THE MACROECONOMIC VARIABLES INFLUENCING PLANTATION STOCK PRICE

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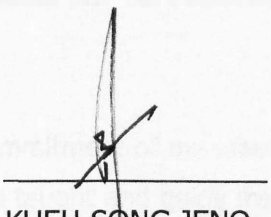

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CERTIFICATION

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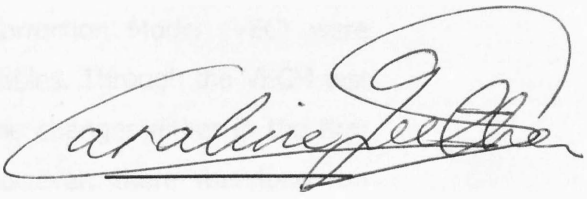

ABSTRACT

THE MACROECONOMIC VARIABLES INFLUENCING PLANTATION STOCK PRICE

The overall objective of this study is to determine whether the macroeconomic variables create the variation in stock returns is the same for industry and firm. The secondary data used in this study consists of monthly time series data from January 2000 to December 2010. Time series method such as Unit Root Test, Johansen Cointergration Test and Vector Error Correction Model (VEC) were conducted to proof the relationship between the variables. Through the VECM test the independent variables were unable to explain the changes either in the firm index or the industries index in the short run. However, there was long run relationship between the industry's stock price with interest rate, exchange rate and industry production index through Johansen cointegration test. Besides, there was long run relationship between firm's stock price and interest rate, exchange rate, inflation rate and industry production index.

ABSTRAK

Secara keseluruhannya, penyelidikan ini adalah bertujuan untuk menentukan kadar ketidakstabilan ekonomi terhadap pembolehubah yang dimana akan membentuk kepelbagaian pulangan stok yang sama di dalam sektor industri dan firma. Data sekunder yang turut digunakan dalam kajian ini ialah tempoh masa iaitu dikaji dari bulan Januari 2000 hingga Disember 2010. Beberapa kajian seperti Unit Root Test, Johansen Cointergration Test and Vector Error Correction Model (VEC) telah dijalankan untuk menkaji hubungan antara kesinambungan ini. Melalui ujian VECM yang dijalankan didapati bahawa pembolehubah yang tidak bersandar gagal menjelaskan perubahan di dalam sektor industri atau firma dalam jangka masa pendek. Bagaimanapun, ia terdapat hubungan jangka masa panjang antara industri perladangan indeks dengan kadar faedah, indeks pengeluaran perindustrian dan kadar penukaran wang asing melalui ujian Johansen co-integration.Sementara, ia terdapat hubungan jangka masa panjang antara harga stok firma dengan kadar faedah, indek pengeluaran preindustrian, kadar penukaran wang asing dan kadar inflasi.

LIST OF ABBREVIATIONS

ARCH	AUTOREGRESSIVE CONDITIONAL HETEROSKEDASTICITY
ARDL	AUTOREGRESSIVE DISTRIBUTED LAG
ARIMA	AUTO REGRESSIVE INTEGRATED MOVING AVERAGE
CPI	CONSUMER PRICE INDEX
DSI	DATABANK STOCK INDEX
ECM	ERROR CORRECTION MECHANISMS
EGARCH	EXPONENTIAL GENERALIZED AUTOREGRESSIVE CONDITIONAL HETEROSKEDASTICITY
EXCH	EXCHANGE RATE
FDI	FOREIGN DIRECT INVESTMENT
GARCH	GENERALIZED AUTOREGRESSIVE CONDITIONAL HETEROSKEDASTICITY
GDP	GROSS DOMESTIC PRODUCT
GSE	GHANA STOCK EXCHANGE
IIP	INDEX OF INDUTRIAL PRODUCTION
INFL	INFLATION RATE
INR	INDIAN RUPEE
INT	INTEREST RATE
IOI	IOI CORPORATION BERHAD
IPI	INDUSTRIAL PRODUCTION INDEX
IPO	INITIAL PUPLIC OFFER
ISE	ISTANBUL STOCK EXCHNAGE
KLCI	KUALA LUMPUR COMPOSITE INDEX
KLPLNT	KUALA LUMPUR PLANTATION INDEX
KLSE	KUALA LUMPUR STOCK EXCHANGE
KSE 100 Index	KARACHI STOCK EXCHANGE 100 INDEX
LSE25 Index	LAHORE STOCK EXCHANGE 25 INDEX
SGX	SINGAPORE STOCK EXHANGE
S&P CNX Nifty Index	THE STANDARD & POOR'S CRISIL NSE INDEX 50
USD	UNITED STATES DOLLAR

