

# Economic Development and Integration in Southeast Asia

Economic Convergence, Distribution and Integration

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To Buddha, Dharma and Sangha  
and to my beloved family

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# **Declaration**

I hereby declare that this is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been submitted in the fulfillment of the requirements for any other academic degree or qualification, except where due acknowledgment has been made.

Sorayod Kumbunlue

# Abstract

This thesis presents the development of Southeast Asian regionalism and in particular strategies for the sustainable development of ASEAN and East-Southeast Asian integration are born out. The two strategies that constitute the focal point of the thesis have been established as “openness and deepening” and “strengthening foundation”. The concrete implementation of both strategies is as follows: in association with “openness and deepening”, to develop ASEAN and East-Southeast Asia economic integration and simultaneously, in association with “strengthening foundation”, to strengthen macroeconomic structures. This thesis concentrates on convergence and distribution as key factors to achieve both objectives. Accordingly, it examines how to achieve convergence; in particular, the effects of the convergence of human-capital and technological progress on the convergence of income and the trend towards integration are contemplated. This thesis examines the existence of relevant mutual positive relations between economic cooperation and integration and economic convergence. Convergence supports economic integration by assuaging the problems of sensitive sectors and hub and spokes bilateralism. Obviously, economic convergence does not only assist economic integration, but also is a general foundation for sustainable development. Further, this thesis presents models of strategies that strengthen economic fundamentals and promote convergence within an economic structure and illustrates the interrelation of convergence, devel-

opment and economic integration. These strategies aim at coping with economic disparity within and between countries. In the main, discrepancies in the human capital and wage-rates of blue-collar (workers from low-income-earner sector or from poor countries) and white-collar workers (workers from high-income-earner sector or from rich countries) and in the technology used in different production sectors are considered. This model can be used on analysis within a country or a regional grouping which undergoes economic disparity. If it analyzes economic situation of a single country, the examination carried out will be between blue- and white-collar workers. On the other hand, if an integrated region is analyzed, this model originally used for blue- and white-collar workers will be applied for the case of average workers in the poor and rich countries respectively.

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# Abbreviations

AEM	ASEAN Economic Ministerial Meeting
AFAS	ASEAN Framework Agreements on Services
AFMM	ASEAN Foreign Ministers Meeting
AFTA	ASEAN Free Trade Area
AIA	ASEAN Investment Area
AIC	ASEAN Industrial Complementation
AICO	ASEAN Industrial Cooperation scheme
AIJV	ASEAN Industrial Joint Venture
AIPs	ASEAN Industrial Projects
AIPO	Inter-Parliamentary Organization
AMF	Asian Monetary Fund
AMM	ASEAN Ministerial Meeting
APEC	Asia Pacific Economic Cooperation
ARF	ASEAN Regional Forum
ASA	Association of Southeast Asia
ASC	ASEAN Standing Committee
ASEAN	The Association of Southeast Asian Nations
ASEAN+3	The Association of Southeast Asian Nations plus China, Japan and Korea
ASEAN-CLMV	The Association of Southeast Asian Nations plus Cambodia, Laos, Myanmar and Vietnam
CARICOM	The Caribbean Common Market
CEP	Closer Economic Partnership
CEPT	Agreement on the Common Effective Preferential Tariff
CSFP	Common Foreign and Security Policy
EC	European Community
EEC	European Economic Community
EFTA	European Free Trade Association
ESCAFE	United Nations Economic Commission for Asia and the Far East
ESCAP	Economic and Social Commission for Asia and the Pacific
EU	European Union

FDI	Foreign direct investment
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
IMF	International Monetary Fund
IP	Intellectual Property
LAFTA	Latin America Free Trade Agreement
MAPHILINDO	The Federation of Malaya, the Philippines and Indonesia
MERCOSUR	Mercado Común Suramericano
NEDA	National Economic and Development Authority
NAFTA	The North American Free Trade Agreement
NIEs	Newly Industrializing Economies
NGOs	Non-Governmental Organization
OCA	Optimum Currency Area
PMC	Post Ministerial Conference
PTA	Preferential Trading Agreement
R&D	Research and Development
SADCC	The Southern African Development Coordination Conference
SEANWFZ	The Southeast Asia Nuclear Weapon Free Zone
SEATO	Southeast Asia Treaty Organization
SEOM	Senior Economic Meeting
SOM	Senior Official Meeting
TAC	Treaty of Amity and Cooperation in Southeast Asia
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US	United States
US GSP	Generalized System of Trade Preferences to developing countries
VAR	Vector Auto Regression
WEU	West European Union
WTO	World Trade Organization
ZOPFAN	Zone of Peace, Freedom and Neutrality

