



UNIVERSITI PUTRA MALAYSIA

**PRODUCTIVITY DYNAMICS OF MALAYSIAN
BANKING INSTITUTIONS**

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FEP 2006 9

**PRODUCTIVITY DYNAMICS OF MALAYSIAN
BANKING INSTITUTIONS**

By

KHONG WYE LEONG ROY

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirement for the Degree of Doctor of Philosophy**

November 2006



To My Loving Family



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in the fulfilment of the requirement for the degree of Doctor of Philosophy

PRODUCTIVITY DYNAMICS OF MALAYSIAN BANKING INSTITUTIONS

By

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November 2006

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The productivity behaviors play important role in encouraging the profitability of Malaysian banking institutions. Thus, it is important for bank management and banking regulatory authorities to understand the factors that underlying the productivity behaviors of the banking industry. Malmquist productivity index was used to measure the productivity changes of Malaysian commercial banks, finance companies and merchant banks over the period of 1991 to 2003. The productivity change was also decomposed into technological change and technical efficiency change. In addition, the dynamic panel method based on Generalized Method of Moments was also employed to identify the determinates of total factor productivity.

In general, commercial banks, finance companies and merchant banks experienced average positive productivity growth of 2.33%, 1.75% and 3.19% per annum respectively. During the period under study, the growth in productivity for finance companies and merchant banks were attributed to both technological progress and



technical efficiency increased. However, commercial banks productivity progress was due solely to technological improvement. A fact worth noting is that all the three types of banking institutions exhibited the dominance of technological progress as the source of productivity growth.

In the second stage dynamic panel regression, the results for commercial banks and finance companies were similar in most aspects. In particular, the age of the institutions and the development of the capital market were positively related to the commercial banks and finance companies productivity levels. On the other hand, commercial banks and finance companies that have high specializations of outputs tended to have lower productivity levels. Moreover, the productivity level will increase at a decreasing rate, as the size of finance company increase.

Turning to the behaviors of merchant banks, the age of the merchant banks and the two tier regulatory system were the only factors that have adverse effects on the productivity level of merchant banks.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KELAKUAN DINAMIK PRODUKTIVITI UNTUK INSTITUSI-INSTITUSI PERBANKAN DI MALAYSIA

Oleh

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Kelakuan produktiviti memainkan peranan penting dalam menggalakkan keuntungan institusi-institusi perbankan di Malaysia. Oleh itu, ia sangat penting untuk pengurusan bank dan pihak berkuasa perbankan untuk memahami faktor-faktor di sebalik kelakuan produktiviti industri perbankan. Indeks produktiviti Malmquist telah digunakan untuk mengukur perubahan produktiviti bank-bank komersil, syarikat-syarikat kewangan dan bank-bank saudagar yang meliputi tempoh 1991 hingga 2003. Perubahan produktiviti juga dibahagikan kepada perubahan teknologi dan perubahan teknikal efisien. Tambahan pula, kaedah dinamik panel berdasarkan GMM juga digunakan untuk mengenalpasti penentuan faktor produktiviti keseluruhan.

Secara umum, bank-bank komersil, syarikat-syarikat kewangan dan bank-bank saudagar mengalami pertumbuhan produktiviti positif secara purata sebanyak 2.33%, 1.75% dan 3.19% setahun masing-masing. Dalam tempoh kajian,



pertumbuhan produktiviti untuk syarikat-syarikat kewangan dan bank-bank saudagar disebabkan oleh perkembangan teknologi dan peningkatan teknikal efisien. Namun, perubahan produktiviti bank-bank komersil hanya disebabkan oleh perkembangan teknologi. Satu fakta yang bernilai dicatatkan ialah ketiga-tiga jenis institusi-institusi perbankan menunjukkan dominasi perkembangan teknologi sebagai sumber pertumbuhan produktiviti.

Dalam dinamik panel regresi peringkat kedua, keputusan-keputusan untuk bank-bank komersil dan syarikat-syarikat kewangan adalah serupa dari banyak aspek. Khususnya, umur institusi-institusi serta perkembangan dalam pasaran modal adalah positif berhubung dengan tahap produktiviti bank-bank komersil dan syarikat-syarikat kewangan. Sebaliknya, bank-bank komersil dan syarikat-syarikat kewangan yang mempunyai pengkususan output yang tinggi cenderung untuk mempunyai tahap produktiviti yang rendah. Tambahan pula, tahap produktiviti akan meningkat dengan kadar yang menurun sekiranya saiz syarikat-syarikat kewangan meningkat.

Beralih kepada kelakuan bank-bank saudagar, umur bank-bank saudagar dan system pengawalan dua tingkat merupakan faktor-faktor yang mempunyai kesan buruk keatas tahap produktiviti bank-bank saudagar.

