**UNIVERSITI PUTRA MALAYSIA**


**MACROECONOMIC FUNDAMENTALS,
STOCK MARKET AND ECONOMIC GROWTH**


**CHONG LEE LEE**


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BY

CHONG LEE LEE

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**Chairman**     **: Dr Tan Hui Boon**

**Faculty**        **: Economics and Management**

This study investigates the dynamic relationships amongst the KLSE stock prices, macro variables and economic growth. It is a general belief that the macro variables, namely the inflation rate, interest rate, aggregate output, money supply, exchange rate and the trade balance are some prominent factors to the performance of the stock market. The stock market, in turn, is one of the leading indicators for the economic growth.

The VAR model of Johansen-Jeselius multivariate cointegration test, multivariate Granger-causality test, and also the impulse response function are applied to capture the dynamic linkages among those variables over the period of 1987:1 to 1997:2. In this study, the Composite Index is used to represent the general performance of the market. The performance of individual sectors, on the other hand, is measured by the individual sectoral indices. These sectoral indices include

the Industrial Index, Finance Index, Property Index, Plantation Index and the Mining Index.

The empirical results of this study indicate that the stock indices and macroeconomic variables are moving together towards its equilibrium path in the long run. In the short run, there are evidences of contemporaneous causality running between the variables. The results show that the general performance of market, which is reflected by the Composite Index, is caused by the changes in inflation, output, money supply and the trade balance. The sectoral performance, on the other hand, has shown different responses to the fluctuations in the macroeconomic variables. The property sector appears to be the least sensible to these fluctuations.

Besides, the physical capital, stock capitalisation and its trading activities are also the important factors that contribute to the economic growth. This study thus implies that an efficient management of macroeconomic policies will promote a better performance of stock market, which in turn helps to achieve a stronger and sustainable economic growth.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi sebahagian daripada keperluan untul ijazah Master Sains.

# PEMBOLEHUBAH MAKROEKONOMI, PASARAN SAHAM DAN PERTUMBUHAN EKONOMI

## OLEH

## CHONG LEE LEE

## Mei 2000

**Pengerusi**   : **Dr Tan Hui Boon**

**Fakulti**      : **Ekonomi dan Pengurusan**

Kajian ini menguji hubungan dinamik antara harga saham KLSE, pembolehubah makroekonomi dan pertumbuhan ekonomi. Terdapat kepercayaan umum bahawa pembolehubah makroekonomi , seperti kadar inflasi, kadar bunga, keluaran negara, penawaran wang, kadar pertukaran asing dan imbangan perdagangan adalah faktor-faktor penting bagi menpengaruhi prestasi pasaran saham. Pasaran saham, sebaliknya, adalah satu petunjuk utama bagi pertumbuhan ekonomi.

Model VAR bagi kointegrasi multivariate Johansen-Jeselius, Model Vektor Pembetulan-Ralat (VECM) dan Fungsi Tindak Balas (IRFs) telah digunakan untuk menguji hubungan dinamik antara pembolehubah-pembolehubah tersebut merangkumi tahun dari 1987:1 ke 1997:2. Dalam kajian ini, Komposit Index telah digunakan untuk menunjukkan prestasi pasaran umum. Prestasi sektor individu

pula diukur dengan sektoral indeks termasuklah Indek Pengeluaran, Indek Kewangan, Indek Hartanah, Indek Perladangan dan Indek Perlombongan.

Keputusan empirikal bagi kajian ini menunjukkan bahawa indek saham dan pembolehubah makroekonomi mempunyai pergerakan bersama menuju ke titik keseimbangan pada jangka masa panjang. Pada jangka masa pendek, terdapat bukti bahawa wujubnya hubung-kait antara indek saham dan pembolehubah makroekonomi. Prestasi bagi sektoral saham menunjukkan reaksi yang berbeza-beza daripada perubahan dalam pembolehubah makroekonomi. Bidang hartanah pula muncul sebagai satu bidang yang paling kurang sensitif kepada perubahan tersebut.

