



UNIVERSITI PUTRA MALAYSIA

**FINANCE, TRADE AND ECONOMIC GROWTH
IN THIRTEEN ASIAN DEVELOPING COUNTRIES**

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**FINANCE, TRADE AND ECONOMIC GROWTH IN THIRTEEN ASIAN
DEVELOPING COUNTRIES**

By

TAN SIOW HOOI

**Thesis Submitted in Fulfilment of the Requirements for the Degree of Master
of Science in the Faculty of Economics and Management
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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirements for the degree of Master of Science.

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Chairman : Associate Professor Dr. Muzafar Shah Habibullah

Faculty : Economics and Management

The main purpose of this study is to empirically assess the impact of financial deepening, export and investment, on economic growth in thirteen Asian developing economies. To achieve that end, the bivariate relationship between economic growth and three macroeconomic variables are tested through these bivariate models, namely: finance-led, export-led and investment-led. To address the mis-specification problem inherent in the bivariate studies, a multivariate VAR framework is then utilised to investigate the long-run relationships among these four variables.

Annual data is used in the analysis covering the period from as early as 1950 to 1996. The Asian countries selected included Singapore, South Korea, Taiwan, Indonesia, Malaysia, Thailand, India, the Philippines, Bangladesh, Myanmar, Nepal, Pakistan and Sri Lanka.

The empirical evidence obtained from this study suggest the following: for the bivariate studies, results from the finance-led model suggest a bi-directional relationship between financial deepening and economic growth in South Korea,

Taiwan, Bangladesh and Pakistan. For Singapore, Malaysia, Thailand, India and Myanmar, the evidence supported the “demand following” hypothesis. For the export-led model, causality results on export-led growth versus growth-led export are mixed and, in some cases, contradictory. When investment-led model is utilised, there exhibit one-way Granger causal relationship from investment to growth for South Korea and Thailand whereas the reverse relationship is shown in Singapore, Indonesia, Malaysia and Sri Lanka. The feedback relationship is found in the case of Taiwan, Bangladesh and Pakistan.

Under the multivariate VAR framework, long-run relationships between the investigated variables are identified in a cointegrating framework, suggesting the increasing degree of interdependence of these three macroeconomic variables with economic growth.

Overall result has purported the significance of open economy structure, and outward-looking trade policies in stimulating the economic growth of many developing economies. Hence, the continuation of open-door economic policies in developing economies is warranted, and integrating these economies more closely to the international economies.

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

**KEWANGAN, PERDAGANGAN DAN PERTUMBUHAN EKONOMI DI TIGA
BELAS BUAH NEGARA ASIA SEDANG MEMBANGUN**

Oleh

TAN SIOW HOOI

Ogos 2000

Pengerusi : Profesor Madya Dr. Muzafar Shah Habibullah

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Tujuan utama kajian ini adalah untuk menyelidik kesan “financial deepening”, eksport dan pelaburan terhadap pertumbuhan ekonomi di tiga belas buah negara Asia sedang membangun. Untuk tujuan ini, hubungan bivariate antara pertumbuhan ekonomi dengan tiga angkubah makroekonomi telah diuji melalui tiga model bivariate, iaitu model dorongan-kewangan (finance-led), model dorongan-eksport (export-led) dan model dorongan-pelaburan (investment-led). Bagi mengatasi kelemahan yang dihadapi dalam analisa bivariate, rangka kerja multivariate VAR seterusnya telah digunakan untuk mengkaji sama ada angkubah-angkubah makroekonomi bagi kesemua negara yang dikaji mempunyai pergerakan bersama atau tidak pada jangkamasa panjang.

Data tahunan yang digunakan bagi tujuan kajian ini merangkumi tahun 1950 sehingga tahun 1996. Negara-negara Asia yang dikaji adalah Singapura, Korea Selatan, Taiwan, Indonesia, Malaysia, Negara Thai, India, Filipina, Bangladesh, Myanmar, Nepal, Pakistan dan Sri Lanka.

Keputusan empirikal yang diperoleh mencadangkan beberapa perkara penting. Bagi analisa bivariate, keputusan dari model dorongan-kewangan menunjukkan hubungkait dua hala bagi Korea Selatan, Taiwan, Bangladesh dan Pakistan. Bagi Singapura, Malaysia, Negara Thai, India dan Myanmar, hipotesis dorongan-kewangan disokong. Bagi model dorongan-eksport, keputusan yang diperoleh adalah tidak selaras bagi negara-negara yang dikaji. Apabila model dorongan-pelaburan diuji, keputusan bagi Korea Selatan dan Negara Thai menyokong hipotesis dorongan-pelaburan, manakala bagi Singapura, Indonesia, Malaysia dan Sri Lanka, hipotesis yang sebaliknya dibuktikan. Hubungkait dua hala dicadangkan bagi Taiwan, Bangladesh dan begitu juga Pakistan.