# Introduction

This thesis explores the importance of human capital and technological enhancement and convergence for economic development in ASEAN. ASEAN is one of the regional groupings established in 1967 to cope with political and economical hardships. The emergence of regionalism can be observed from the end of the Second World War, a period also hallmarked by decolonialization. Regionalism gained in importance in Europe, beginning in the fifties with the Paris Treaty on coal and steel in 1951, the signing of the Treaty of Rome to create the European Economic Community (EEC) in 1957 and the formation of the European Free Trade Association (EFTA) in 1960. In response to the successful establishment and enlargement of the European Community (EC), regional groupings were formed in almost all developing regions of the world during the sixties and seventies. Examples of these include the Latin American Free Trade Agreement (LAFTA) and the Central American Common Market, both created in 1960, the Association of Southeast Asian Nations (ASEAN) in 1967, the Caribbean Common Market (CARICOM) in 1973, the East African Community in 1967 and the Southern African Development Coordination Conference (SADCC) in 1979<sup>1</sup>. Nonetheless, it should be recognized that a large number of regional arrangements in Africa and Latin America as well as the Caribbean and the Middle East were deficient and largely failed to fulfill expectations. ASEAN, however, has survived until today.

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<sup>1</sup> An overview of regional groupings of the developing countries in the sixties and seventies, Langhammer, R. J. and Hiemenz, U. (1990), p. 18-58

The study in the thesis is based on the emergence, evolution, strengths and weaknesses and prospective development of ASEAN. Even though the development of ASEAN has been very slow compared to that of the EU, its work has been very satisfactory. It managed to solve political issues in the region in its early days. Later there were several economic problems in the region and again ASEAN was able to cope with the problems, albeit with some difficulty. ASEAN has its own characteristics which explicitly distinguish it from the EU, namely its high pragmatism and flexibility. These characteristics should be taken into consideration in the development of ASEAN itself. In other words, ASEAN should find its own path of development which is compatible with its characteristics and members. Nevertheless, the EU cannot be overlooked as it is the most important example of regional integration in the world. Its experiences and success are very valuable to ASEAN's development process, especially in solving ASEAN's weaknesses and illustrating a successful integration movement for ASEAN.

In this thesis, two strategies are scrutinized that are intended to lead to sustainable development in ASEAN. The first is opening and deepening regionalism, the second strengthening economic structure. With ASEAN's characteristics of high pragmatism and flexibility, the opening and deepening regionalism strategy has potential for success. However, with respect to the strategy of strengthening economic structure, the prospects are dim. Almost all ASEAN member states have weak economic fundamentals. This is the main obstacle to sustainable development within ASEAN. The assumption of this thesis is that the enhancement and convergence of human capital and technology are means of pursuing both strategies. These approaches not only strengthen economic fundamentals, but also en-

courages economic integration, which in turn assists the enhancement and convergence of human capital and technology in a reciprocal fashion. The results of the study provide a short- and long-term solution to obstacles hindering the sustainable integration of ASEAN and a long term basis for ASEAN's future development. The thesis is composed of five chapters which are divided as follows.

### **Chapter 1: Definition**

The first section of this chapter sets out the definition and gives an historical overview of regionalism. The terms "cooperation" and "integration" are classified and then explained. Based on the definition of integration, this chapter distinguishes three significantly interdependent aspects of integration: economic, political and social. In particular, the economic facet, the reasons for integration and the phases of its development will be comprehensively analyzed. Finally, definitions of cooperation and integration are set out.

### **Chapter 2: The Development of ASEAN**

This chapter illustrates the emergence and development of ASEAN from the outset. It intends to provide a better understanding of the characteristics and the nature of ASEAN. This culminates in the realization of the problems in the past as well as its strengths and weaknesses.

