Macroeconomic variables and stock return in malaysia

CHAPTER 1

INTRODUCTION

Pricing stocks has a great concern by investors and they believe that the change of stock prices were sensitively to economic news. Chen et al. (1986) was found out that the stock returns are exposed to systematic economic news. If the stock influenced by systematic economic news and there are no profit return in order to compensate the risk. Besides that, some investor would predict the fluctuation of stock prices base on their daily experience and some unanticipated events which influence the stock prices. However, in 1976, Stephen Ross was developed Arbitrage Theory Pricing (APT) to determine which of the macroeconomic factors influence to stock returns rather than investors determine stock price base on their experience estimation.

Overview of Malaysia stock market

Malaysia is potential country for investors to have new business opportunities because the countries have economic growth. Ali (2001) was stated Malaysia stock market was growth in line with rapid economic expansion during the past decades. Since the Malaysia stock market was influence by economic, there are very important for macroeconomic management in order for Malaysia economic growth stability and social progress.

The development of Malaysia economy was referring to the successful transformation from a mainly raw material producer (1970s) into a multi-sector economy (1990s). In 2007, the economy of Malaysia was announced

the 3rd largest economy in Southeast Asia and 29th largest economy in the world by purchasing power parity with gross domestic product for 2008 of $222 billion. The growth rate from 5% increase to 7% since 2007. In 2009, GDP per capita (PPP) of Malaysia was reached US$14, 900. At the same time, the nominal GDP was US$383. 6 billion, and the nominal per capital GDP was US$8, 100.

Besides that, Malaysia population was gradually increase, for instance, Khal Mastan (2006), a senior Consultant with Pegasus Business and Market Advisory stated that Malaysia's population is becoming increasingly urban. The country's urban population increased from 54. 7% to 62. 8% of Malaysia's total population from 1995 to 2004. On 2009, the population was estimated over 28 million. This show a good phenomena to a country because with sufficiency manpower, the country economic would growth.

Problem Statement

There many researchers tested on the stock return and macroeconomic factors in different country with different macroeconomic variable. However, they are no standard benchmark which can follow. For instance, Chen, Roll and Ross, (1986) also stated that there are no satisfactory theory could be argue that the relation between financial markets and the macroeconomic is entirely in one direction. Therefore, it is attract attention for many researchers to run the research regarding the stock return and macroeconomic factors.

In various studies, researcher would like to use exchange rate, interest rate and inflation as their tested variable on stock return because they believe

government financial policy and macroeconomic event have large influence on general economic activities in an economy including the stock market which stated by Adam and Tweneboah (2008). Once again motivates researchers to investigate the relationship between stock returns and macroeconomic variables.

Besides, some of the stock market still under explore because the result obtained by researches were ambiguous. Samitas and Kenourgios pointed out the majority of empirical work which specific test on long-term stock market in mature market than emerging market and provided a range of ambiguous and inconsistent conclusions although they had empirical study as an evidence to support there are co-integration relationships in a number of markets. However, this is useful for the in emerging stock markets which have low correlations with mature markets.

Research Questions

In this study, the researcher may raise some question that relate with the macroeconomic factors influence on stock return based on Malaysia stock market. Below is the research question:-

What are the macroeconomic factors that influence on stock return of Malaysian stock market?

What are the relationship between the factors (oil price, gross domestic product, inflation rate, unemployment rate) and stock return of Malaysia stock market?

Research Objectives

The study wants to ascertain the stock return effect by macroeconomic factors based study on Malaysia stock market. By doing this research, the researcher has developed major objectives, which is:-

To examine macroeconomic factors that might have an influence in determining the stock return of Malaysia stock market.

To determine the relationship between factors (oil price, gross domestic product, inflation rate, unemployment rate) and stock return of Malaysia stock market.

Significance of the study

This study is relevant and of much interest to the stock investors particularly those interested investing in Malaysia listed companies and they would hesitate to know about the macroeconomic factors which will influence Malaysia stock market. In addition, finance researcher would get an idea whether stock return effect by oil price, gross domestic product, and inflation and unemployment rate of Malaysia stock market before doing their research. This finding also could useful for investors make correct decision on their stock investment by referring the manner of the macroeconomic influence Malaysia stock market. If the macroeconomic have a relationship with stock return, investors probably need to hedge its stock price or vice versa. This also could bring alert to investors to be aware to those influential macroeconomic factors on stock return. Therefore, investors could maximize profit through their stock investment.

