

JURNAL AKADEMIK

February 2005 Issue

**Attitudes Of Form Two Students
Towards Learning Science In
English: A Case Study Of Schools
In Kota Samarahan**

**Caesar DeAlwis, Saira Joe And
Sharifah Aishah Wan Kahar**

**The Sythesizing Process Of Work
Motivation Between Western And
Islamic Perspectives: An Analysis**

**Nursuria bt Mahrif,
Prof. Ibrahim Mamat And
Norizan b. Hj. Jili**

**Rethinking Industrial Relations
In Malaysia**

Kuldip Singh

**The Influence Of Macroeconomic
Factors On The Malaysian Equity
Market**

**Jaafar Pyeman And
Abdullah Sulaiman**

**Synthesis Of Ceramic Matrix
Composite (Sic Based) Via
Polymer Precursor Route**

**Hazman Seli And
Zainal Arifin Ahmad**

**On Autoregressive Order Selection
Criteria**

**Venus Khim-Sen Liew,
Sie-Hoe Lau And
Chin-Hong Puah**

**Penilaian Tren Pengundi-Pengundi
Melayu / Melanau Muslim Dalam
Pilihanraya Sarawak 2001**

**Prof Madya Shaharuddin
Badaruddin,
Abang Yusof Abang Spawi,
Nadrawina Hj Isnin And
Nursuria Mahrif**

**Sejauhmana Bilangan Lelaki Dan
Wanita Di Tempat Kerja Boleh
Mempengaruhi Persepsi Gangguan
Seksual**

**Prof. Madya Dr. Sabitha
Marican**



UNIVERSITI TEKNOLOGI MARA SARAWAK

Usaha Taqwa Mulia

**JURNAL AKADEMIK
UNIVERSITI TEKNOLOGI
MARA
SARAWAK**

PENAUNG

*Prof. Datuk Seri Dr. Ibrahim Abu Shah
Naib Canselor, UiTM*

PENASIHAT

*Prof. Dr. Abdul Rahman Deen
Pengarah Kampus UiTM Sarawak*

SETIAUSAHA

*Prof. Madya Dr. Simon Botley
@ Faizal Hakim
Jabatan Bahasa, UiTM Sarawak*

**SIDANG REDAKSI
JURNAL AKADEMIK**

*Prof. Madya Dr. Fatimah Bujang
Prof. Madya Hajjah Lelawati
Abdul Hamid
En. Sick Goh Ngong
Pn. Mary Gunjew*

Jurnal Akademik diterbitkan oleh Sidang Redaksi Jurnal Akademik, Universiti Teknologi MARA Sarawak. Ia diterbitkan sekurang-kurangnya sekali setahun. Jurnal ini memuatkan artikel hasil daripada penyelidikan dan juga analisis penulis tentang pelbagai aspek dalam pelbagai bidang.

Para penyumbang yang ingin memuatkan artikel mereka di dalam Jurnal ini diminta merujuk kepada 'Garis Panduan kepada Penulis' di bahagian belakang Jurnal ini dan sila hantar artikel atau pertanyaan anda kepada:

**Setiausaha Sidang Redaksi
Jurnal Akademik
Universiti Teknologi MARA
Cawangan Sarawak,
Kampung Samarahan
Peti Surat 1258
93912 Kuching
Sarawak**

ISSN 0128-2635

JURNAL AKADEMIK

Hakcipta terpelihara.

Tidak dibenarkan mengeluarkan mana-mana bahagian bahan cetak ini atau memindahkannya dalam sebarang cara sama ada elektronik, mekanik, rakaman semula atau sebarang bentuk penyimpanan maklumat sebelum mendapat izin bertulis dari Sidang Redaksi Jurnal Akademik Sarawak.

Pandangan dan pendapat yang dikemukakan dalam jurnal ini tidak mencerminkan pandangan atau pendapat Sidang Redaksi Jurnal atau Universiti Teknologi MARA Sarawak

THE INFLUENCE OF MACROECONOMIC FACTORS ON THE MALAYSIAN EQUITY MARKET

Jaafar Pyeman

Department of Finance, Faculty of Business Management
Universiti Teknologi Mara, Samarahan Campus

Abdullah Sulaiman

Faculty of Business and Economics
Swinburne University, Kuching Campus

Abstract

This study explores the influence of macroeconomic variables on stock market performance by utilizing regression and correlation analyses on the movement of the indices at Kuala Lumpur Stock Exchange. The performance of the stock market will be measured based on the level of the indices stated by KLSE. This study was carried out for a period of five years from 1998 until 2002, a period when the Malaysian economy was experiencing various economic situations from a booming economy to the economic (financial) crisis. The variables analysed in this study are macroeconomic variables as independent variables and stock market performance as the dependent variable. There are three macroeconomic variables in this analysis namely, gross domestic product (GDP), interest rate and inflation rate. According to previous research, the gross domestic product, interest rates and the inflation rates were considered the most common elements taken into consideration. Compared to previous studies on the impact of economic variables (gross domestic product, interest rate and inflation rate) on stock market performance, there are some similarities and consistencies in terms of the findings. The results of this study suggest that the macroeconomic fundamentals in Malaysia i.e., gross domestic product (GDP), inflation rate and interest rate have different influences on stock market performance.

