



UNIVERSITI PUTRA MALAYSIA

**AN ECONOMIC ANALYSIS OF MONETARY POLICY IN FOUR
ASEAN ECONOMIES**

TAN SIOW HOOI.

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**AN ECONOMIC ANALYSIS OF MONETARY POLICY IN FOUR ASEAN
ECONOMIES**

By

TAN SIOW HOOI

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

December 2005



Specially Dedicated To:

**Dad, Mum, Sisters and Brother
for their love and support**



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

AN ECONOMIC ANALYSIS OF MONETARY POLICY IN FOUR ASEAN ECONOMIES

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December 2005

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Asymmetric effect, in the context of monetary policy, refers to a situation in which the effects of a given policy are not constant but vary depending on the circumstances. By employing a relatively popular technique of non-linear modelling — for instance, Hamilton's Markov-switching model — this study empirically analyses if real output asymmetrically responds to monetary policy shocks in four ASEAN economies: Indonesia, Malaysia, the Philippines and Thailand. Typically, the asymmetries in discussion are pertaining to, (i) the policy action and, (ii) the phase of the business cycle. Quarterly data spanning the period from 1978:1 for Indonesia; 1974:1 for Malaysia; 1977:1 for the Philippines and Thailand; to 2003:4 are being utilised in this study.

Several important observations can be made based on this study. First, this study provides evidence that a tight monetary policy has a larger absolute impact than an easy policy. For instance, by incorporating a time-varying inflation parameter in the model, both the money supply shocks and interest rate shocks in all economies under

study are found to have asymmetric effects on real output, in which the effects of an easy policy mitigate while the effects of a tight policy increase, with higher inflation rates. Furthermore, the inverted L-shaped aggregate supply curve and negative-sloped equilibrium locus is supported in the case of Indonesia, the Philippines and Thailand. This evidence implies that an easy policy has a favourable impact, no impact and a harmful impact on output during the low, medium and high inflation regimes respectively in these economies. The fact of asymmetry is particularly important in the Asian context in their discussion and formulation for a monetary union. It implies that monetary authorities must take into account not only the fact that these economies do not react symmetrically in response to the policy action but also the behaviour of the inflation process. In other words, the evidence of high inflation rates for some of the developing economies may contribute to increased asymmetries in this context.

Second, the results do support the argument that effects of monetary policy vary depending on the phase of the business cycle. More precisely, monetary policy effects are found to be larger during recessionary periods for all economies under study. This finding therefore suggests the important role that credit market imperfections have on a firm's investment behaviour, which in turn points to the financial accelerator as a relevant mechanism underlying the observed asymmetry. An important lesson based on this study is that the macroeconomic stability will be in dire peril if financial systems of these economies are not managed prudently. Policies thus may be designed to reduce the financial sector's vulnerability to a crisis by encouraging appropriate and disciplined financial intermediary practices.

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

**ANALISIS EKONOMI TERHADAP DASAR MONETARI UNTUK EMPAT
NEGARA ASEAN**

Oleh

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Kesan tak simetri, dalam konteks dasar monetari, merujuk kepada suatu fenomena di mana kesan bagi sebarang dasar adalah tidak konstan tetapi berubah bergantung kepada keadaan. Dengan menggunakan teknik yang agak popular dalam model tak linear — iaitu, model “Markov-switching” — kajian ini menguji samada aktiviti ekonomi bertindak secara simetri terhadap dasar monetari di Indonesia, Malaysia, Filipina dan Thailand. Secara khususnya, isu tak simetri yang dibincang adalah berkaitan dengan (i) tindakan dasar dan (ii) fasa kegiatan ekonomi. Data yang digunakan untuk kajian ini meliputi tahun 1978 suku pertama hingga 2003 suku keempat bagi Indonesia, dari tahun 1974 suku pertama sehingga tahun 2003 suku keempat bagi Malaysia, dan dari tahun 1977 suku pertama sehingga tahun 2003 suku keempat bagi Filipina dan Thailand.