Dalam rangka kerja multivariate VAR pula, keputusan empirikal menunjukkan bahawa keempat-empat angkubah makroekonomi bagi kesemua negara yang dikaji mempunyai pergerakan bersama pada jangkamasa panjang dalam rangka kerja kointegrasi. Hubungan jangkamasa panjang yang stabil ini menunjukkan bahawa angkubah-angkubah tersebut adalah semakin saling bersandar dengan pertumbuhan ekonomi.

Secara keseluruhannya, keputusan kajian ini jelas membuktikan betapa pentingnya struktur ekonomi terbuka dan polisi perdagangan pandang luar dalam menjana pertumbuhan ekonomi di negara-negara sedang membangun. Justeru itu, polisi ekonomi terbuka yang berterusan di negara-negara sedang membangun adalah wajar dan mengintegrasikan negara-negara tersebut dalam ekonomi antarabangsa.

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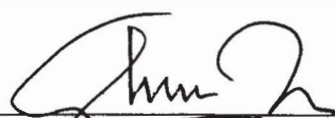
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DECLARATION

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.



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TABLE OF CONTENTS

	Page
ABSTRACT	2
ABSTRAK	4
ACKNOWLEDGEMENTS	6
APPROVAL SHEETS	7
DECLARATION FORM	9
LIST OF TABLES	12
LIST OF FIGURES	13
LIST OF ABBREVIATIONS	14
CHAPTER	
I INTRODUCTION	15
Relationship between the Fundamental Variables and Economic Growth	27
Financial Deepening and Economic Growth	27
International Trade and Economic Growth	29
Capital Formation and Economic Growth	30
Statement of Problem	31
Objectives of the Study	34
Significance of the Study	35
Plan of the Study	36
II LITERATURE REVIEW	38
An Overview	38
Review on Financial Liberalisation and Economic Growth	38
Review on Trade Expansion and Economic Growth	49
Review on Investment and Economic Growth	67
III METHODOLOGY	76
The VAR Technique	76
Time Series Properties of the Data	77
The Concept of Cointegration	77
Unit Root Test for Integration	79
Augmented Dickey-Fuller (ADF) Test	79
Phillips-Perron (PP) Test	80
Weighted Symmetric Estimator (WS)	81
The Multivariate Cointegration Tests	82
Granger Causality Test	84
Vector Error-Correction Modelling (VECM) and Exogeneity	85
Model Specification and Estimating Procedures	87
Sources of Data	88
IV EMPIRICAL RESULTS	91
Unit Root Tests	91
Johansen Cointegration Tests	97
Finance-led Model, Export-led Model, Investment-led Model	98



Finance-led, Export-led, Investment-led Causality Test Results	102
Multivariate Model	114
Multivariate Causality Test Results	118
V SUMMARY AND CONCLUSION	143
Introduction	143
Discussions of the Empirical Findings	145
Policy Implications and Conclusions	152
Recommendations for Further Studies	159
BIBLIOGRAPHY	162
APPENDICES	175
BIOGRAPHICAL SKETCH	180

LIST OF TABLES

TABLE	Page
Table 1: General Economic Indicators in Selected Asian Countries	16
Table 2: Selected Measures of Monetisation and Financial Deepening in 13-Asian Countries, 1976-1996	20
Table 3: Trade Indicators in Selected Asian Countries	25
Table 4: Capital Formation Indicators in Selected Asian Countries	26
Table 5: Unit Root Test Results for Series in Levels	93
Table 6: Unit Root Test Results for Series in First Difference	95
Table 7: Johansen Cointegration Test Results	101
Table 8: Results of Granger Causality Test between Macroeconomic Variables and Economic Growth Based on VECM	112
Table 9: Summary of Granger Causality Tests Results for Several Macroeconomic Measures and Economic Growth	113
Table 10: Johansen Multivariate Cointegration Test Results	117
Table 11: Granger Causality Test Results Based on VECM	134

LIST OF FIGURES

FIGURE	Page
Figure 1: Short Run Lead-Lag Summarised from VECMs	138

LIST OF ABBREVIATIONS

NIEs	New Industrialised Economies
LRYK	Real output per capita
LM2YK	Ratio of broad money to income per capita
LRXK	Real export per capita
LRIK	Real gross capital formation per capita

CHAPTER I

INTRODUCTION

For the last two to three decades, several Asian economies had been dubbed as the world's economic miracles. South Korea, Hong Kong, Taiwan, Singapore, Malaysia, Thailand and Indonesia have displayed a rapid economic growth with having achieved remarkable rates of growth for a sustained period. Table 1 confirms these general impressions, where the countries are divided into first-, second- and third- generation New Industrialised Economies (NIEs) and some of the other selected countries in the rim of Asia.