VAR	VECTOR AUTOREGRESSIVE
VECM	VECTOR ERROR CORRECTION MODEL
WPI	WHOLE SALE PRICE INDEX

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Macroeconomic variables play an important role in influencing the variation in stock prices. Variation in stock price takes place when there is a change in stock returns. Researchers like Butt, Rehman, Khan and Safwan (2009) claimed that macroeconomic variables have a significant effect on the performance of the industry as a whole but it was insignificant to firms. Thus it was concluded that economic exposure is higher at industry level compared to firms. In addition, some researchers like Gay (2008) found that macroeconomic variables have different effect on different firms. This is the reason why investors are able to reduce their risk through diversification opportunity in stock market. Gay's (2008) finding was supports by other researchers like Ibrahim (1999), Ibrahim and Aziz (2003) and Janor and Rahman (2005) had study the relationship between stock market and economic activities in Malaysia. In their assumption, they claimed that the stock market in Malaysia has lead to the movement of macroeconomic variables.

The macroeconomic variables used to measure macroeconomic variables were industrial production index, inflation rate, interest rate, exchange rate, reserve, money supply and even commodity price. Industrial Production Index (IPI) measured the economic activity of the country. Increase in the value of the production index can increase the economic performance of industry and firms, indicating a positive relationship between the variables. Inflation rate, interest rate, and exchange rate can be classified as monetary variables. This also includes money supply. All these variables were interrelated thus creating a possibility of a multicolinearity effect. When money supply increases, interest rate will decrease. When interest rate decreases, the

inflow of foreign capital will decrease; eventually decrease the value of exchange rate. Changes in interest rate can also be created a new channel that links it with interest rate; it will increase investment and eventually aggregate demand. As increase in aggregate demand, would increase inflation. Changes in all these monetary variables can influence the stock price based on the traditional approach, monetary approach and portfolio approach. All these approach confirms a negatives effect with the stock price.

1.2 PROBLEM STATEMENT

The stock prices adjust rapidly to information. Therefore, the latest stock prices reflect all information about the stock price. But, investors were unable to obtain profit by using the available information to predict the stock price movement. Fama (1981) explained that the stock prices must contain all related information that includes publicly available information.

The stock price should reflect the expectations about the company's future performance and the company's profits generally are a sign of the level of economic activities. Thus, if the stock prices exactly showed the underlying fundamentals, then the stock prices should be selected as indicators that lead the future economic activities. As a result, the relationship between the macroeconomic and stock price are important in the aspect of formulation of the country's macroeconomic policy and the firms' corporate strategy.

Chong and Goh (2003) claimed that in the stock market it will make sure that all related information, which includes the changes in macroeconomic variables such as interest rate, inflation, money supply, exchange rate and etc, were fully reflected in the current stock price. Therefore, investors will not be able to obtain any abnormal profit through the prediction of the future stock market movement. Then there would be no way for investors to get advice from investment advisor unless they employ

insider information which was prohibited and punishable by law, and the principle of stock broking will be changed.

Comparing with other developed countries stock market, Malaysian stock market is more unique in term of trade-led approach that imply to stimulate the country's economy; more capital control and does not adopt free exchange rate system (Pan, Robert, Liu and Angela, 2007). Thus, through this study to confirm whether the macroeconomic variables such as interest rate, exchange rate, inflation rate and industry production index, influencing the stock index in the industry level and the firm level are the same or not.

Up to date, various studies were carried on the effect of macroeconomic variables on stock prices but the studies concentrated on the performance of stock prices at the macro level only. No limited research was conducted at the industrial and the firm level stock price performance. Therefore, the study aims to compare the effect of macroeconomic variables on stock price at both industrial and firm level.

Thus, the study aims to answer the following research question "Does macroeconomic variables influence stock price the same for industry level and firm level?"

1.3 RESEARCH OBJECTIVES

The overall objective of this study is to determine whether the macroeconomic variable that creates the variation in stock returns is the same for industry and firm. The specific objectives of the study are as follows:

a. Are the macroeconomic variables responsible in influencing stock price the same at the industry and firm level in the short run?
b. Are the macroeconomic variables responsible in influencing stock price the same at the industry and firm level in the long run?

1.4 SCOPE OF STUDY

The study uses variation in stock returns plantation industry and the plantation firm as the dependent variable. This is because the macroeconomic variable responsible differs according to the type of industry and also the level of industry. Meanwhile the independent variables were GDP proxies by industrial production index, inflation rate, exchange rate and interest rate. The monthly data that ranged from January, 2000 to December, 2010 were obtained from the monthly Bulletin of Bank Negara and the Bursa Malaysia report.

The analysis began with a unit root test to identify the unit root problem. This will be followed by the Johansen Co-integration test to confirm the variables responsible in influencing stock return variation in the long run and VECM for the short run.