Selain itu, modal fizikal, modal saham dan aktiviti urusniaganya juga adalah faktor-faktor penting yang menyumbang kepada pertumbuhan ekonomi. Jadi, kajian ini menujukkan bahawa polisi pengurusan makroekonomi yang cekap akan menggalakkan prestasi saham yang lebih baik di mana akan menolong mencapai pertumbuhan ekonomi yang kuat.

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| | |
|---|---|
| CI | Composite Index |
| CPI | Consumer Price Index |
| ER | Exchange rate |
| FIN | Finance Index |
| INDUS | Industrial Index |
| INT | Interest Rate |
| IP | Industrial Production Index |
| MIN | Mining Index |
| PLAN | Plantation Index |
| PRO | Property Index |
| SCAP | Stock Capitalisation |
| SVOL | Stock Volume |
| TB | Trade Balance |

# CHAPTER I

# INTRODUCTION

Malaysia, as one of the countries in the Asian region, was built up by a clean bill of health in terms of macroeconomic fundamentals and a strong financial sector prior to the 1997 economic crisis. In general, the inflation rate was low, the interest rate and exchange rate were stable, the current account was improved as well as the rapid economic growth. The base of economic fundamentals was strong and stable. At the same time, the high performing of Malaysian economy had led to a substantial economic growth by more than 8% in the real GDP for the past many years. All the symptoms exhibited that Malaysia was a well-established country either in terms of economic development or political stability.

Apart from the achievement of rapid economic growth, Malaysia had also attained prudential development in social and political stability as well as efficient management of economy. The economic fundamentals were the crucial factors and remained paramount so as to achieve a stronger foundation for the attainment of sustained growth, particularly in recent dynamic, competitive and globalisation international economy. In general, the performance of Malaysian economy was impressive before the currency crisis in mid-1997. Specifically, the development of stock market was also remarkable resulting from the booming in economic activity.

As a consequence, the strong economic fundamentals resulting from sound macroeconomic policies and the growing stock market induced an attractive issue

to investigate the relationships amongst macroeconomic variables and stock market. Stock market as the important component in financial system, has contributed to abundant development in the national economy through the facilities of fund-raising. Thus, studies focus on the economic fundamentals, especially link to the stock market, are crucial in order to gain more understandings on the function of stock market. The finding of this area is vital due to the substantial role of stock market in managing the economic development and providing role to boost the economy.

The economy performance is closely related to the economic forces and on the other hand, the economic forces are part of the determinants of stock prices. The stability of stock market and sustainable long-run growth can be achieved through the suitable monetary and fiscal policies. Therefore, the dynamic linkages amongst macroeconomic variables and stock market are important findings for policy makers to implement suitable policies and lead to a higher level of economic success.

The rational of this study for an emerging economy, Malaysia, is to ascertain macroeconomic fundamentals as endogenous factors to the stock prices. In a local context, only few studies identified the relation between macroeconomic variables and stock market but they, however, mostly focused on one or two macro variables and the broad measure stock index (Nik Mutasim, 1986; Fauzias, Norazlan and Zaidi, 1998). This study attempts to extend the previous findings in a more comprehensive setting to enhance the knowledge in this disciple. From the perspective of efficient-market theory and rational expectation intertemporal asset-

pricing theory, asset prices should depend on their exposures to the state variables in the economy and one of the economic state variables is macroeconomic fundamental. By analysing the specific industry measures of stock indices with same piece of information, it might explain the behaviour of various sectoral stock indices caused by macroeconomic variables.

Nevertheless, the debate on the relationships between financial system and economic growth has received considerable concern. Financial system was formed by several components, which include banking sector, stock market, money market, future market and non-financial institutions. Therefore, the relationship between financial system and economic growth is really pronounced. Particularly, study on the effect of stock market towards the economic growth is extremely important. Stock market is interrelated in the financial system and thus it will influence the whole system. Consequently, financial system will influence the performance of economy and more specifically, the real GDP. Therefore, research on stock market and economic growth is an interesting topic to survey on especially in the long run and many endeavors have been contributed to investigate such relationship. The findings are important for policy makers to have a clearer idea of implementing effective economic measures. In this particular research, we focus on the interrelation between the Kuala Lumpur Stock Exchange (KLSE) with the economic growth by examining the causal effect for the case of Malaysia. An overview of the Malaysian economy ranging from 1996 to 1998 will be provided in Table 1 to present some information on the economic indicators.