The world GDP experienced an average of 2 percent growth rates per annum during the period 1990-96 while most of the Asian countries encountered a GDP growth of above 4 percent during the same period (except Philippines). Compared with other high-income countries, growth rates in Singapore, Korea and Taiwan are remarkably high. As the First Generation NIEs, these countries have experienced an average of 6-9 percent growth in GDP during 1990-96 where the high-income countries has only recorded a growth rate of 2.6 percent per annum on average. On the other hand, during the same period, Malaysia, Indonesia and Thailand's growth rate accounted up to 8.8 percent, 7.3 percent and 8.5 percent respectively. For the remaining countries (refer Table 1), the GDP growth were merely 4-6 percent, a high growth rate compared to the low- and middle- income countries (2.1 percent per annum on average) according to World Bank (World Development Report, 1997).

Table 1: General Economic Indicators in Selected Asian Countries

Year	1980-1990		1990-1996	
Country	Real GDP Growth (%)	Growth in CPI (%)	Real GDP Growth (%)	Growth in CPI (%)
A. First Generation NIEs				
Singapore	6.4	2.9	8.4	2.5
South Korea	9.4	8.4	7.7	6.4
Taiwan	7.9	4.6	6.3	3.6
B. Second Generation NIEs				
Indonesia	6.1	9.5	7.3	8.9
Malaysia	5.2	3.6	8.8	4.0
Thailand	7.6	5.8	8.5	5.1
C. Third Generation NIEs				
India	5.8	9.1	5.6	10.0
Philippines	1.0	15.0	2.8	10.7
D. Other Selected Countries				
Bangladesh	4.3	11.0	4.7	4.5
Myanmar	3.1	10.8	5.5	24.2
Nepal	4.6	10.6	5.1	10.5
Pakistan	6.3	7.4	4.7	10.8
Sri Lanka	4.2	13.6	5.3	12.7
Low- and middle- income	2.8	41.4	2.1	46.2
High income economies	3.2	5.8	2.6	3.2
World	3.1	17.7	2.0	18.2

Sources: International Financial Statistics and World Development Report, various issues.

Despite the high economic growth, the inflation rate has been extremely low in most of the Asian economies. The adoption of a sound macroeconomic policy mix kept inflationary pressures in check. Malaysia, Singapore, Taiwan, South Korea and Thailand are considered stable economies with relatively low inflation rates of 2-6 percent in the period 1990-96, except for the period 1970-1980¹. For the remaining countries, during the same period, inflation varies from about 9 percent in Indonesia to over 24 percent in Myanmar. The combination of high growth and low inflation in most of the Asian countries especially for the Asian First and Second Generation NIEs² clearly suggests that the Asian economies had benefited tremendously from a framework of sound macroeconomic policy-mix. In fact, most of the period since 1980 was characterised by a rising investment-GDP ratio, rising human capital stock, and expanding GDP.

Since the early 1980s, most of the Asian countries had implemented financial liberalisation with the main features of liberalising interest rates. Interest rates liberalisation is aimed in promoting savings and efficient investment and to deepen financial markets. As pointed out by McKinnon (1973), the positive real interest rate as the results of financial liberalisation favour financial over non-financial savings, leading to the deepening of financial markets. In turn, greater financial intermediation

¹ The inflationary experiences of the Asian countries can be roughly divided into several time periods. In the 1970s, the surge in the oil price brought about by the first oil-shock caused many of the Asian countries to experience the first episode of inflation. Inflation averaged over 15 percent in all Asian countries. The second oil shock, following the Iranian Revolution in the mid-1980s instigated another round of pressure on inflation. In addition, the devaluation of domestic currencies increased in the interest rate flood or prolonged drought, and foreign price influences also contributed to the fuelling of inflationary pressures on these economies throughout the period of study.