Beberapa penemuan penting daripada kajian ini boleh disimpulkan seperti berikut. Pertama, kajian ini membuktikan bahawa dasar monetari ketat memberi kesan mutlak yang lebih besar daripada dasar sebaliknya. Misalan, dengan memasukkan

pembolehubah inflasi-berbeza-mengikut masa ke dalam model, penemuan menunjukkan bahawa kesan dasar monetari terhadap aktiviti ekonomi adalah berbeza bagi keempat-empat negara yang dikaji dan kesan dasar monetari longgar didapati semakin berkurangan ke atas aktiviti ekonomi dengan kenaikan kadar inflasi. Sementara itu, keluk agregat penawaran L-songsang dengan lokus keseimbangan yang berkecerunan negatif juga disokong bagi Indonesia, Filipina dan Thailand. Ia memberi implikasi di mana dasar longgar mempunyai pengaruh yang menggalakkan terhadap aktiviti ekonomi pada tahap inflasi yang rendah, tetapi tidak memberi kesan ke atas ekonomi pada tahap inflasi yang sederhana. Manakala, ia membawa kesan yang merbahaya terhadap kegiatan ekonomi pada tahap inflasi yang tinggi. Penemuan ini adalah mustahak bagi konteks Asia dalam perbincangan untuk membentuk kesatuan monetari. Penemuan ini memberi implikasi di mana pihak kewangan berkuasa harus mempertimbangkan bukan sahaja fakta di mana dasar monetari yang berbeza memberi kesan yang tak simetri ke atas aktiviti ekonomi tetapi juga tingkah laku proses inflasi. Dalam kata lain, kadar inflasi yang tinggi di negara-negara tertentu mungkin menyumbang kepada kesan tak simetri dalam konteks ini.

Kedua, kajian ini juga menyokong bahawa kesan dasar monetari adalah berbeza pada tahap kegiatan ekonomi yang berlainan. Secara umumnya, penemuan ini mencadangkan bahawa dasar monetari akan memberi kesan yang lebih besar semasa kemerosotan ekonomi. Dengan itu, penemuan ini menekankan kepentingan peranan pasaran kredit yang tak sempurna dalam tingkah laku pelaburan firma-firma dan mencadangkan bahawa pencepat kewangan sebagai satu mekanisme yang penting untuk menjelaskan tindakbalas yang tak simetri tersebut. Penemuan ini juga menyimpulkan bahawa kestabilan makroekonomi akan terjejas sekiranya sistem

kewangan di negara-negara tersebut tidak diuruskan dengan teliti. Dasar boleh dirancang untuk meminimalkan pendedahan sektor kewangan semasa krisis dengan menggalakkan amalan pengurusan yang berhemah.

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I certify that an Examination Committee met on 6th December 2005 to conduct the final examination of Tan Siow Hooi on her Doctor of Philosophy thesis entitled "An Economic Analysis of Monetary Policy in Four ASEAN Economies" 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.

Tan Siow Hooi

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TABLE OF CONTENTS

	Page
DEDICATION	ii
ABSTRACT	iii
ABSTRAK	v
ACKNOWLEDGEMENTS	viii
APPROVAL	ix
DECLARATION	xi
LIST OF TABLES	xv
LIST OF FIGURES	xviii
LIST OF ABBREVIATIONS/GLOSSARY OF TERMS	xxi
 CHAPTER	
I INTRODUCTION	1
Background of the Study	1
The Study of Monetary Policy in the ASEAN-4 Economies	6
Statement of Problem	18
Objectives of the Study	27
Significance of the Study	28
Organisation of the Thesis	31
 II THEORETICAL RATIONALE	 33
Chapter Preview	33
Different Schools of Thought of Monetary Policy on Output Determination	33
The Classical Theory	33
The Keynesian Theory	34
Monetarist Theory	35
New Classical Theory	36
New Keynesian Theory	37
Real Business Cycle Theory	38
Asymmetry of Monetary Policy	39
Tight-Easy (TE) Asymmetry	40
Recession-Expansion (RE) Asymmetry	46
Conclusion	54
 III LITERATURE REVIEW	 56
Chapter Preview	56
Monetary Policy and Economic Activity (Monetary Aggregates as the Indicators)	56
Monetary Policy and Economic Activity (Interest Rates as the Indicators)	68
Asymmetric Effects of Monetary Policy on Output	72
Conclusion	100
 IV METHODOLOGY AND ESTIMATION PROCEDURE	 103
Chapter Preview	103