### **Chapter 3: ASEAN Regionalism and European Integration**

This chapter examines the differences and the resemblances between ASEAN and the EU – obviously the most successful regional integration process worldwide. This comparison predominately relates to their economic, political and, to a lesser extent, social dimensions. Subsequently, prospects for the further integration of ASEAN will be analyzed, supported by the example of EU development, in order to ascertain “what ASEAN can learn from the European integration”. Yet it must be recognized that, even though the EU has conducted its integration process successfully, it should not be taken arbitrarily as a general benchmark model for integration process in every other region. It is of significance to study how to take advantage of the lesson of the EU, under a prudent understanding of the region’s own specific economic, political, and social structures and circumstances. This approach could help ASEAN in finding its most efficient way of integration.

### **Chapter 4: East-Southeast Asian Economic Integration and its Implications for ASEAN**

This chapter considers the prospect of further economic integration of East-Southeast Asian regionalism. It illustrates ways to cope with the emerging new surges of bilateral arrangements which result from contemporary, complex interactions of political and economic issues and pressures from internal and external circumstances. Additionally, the chapter describes a development scheme for East-Southeast Asian economic integration. The role of ASEAN in the development of East-Southeast Asian regionalism is also introduced and a strategy for strengthening ASEAN’s economic structure is presented afterwards.

The study is based on the two strategies characterized by openness and deepening on the one hand and strengthening foundation on the other. The predominant means of implementing these strategies is via liberalization and facilitation.

### **Chapter 5: Theory on Economic Integration: Mutual Positive Relationship between Economic Convergence and Economic Integration**

This chapter models strategies that strengthen economic fundamentals and bring about convergence of the economic structure. The aim of these strategies is to work against economic disparity within and between countries. In the main, the discrepancies in the wage rates of blue- and white-collar workers and in technologies used in different production sectors are considered.

Diversity in economic structure can be found in several developing countries and is regarded as a significant hindrance in East-Southeast Asian and ASEAN economic integration. Economic convergence and distribution are considered as economic schemes which may be relevant to the solution of recent economic problems within the region and help lay down a strong foundation for long-term development. Both schemes lead to improvement as well as convergence in the standard of living and economic structure. These will provide an essential basis for solving the sensitive sector problems. Sustainable development can then be achieved smoothly and the economy will be, to a certain extent, immune to external pressures. Negative effects from “hub and spoke bilateralism” will be eased or hindered and bilateral regionalism will become a stepping stone towards economic integration. Economic cooperation and integration within the region will support and strengthen economic convergence and the region’s economic fundamentals. This, in turn, should al-

low countries to achieve regional and global economic integration in the long run. This reflects the mutual relationship between economic convergence and integration, see figure 1.1 for the overview.

One of the relevant supporting measures involves education and technology enhancement. Both serve as cornerstones of economic, political and social structures. Advancement in education and technology will assist economic development, convergence and distribution by raising income and living-standards, particularly in the poor sector. Consequently, development in economic structure and economic convergence will support and strengthen economic integration in the region. Due to positive spill-over effects, economic integration will, in turn, enhance the quality of education and technology development.

Modelling is carried out for “short-” and a “long-term” developments separately. The model is based on the growth model by Galor and Weil (1999) which analyses the historical evolution of population, technology and output, encompassing the endogenous transition between three regimes, a Malthusian regime, a Post-Malthusian regime and a Modern Growth regime. The growth model by Galor and Weil is modified and adapted in order to analyze the long-term development of the economy under inequality between labour groups and to discover strategies that will strengthen economic fundamentals and assist the economic integration within the region. The short-term model analyses the economic development under inequality between labour groups in the short-run. The model is built, to a certain extent, so that the structure of the utility function is consistent with the utility function of the long-term model. Both models use the Cobb-Douglas production function;



the short-term model assigns a common two-period intertemporal model and the long-term model is based on an overlapping generation model.