² Most of the Asian countries under this study comprise a group of actors among those World Bank has labelled as "High Performance Asian Economies" (World Bank, 1995). The Philippines, on the other hand, has been described as one of the "Asian Third Generation NIEs", together with India and China (see McGIVEN, 1996). Indonesia, Malaysia and Thailand have also been labelled as the "Asian Second Generation NIEs". The "Asian First Generation NIEs" comprises Hong Kong, Singapore, South Korea and Taiwan (also popularly known as 4 Tigers or 4 Dragons).

tends to ensure that more productive investments are financed. Positive real interest rates, therefore, contribute to economic growth by promoting financial deepening and improving the productivity of investment. The selection of indicators in Table 2 summarises the development of monetisation and financial deepening in the Asian countries³.

As shown in Table 2, the degree of monetisation in the Asian countries has been significant over the 1976-96 period. The increasing use of the narrow money (M1), relative to GNP (gross national product), has increased from 19 percent in 1976 to 33 percent in 1996 for Malaysia. For Nepal, the ratio grows from 9 percent in 1976 to 14 percent in 1996 whereas it soars from 23 percent to 45 percent in Taiwan for the same period. On the other hand, these ratios have declined in Singapore (from 27 percent in 1976 to 20 percent in 1996), Sri Lanka (dropped to 10 percent in 1996 from 16 percent in 1976) and Thailand (dipped to 9 percent in 1996 from 12 percent in 1976). For the remaining Asian countries, these ratios are fairly stable.

However, the increasing use of broad money (M2) is evident in all the Asian countries, as shown by the consistent rise in their M2/M1 and M2/GNP ratio during the periods, reflecting the movement towards higher level of monetised economy. In 1996, Thailand registered the highest M2/M1 ratio of 8.80, followed by the Philippines (5.07), Korea (4.51), Indonesia (4.33), Singapore (4.14), Taiwan (4.08), Bangladesh (3.45), Sri Lanka (3.24) and Malaysia (3.16). Other Asian countries show

³ According to Shaw (1973), financial deepening is the phenomenon in which the financial sector grows at a rate faster than the real sector of an economy. The popular indicator cited in the literature to measure the process of financial deepening is the financial interrelations ratio (see Goldsmith, 1969). A value greater than unity for these ratios indicates financial deepening. The process of monetisation refers to the size as well as the composition of the stock of money (money supply) in an economy (Chandavarkar, 1977).

a ratio of less than 3.00. For instance, other indicators of monetisation, the holdings of money per capita and total bank deposits per capita, also suggest that Singapore, Taiwan, Malaysia and Korea have significantly higher levels of monetisation relative to those in the remaining Asian countries.

Also shown in Table 2 is the relationship between total assets of the financial system and national income which can be used to measure the stage of financial intermediation in a country (see Goldsmith, 1969). The banking system (comprising only the Central Bank and commercial banks) in all the Asian financial system has evolved rapidly especially in the past two decades. The ratio of total banking system to GNP ranges from 30 percent for Myanmar to 240 percent for Singapore in 1996. On the other hand, as indicated in Table 2, the income elasticity⁴ of financial assets during the deregulation era was way above unity for all the Asian countries except Myanmar (0.92). This further supports the implementation of financial liberalisation since a value greater than unity for these ratios indicates financial deepening (Goldsmith, 1969). The income elasticity of financial asset in Taiwan, as one of the highest among the Asian countries, had recorded the ratio of 2.06 during the period 1976-96.

To sum up, in most countries there was a parallelism between financial development and economic growth. Indeed, there were indications in a few countries that the periods of more rapid economic growth have been followed by an above-average rate of financial deepening.

⁴ The income elasticity was calculated as the ratio of financial institutions assets' growth rate to growth rate of national income.

Table 2: Selected Measures of Monetisation and Financial Deepening in 13-Asian Countries, 1976-96