Time Series Properties of the Data	106
Stationarity	106
Testing for Stationarity	108
Augmented Dickey-Fuller (ADF) Test	108
Phillips-Perron (PP) Test	109
The Kwiatkowski, Phillips, Schmidt, and Shin (KPSS) Test	110
Unit Root with Structural Break	111
Zivot-Andrews (ZA) Test	112
Markov-Switching Model	113
A Stochastic Model of Changes in Regime	115
Estimation, Filtering and Smoothing	116
Model Specification and Estimation Procedure	118
Tight-Easy (TE) Asymmetry	118
Money Supply Shock Model (Fixed Asymmetry)	118
Testing for Asymmetry	120
Money Supply Shock Model (Time-Varying Asymmetry)	122
Testing for Asymmetry	124
Interest Rate Shock Model (Fixed Asymmetry)	125
Testing for Asymmetry	127
Interest Rate Shock Model (Time-Varying Asymmetry)	128
Testing for Asymmetry	129
Recession-Expansion (RE) Asymmetry	130
A Univariate Markov-Switching Model	131
Extended I of Money Supply Shock Model (Conditioning on the State at the Time of the Shocks)	132
Testing for Asymmetry	133
Extended II of Money Supply Shock Model (Conditioning on the Current State)	134
Testing for Asymmetry	134
Extended I of Interest Rate Shock Model (Conditioning on the State at the Time of the Shocks)	135
Testing for Asymmetry	136
Extended II of Interest Rate Shock Model (Conditioning on the Current State)	136
Testing for Asymmetry	137
Sources of Data	137
V EMPIRICAL ESTIMATION RESULTS AND DISCUSSIONS	139
Chapter Preview	139
Unit Root Tests Results	139
Tight-Easy (TE) Asymmetry	143
Money Supply Shock Model	143
Indonesia	145
Malaysia	154
The Philippines	162
Thailand	170
Interest Rate Shock Model	178
Indonesia	180
Malaysia	184
The Philippines	188

Thailand	192
Conclusion	196
Recession-Expansion (RE) Asymmetry	199
Univariate Markov-Switching Model	200
Indonesia	201
Malaysia	206
The Philippines	210
Thailand	214
Extended I and II of Money Supply Shock Models	219
Indonesia	219
Malaysia	223
The Philippines	227
Thailand	231
Extended I and II of Interest Rate Shock Models	234
Indonesia	234
Malaysia	238
The Philippines	242
Thailand	245
Conclusion	248
VI CONCLUSION AND POLICY IMPLICATION	251
Overview	251
Summary of the Findings based on TE Asymmetry	255
Summary of the Findings based on RE Asymmetry	260
Policy Implications	264
Limitations and Recommendations for Further Research	274
REFERENCES	276
APPENDIX	288
BIODATA OF THE AUTHOR	289