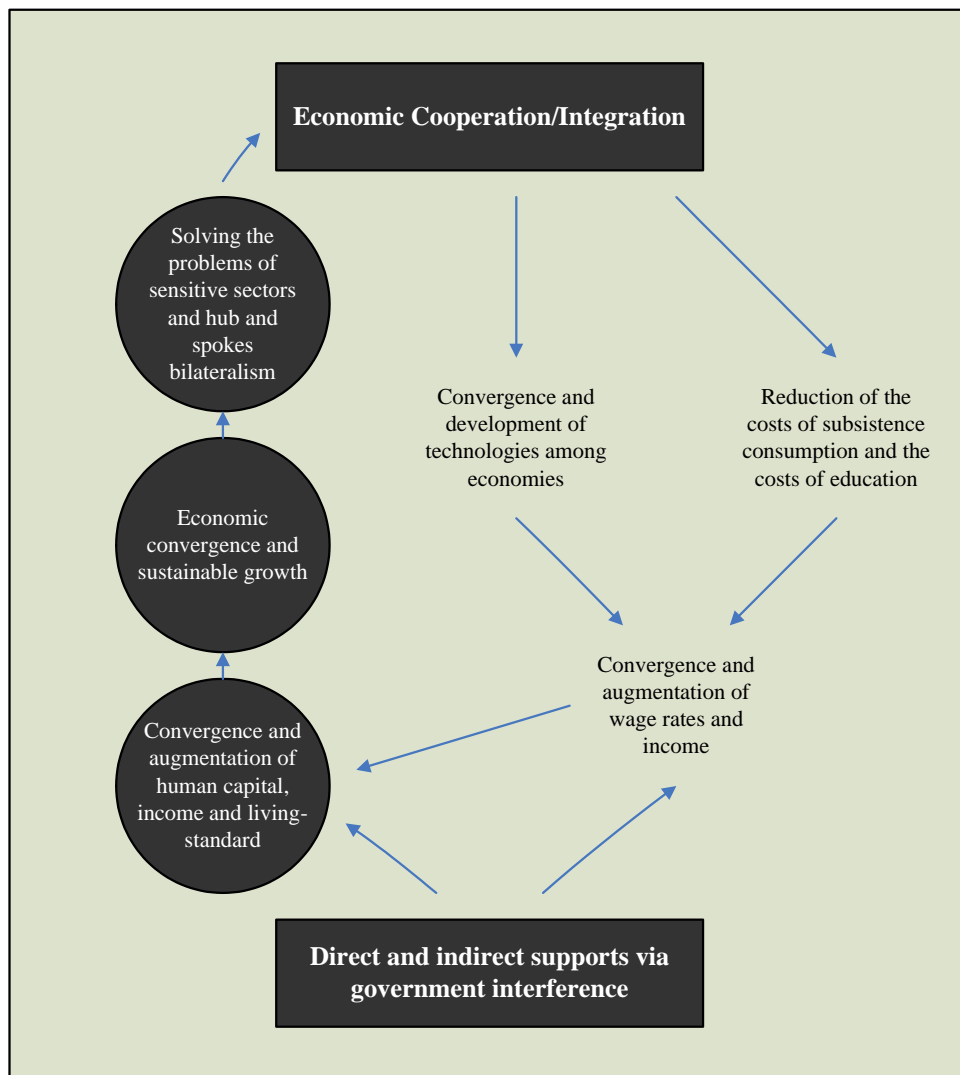


Figure 1.1: Theoretical mutual positive relation between economic integration and convergence

# Chapter 1

## Definition

One of the important components of the study of economic integration in this thesis is the understanding of the basic concept and the definition of the term “integration”. Since the term “integration” has a broad definition, it is therefore essential to determine the term’s specific usage herein and then to demarcate the range of its definition which will be treated in this thesis.

The first section of this chapter sets out the definition and gives an historical overview of regionalism. The terms “cooperation” and “integration” are classified and explained afterwards. Based to the definition of integration, this chapter distinguishes three significantly interdependent aspects of integration: economical, political and social. In particular, the economic facet, the reasons for integration and its phases of development will be comprehensively analyzed. Finally, definitions of cooperation and integration are set out.

### 1.1 Regionalism

In economic and political literature, the term “regionalism” often refers to regional integration or regional cooperation. It conceptually encompasses not only geographical territorial features but also economic, political and military characteristics. In general, the term “regionalism”, according to Joseph Nye<sup>2</sup>, can be defined in the descriptive sense as the formation of interstate associations or groupings based on regions. In the doctrinaire sense

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<sup>2</sup> Nye, J. (1968a), p. vii

it can be described as the propagation of such formations. With reference to a successful regional system Ronald Yalem additionally refers to a definition put forward by Bhoutros-Ghali, which expressively describes regional understanding as “organisms of a permanent character grouping in a geographically determined region of more than two states which by reason of their proximity, their communities’ interests or their affinities establish an association for the maintenance of peace and security in their region and for the development of their economic, social and cultural cooperation with the final purpose of forming a distinct political entity”<sup>3</sup>.

