MONTHLY EFFECT IN MALAYSIAN STOCK MARKET

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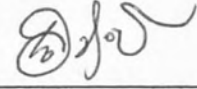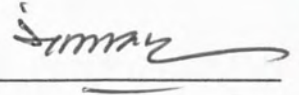
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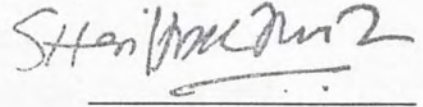HS 2004-4726

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ABSTRACT

This study investigates the existence of the monthly effect in Malaysian stock market. The study uses the monthly closing prices of Kuala Lumpur Composite Index (KLCI) for the period from January 1994 to December 2006 for analysis. Further, the data was partitioned into three sub-periods which allows testing the presence of monthly effect over short periods of time and whether there is any persistence monthly effect. These sub-samples are pre-crisis, crisis and post-crisis period, respectively. The regression results reveal the monthly patterns in this market. Monthly effects do not exist in the full period and crisis period. Only February effect is present during the pre-crisis period. There is January effect for the post-crisis period. Other than that, significant negative returns were also found in March and September with September being the lowest. However, the Wald test and Kruskal-Wallis test results indicate that there is no monthly effect in the stock returns. Finally, this study fails to detect any other persistent monthly effect.

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ABSTRAK

Kajian ini bertujuan untuk menguji kewujudan kesan bulanan dalam bursa saham Malaysia. Data yang digunakan dalam kajian ini merupakan harga penutup bulanan bagi Indeks Komposit Kuala Lumpur yang bermula dari Januari 1994 hingga Disember 2006. Data ini dipartisikan kepada tiga sub-sampel. Pempartisian data membenarkan pengujian kesan bulanan dalam masa yang singkat dan menentukan sama ada kesan bulanan itu berpanjangan. Ketiga-tiga sub-sampel tersebut dinamakan sebagai tempoh sebelum, semasa dan selepas krisis. Keputusan regresi yang diperolehi menunjukkan kehadiran kesan bulanan dalam bursa saham ini. Kesan bulanan tidak wujud dalam sampel keseluruhan dan sampel semasa krisis. Hanya kesan bulanan Februari hadir dalam sampel sebelum krisis. Kesan bulanan Januari ditemui dalam sampel selepas krisis. Selain itu, pulangan yang negatif dan signifikan dikesan pada bulan Mac dan September dengan September mempunyai pulangan yang terendah. Walau bagaimanapun, ujian Wald dan ujian Kruskal-Wallis tidak menunjukkan kehadiran kesan bulanan dalam pulangan stok. Kajian ini juga gagal mengesan sebarang kesan bulanan yang berpanjangan.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

xi

LIST OF SYMBOLS

%	percent
$\sum$	summation
ln	natural logarithm
β	beta coefficient
$\hat{\beta}$	estimate of coefficient
D	dummy variable
ε	error term
ESS	error sum of squares
$s_{\hat{\beta}}$	standard error of coefficient
R_t	return for month t
r_t	continuously compounded monthly percentage change
H_0	null hypothesis
H_1	alternative hypothesis
χ^2	chi-square

CHAPTER 1

FOREWORD

1.1 Introduction

Some patterns in the market that are related to specific calendar events are known as calendar or seasonal anomalies. The calendar anomalies have been one of the most widely researched areas in financial economics. A number of calendar anomalies have been documented and an enormous literature on this subject is available. The existence of calendar anomalies in the market is a contradiction to the weak form of the Efficient Market Hypothesis (EMH). In earlier researches, researchers focused on the discovery of anomalies or search for known anomalies in other markets. In later researches, researchers have questioned the previous findings and the persistence of calendar anomalies in recent periods.