LIST OF TABLES

Table		Page
1	ASEAN-4 Real GDP Growth and Inflation Rate (Percentage Change from Previous Year)	3
2	Monetary Policy Framework of the ASEAN-4 Economies	8
3	ASEAN-4 Economies: Basic Economic and Financial Indicators	11
4(a)	Augmented Dickey-Fuller Unit Root Test, Phillips-Perron Unit Root Test and KPSS Stationary Test Results	141
4(b)	Zivot-Andrews Unit Root Test Results	142
5(a)	Money Supply Shock Model for Indonesia (Testing Fixed TE Asymmetry)	146
5(b)	Money Supply Shock Model for Malaysia (Testing Fixed TE Asymmetry)	155
5(c)	Money Supply Shock Model for the Philippines (Testing Fixed TE Asymmetry)	163
5(d)	Money Supply Shock Model for Thailand (Testing Fixed TE Asymmetry)	171
6(a)	Three-State Markov-Switching Model for Inflation Rate (Indonesia)	148
6(b)	Three-State Markov-Switching Model for Inflation Rate (Malaysia)	156
6(c)	Three-State Markov-Switching Model for Inflation Rate (The Philippines)	164
6(d)	Three-State Markov-Switching Model for Inflation Rate (Thailand)	172
7(a)	Money Supply Shock Model for Indonesia (Testing Time-Varying TE Asymmetry)	153
7(b)	Money Supply Shock Model for Malaysia (Testing Time-Varying TE Asymmetry)	161
7(c)	Money Supply Shock Model for the Philippines (Testing Time-Varying TE Asymmetry)	169
7(d)	Money Supply Shock Model for Thailand (Testing Time-Varying TE Asymmetry)	176

8(a)	Interest Rate Shock Model for Indonesia (Testing Fixed TE Asymmetry)	181
8(b)	Interest Rate Shock Model for Malaysia (Testing Fixed TE Asymmetry)	185
8(c)	Interest Rate Shock Model for the Philippines (Testing Fixed TE Asymmetry)	189
8(d)	Interest Rate Shock Model for Thailand (Testing Fixed TE Asymmetry)	193
9(a)	Interest Rate Shock Model for Indonesia (Testing Time-Varying TE Asymmetry)	183
9(b)	Interest Rate Shock Model for Malaysia (Testing Time-Varying TE Asymmetry)	187
9(c)	Interest Rate Shock Model for the Philippines (Testing Time-Varying TE Asymmetry)	191
9(d)	Interest Rate Shock Model for Thailand (Testing Time-Varying TE Asymmetry)	195
10(a)	Linear Autoregressive versus the Markov-Switching Model for Indonesia	202
10(b)	Linear Autoregressive versus the Markov-Switching Model for Malaysia	207
10(c)	Linear Autoregressive versus the Markov-Switching Model for the Philippines	211
10(d)	Linear Autoregressive versus the Markov-Switching Model for Thailand	215
11(a)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended I of Money Supply Shock Model for Indonesia	221
11(b)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended I of Money Supply Shock Model for Malaysia	225
11(c)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended I of Money Supply Shock Model for the Philippines	229
11(d)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended I of Money Supply Shock Model for Thailand	232
12(a)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended II of Money Supply Shock Model for Indonesia	222

12(b)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended II of Money Supply Shock Model for Malaysia	226
12(c)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended II of Money Supply Shock Model for the Philippines	230
12(d)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended II of Money Supply Shock Model for Thailand	233
13(a)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended I of Interest Rate Shock Model for Indonesia	236
13(b)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended I of Interest Rate Shock Model for Malaysia	240
13(c)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended I of Interest Rate Shock Model for the Philippines	243
13(d)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended I of Interest Rate Shock Model for Thailand	246
14(a)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended II of Interest Rate Shock Model for Indonesia	237
14(b)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended II of Interest Rate Shock Model for Malaysia	241
14(c)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended II of Interest Rate Shock Model for the Philippines	244
14(d)	Monetary Policy Effect on Output in Recession and Expansion based on the Extended II of Interest Rate Shock Model for Thailand	247
A1	Overall Performance of Inflation Targeting Regime: Inflation and Growth (Percent) for the ASEAN-4 Economies	288