ACKNOWLEDGEMENTS

Foremost, I would like to thank my family members for their moral and emotional support during the course of my study. Deepest appreciation to my supervisors, in particular, Professor Muzafar Shah Habibullah, Associate Professor Azali Mohamed and Associate Professor Mariam Abdul Aziz for their guidance, assistance and critical comments.

Many thanks to the viva chairperson and examiners held on 6th November 2006 for their comments and suggestions. Appreciations are also extended to the administrative staffs of Faculty of Economics and Management and Graduate School Office. Lastly, my deepest gratitude to my friends and those who have help me, directly or indirectly, in completing my study.



I certify that an Examination Committee has met on 6th November 2006 to conduct the final examination of Khong Wye Leong Roy on his Doctor of Philosophy thesis entitled “Productivity Dynamics of Malaysian Banking Institutions” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations, which have been duly, acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.



KHONG WYE LEONG ROY

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The Malaysian economy has grown well above most of the economies in the ASEAN region. From Table 1.1, over the 1971 to 2002 period, Malaysian economy grew at an average rate of 6.8% per annum, while the growth rate for other ASEAN countries were between 3% and 8%. Moreover, the Malaysian economy grew faster than most developed countries, which were expanding at the average annual rate of 1% to 4% over the same period. However, the Newly Industrialized Economies namely Singapore, South Korea and Taiwan were generally expanding at a faster rate than the economy of Malaysia with an average rate of 7%.

Table 1.1 also disaggregates the growth performances of selected countries by various sub-periods. As can be seen from the table, for the sub-period of 1971 to 1980, the Malaysian economy was able to grow at the average rate of 8.3% annually. This rate can be considered as encouraging as the world was negatively affected by two oil shocks namely the Arab Oil Embargo in 1973-1975 period and also the Iraq-Iran War in the 1978-1981 period. This was mainly due to the fact that Malaysia is a crude petroleum-producing nation and is able to gain from the increased in the price of crude oil.

Table 1.1: Growth Rate of Real Gross Domestic Products for Selected Countries Versus Malaysia from 1971 to 2002

Economy	Average Growth Rate (% Per Annum)				
	1971-1980	1981-1990	1991-2000	2001-2002	1971-2002
<i>Developed Economies</i>					
Germany	NA	NA	1.9	0.5	1.7 [#]
Japan	4.6	4.1	1.6	0.2	3.2
United Kingdom	2.0	2.7	2.3	2.0	2.3
United States	3.2	3.2	3.2	1.4	3.1
<i>Newly Industrialized Economies</i>					
Hong Kong	NA	NA	4.6	1.4	4.1 [#]
Singapore	9.1	7.2	7.8	0.1	7.5
South Korea	7.5	8.7	6.3	4.7	7.3
Taiwan	9.8	8.0	6.2	0.7	7.6
<i>ASEAN-4</i>					
Indonesia	8.0	5.5	4.3	3.5	5.8
Malaysia	8.3	5.9	7.2	2.3	6.8
Philippines	5.9	1.8	2.9	4.0	3.6
Thailand	6.8	7.9	4.6	3.4	6.3

Sources:

Bank Negara Malaysia, *Monthly Statistical Bulletin*, Various Issues.

Bank of Japan, *Financial and Economic Statistics Monthly*, 2003.

Central Bank of China, *Financial Statistics*, Various Issues.

International Monetary Fund, *International Financial Statistics Yearbook*, Various Issues.

Notes:

NA denotes as not available.