1.1.1 Efficiency Market Hypothesis (EMH)

The EMH asserts that the stocks always trade at their fair value on stock exchanges and the prices reflect all available information. It is impossible for the investors to buy

undervalued stocks or sell stocks for inflated prices. In other words, the investors cannot systematically outperform the market. If the market is inefficient, investors would be able to make above normal profits on a consistent basis in the market. The information concerning stock prices has divided into three forms of EMH which are the weak form, the semi-strong form, and the strong form.

The weak form of EMH, in which the information set, includes only the historical prices. The short-run future price movements of stock issues are approximately random in character and it means that they are independent of the past history of price movements. This implies that the past history of prices cannot provide information that can be used to predict their movements in the future (Othman Yong, 1993). A market is said to be efficient in the weak sense if all past market prices and data are fully reflected in stock prices; that is, technical analysis is of little or no value.

Since the stock market is one of the leading economic indicators, a number of empirical researches have been done on the random walk behavior of stock prices. Most of the analyses conclude that stock prices follow a random walk. A random walk series implies that the market is weak-form efficient. The stock prices of the United States (US) and Japan has been known to conform to the weak form of EMH (Othman Yong, 1993).

A number of previous studies have investigated issues concerning to the efficiency of the KLSE. Several early papers study the randomness of price changes using serial correlation and run tests. Othman Yong (1993) finds that KLSE is quite efficient in

the weak sense of the EMH. This study provides evidence that a small and thinly traded stock market is less efficient in the weak sense of the EMH compared to larger stock markets in the US. The conclusion of this study is consistent with the conclusions of the studies performed on European and Far Eastern stock markets. Another study done by Othman Yong (1995) uses weekly data for 170 stocks and finds that about 50% of the stocks are inefficient in the weak form of EMH at 1% level of significance.

Kok & Goh (1995) find that Malaysian stock market is inefficient in the weak form when daily data are used. However, when weekly data are used, Malaysian stock market has improved its efficiency from a weak form inefficient market in the mid 1980's to a weak form efficient market by the late 1980's and early 1990's. The results also suggest that the Malaysian stock market is weak form efficient with respect to monthly data.

Lim *et al.* (2003) who investigated the random walk behavior of Malaysian stock market for the period of 1990 to 2002 using daily data have a similar result to the former finding regarding the efficiency of Malaysia stock market (Kok & Goh, 1995). The results in this study reject the hypothesis of random walk since some patterns show up more frequently than would be expected in a true random series. It means that Malaysian stock market is inefficient in the weak form of efficient market hypothesis if the underlying structure in this non-random series can be identified and the investors are able to make abnormal profits. This paper is adoptable since it is using a more recent year data to test the market efficiency.

1.1.2 Calendar Anomalies

Anomalies refer to regularities that appear in stock trading. Anomalies are empirical results that seem to be incompatible with maintained theories of asset-pricing behavior. It indicates either market inefficiency (profit opportunities) or inadequacies in the underlying asset-pricing model (Schwert, 2003). However, anomalies often seem to vanish or reverse as the market becomes more efficient after anomalies is documented and analyzed in the academic literature because the investors attempt to take advantage of it in advance.

Calendar effect is the tendency of stocks to perform differently at different times of the year. Certain days of the week, weeks of the month, and months of the year are more likely to produce rises or falls in stock prices than others. The calendar effect is presence in stock returns if the average returns were not the same in all periods. The main calendar anomalies are the day of the week effect, the January effect, the turn of the month effect and the holiday effect.

The January effect refers to the phenomenon that average monthly returns in January are higher than the average returns in any other months. Stock that exhibits abnormally large returns during the first few days of the January also known as the turn of the year effect. The January effect occurs because many investors choose to sell some of their stock right before the end of the year in order to claim a capital loss for tax purposes. Once the tax calendar rolls over to a new year on 1 January, these same investors will

quickly reinvest their money in the market and causing the stock prices to rise (Gao & Kling, 2005).