Table 1: The Performance of Malaysian Economy from 1996 to 1998

|  | 1996 | 1997 | 1998 |
|---|---|---|---|
| Gross Domestic Product (%) | 8.6 | 7.7 | -6.7 |
| Gross National Product(%) | 8.3 | 7.8 | -6.3 |
| Unemployment (%) | 2.6 | 2.6 | 3.9 |
| Public Investment(%) | 1.1 | 8.6 | -10.0 |
| Private Investment(%) | 13.4 | 8.4 | -57.8 |
| Exports(%) | 7.2 | 10.8 | -0.7 |
| Imports(%) | 4.2 | 10.2 | -18.3 |
| Consumer Price Index(%) | 3.5 | 2.7 | 5.3 |
| External Debt(RM million) | 98086 | 170757 | 159775 |

Source  Annual Report, Bank Negara Malaysia, 1998

## The Role of Stock Market

A stock market plays a vital role in the economic development of a country by acting as a mechanism for the effective mobilisation of domestic funds to assist economic development and also allocate resources efficiently. It plays a pivotal role in economic development of a country. Moreover, stock market is part and parcel of a capital market, which typically transacts all public and private debt instruments including corporate stock. The main purpose of capital market is helping the process of economic development by mobilising medium and long-term securities from investors to finance public development programs, private investment and also banking system. It facilitates the transfer of funds from economic agents in financial surplus to those in financial deficit by selling securities to those with surplus funds. Nevertheless, stock market promotes private enterprise by providing intermediary services to raise funds for corporate investment and expansion. In addition, this market can be used as an impetus to economic growth as well as the stimulation to the financial development of any

developing countries. In Malaysia, the Kuala Lumpur Stock Exchange (KLSE) is the only stock market in the country.

## The Development of Kuala Lumpur Stock Exchange (KLSE)[1]

The Malaysian securities industry began in the late 19th century as an expansion of the British corporate in the rubber and tin industries. The first official organisation in the securities business in Malaysia was established on 23 June 1930 as the Singapore Stockbrokers' Association. But, it was still no public trading at that time. The trading activities were erupted by the Second World War and only returned to normal in 1946.

In 21 March 1960, the Malayan Stock Exchange was constituted and public trading of shares began on 9 may 1960 when four stockbrokers combined together in the clearing house of Bank Negara Malaysia (BNM) to mark prices. In order to instill public confidence in the market development, a board was launched in the exchange in 1963 with the aim to set the listing requirement and also handle the renewal of application for new listing companies. In 6 Jun 1964, the Stock Exchange of Malaysia was formed to adopt new rules and by-laws, more stricter listing requirements and also the creation of fidelity fund. In the subsequent years, Singapore withdrew from Malaysia but the stock exchange still continued as the Stock Exchange of Malaysia and Singapore (SEMS).

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[1] Most information for this section is extracted from KLSE report.

In 1993, the most significant event in the Malaysian capital market was the splitting of the Stock Exchange of Malaysia and Singapore, and an establishment of a separate stock exchange to develop a strong and healthy capital market. Basically, it was operated on provisional rules, by-laws, listing requirement and a corporate disclosure policy. Its aims were to develop a strong and healthy capital market. In addition, it helped to terminate the currency interchangeability arrangements between Malaysia and Singapore and also strengthen the growth of financial institutions in Malaysia. The new board was called the Kuala Lumpur Stock Exchange Berhad (KLSEB). Another development in that year was the enactment of the Securities Industry Act, 1973. When the act was brought into force in 1976, the Kuala Lumpur Stock Exchange Berhad was taken over by the Kuala Lumpur Stock Exchange (KLSE). The new Act as incorporated up to date legislation provided more attractive supervision and guided the securities industry in order to protect investors.