LIST OF FIGURES

Figure	Page
1 GDP and M2 Growth (%)	14
2 GDP Growth and Short-term Interest Rate (%)	15
3 Inflation and M2 Growth (%)	16
4 Inflation and Short-term Interest Rate (%)	17
5 Inverted L-Shaped AS and Negative-Sloped Equilibrium Locus	45
6 Financial Accelerator Effect	52
7 Recession-Expansion Asymmetry	53
8(a) Filtered Probabilities of Inflation Rate for Indonesia	148
8(b) Filtered Probabilities of Inflation Rate for Malaysia	156
8(c) Filtered Probabilities of Inflation Rate for the Philippines	164
8(d) Filtered Probabilities of Inflation Rate for Thailand	172
9(a) Money Supply Shock Model for Indonesia (Time-Varying Asymmetry of Monetary Policy)	154
9(b) Money Supply Shock Model for Malaysia (Time-Varying Asymmetry of Monetary Policy)	162
9(c) Money Supply Shock Model for the Philippines (Time-Varying Asymmetry of Monetary Policy)	170
9(d) Money Supply Shock Model for Thailand (Time-Varying Asymmetry of Monetary Policy)	177
10(a) Interest Rate Shock Model for Indonesia (Time-Varying Asymmetry of Monetary Policy)	184
10(b) Interest Rate Shock Model for Malaysia (Time-Varying Asymmetry of Monetary Policy)	188
10(c) Interest Rate Shock Model for the Philippines (Time-Varying Asymmetry of Monetary Policy)	192
10(d) Interest Rate Shock Model for Thailand (Time-Varying Asymmetry of Monetary Policy)	196

11(a)	Filtered and Smoothed Probabilities of Real GDP based on the Markov-Switching Model for Indonesia	202
11(b)	Filtered and Smoothed Probabilities of Real GDP based on the Markov-Switching Model for Malaysia	207
11(c)	Filtered and Smoothed Probabilities of Real GDP based on the Markov-Switching Model for the Philippines	211
11(d)	Filtered and Smoothed Probabilities of Real GDP based on the Markov-Switching Model for Thailand	215
12(a)	Filtered and Smoothed Probabilities of Real GDP based on the Extended I of Money Supply Shock Model for Indonesia	221
12(b)	Filtered and Smoothed Probabilities of Real GDP based on the Extended I of Money Supply Shock Model for Malaysia	225
12(c)	Filtered and Smoothed Probabilities of Real GDP based on the Extended I of Money Supply Shock Model for the Philippines	229
12(d)	Filtered and Smoothed Probabilities of Real GDP based on the Extended I of Money Supply Shock Model for Thailand	232
13(a)	Filtered and Smoothed Probabilities of Real GDP based on the Extended II of Money Supply Shock Model for Indonesia	222
13(b)	Filtered and Smoothed Probabilities of Real GDP based on the Extended II of Money Supply Shock Model for Malaysia	226
13(c)	Filtered and Smoothed Probabilities of Real GDP based on the Extended II of Money Supply Shock Model for the Philippines	230
13(d)	Filtered and Smoothed Probabilities of Real GDP based on the Extended II of Money Supply Shock Model for Thailand	233
14(a)	Filtered and Smoothed Probabilities of Real GDP based on the Extended I of Interest Rate Shock Model for Indonesia	236
14(b)	Filtered and Smoothed Probabilities of Real GDP based on the Extended I of Interest Rate Shock Model for Malaysia	240
14(c)	Filtered and Smoothed Probabilities of Real GDP based on the Extended I of Interest Rate Shock Model for the Philippines	243
14(d)	Filtered and Smoothed Probabilities of Real GDP based on the Extended I of Interest Rate Shock Model for Thailand	246
15(a)	Filtered and Smoothed Probabilities of Real GDP based on the Extended II of Interest Rate Shock Model for Indonesia	237



15(b)	Filtered and Smoothed Probabilities of Real GDP based on the Extended II of Interest Rate Shock Model for Malaysia	241
15(c)	Filtered and Smoothed Probabilities of Real GDP based on the Extended II of Interest Rate Shock Model for the Philippines	244
15(d)	Filtered and Smoothed Probabilities of Real GDP based on the Extended II of Interest Rate Shock Model for Thailand	247