1.0 INTRODUCTION

The first nine months of 1998 saw heavy losses in the Malaysian Stock Market since the devaluation of the Thai currency on July 2, 1997 showed the beginning of a currency crisis in the Asian region. However, the year 1999 showed a somewhat different situation. By the first week of July 1999, it had shot past the 870 mark. Furthermore, the level of the Malaysian stock market was becoming more stable during the year 2000 until 2002. The Base Lending Rate (BLR) was 11.7% in August 1998 and it was reduced to the level of below 7% in 2000. Generally, when the economic condition is at the stabilized stage, the stock market will show a strong level of performance represented by the indices.

The issue concerns the relations between stock market performance in a country where the macroeconomic factors have been widely studied during the last two decades. Previous studies are mainly focused on developed markets such as the USA, Japan, UK and other developed countries. There are only a few studies on this issue in the Asian emerging markets. There is a strong debate among previous researchers on the issue of macroeconomic factors and their impact on stock market performance. Most of the discussions are related to the same independent macroeconomic variables such as interest rates, inflation rates, gross domestic product, exchange rates and money supply.

The results of previous studies suggest that macroeconomic factors were significantly related to stock returns in the developed markets of USA and Japan (Mukherjee and Naka, 1995). Most studies on this issue, however, fail to explain the same relationships in European and other developed countries. However, the roles of macroeconomic variables in other Asian stock markets are relatively less explored. Chen, Roll and Ross (1986), showed that macroeconomic variables have a systematic influence on stock returns as a result of their effect on future dividends and discount rates. Their study provided the theoretical foundation for a relationship between stock price and related macroeconomic variables.

The inflation rate is an important element in determining stock returns, as mentioned by Stulz (1986), due to the fact that during times of high inflation, people recognize that the market is in a state of economic difficulty. People are laid off work, which could cause production to decrease. When people are laid off, they tend to buy only the essential items. Thus the production is cut even further. This eats into corporate profits, which in turn diminishes dividends. When the dividends decrease, the expected return of stocks decrease, causing stocks to depreciate in value.

Furthermore, Basabbi and Mukherjee (1995) studied the same issue but used real economic activity (GDP) as one of the variables. Their study showed a positive relationship between stock returns and real economic activity (GDP). Mukherjee and Naka (1995) investigated the linkage between Tokyo Stock Exchange (TSE) and Japanese macroeconomic variables. They found that TSE index was integrated with six macroeconomic factors, i.e. money supply, inflation, real economic activity (GDP), long-term government bonds, exchange rates and interest rates. Exchange rates, real activity, money supply and interest rates were positively related to stock returns, while inflation and long-term government bonds were in a contrary relationship.

The relationship between stock price and real economic activity seems to be positive as suggested by Chen, Roll and Ross (1986). This phenomenon is fully acceptable, since the growth of real activity will affect stock prices in the same direction as a result of its effect on expected future cash flows. The relationship between stock returns and inflation seems to be negative as hypothesized by Chen, Roll and Ross (1986). An increase in inflation will increase the nominal risk-free rate and raise the discount rate in the valuation model and therefore the stock prices should be decreased.

The effect of the money supply on stock prices as explained by Mukherjee and Naka (1995) show that inflation has a connection with the interest rate in the market. Since the rate of inflation is positively related to money growth rates, an increase in the money supply may lead to an increase in discount rates. The negative effects on the stock prices, however, may be countered by the economic stimulus or what is often called a corporate earning effect.

It is widely believed that stock market price is related to macroeconomic fundamentals. According to the Dividend Growth Model (Discounted Cash flow Basis) of stock valuation analysis, most of the factors that will affect the stock price are macroeconomic factors such as the interest rate, inflation rate, gross domestic product, exchange rates and money supply. The economic forces may be viewed as variables that affect stock returns through their influence on expected dividends and the discount rate. According to the basic Discounted Cash Flow Model, the price of a financial asset is equal to the discounted value of the future cash flows to be derived from the asset as follows:

$$P = \sum_{t=1}^n CF_t / (1 + RRR)^t$$

Indicator

- P* - *Intrinsic value (price) of the stock*
- CF_t* - *Expected future cash flow of the stock at t year*
- RRR* - *Investors' Required Rate Of Return*
- n* - *Number of holding years*

Any change in an asset's cash flows (CF_t) should have a direct impact on its price. Thus, the asset's expected growth rates that influence its predicted cash flows will affect its price in the same direction. Conversely, any change in the required rate of return (RRR) should inversely affect the asset's price. The required rate of return has two basic components – the risk-free rate and the premium commensurate with the asset's risk. The risk-free rate is comprised of the real rate of interest and the anticipated inflation rate.