Financial Indicator	Singapore			South Korea			Taiwan			Indonesia		
	1976	1986	1996	1976	1986	1996	1976	1986	1996	1976	1986	1996
Monetisation:												
M1/GNP	0.27	0.24	0.20	0.11	0.09	0.10	0.23	0.39	0.45	0.11	0.11	0.13
M2/GNP	0.63	0.77	0.84	0.30	0.36	0.46	0.59	1.13	1.85	0.17	0.26	0.57
M2/M1	2.30	3.15	4.14	2.72	3.84	4.51	2.52	2.90	4.08	1.64	2.37	4.33
Currency/M1	0.49	0.51	0.38	0.44	0.42	0.39	0.29	0.20	0.15	0.49	0.46	0.35
M2 per capita(US\$)	1636	5648	21384	242	953	4638	658	4778	23674	47	100	588
Per capita total bank deposits(US\$)	1290	4729	19418	203	852	4240	498	3298	17875	33	80	539
Financial Deepening:												
Total Financial Assets/GNP	1.69	2.58	2.66	0.75	1.15	1.75	0.35	1.95	1.53	0.40	0.61	0.87
Assets/GNP:												
Central Bank	0.57	0.70	0.81	0.18	0.18	0.14	0.12	0.58	0.34	0.18	0.24	0.16
Commercial banks	0.96	1.67	1.59	0.47	0.66	0.78	0.23	0.47	0.47	0.22	0.36	0.71
Total banking system	1.52	2.37	2.40	0.65	0.83	0.93	0.35	1.05	0.81	0.40	0.61	0.87
Income elasticity of net issues:												
Financial System,	1976-96			1976-96			1976-96			1976-96		
Of which;	1.23			1.24			2.06			1.25		
Central Bank	1.17			0.94			1.82			1.01		
Commercial banks	1.28			1.13			1.55			1.38		
Total banking system	1.23			1.09			1.55			1.25		

Source: International Financial Statistics, various issues and author's calculations.

Table 2 (continued): Selected Measures of Monetisation and Financial Deepening in 13-Asian Countries, 1976-96

Financial Indicator	Malaysia			Thailand			India			Philippines		
	1976	1986	1996	1976	1986	1996	1976	1986	1996	1976	1986	1996
Monetisation:												
M1/GNP	0.19	0.22	0.33	0.12	0.09	0.09	0.20	0.18	0.19	0.09	0.07	0.10
M2/GNP	0.47	0.81	1.04	0.36	0.60	0.83	0.33	0.51	0.55	0.26	0.27	0.52
M2/M1	2.43	3.74	3.16	3.04	6.56	8.80	1.68	2.77	2.90	2.86	3.77	5.07
Currency/M1	0.50	0.49	0.24	0.62	0.69	0.72	0.48	0.56	0.60	0.47	0.68	0.53
M2 per capita(US\$)	410	1295	4639	143	490	2425	47	132	185	107	142	626
Per capita total bank deposits(US\$)	319	1116	4003	113	437	2219	34	105	145	66	115	553
Financial Deepening:												
Total Financial Assets/GNP	1.04	2.13	2.30	0.71	1.10	1.98	0.51	0.76	0.68	0.65	0.65	1.07
Assets/GNP:												
Central Bank	0.24	0.28	0.33	0.19	0.22	0.25	0.16	0.24	0.21	0.18	0.23	0.25
Commercial banks	0.46	1.04	1.32	0.38	0.65	1.20	0.28	0.46	0.47	0.38	0.38	0.76
Total banking system	0.71	1.31	1.66	0.57	0.87	1.45	0.44	0.70	0.68	0.56	0.62	1.01
Income elasticity of net issues:												
Financial System,	1976-96			1976-96			1976-96			1976-96		
Of which;	1.43			1.46			1.16			1.19		
Central Bank	1.39			1.11			1.12			1.21		
Commercial banks	1.49			1.47			1.28			1.25		
Total banking system	1.42			1.37			1.22			1.21		

Source: International Financial Statistics, various issues and author's calculations.

Table 2 (continued): Selected Measures of Monetisation and Financial Deepening in 13-Asian Countries, 1976-96