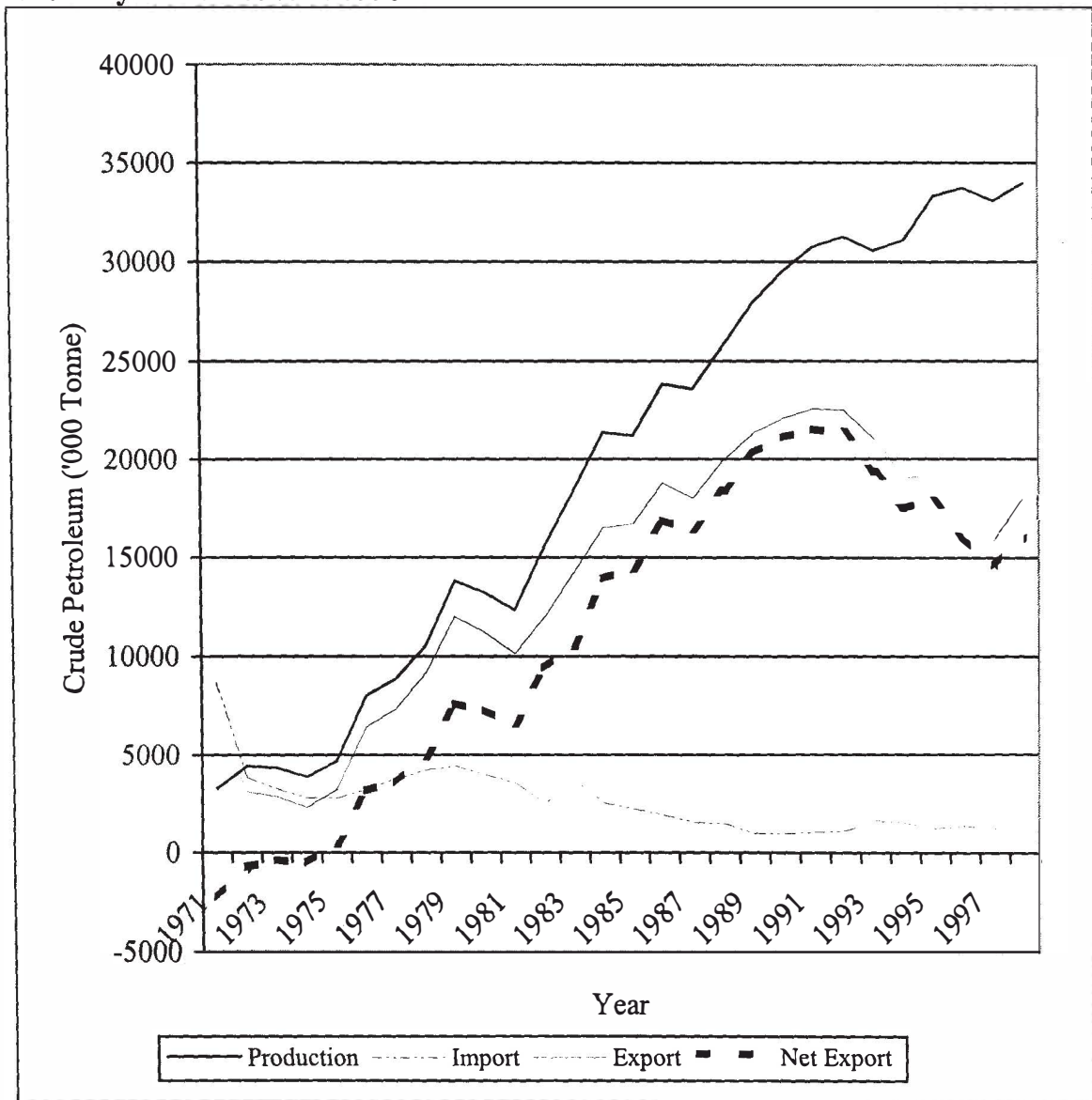
denotes as average for the period from 1991 to 2002.

From Figure 1.1, the production of crude petroleum in Malaysia increased from 4.339 million tonne in 1973 to 4.683 million tonne in 1975, while the exports of crude petroleum increased by 12.3% to 3.24 million tonne for the same corresponding period. During the second oil shock, crude petroleum production grew by 17.1% for the period of 1978 to 1981. On the other hand, exports of petroleum also jumped upward to 10.143 million tonne in 1981 from the amount of 9.153 million tonne. These have shown that Malaysia was in a better position to absorb the negative effects of oil price shocks in the 1970s.

As noted in Table 1.1, there has been some slowing down in the economy of Malaysia between the 1970s and 1980s from 8.3% in the 1971 to 1980 period to 5.9% in the 1981 to 1990 period. This is primarily caused by the global recession in the early 1980s. In addition, the slump in the prices of commodities especially on the prices of tin and petroleum has resulted in the 1985-1986 recession. For example, the price of tin has dropped drastically from an average price of RM29680 per tonne in 1985 to RM15390 per tonne in the following year, while the price of crude oil has decreased from US\$29.88 per tonne in 1985 to US\$14.85 per tonne in the year 1987 (Bank Negara Malaysia, 1998b).

However, Malaysia was able to successfully come out of recession with a real gross domestic product growth of at least 7% from 1988 till prior to the onset of Asian financial crisis in 1997. Moreover, the economy was able to growth at a record high of 10.0% in 1996 (See Figure 1.2).