1.5 STRUCTURE OF STUDY

Chapter 1 consists of introduction, problem statement, objectives, significant of study and scope of study. Chapter 2 consists of literature review meanwhile Chapter 3 consist of methodology of study. Chapter 4 explains the result and Chapter 5 discusses the conclusion and policy recommendation.

1.6 SIGNIFICANCE OF STUDY

The study aims to identify whether changes in macroeconomic variables were responsible changes in stock prices. No doubt there were many studies conducted in this area but up to date there were limited studies conducted to confirm whether the macroeconomic variables responsible for the changes of stock price was the same for the performance of the industry and with the performance of firm. In addition, the study was able to further distinguish whether the variables responsible were same in the short run and long run.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Literature review is an analysis or summary of previous researches towards a particular topic. The purpose of performing literature review is to evaluate related literature in order to guide and support the current writing, and to define each variable involved in this study. The focus area of this study is to examine the macroeconomic variable that influencing stock returns is the same for industry and firm.

It is evident from literature that the relationships between macroeconomic variables and stock returns have received big focus over recent years in specific countries and economic conditions. The amount of return achieved or expected from an investment is contingent on a variety of factors. In this study, the focus area of the macroeconomic variable will be inflation rate, exchange rate, interest rate and GDP which proxy by the industrial production index.

Butt, Rehman, Khan, and Safwan (2009) with observation 32 firms' top performers at KSE 100 Index from Banking Industry and Textile Industry, data obtained from July 1998 until June 2008, 120 months with employ Multi Factor Method to explore the relationship between the market index, consumer price index, risk free rate of return, exchange rate, industrial production index, money supply and individual industrial production. As the result, they found that the stock returns act different at the level in firm and industry. The impact of changes in economic factors on the stock returns was showed more significant in the level of industry than the

level of firm level. They concluded that the stock returns of industry were subjected to larger variation against macroeconomic variables that the stock returns of firm level.

Bredin, Hyde, and O'Reilly, (2009) had showed that financial and macroeconomic factors influence on the stock returns respond in a nonlinear fashion. The world stock returns had captured the non-linearity or cyclical behavior with the large negative falls leading to a different regime to that of smaller negative or positive returns. These single evolution models all segregate extreme falls in return or in the crisis period such as October 1987the consequence of the Asian financial crisis and the impact of the 9/11 terrorist attacks in September 2001. Study from Longin and Solnik (2001) and Ang, Chen and Xing (2006) had showed that covariance between country stock return and world stock returns increases during these periods.

2.2 THE MACROECONOMIC VARIABLES THAT INFLUENCE STOCK PRICE

2.2.1 Monetary Transmission Channel

Monetary Transmission Channel is a monetary based economic theory that links macroeconomic variables with the stock prices. When money supply increases, interest rate will decrease through the interest rate channel, exchange rate will increase through the exchange rate channel, demand for financial assets will increase through the money channel and demand for credit will increase through the credit channel. All these channels will influence the stock price of a firm or an industry.

2.2.2 Relationship between inflation rates and stock returns

Wang (2010) inspected on the effect of inflation, interest rate, and GDP on China's Stock Market (Shanghai Composite Index) by use exponential generalized autoregressive conditional heteroskedasticity (EGARCH) and lag-augmented VAR (LA-VAR). Data started from January 1992 to December 2008 by month report stock price index from China Economic Information Network. He also proved that there is a mutual causal relationship between stock market and inflation volatility. This has been

proven from the existence of a feedback incident between China's CPI and stock prices.

Through the data collect from Turkish Central Bank from January 1981 to December 2000, Sari and Soytas, (2005) had showed the expected inflation and real returns are not related, but the inflation and stock returns showed in negative relationship. This negative relationship comes into sight to be stemming from the negative impact of unexpected inflation on real stock returns. Therefore, they test the validity of the proxy explanation for the negative relationship between inflation and real returns. The result provided weak support for this test and he concluded that Turkish stocks do not appear to be a perfect hedge against inflation.

Maysami and Sims (2002, 2001a, 2001b) had examined the relationship between macroeconomic variables and stock returns in Hong Kong and Singapore, Malaysia and Thailand and Japan and Korea. They employed Hendry's (1986) Error-Correction Modeling technique to predict the short-run and long run relationship between macroeconomic variable, which include interest rate, inflation, money supply, exchange rate, and real activity, along with a dummy variable to capture the impact of the 1997 Asian financial crisis. They found that the influence of these macroeconomic variable on each 6 countries stock market index were different depending on the particular country's financial structure.

With use Johansen's (1998) VECM to investigate the relationship between Japanese Stock Market and macroeconomic variables include exchange rate, long-term government bond rate, money supply, inflation, real economic activity, and call money rate; Mukherjee and Naka (1995) had found out that the significant relationship between the movement of Japanese Stock Market and these macroeconomic variables.