In order to grow faster, the KLSE itself also implemented various measures and improvements. In 1984, Securities Clearing Automated Network Services Sdn Bhd (SCANS) was formed to implement computerisation in the clearing system, followed by the form of the Research Institute of Investment Analysts Malaysia (RIAM) in May 1985. The KLSE Composite Index was launched in 1986 whereas the Second Board of KLSE was also formed in 1988 in order to allow small and potential companies to be listed. In 15 May 1989, the KLSE took a leap into the technological age with the introduction of its new semi-automated trading system, SCORE. The implementation of an electronic system had improved the speed and

also the volume of transaction. By 1992, the trading system of KLSE had fully automated and it was more capable to handle all the transactions.

In addition, the exchange had operated its Fixed Delivery and Settlement System in 12 February 1990 to accomplish an efficient clearing and settlement system. At the same year, the Malaysian Central Depository Sdn Bhd was also set up to initial the Central Depository System (CDS) and on the other hand, the minimum requirement of RM20 million paid-up capital was imposed with the objective to build a stronger securities industry. This marked a very important milestone for the KLSE in 1990.

In 19 October 1992, the full automated of SCORE system had firstly introduced to all Second Board counters and followed by all the counters in the KLSE. Besides, the Rating Agency Malaysia (RAM) was formed to provide credit ratings for corporate debt securities as well as promote private debt securities. By 1995, the components of KLSE Composite Index had inclined to 100 counters and the Second Board counters were group into five sectors in 1997 to increase market transparency. On the other hand, the KLSE-RIAM Information System and T + 5 Rolling Settlement System were implemented in order to improve the stock market.

Subsequently, in 1998, the KLSE initiated new measures to enhance transparency in the stock market in order to meet future challenging environment. In 1 September 1998, two objectives were aimed. One was to ensure an orderly

and fair market for the trading of Malaysian securities and on the other hand, it aimed to improve the transparency in the capital market.

## The Profiles of Listed Companies in KLSE

For the KLSE listed companies, it can be separated into two boards, the main board and second board. In the main board, it is built up by 12 sectors consisting of Consumer Products, Industrial Products, Construction, Trading/Services, Infrastructure, Finance, Hotel, Properties, Plantation, Mining, Trusts and Closed-End Fund. On the other hand, the second board comprises of four different sectors that include Consumer Products, Industrial Products, Construction and Trading/Services.

Overall, there are thirteen broad and specific market indices in the Kuala Lumpur Stock Exchange (KLSE) which include Composite, Second Board, Emas, Industrial, Syariah[2], Mining, Plantation, Properties, Finance, Trading/Services, Construction, Industrial Products and Consumer Products indices. Each index has its own specification and representation for each sector. Moreover, it further acts as the performance indicator for each particular sector.

## The Changes in Malaysian Stock Market

The Kuala Lumpur Stock Exchange experienced an upward trend throughout the period of 1987-1996. Table 2 shows the rapid development of the Malaysian stock market from the 80's to 90's.

Table 2: Kuala Lumpur Stock Exchange: Key Indicators

|  | 1987 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|---|---|
| Composite Index | 261 19 | 505 92 | 556 22 | 643 96 | 1275 32 | 971 21 | 995 17 | 1237 96 | 594 44 | 586 13 |
| Market Capitalisation (bil RM) | 73 79 | 131 66 | 161 39 | 245 82 | 619 64 | 508 85 | 565 63 | 806 77 | 375 8 | 374 5 |
| Turnover: Volume (units bil) | 5 3 | 13 2 | 12 4 | 19 3 | 107 7 | 60 1 | 34 0 | 66 5 | 72 8 | 58 3 |
| Value (RM bil) | 10 1 | 29 5 | 30 1 | 51 5 | 387 2 | 328 1 | 178 9 | 463 3 | 408 6 | 115 2 |
| No of Listed Companies | 291 | 285 | 324 | 369 | 413 | 478 | 526 | 618 | 708 | 736 |

Source· Investor Digest, KLSE, various series

From Table 2, the results report that the Composite Index was increasing over the period of 1987 to 1996 prior to the contagion of Asian currency crisis. Apart from 1997, the Malaysian stock market was plunging and all the stock indices declined tremendously. For the market valuation of securities listed on the KLSE, there was a big jump in the market value for more than 150 percent in year 1993 resulting from the strong bull-run in that year. The market turnover in terms of volume and value also experienced the similar sentiment in year 1993.