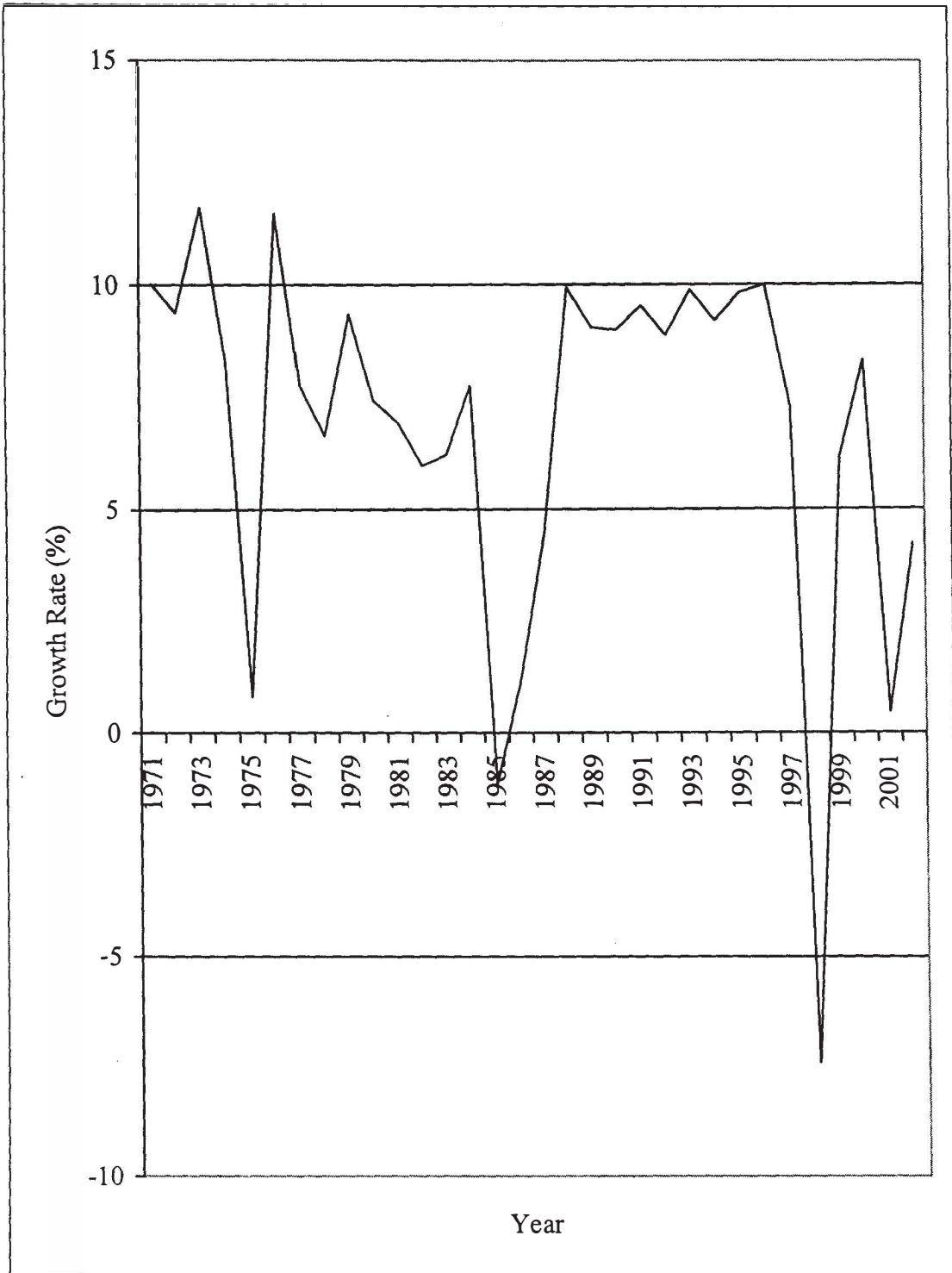
Figure 1.1: Production, Imports, Exports and Net Exports of Crude Petroleum for Malaysia from 1971 to 1998



Source:

Department of Statistics, *Malaysian Economic Statistics - Time Series 1999*, 1999.

Figure 1.2: Growth Rate of Real Gross Domestic Products for Malaysia from 1971 to 2002



Source:

International Monetary Fund, *International Financial Statistics Yearbook*, Various Issues.



The spectacular growth of Malaysia's economy came to an end with the onslaught of the Asian financial crisis that started in July 1997 in Thailand and spread rapidly to other countries in the Asia Pacific region. By 1998, Malaysia's real gross domestic product already contracted by 7% but rebounded back strongly in the following 2 years.

However, this recovery was short lived as the growth in most developed economies started to slow down. From Table 1.1, the four major developed countries grew at the average rate of between 0% and 2% for the year of 2001 to 2002. This has affected the growth of most East Asian countries especially nations that are much depended on exports to these developed markets. For the same corresponding period, the New Industrialized Economies and ASEAN-4 economies grow moderately at an average rate of between 0% and 5%.

Table 1.2 presents the unemployment rates of selected developed and Asian countries for the period of 1986 to 2002. As a whole, the Malaysian unemployment rate was almost similar against other Asian countries with the exception of the Philippines. As a result of recession in the mid 1980s, the unemployment rate increase drastically to an average rate of 6.8% in the second half of 1980s. However, with the rapid development of the Malaysian economy the unemployment rate was able to stay approximately 3% since 1991.