Limitation of the study

There are various types of industry in Malaysia listed board and it would forgo some industrial because of the randomly choose.

Variables used as predictors, as there still other variables not been used (i. e. exchange rate, interest rate, export and import).

Time, it had a limited time.

CHAPTER 2

LITERATURE REVIEW

2. 1 INTRODUCTION

Chapter two is the literature review which provides the theoretical and empirical information to study macroeconomic factors and stock return of Malaysia stock market. It is also used as foundation for interpretation the study's results and analysis the findings then formulate our hypotheses.

2. 2 EMPIRICAL EVIDENCE

There are plenty of empirical researches regarding macroeconomic factors on stock return by using different macroeconomic variables to test on it. Furthermore, some research result was showing different countries was influence by different macroeconomic factors. For instance, Gunsel and Çukur (2007) examined the performance of the Arbitrage Pricing Theory (APT) in London Stock Exchange from 1980-1993by using OLS technique. They were using seven macroeconomic variables to test in their study which is interest rate, the risk premium, the exchange rate, the money supply, unanticipated inflation, sectoral dividend yield and sectoral unexpected

production. The result showed that macroeconomic factors have a significant effect in the UK stock exchange market but each factor may affect different industry in different manner. Test results also support that there is no significant relationship between unexpected inflation and sectoral return when the efficient market hypothesis for the unexpected inflation case. In addition, market predicts it and incorporates into the stock prices before announcement. Besides, the effective exchange rate is one of the important factors for industries. Lastly, they figure out that some industries could not eliminate the exchange rate risk because they don't have much knowledge about sectoral movement of exchange rate or sectoral productivity.

Tursoy, Gunsel and Rjoub (2008) were test the Arbitrage Pricing Theory (APT) in Istanbul Stock Exchange (ISE) for the period of February 2001 up to September 2005 on monthly base by using ordinary least square (OLS) technique. The macroeconomic variables that they used in their study is money supply (M2), industrial production), crude oil price, consumer price index (CPI), import, export, gold price, exchange rate, interest rate, gross domestic product (GDP), foreign reserve, unemployment rate and market pressure index (MPI). They examined 13 macroeconomic variables against 11 industry portfolios of Istanbul Stock Exchange to observe the effects of those variables on stocks' returns. The study was showed that macroeconomic variable may affect different industry in different manner, for example, a macroeconomic variable may affect one industry positively, but affect the other industry negatively. Lastly, they found out there is no relationship between the macroeconomic variables and stock market return.

Adam and Tweneboah (2008) studied about the role of macroeconomic variables on stock prices movement in Ghana from 1991 to 2006. They were using Johansen's multivariate co-integration test and innovation accounting techniques to analyze both long-run and short-run dynamic relationships between the stock market index and the economic variables. The tested macroeconomic variables such as inward foreign direct investments, the treasury bill rate (as a measure of interest rates), the consumer price index (as a measure of inflation), and the exchange rate. They finding showed that there is co-integration between macroeconomic variables identified and Stock prices in Ghana indicating long run relationship. They also prove that the interest rate and Foreign Direct Investment (FDI) are the key determinants of the share price movements in Ghana.

Kandir (2008) was investigates the role of macroeconomic factors in explaining Turkish Stock returns for the period of July 1997 to June 2005. The macroeconomic variables been used is the growth rate of industrial production index, change in consumer price index, growth rate of narrowly defined money supply, change in exchange rate, interest rate, growth rate of international crude oil price and return on the MSCI World Equity Index. Empirical findings indicate that exchange rate, interest rate and world market return seem to affect all of the portfolio returns, while inflation rate is significant for only three of the twelve portfolios. The exchange rate is significant because the increase of the tourism activities and foreign in recent years. The interest rate on stock returns showed negative effect but Turkish stock returns were not influenced by the inflation rate. This finding may suggest that technique of hedging could not be use against inflation.