However, various aspects of regionalism refer either to how to demarcate the area in which the members participate or to the extent to which regionalism in economic sense should be encompassed. In relation to “regionalism”, the term “region”, on the one hand, refers to a subjectively demarcatable unit that may relate to an economic, political, demographical, religious or even to an artificial feature. This depends on respective circumstances. For instance, an economic border, defined as any demarcation over which the actual and potential mobility of goods, services and factors of production and also communication flows are relatively low, is notably not equivalent to a territorial frontier<sup>4</sup>. On the other hand, the presence of a demarcatable and to some extent plausible geographic geopolitical area is also necessary.

It should be emphasized that it is fairly complicated to find an appropriate definition for regionalism adequate for all academic research. The scope of this thesis is thus essentially restricted to the economic aspects of regionalism. Because of this, we can loosely

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<sup>3</sup> Yalem, R. (1973), p. 218-220

<sup>4</sup> Pelkmans, J. (1997), p. 2-3

define regionalism for our purposes as “any policy designed to reduce trade barriers and the economic significance of national political boundaries between a subset of countries or separate national economies with the intention of institutionalizing into larger economic blocks or communities within a plausible demarcatable geographic area or subjectively demarcatable unit<sup>5</sup>”.

The emergence of regionalism can be observed since the end of the Second World War and the decolonialization which followed. It was popular in Europe, beginning in the fifties with the Paris Treaty on coal and steel in 1951, the signing of the Treaty of Rome to create the European Economic Community (EEC) in 1957 and the formation of the European Free Trade Association (EFTA) in 1960. In response to the successful establishment and enlargement of the European Community (EC), regional groupings were formed in almost all developing regions of the world during the sixties and seventies. Examples of these include the Latin America Free Trade Agreement (LAFTA) and the Central America Common Market, both created in 1960, the Association of Southeast Asian Nations (ASEAN) in 1967, the Caribbean Common Market (CARICOM) in 1973, the East African Community in 1967 and the Southern African Development Coordination Conference (SADCC) in 1979<sup>6</sup>. Nonetheless, it should be recognized that a large number of regional arrangements in Africa, Latin America as well as the Caribbean and the Middle East were deficient and largely failed to fulfill expectations.

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<sup>5</sup> Anderson, K. and Blackhurst, R. (1993), p. 1. Robson, P. (1998), p. 1. Winter, A. L. (1999), p. 8-10

<sup>6</sup> An overview of regional groupings of the developing countries in the sixties and seventies, Langhammer, R. J. and Hiemenz, U. (1990), p. 18-58

The formation of regional groupings in the sixties and seventies are denoted as “old regionalism” or “first regionalism”. Its characteristics were based on a large number of assumptions<sup>7</sup>. One of them was the idea of an increase in welfare deriving from freeing trade and productivity gain thanks to the economies of scale and improved allocation and availability of resources achieved by enlarging the size of the domestic market. Furthermore there was the idea of an increase in welfare from the economic growth ensuing from traditional customs union, in terms of gains from trade creation and trade diversion which went hand-in-hand with the idea of growth and modernization as development<sup>8</sup>. In the field of economic development, enhancing industrialization has been accepted as a central goal policy and has been regarded as a rational social choice by developing countries. Thus, at the time when import substitution was undertaken as a development policy and a way to launch industrialization in a country, in the case of a domestic market proving to be too small to allow import substitution as the starting point of industrialization, the formation of a regional market was seen as a way around this impediment<sup>9</sup>. Further benefits of this type of regionalism were the joint production of public goods and protection against adverse developments in the world market. Moreover, it was advantageous in improving the

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<sup>7</sup> Langhammer, R. J. and Hiemenz, U. (1990), p. 4-12 and Bhalla, A. S. and Bhalla, P. (1997), p. 1-2. Furthermore, Axline, A. W., (1994), p. 1-4, has characterized the evolution of “first regionalism” into 3 generations. The first generation “generation of traditional customs union” is characterized by economic growth resulting from the concept of traditional customs union. In the second generation “generation of regional import substitution”, industrialization remains the central goal of development policy. And there is finally the third generation “generation of collective self-reliance”, in which joint policies within the region was improved by regional external policies vis-à-vis third countries and by common negotiation position in larger international forums.

<sup>8</sup> According to the characterization of the evolution of “first regionalism” by Axline, W. Andrew, this assumption relates to the “first generation”.