The monthly effect is a phenomenon where the stock market returns are not distributed equally across the year. Gao & Kling (2005) investigate the calendar effects in Chinese stock market using the market index of Shanghai and Shenzen stock exchanges over the period 1990-2002. They find that China differs from other markets with the highest average returns in March and April. They explain that the Chinese year ends in February. Their findings that March and April had higher returns than other months of the year are hence similar with other studies based on the western calendar year. This monthly effect will be examined whether it is present in Malaysian data set.

1.1.3 Stock Market

Stock market is an institution where corporations able to raise money conveniently. Stock market is a place where people buy and sells pieces of paper called stock. Corporations issue shares of stock to raise money in order to hire more employees, build more factories or offices and upgrade their equipment. Stock market plays an important role in the economic development of a country. It is regarded as a mechanism for the effective mobilization of domestic funds to assist economic development and for the efficient allocation of resources (Kok & Goh, 1995).

Bursa Malaysia is the only stock market in Malaysia. It plays a significant role in assisting the development of the Malaysian capital market and enhancing global competitiveness. Bursa Malaysia is committed to maintaining an efficient, secure and active trading market for local and global investors. The importance of Bursa Malaysia has been acknowledged by the government with the establishment of the Securities Commission to supervise the development of the securities industry in Malaysia (Kok & Goh, 1995). Bursa Malaysia Berhad is an exchange holding company which listed on the Main Board of Bursa Malaysia Securities. It operates a fully integrated exchange; offer a complete range of exchange-related services, including trading, clearing, settlement and depository services. Bursa Malaysia provides information services related to the Malaysian securities market too.

Today, Bursa Malaysia has over 1000 listed companies offering a wide range of investment choices to the world. The companies are either listed on the Bursa Malaysia Securities Main Board or the Second Board. Main Board for larger capitalized companies while the Second Board which acts as a complements of the Main Board enables smaller companies that have a strong growth potential to look for a listing on the Exchange. The Second Board was established on 11 November 1988. The MESDAQ Market for high growth and technology companies (Lim *et al.*, 2003).

a.   History of Bursa Malaysia

The first formal securities business organization in Malaysia was the Singapore Stockbrokers' Association which was established on 23rd June 1930. In 1973, it was re-registered as the Malaysian Stockbrokers' Association. The Malayan Stock Exchange was established in 1960 and the public trading of shares started in Malaya. In 1961, the board system with trading rooms in Singapore and Kuala Lumpur was connected by direct telephone lines into a single market with the same share listed as a single set of prices on both boards, was established.

The Stock Exchange of Malaysia was established in 1964. In 1965, Singapore was separated from Malaysia and the Stock Exchange of Malaysia became known as the Stock Exchange of Malaysia and Singapore. The currency interchangeability between Malaysia and Singapore was ceased in 1973, and the Stock Exchange of Malaysia and Singapore was separated into Kuala Lumpur Stock Exchange Berhad (KLSEB) and Singapore Stock Exchange (SES). The operations of KLSEB were taken over in the 1967 by Kuala Lumpur Stock Exchange (KLSE) which was incorporated on December 14, 1976 as a company limited by guarantee. KLSE provide a central market place for buyers and sellers to transact business in shares, bonds and various other securities of Malaysian listed companies. On 1 January 1990, all Singapore incorporated companies were delisted from the KLSE and vice-versa for Malaysian companies listed on the SES.

KLSE were demutualized according to the Demutualization Act and converted into a public company limited by shares on 5th of January 2004. KLSE were then known as Kuala Lumpur Stock Exchange Berhad. Upon the conversion, KLSE were vested and the securities exchange businesses were transferred to a new wholly-owned subsidiary, Bursa Securities. On 14th of April 2004, Bursa Securities became an exchange holding company and were renamed as Bursa Malaysia Berhad (Bursa Malaysia, 2006).

b.   The Kuala Lumpur Composite Index (KLCI)

Stock market indices are used as an indicator for the performance of the stock market as a whole. Bursa Malaysia electronically calculates all indices on a minute by minute basis and made available immediately to stock broking companies and other real-time market information subscribers. The KLCI is generally accepted as the local stock market barometer. It was introduced in 1986 when there was a need for a stock market index to serve as a more accurate indicator of the performance of the Malaysia stock market and the economy. This index satisfies stringent guidelines and has gone through rigorous screenings of the component companies that were selected to compose the index. The number of component companies was increased to 100 in 1995 and is limited to this figure although the actual component of companies may change from time to time (Lim *et al.*, 2003).