In addition to the Discounted Cash Flow Model, the theory in the Capital asset Pricing Model (CAPM) can also be applied especially in the investor's required rate of return determinants, risk-free interest rate in government security, beta or market returns for the particular stock and the risk premium. This situation will reflect the concept of additional returns that would be requested by the investors in compensating for the increase in risk for the particular investment.

The equation for the Capital Asset Pricing Model is stated below.

$$K_j = K_{rf} + B_j(K_m - K_{rf})$$

Indicator

- K_j - Required rate of return B_j - Beta (market risk) for j stock
 K_m - Market return K_{rf} - Risk-free interest rate

2.0 PROBLEM STATEMENT

The studies of the relationship between macroeconomic variables and the stock market have been the highlight of most economics literature. Although investigations have been carried out extensively, the precise nature of the fundamental determinants of stock prices remains ambiguous. The relationship between macroeconomic variables and stock market performance can be expressed by using the following function.

Indicator

- I - The Performance of The Stock Market Indices
 GDP - Gross Domestic Product
 Int - Interest Rate
 Inf - Inflation Rate

Based on the above function of stock market indices, the impact of each element of macroeconomic variables on stock market performance may be analyzed individually according to the classification of indices. One reason for the upward trend of our stock market performance from the year 1999 to 2002 is because of the improvement in the Malaysian economic conditions but how significant is the impact of macroeconomic variables on stock price performance is a crucial question. The ambiguous casual relationships between inflation rates, interest rates and the GDP level on the one hand and stock market performance on the other have long been the subject of ongoing discussion and debate. The question whether macroeconomic variables have significant impact on stock market performance needs to be tested since it has little empirical support. In other words, how significant is the impact of GDP, inflation and interest rate on our stock market performance?

3.0 OBJECTIVES OF THE STUDY

The objective of this study is to determine the impact of the macroeconomic variables (inflation rate, interest rate and gross domestic product) on Malaysian stock market performance. The stocks to be analyzed are those listed in the Main Board and the Second Board.

4.0 METHODOLOGY

This study will focus on two types of variables namely, macroeconomic variables as independent variables and the stock market performance as the dependent variable. The macroeconomic variables comprise inflation rates, interest rates and gross domestic product (GDP). The stock market performance will be represented by the level of Stock Market Indices such as Kuala Lumpur Composite Index, Emas Index, KLSE Indices for every sector in the Main Board and the KLSE Second Board Index. The GDP variable will be measured using the real GDP for the 5 year period from the year 1998 until 2002. Besides that, the interest rates will be measured by the base lending rate (BLR) fixed by Bank Negara for a five year period. Meanwhile, the inflation rate will be based on the consumer price index (CPI) as the unit of measurement for the same period as GDP and inflation rate variables. The stock market indices are taken into consideration in this study due to its function in reflecting the performance of the Malaysian Stock Market.

5.0 RESEARCH FINDINGS

Table 1 is a summary of the correlation coefficient (r) and Significance Level (p) between the stock market indices and changes in GDP. Generally, all of the indices being analyzed have shown a significant positive relationship with the change in GDP for the year 1998 until 2002. All of the KLSE Indices had strong positive relationships with the movements of the gross domestic product during the five year period of the study. In addition, the relationships between the stock market indices and the change in GDP are always significant. Therefore the researchers believe that the gross domestic product is one of the main determinants in affecting the performance of Malaysian stock market.

However, based on the regression analysis, the values of R-Square for all indices are relatively low. Most of the indices had the value of R-Square of less than 50 percent. This indicates that the regression model which had been developed could not adequately explain the movement in stock market performance when there are changes in gross domestic product.

Table 1: Summary of The Correlation Analysis (KLSE Indices and Malaysian GDP)

	r	p-value
<i>Indices</i>		
Composite	.702	.000
Emas	.725	.000
Construction	.486	.000
Finance	.673	.000
Industrial Product	.605	.000
Property	.643	.000
Trading & Services	.671	.000
Consumer Product	.556	.000
Mining	.440	.000
Plantation	.627	.000
Second Board	.739	.000
Total (Significant Coefficient)		11 100%
Total (Insignificant Coefficient)		- -

Table 2 clearly indicates that gross domestic product has a positive impact on the movement in the stock market performance since the p-values of the indices are less than 0.05 (Mukherjee and Naka, 1995). Therefore, there is significant impact of the gross domestic product on stock market performance represented by the KLSE indices. However, this conclusion is just based on the preemptive analysis using the regression analysis. It needs to be tested by using other advanced techniques (e.g. the Vector Autoregressive Model or Vector Error Correction Model) in order to determine the level of impact and the relationship between the variables.