Besides, industrial production, money supply and oil prices were no significant affect on stock returns.

Robert and Gay (2008) were investigating the relationship between share prices and economic activity in emerging economies. They were study about the time-series relationship between stock market index prices and test on two macroeconomic variables which is exchange rate and oil price for Brazil, Russia, India, and China (BRIC) using the Box-Jenkins ARIMA model. The finding obtained there are no significant relationship between exchange rate and oil price on the stock market index prices of either BRIC country because the influence of other domestic and international macroeconomic factors on stock market returns, warranting further research. Furthermore, there was no significant relationship found between present and past stock market returns, suggesting the markets of Brazil, Russia, India, and China exhibit the weak-form of market efficiency.

THEORITICAL LITERATURE

Arbitrage pricing theory (APT) is a theory which investigated by economist Stephen Ross in 1976. This theory is an asset pricing theory and it would bring affect to the pricing of stocks. APT explained that there is a linear relationship between required return and macroeconomic factors; the sensitivity to changes in each factor is represented by a factor-specific beta coefficient. Jay Shaken (1992) proof that any variable correlated with the factor can be the benchmark in an approximate APT expected return relation when in the single factors case. If the result obtained significance which could be a new direction for empirical work on " arbitrage pricing" is outlined. Besides, the asset price should equal the expected end of period

price discounted at the rate according to the model. If the price diverges, arbitrage should bring it back into line. In addition, APT not same like the Capital Asset Pricing Model (CAPM), which specifies returns as a linear function of only systematic risk APT may specify returns as a linear function of more than a single factor. Dybvig and Ross (1985) were examined the relationship between APT and CAMP. They were prove that the CAPM is not applicable to the APT which follow the Shanken' assertion, meanwhile, the finding also showed that APT is a testable model.

THEORITICAL FRAMEWORK

Voluminous of the research on stock return was concentrate on industrial production, inflation and others but not much of empirical studies test on gross domestic product and unemployment rate. Base on this, the framework of study was constructed to identify relationship between stock return and macroeconomic factors.

Figure 1 below shows the dependent variable is the average stock return; meanwhile the independent variables are oil price (OP), gross domestic product, inflation (INTL) and unemployment rate (UNP) of the Malaysian's farming and fishing companies which listed in Bursa Malaysia.

OIL PRICE (OP)

GROSS DOMESTIC PRODUCT (GDP)

STOCK

RETURN (R)

INFLATION (INTL)

UNEMPLOYMENT RATE (UNP)

Figure 1: Theoretical Framework of study

HYPOTHESES

Hypothesis 1

H01: There is no significant relationship between oil prices and the stock returns of Malaysia multinational companies.

H1: There is a significant relationship between oil prices and the stock returns of Malaysia multinational companies.

Hypothesis 2

H02: There is no significant influence of gross domestic product on the stock returns of Malaysia multinational companies

H2: There is a significant influence of gross domestic product on the stock returns of Malaysia multinational companies.

Hypothesis 3

H03: There is no significant influence of inflation rate on the stock returns of Malaysia multinational companies.

H3: There is a significant influence of inflation rate on the stock returns of Malaysia multinational companies.

Hypothesis 4

H04: There is no significant influence of unemployment rate on the stock returns of Malaysia multinational companies.

H4: There is a significant influence of unemployment rate on the stock returns of Malaysia multinational companies.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

This chapter presents the methodology and the procedure used in measuring the variables used by the researcher. The chapter provides detailed steps of the way to conduct the analysis of the stock return for 30 Malaysia's multinational companies which listed in Bursa Malaysia. It is included sample of companies' measurements of variable and data collection method.

3. 2 Sample of firms

The analysis of stock return for 30 multinational companies which listed in Bursa Malaysia main board and the data was retrieved from Data Scream. The sample included the industrial sector according to the classification of Bursa Malaysia board. The all stocks in different industrial sector available on Data Scream will take under consideration. However, the final sample of this study was 30 out of 50 multinational companies for eleven years from the period 1999 until 2009. Our studies would select the company as sample after screen the available data during the eleven years period. The breakdown of the sample into each industry is shown in table 1.