Similarly, Maysami and Koh (2000) conduct the research on relationship between macroeconomic variable such as inflation, money supply growth, changes in short term and long-term interest rate and exchange rate; and Singapore's stock market. They found that a co-integrating relation between the macroeconomic variables and the changes in Singapore's stock market levels.

With employed foreign exchange rate, money supply and CPI as dependents variable, Nishat and Shaheen (2004) had claim that different variable has different result against the stock market return. He had observed Karachi Stock Exchange 100 Index from 1974 to 2004 to figure out the relationship between stock price and economy. As the result, he proved that the inflation variable had showed no significant relationship to the stock price by implement granger causality test.

Song (1997) he used money supply oil price and inflation rate as his variables for Asian stock market. He observes the differences of the structure of fluctuation after 1997 financial crises by using VAR model. As result for his study, the stock market of Asian economy is highly effect by the oil prices and inflation.

Hasan and Nasir (2009), test the relationship between industrial production, oil prices, inflation, exchange rates, short-term interest rate, foreign portfolio investment, money supply and equity price. In their study showed that inflation is not statistically significant in determining equity prices in the long run.

Ahmed and Mustafa (2003) used data collected by basis of monthly data and annual data from 1972 to 2002 to study the effect of inflation towards stock prices index. They has found that control in the real output growth rate will impact negatively to real return. This proved by the finding from Fama (1981). However, the relationship between real returns and unexpected growth and unexpected inflation were significant but negatively trend to the stock return.

Adrangi, Chatrath, and Sanvicente (2002) used data obtained from the Brazilian Institute for Geography and Statistics (January 1986 to July 1997). The empirical tests are conducted within Fama's proxy hypothesis framework, where the statement claims that there is a negative relationship between inflation and real activity; and the positive relationship between the real stock returns and real economic activity. They claim that there is negative relationship between inflation and the real stock returns but this does not obtained any results to support. In Brazil, the real stock and inflation rate showed negative relationship and this situation keep on going after the situation is purging on the negative relationship between inflation and real activity. So, inflation may can affected the real stock returns because the inflation pressure may threaten the corporate future profit, thus the nominal discount rate increase due to the inflationary pressures, current value of future profits been cut down, and the end is the stock return affected too. In the long-run relationship, price levels, stock price and the real activity had been proved is consistent result with the effect of hypothesis; and these findings were only occur in the long-run only.

From study carried out by Maysami, Lee, and Hamzah (2004) authors confirmed and concluded that the efficient market hypothesis in doubt was because of the co-integrating relationship between macroeconomic variables and stock prices. Principally, the behavior of stock market may definitely be predicted, contrary to the EMH conclusions and if affecting the stock market is not something they desire, policy-makers may need to re-evaluate their economic policy. The fact that specific sectors represented in the SGX were individually affected by to different extent by various macroeconomic variables points to the possibility of superior returns based on selecting stocks from specific sectors of the economy as information had becomes available on specific macroeconomic variables. Policy-makers need to be careful too when they want to use changes in macroeconomic variables such as interest, the money supply rates, or the exchange rate as the tool to influence the economy. Policy maker may unintentionally lower the stock market, and curtail capital formation which

itself would lead to further slowdown of the economy in order to cross over the macroeconomic ills such as inflation or unemployment.

Gunsel and Cukur (2007) employ the method of Durbin-Waltson Statistics and OLS technique to test the relationship between the macroeconomic variables such as interest rate, risk premium, exchange rate, money supply, inflation, industrial production and dividend yield and the stock return in London. They obtained data from Datastream from January 1980 to December 1993. As the result, they found that there was no significant relationship between unexpected inflation and the stock return. This is because before the announcement, the market predicts it and incorporates into the stock prices. The effective exchange rate showed the relationship to the stock price movement and pointed as important factor by the researchers in two industries, building materials and merchants & engineering. Both industries suffered because of the exchange rate movement.

Anokye and George (2009) obtained quarterly data from DSI from January 1991 to April 2006 to test the relationship between the macroeconomic variables and the stock market index return. They used Johansen's multivariate co integration test & VECM to run this test. As the result, they proved that there is positive relationship between the inflation to DSI. This result were supported by the finding from Firth (1979), Anari and Kolari (2001), Luintel and Paudyal (2006), and Gultekin (1983) where they concluded that the inflation was used by the market as hedging method for the stock. Besides, they also found that interest rate and exchange rate had small impact to the share price but not as the inflation rate and net FDI inflow. Thus, Anokye and George (2009) suggested that investors should focus on the inflation rate and exchange rate, followed by the net FDI inflow but not in interest rate.

2.2.3. Relationship between exchange rates and stock returns

Mohammad, Hussain, and Ali (2009) used descriptive statistics & auto regressive integrated moving average (ARIMA) model testing to study Stock Prices from KSE