The KLCI is a capitalisation-weighted index. A capitalisation-weighted index is an index whose components are weighted according the total market value of their

outstanding shares. It is also called as market value-weighted index. The KLCI is calculated as follows:

$$\text{Index price} = \frac{\text{Current aggregate Market Capitalisation}}{\text{Base aggregate Market Capitalisation}} \times 100 \qquad (1.1)$$

The whole of the year 1977 adopted as the base period (Kok & Goh, 1995).

1.2   Objective

The main purpose of this study is to investigate the existence of monthly pattern or monthly effect in KLCI on the Bursa Malaysia, using the latest data sets, from January 1994 until December 2006. This study is also aim to determine the persistent of the monthly effect in KLCI. The findings of this calendar effect have important implications for fund managers, financial analysts, financial managers and investors. The understanding of seasonality should help develop appropriate investment strategies.

1.3   Research Scope

The data used in this paper are the monthly index values for the overall Malaysian stock market. The data covers the period January 1994 through December 2006. These data are obtained from Yahoo Finance. All indices are value-weighted and represent end-of-the-month values.

1.4   Organization of Study

The rest of the study is organized as follows. The chapter 2 examines the literature on calendar effects in global stock market. Chapter 3 looks at the methodology used in this study. Result and discussion are then presented in the Chapter 4. Chapter 5 concludes.

CHAPTER 2

LITERATURE REVIEW

2.1   Review on Monthly Effect

The most significant of the calendar anomalies is the monthly effect or also known as month of the year effect. There has been a considerable research in the monthly effect and broadly documented in the finance literature. In the US market, Rozeff & Kinney (1976) first document that mean returns in January are higher compared to other months of the year on the New York Stock Exchange (NYSE). This study also find that the mean returns in July, November and December are relatively high and low mean returns in February and June. Haugen & Jorion (1996) also discover the January effect on the NYSE. Redman et al. (1997) support this finding for the equal-weighted index of NYSE and American Stock Exchange (AMEX) for the period of 1986 to 1993.

Mehdian & Perry (2002) re-examine the January effect in US equity market from 1964–1998 using Dow Jones Composite, NYSE and S&P 500. A positive and statistically significant January effect was found in all three stock indexes. The returns during April also positive and significant at 5% level for all indexes. However, this paper also

document that US equity returns in three major stock indexes are not structurally stable over time. There is a significant structural break around the 1987 stock market crash. In post-crash period, January returns are positive but statistically insignificant indicating that January effect does not exist in the post-crash period. Davidsson (2006) investigates the S&P 500 index from 1970 until 2005. The result shows that December had the highest monthly increased returns and followed by January and November. September effect was found and it is the only month with a negative returns. He found no support for the January effect that stock prices should be higher in January than in December.

The January effect has been found to be present in other countries as well. Gultekin & Gultekin (1983) find evidence of a seasonal pattern in the stock returns in most of the major industrial countries using parametric and non-parametric tests. They find that the returns are much higher in January than non-January months in all the countries, especially for non-US markets. They also discover that April effect is present in UK. Mills & Coutts (1995) reveal the existence of January effect in the FT-SE indices for the period from January 1986 to October 1992. They propose that even if this anomaly is persistent in their occurrence and magnitude, the expenses of implementing 'trading rules' may be prohibitive. Arsad & Coutts (1997) support this finding for the Financial Times Ordinary Shares Index over a 60 year period, from 1 July 1935 through 31 December 1994.

Mougoué (1996) investigates the Taiwanese stock market from January 1967 to December 1991. The data was examined for the entire period and for five five-year sub-

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