Table 1: Sample of 30 Malaysia's Multinational companies

NO.

Name

Sector

1

AHMAD ZAKI RESOURCES

Heavy constructions

2

AIC

Semiconductors

3

AMTEK HOLDINGS

Clothing and accessory

4

CARLSBERG BREWERY MAL.

Brewers

5

CHUAN HUAT RESOURCES

Building Mat & Fix.

6

GAMUDA

Heavy constructions

7

GENTING

Hotels

8

GLOBETRONICS TECHNOLOGY

Semiconductors

9

GOLDEN LAND

Farming & Fishing

10

IJM

Heavy constructions

11

KHIND HOLDINGS

Dur. Household Prod.

12

KUMPULAN JETSON

Heavy constructions

13

LIEN HOE

Heavy construction

14

MASTER-PACK GROUP

Heavy constructions

15

NATIONWIDE EXPRESS

Delivery Services

16

PETRONAS GAS

Exploration & Prod.

17

PHARMANIAGA

Pharmaceuticals

18

PJI HDG.

Heavy constructions

19

PUNCAK NIAGA HOLDINGS

Water

20

SEG INTL.

Spec. Consumer Service

21

SELOGA HOLDINGS

Heavy constructions

22

SHANGRI-LA HOTELS (MAL.)

Hotels

23

SINDORA

Specialty finance

24

SP SETIA

Real Estate Hold, Dev

25

TELEKOM MALAYSIA

Fixed line

26

TIEN WAH PRESS HOLDINGS

Business Support Svs.

27

TIMBERWELL

Forestry

28

TOP GLOVE

Medical Supplies

29

UMW HOLDINGS

Automobiles

30

UNISEM (M)

Semiconductors

3. 3 The measurement of variable

The study required a number of variables both dependent and independent, which is based on the collection of sample and determinants regression model.

3. 3. 1 Dependent variable

In this study, return on stock is dependent variable and the calculation stock return of company ratio of total present stock price deduct by past stock price to present stock price. Stock return could be predict by arbitrage pricing theory like stock price will increase when the macroeconomic factor have a significant positive relationship, meanwhile; stock price will decrease when the macroeconomic factor have a significant negative relationship. For

instance, Tursoy, Gunsel and Rjoub (2008) was investigate that

macroeconomic variable may affect different industry in different manner,

for example, a macroeconomic variable may affect one industry positively,

but affect the other industry negatively.

Stock return

LN P1

P0

3. 2. 2 Independent variables

The independent variables were used to find out determinants for capital

structure and this study just focus on the growth rate and liquidity.

Oil price

The increase of oil price would affect the transportation cost, consumer

product and raw material would increase. The investors would need to spend

more on living cost and less investment on stock. Therefore, oil price has a

negative relationship with stock return which means oil price increase and

the stock price would decrease. Jones and Gautamkaul (1996) were studied

on the oil price and stock market. They found out in both the United Kingdom

and Japan were highly influence by oil prices which cause larger changes in

stock prices and changing expected return. The results for both the United

States and the United Kingdom, although not as extreme as Japan or

Canada, show the substantial negative impact of oil. However, Chen, Roll

and Ross (1986) and Clare and Thomas (1994) also does not stated oil price

as an important pricing factor for British and American firms.

The oil price would obtain as below formula:

Change in Oil price (OP)

OP1-OP0

OP0

Gross domestic product

Gross domestic product (GDP) is the market value of all final goods and services produced within a country in a given period of time. It has a positive relationship with stock return which means GDP increase and the stock price would increase. Fama (1981) finds a strong positive correlation between common stock returns and GNP which tested on the relationships between stock prices and real activity, inflation, and money. If the higher production would cause the firm earn more revenue and profits, together with a high volume of cash flow. Therefore, it increases the stock return. However, several studies like Dimson et al. (2002) and Ritter (2005) were found out the correlation between stock returns and economic growth across countries was negatively related. The result opposite from the expectation because some companies like multinational companies were operated across the world unlikely to indicate that stock return reflect to GDP growth which leads to the profit derived outside its home market. There is clearly show that must examined whether the company operate locally or globally because they will have different relationship between GDP and return stock.