Financial Indicator	Bangladesh			Myanmar			Nepal			Pakistan			Sri Lanka		
	1976	1986	1996	1976	1986	1996	1976	1986	1996	1976	1986	1996	1976	1986	1996
Monetisation:															
M1/GNP	0.09	0.11	0.10	0.20	0.28	0.22	0.09	0.12	0.14	0.26	0.26	0.24	0.16	0.12	0.10
M2/GNP	0.17	0.29	0.36	0.22	0.41	0.33	0.16	0.28	0.37	0.37	0.40	0.45	0.25	0.30	0.33
M2/M1	1.90	2.66	3.45	1.12	1.46	1.47	1.72	2.24	2.65	1.47	1.53	1.85	1.53	2.51	3.24
Currency/M1	0.41	0.38	0.48	0.91	0.93	0.91	0.61	0.69	0.72	0.41	0.49	0.48	0.50	0.55	0.54
M2 per capita(US\$)	14	42	96	29	86	937	17	41	78	69	130	181	52	115	244
Per capita total bank deposits (US\$)	11	36	82	5	33	232	11	28	56	49	88	133	34	88	203
Financial Deepening:															
Total Financial Assets/GNP	0.27	0.45	0.54	0.37	1.13	0.30	0.27	0.42	0.59	0.54	0.66	0.67	0.42	0.60	0.61
Assets/GNP:															
Central Bank	0.11	0.11	0.12	0.24	0.41	0.24	0.15	0.21	0.24	0.20	0.25	0.20	0.19	0.26	0.21
Commercial banks	0.16	0.34	0.42	0.13	0.72	0.06	0.11	0.21	0.35	0.34	0.41	0.47	0.23	0.34	0.40
Total banking system	0.27	0.45	0.54	0.37	1.13	0.30	0.27	0.42	0.59	0.54	0.66	0.67	0.42	0.60	0.61
Income elasticity of net issues:															
Financial System,	1976-96			1976-96			1976-96			1976-96			1976-96		
Of which;	1.42			0.92			1.37			1.10			1.20		
Central Bank	1.24			0.99			1.24			1.01			1.18		
Commercial banks	1.53			1.50			1.51			1.16			1.24		
Total banking system	1.42			0.92			1.37			1.11			1.20		

Source: International Financial Statistics, various issues and author's calculations.

Apart from the deregulation of the financial developments, economic co-operation in Asian countries has also benefited very much from the favourable international trade climate (including trade facilitation, non-broader measures and investment promotion activities). Most Asian countries depend heavily on trade with outside world to provide markets for their products as well as sources of necessary intermediate and final goods. In its 1987 World Report, the World Bank identified four types of countries with respect to their trade policies. The World Bank categories included strongly outward oriented, moderately outward oriented, moderately inward oriented and strongly inward oriented countries. South Korea, Singapore, Malaysia and Thailand were the countries listed as outward oriented. On the other hand, Bangladesh, India, Indonesia, Sri Lanka, Pakistan and the Philippines were characterised as inward oriented countries for the same period.

According to the World Development Report (1997), Singapore, as a traditional entrepot center in Southeast Asia, has an export and import trade of 273.2 per cent of GDP in 1996. As a country that is pursuing an export-oriented development strategy, Korea's trade amounts to 58.5 per cent of GDP in 1970 and increases to 61.8 per cent in 1996. In Malaysia, trade accounts constituted 121.4 per cent of GDP in 1980 and 175.9 per cent in 1996, whereas for Taiwan, trade accounted for 88-89 percent of GDP in both 1970 and 1996. In Thailand, with expanded export-oriented manufacturing base, it accounts to 56.6 per cent of GDP in 1980 and increased to 81.1 per cent in 1996. In Indonesia, trade amounts to 53.1 percent in 1996 from a 48.0 percent in 1980 while the Philippines, there is an increased from 51.8 per cent in 1980 to 72.2 per cent in 1996. The other remaining countries, that is, Bangladesh, India, Nepal, Pakistan and Sri Lanka, all have an increase on trade over

income by more than 30 percent in 1996⁵. The relative openness of the Asian countries could be seen and understood as a vital determinant of the superior trade and general performance of the Asian countries.

The other contributing factor that has accelerated economic growth in most of the developing Asian countries was mainly the reliance on government incentives in promoting capital formation. The open-door policy has attracted substantial foreign investment, which has brought in the consequent high rate of technical transfer and heavy investment. As the Asian First Generation NIEs, capital formation over income accounted for 37 percent, 34 percent and 22 percent in South Korea, Singapore and Taiwan in 1996 respectively. Indonesia, Malaysia and Thailand as the Second Generation of NIEs sustained a quite stable share of capital over income, at an average rate of 33 percent in Indonesia, and about 40 percent in Malaysia and Thailand. For the other Asian countries, as shown in Table 4, their capital share to income varies from 13 percent to 24 percent in 1996. In short, this stable capital formation is essential for a long-run and sustained economic growth.

The economic growth has brought much benefit to the populace of these Asian countries in the form of higher incomes and expanded employment opportunities. The high economic growth has also been accompanied by phenomenal export growth and sharp increases in private consumption expenditure. In short, the economic success of these Asian countries has been attributed to sound macroeconomic management, as well as open economic policies.

⁵ Myanmar was basically a planned economy and has maintained highly regulated system prior to 1988. As Myanmar is in transition to a market economy, the trade amounts decrease from 20 percent in 1980 to only 2 percent in 1990/96.