Table 2 : Regression Analysis Between Gross Domestic Product and the KLSE Indices

Indices	r	Square	p-value
Composite	.702	.493	.000
Emas	.725	.526	.000
Construction	.486	.238	.000
Finance	.673	.453	.000
Industrial Product	.605	.366	.000
Property	.643	.414	.000
Trading & Services	.671	.450	.000
Consumer Product	.556	.309	.000
Mining	.440	.193	.000
Plantation	.627	.394	.000
Second Board	.739	.546	.000

On the other hand, there are only seven (7) or 64% of the indices at KLSE that indicate a positive significant relationship with the changes in the inflation rates in the market (refer to Table 3). However, the levels of the relationship are not strong as compared to the changes in gross domestic product. Theoretically, there is an overlapping impact contributed by the two variables (GDP and inflation rate) on the stock market performance and it is called the cointegration effect between the gross domestic product and the inflation rate. There are no significant relationships between the stock market performance and the other FOUR (4) KLSE indices (36%) for the respective sectors in this study.

Table 3: Summary of The Correlation Analysis (KLSE Indices and Inflation)

	r	p-value
<i>Indices</i>		
Composite	.206	.209
Emas	.366	.022
Construction	.262	.106
Finance	.367	.026
Industrial Product	.119	.482
Property	.028	.864
Trading & Services	.532	.001
Consumer Product	.453	.005
Mining	.349	.030
Plantation	.551	.000
Second Board	.390	.017
<i>Total (Significant Coefficient)</i>	7	
	64%	
<i>Total (Insignificant Coefficient)</i>	4	
	36%	

Table 4 shows that the fitness levels of the regression models are low. The R-Square values are less than 50 percent. These levels are also considered weak compared to the results for gross domestic product. As a general conclusion, there is a positive relationship between the two variables (stock market performance and inflation rate) as suggested by the results in the correlation analysis. However, the impact of changes in inflation rate on the stock market performance was weak due to some other factors that could influence the findings such as political stability, capital market turnover, government policies, global environment of stock markets in other countries and the level of confidence among the investors (retail and institutional) on the Malaysian stock market.

Table 4 : Regression Analysis Between Inflation Rate and The KLSE Indices

Indices	r	Square	p-value
Composite	.206	.042	.209
Emas	.366	.134	.022
Construction	.262	.069	.106
Finance	.367	.134	.026
Industrial Product	.119	.014	.482
Property	.028	.001	.864
Trading & Services	.533	.284	.001
Consumer Product	.453	.205	.005
Mining	.349	.122	.030
Plantation	.559	.303	.000
Second Board	.390	.152	.017

The findings also show that most of the KLSE indices have no significant relationship with the interest rate. These findings are supported by the lower correlation coefficient (r), the weak level of regression fitness model (R -Square) and the significance values (p) which were greater than 0.05. Although none of the indices at the KLSE had shown any positive significant relationship between the two variables, the Second Board Index has a significant relationship with the movements in interest rates. It seems that the counters listed on the Second Board of the Kuala Lumpur Stock Exchange are more sensitive and react positively towards the fluctuations in interest rate as compared to the other counters on the main board.

Therefore, the interest rate does affect stock market performance especially those counters listed on the Second Board of the KLSE and there is less evidence from this study to support the relationship or impact of interest rates on the other KLSE indices. There may be some other factors that have not been considered in this analysis which contribute to the findings. All of the information regarding this situation is summarized in Table 5 and Table 6.

Table 5 : Correlation Between Interest Rates and The KLSE Indices

	r	p-value
<i>Indices</i>		
Composite	.093	.573
Emas	.285	.081
Construction	.436	.005
Finance	.266	.111
Industrial Product	.257	.124
Property	.033	.844
Trading & Services	.192	.256
Consumer Product	.126	.456
Mining	.219	.181
Plantation	.177	.280
Second Board	.125	.463
<i>Total (Significant Coefficient)</i>	1	
	9%	
<i>Total (Insignificant Coefficient)</i>	10	
	91%	

Table 6 : Regression Analysis of Interest Rates and the KLSE Indices

Indices	r	Square	p-value
Composite	.206	.042	.209
Emas	.366	.134	.022
Construction	.262	.069	.106
Finance	.367	.134	.026
Industrial Product	.119	.014	.482
Property	.028	.001	.864
Trading & Services	.533	.284	.001
Consumer Product	.453	.205	.005
Mining	.349	.122	.030
Plantation	.559	.303	.000
Second Board	.390	.152	.017