The gross domestic product would obtain as below formula:

Change in gross domestic product (GDP)

GDP1-GDP0

GDP0

Inflation

A negative relationship between inflation and stock prices which obtained in empirical studies, for instance, Hoguet (2008) examined that high inflation is associated with a high equity risk premium leads stock prices decrease in US market. Fama and Gibbon (1982) also examined that expected real returns on bills and expected inflation rates are negatively related. Hamao (1998) who using multi-factor APT framework was investigated inflation significantly influenced Japanese stock returns. Besides, an increasing inflation rate would lower expected earnings growth and higher required real returns. The cost of living probably would increase when the inflation rate increase. At the time, investors would decrease the volume of stock traded. Adam and Tweneboah (2008) stated that if the economic in tightening policies, the monetary policy would increase the inflation rate and nominal risk-free rate and hence increase the discount rate in the valuation model. However, they obtained a positive relationship between stock return and inflation which same result with Fama (1998). The inflation would obtain as below formula:

Change in inflation (INTL)

INTL1-INTL0

INTL0

Unemployment rate

When the unemployment rate increases, there are a lot of people jobless and they not able spend as much money on goods and services. The company profit would fall while the people consumption decreases and stock price will decrease relatively. Therefore, unemployment rate has a negative relationship with stock return which means unemployment rate increase and the stock price would increase. However, Boyd, Hu and Jagannathan (2005) found out that the stock price increase on bad unemployment news if the economy in an expansion. This indicate that the stock prices responses to unemployment news regarding whether the economy in a contraction or an expansion. The unemployment rate would obtain as below formula:

Change in unemployment rate (UNP)

UNP1-UNP0

UNP0

3. 3 Data collection method

The data used in this study is a secondary data which retrieved from Data Scream. Besides, descriptive analysis would determine the numbers of subjects, minimum and maximum score, mean and standard deviation were computed to both variables. In Pearson correlation analysis, a Pearson correlation coefficient would describe the relation between dependent and independent variables. After that, the R-square and multiple regression analysis would used to examine how much the variance in the dependent variable is explained by a set of predictors.

The regression model to be estimated is:

$$\text{Rit} = \hat{\alpha} + \hat{\beta}1 \text{ OP} + \hat{\beta}2 \text{ GDP} + \hat{\beta}3 \text{ INTL} + \hat{\beta}4 \text{ UNP} + \hat{\mu}it$$

R = Stock return

OP = Oil Price

GDP = Gross domestic product

INTL = Inflation

UNP = Unemployment rate

$\hat{\alpha}$ = Constant term of the regression equation

$\hat{\beta}1$, $\hat{\beta}2$, $\hat{\beta}3$, and $\hat{\beta}4$ are the slopes that show the sensitivity of the stock return to oil price, gross domestic product, inflation and unemployment rate respectively.

$\hat{\mu}it$ is the random error term which is the part of the dependent variable that changes randomly in effect of other possible factors not included in this study.

The purpose of the analysis is to test which independent variables is highly significant to determine the company's stock return. Last, regression ANOVA were used to test the significance of the null hypothesis.

CHAPTER 4

ANALYSIS OF FINDINGS

4. 1 INTRODUCTION

This chapter provides the findings and the analysis of the factors affecting stock returns of Malaysia multinational companies. The relationships between the independent and dependent variables are explained detail in this chapter. Base on previous chapter, the multiple regressions technique has been used to develop APT model. It concerns the correlation analysis, coefficient of determination, standard error of coefficient (t-test), analysis of variance (f-test), and Durbin Watson test.

4. 2 DESCRIPTIVE STATISTIC

The sample represents the multinational companies of Malaysia and the data was contained 30 companies which listed in Bursa Malaysia from 1999 to 2009. The table above would show the summary statistics for the variables used in our analysis. Descriptive statistics contains the mean, median, and standard deviation from year 1999 to 2009.