LIST OF ABBREVIATIONS/GLOSSARY OF TERMS

ADF	Augmented Dickey-Fuller
AIC	Akaike Information Criterion
AR	Autoregressive
AS	Aggregate supply
ASEAN	Association of Southeast Asian Nations
ASEAN-4	Indonesia, Malaysia, the Philippines and Thailand
BM	Ball and Mankiw
BOP	Balance of payments
BSP	Bangko Sentral ng Pilipinas
CE	Caballero and Engel
CPI	Consumer price index
DGP	Data generating process
EU	European Union
FDICIA	Federal Deposit Insurance Corporation Improvement Act
GDP	Gross domestic product
GNP	Gross national product
IFS	International Financial Statistics
IMF	International Monetary Fund
KPSS	Kwiatkowski, Phillips, Schmidt and Shin
LMFs	Large manufacturing firms
LR	Likelihood ratio
M1	Narrow monetary aggregate
M2	Broad money
MB	Monetary base

ML	Maximum likelihood
MS	Markov-Switching
NBER	National Bureau of Economic Research
OECD	Organisation of Economic Cooperation and Development
OMO	Open market operations
OPEC	Organisation of Petroleum Exporting Countries
PP	Phillips-Perron
SARS	Severe acute respiratory syndrome
SBI	Bank of Indonesia Certificates
SC	Schwarz Criteria
SETAR	Self-Exciting Threshold Autoregressive
SMEs	Small and medium size industries
STR	Smooth transition regression
SVAR	Structural Vector Autoregressive
TAR	Threshold Autoregressive
TE	Tight-Easy
RE	Recession-Expansion
VAR	Vector Autoregressive
VECM	Vector Error-Correction Model
ZA	Zivot-Andrews

CHAPTER I

INTRODUCTION

Background of the Study

For the past several decades, economic and monetary management in most of the ASEAN economies have faced many problems and challenges. However, this study focuses only on Indonesia, Malaysia, the Philippines and Thailand as these economies have undergone dynamic changes in both their economic structure as well as pattern of economic growth. They adopted outward-looking growth strategies, were competitive in exports, encouraged foreign participation in economic activities (particularly in the manufacturing sector), liberalised their financial sector and practised prudent fiscal policy management since the 1980s, and incidentally, had been interrupted by the devastating Asian financial crisis that began in mid-1997 when the currencies of these economies depreciated sharply against the U.S. dollar within a matter of months. These four economies are hereafter referred to the ASEAN-4 economies.

The ASEAN-4 economic conditions were generally impressive during the 1970s. However, like most of the economies in the Asian region, the ASEAN-4 economies had experienced their earlier episodes of pressure on inflation due to the surge in the oil prices brought about by the first and second oil shocks. Inevitably, a series of moderation of monetary measures were introduced during these periods to curb the escalating inflation rates. Besides the inflationary pressures, these energy crises also paved the way to the economic slowdown in 1974–1975 and 1981–1982. To solve

such economic weaknesses, major structural adjustments were undertaken. Since then, these economies rebounded and have rapidly grown to be more diversified with an expanded export-oriented manufacturing base.

During the mid-1980s, the ASEAN-4 economies again suffered badly as a result of the unfavourable external environment associated with a prolonged recession in the industrial economies. The problem was further aggravated by a sharp decline in oil and non-oil commodity prices in the industrial economies, leading to a sharp deterioration in the competitiveness of domestic products in the international market. The sharp downfall in commodity prices led to a substantial decline in export proceeds and subsequently adversely affected government revenues. On the domestic side, the public sector had to exercise fiscal restraint to maintain the budget deficit to a sustainable level. Consequently, there was a sharp downturn in aggregate demand and creating a trail of excess capacities. The year of 1985 was a nightmare for these ASEAN-4 economies: growth rates were low in Indonesia and Thailand, and negative in Malaysia and the Philippines (Table 1). Meanwhile, the decline in agricultural and manufacturing output also contributed to widespread unemployment in these economies.

Following the recessionary period experienced in the ASEAN-4 economies, the authorities in this region initiated a wide-ranging structural adjustment programme, including reforms in the financial sector, with the aim of restoring an environment that is conducive for the existence of efficient and competitive financial markets. Financial deregulation and changes in monetary and exchange rate policies featured prominently in the overall reform programme.