The number of companies listed on the exchange had increased significantly since year 1990. However, there was a drop in 1990 itself and this can

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[2] A recently introduced index

be explained by the decision to delete all the 50 Singapore companies from the KLSE. Starting from mid-1997, there was a rigorous period for all the countries in the Asian region resulting from the "regional spillover". Malaysia was also facing the same problem. The performance of Malaysian stock market had clearly showed the impact from the currency crisis. The trend of Malaysian stock market's indicators over the period of 1987 to 1998 is presented in Figure 1.
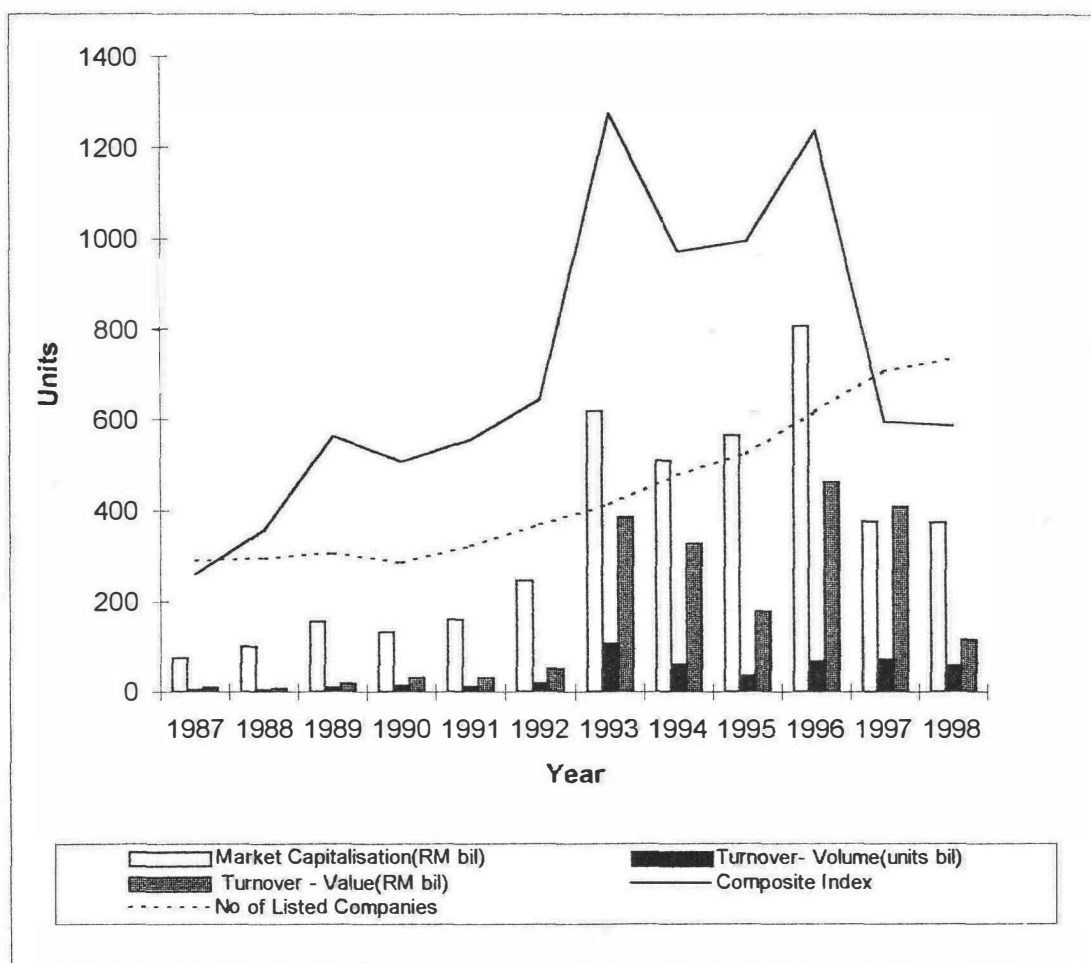


Figure 1: Relationship Between Stock Market's Indicators and Composite Index