Table 4. 1 Descriptive Statistics

N

Minimum

Maximum

Mean

Std. Deviation

R

330

-1. 40

1. 59

. 0001

. 44920

OP

330

-. 55

1. 24

. 1805

. 49245

GDP

330

-. 08

. 19

. 0853

. 07171

INTL

330

-. 88

1. 72

. 0810

. 73076

UNP

330

-. 09

. 16

. 0158

. 07220

Valid N (listwise)

330

Table 4. 1 was explained that the Malaysian multinational companies have mean for oil price (OP), gross domestic product (GDP), Inflation (INTL) and unemployment rate (UNP) is 0. 1805, 0. 0853, 0. 081 and 0. 0158. The

higher mean obtained by oil price and the lowest mean is unemployment rate. Standard deviation indicate that the variability and diversity of the data. A low standard deviation means the data close to mean, whereas high standard deviation mean that the data are spread out over a large range of values. The inflation rate was showed high standard deviation and gross domestic product has the lowest standard deviation.

4. 3 TEST OF CORRELATION

Table 4. 2 Correlations

R

OP

GDP

INTL

UNP

R

Pearson Correlation

1

-. 286(**)

-. 357(**)

-. 395(**)

. 262(**)

Sig. (2-tailed)

.

. 000

. 000

. 000

. 000

N

330

330

330

330

330

OP

Pearson Correlation

-. 286(**)

1

. 712(**)

. 271(**)

-. 560(**)

Sig. (2-tailed)

. 000

.

. 000

. 000

. 000

N

330

330

330

330

330

GDP

Pearson Correlation

-. 357(**)

. 712(**)

1

. 447(**)

-. 825(**)

Sig. (2-tailed)

. 000

. 000

•

. 000

. 000

N

330

330

330

330

330

INTL

Pearson Correlation

-. 395(**)

. 271(**)

. 447(**)

1

-. 164(**)

Sig. (2-tailed)

. 000

. 000

. 000

•

. 003

N

330

330

330

330

330

UNP

Pearson Correlation

. 262(**)

-. 560(**)

-. 825(**)

-. 164(**)

1

Sig. (2-tailed)

. 000

. 000

. 000

. 003

•

N

330

330

330

330

330

** Correlation is significant at the 0. 01 level (2-tailed).

Pearson correlation can determine the correlation between each of predictor variable. The correlation can be from -1 to +1. If the value is -1, the correlation between the variables is a perfect negative correlation, whereas the value is +1, there is a perfect positive correlation between the variables. The close the value to -1 or +1 indicates the strong correlation exist between the variables. The closes the value to 0, the weaker correlation exist. Meanwhile, if the value is equal to 0, it's indicating that there is no correlation exists between the variables. Base on table 4. 2 which can explain each hypothesis as below:

Hypothesis 1

There is a significant negative correlation between oil price (OP) and return stock (R) with a significant value of 0. 000. Hence we reject the null hypothesis H01 and accept the alternative hypothesis H1. On other words, oil price (OP) and return stock (R) is significantly related with a weak relationship (r=-0. 286).

Hypothesis 2

There is a significant negative correlation between gross domestic product (GDP) and return stock (R) with a significant value of 0. 000. Hence we reject the null hypothesis H02 and accept the alternative hypothesis H2. On other words, gross domestic product (GDP) and return stock (R) is significantly related with a weak relationship (r=-0. 357).

Hypothesis 3

There is a significant negative correlation between inflation rate (INTL) and return stock (R) with a significant value of 0. 000. Hence we reject the null hypothesis H03 and accept the alternative hypothesis H3. On other words, inflation rate (INTL) and return stock (R) is significantly related with a weak relationship (r=-0. 395).

Hypothesis 4

There is a significant positive correlation between unemployment rate (UNP) and return stock (R) with a significant value of 0. 000. Hence we reject the null hypothesis H04 and accept the alternative hypothesis H4. On other words, unemployment rate (UNP) and return stock (R) is significantly related with a weak relationship (r=-0. 262).

4. 4 MODEL SUMMARY

Table 4. 3 : Model Summary

Model

R

R Square

Adjusted R Square

Std. Error of the Estimate

Durbin-Watson

1

. 452(a)

. 205

. 195

. 40308

2. 264

a Predictors: (Constant), UNP, INTL, OP, GDP

b Dep