<sup>9</sup> According to the characterization of the evolution of “first regionalism” by Axline, W. Andrew, this assumption relates to the “second generation”.

collective bargaining power when trading with industrial countries and consensus building on regional political and security issues. These can be considered as political advantages<sup>10</sup>.

Unfortunately, as just mentioned, the development of old regionalism outside the EC and EFTA turned out to be unsuccessful. This failure had several causes. Jagdish Bhagwati argues that while the developing countries used their regional groupings to promote industrial import substitution through the economies of scale ensuing from a regional market, they all failed to overcome the difficulties of the political allocation of industries. These difficulties originated from the endeavor to allocate industries among the region's members by bureaucratic negotiations rather than through the market system and the sharing of the high costs of the industrial protection<sup>11</sup>. Taking Bhagwati's assumption further, Robert Baldwin explains that in the early stages of industrialization, in which developing countries' regional groupings were established, the most advanced country in the group tended to benefit significantly, but some of the smaller members were likely to lose out in the integration process<sup>12</sup>. Furthermore, there was the fact that the United States, which played a dominant role in the world market at that time, had changed its policy from regionalism coupled with a protectionist tendency to a policy of fostering multilateralism and non-discrimination, for instance by the use of GATT's Article XXIV to impose sanctions in the case of international discrimination.

Since the sixties, the leading position of the United States in the world market has been considerably weakened by its trade and budget deficits owing notably to the escalat-

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<sup>10</sup> According to the characterization of the evolution of "first regionalism" by Axline, W. Andrew, this assumption of political advantages relates to the "third generation".

<sup>11</sup> Bhagwati, J (1993), p. 28-29

<sup>12</sup> Baldwin, R (1993), p. 51-54

ing competition from the European Union and Japan. The United States therefore turned towards regional and bilateral arrangements. In the eighties and nineties, and also in recent years, interest in regionalism has been revived, partly in response to increasing globalization and in the context of regional zoning between the United States, the EU and Japan. Particularly after the end of the Cold War, the so-called “new regionalism” or “second regionalism” envisions greater integration in economic policy and trade among both industrialized and developing countries. The new or second regionalism differs substantially from the earlier regional groupings which were created at a time when their member countries were at an early stage of development. Whereas earlier regionalism related to the framework of economic planning and government regulation, new or second regionalism, on the other hand, has been driven and brought about by economic liberalization, market deregulation and by the increasing interdependence of the world economy. Whereas the earlier groupings were inward-looking and viewed protective tariffs as an instrument to promote growth, the new groupings are outward looking and focus especially on intra-regional and inter-regional trade for their economic growth. In addition, the new regional integration, which groups its members on a North-South basis (e.g. APEC or NAFTA) instead of North-North and South-South in the case of earlier regionalism, is also construed in terms of scale economies, product differentiation, efficiency gain, policy coordination and foreign direct investment (FDI)<sup>13</sup>.

Nevertheless, there are still debates in economic circles about whether regionalism is a stepping stone or stumbling block. There is a growing concern that regional blocks may

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<sup>13</sup> Bhalla, A. S. and Bhalla, P. (1997), p. 17-22

discriminate against goods and services of non-member countries and thus can be seen as a barrier to a global free trade. A more positive view is that regional blocks are a first step towards globalization and the multilateralization of trade, a supporting argument for which is that a small number of member countries can more easily agree on harmonizing their national economic policies and on opening up their markets.

## 1.2 Cooperation and Integration

The terms “cooperation” and “integration” are both broadly defined. They are extensively significantly interrelated and appear mostly in relation to the same issues. Nevertheless, the two terms are not synonymous. Thus a distinction or classification between them has to be considered within the framework of international or interregional, economic and political cooperation and integration.

The conditions of classification for regional cooperation and integration are determined, to a great extent, in institutional and attitudinal terms, and are particularly concerned with the intensity of international or interregional actions. Brigid Laffan, as a case in point, indicates that international cooperation and integration both involve states in collective action, but the latter can be distinguished from the former by the intensity of relationships between the participating states and the manner in which these relationships are organized and managed<sup>14</sup>. Rolf J. Langhammer and Ulrich Hiemenz view integration as considerably more intense than cooperation. They differentiate between both terms from an economic point of view, arguing that, while integration is a process that aims to abolish discrimina-

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<sup>14</sup> Laffan, B. (1992) p. 2



tion between local and foreign goods, services and factors, cooperation focuses on reducing discrimination in certain spheres only<sup>15</sup>. Still, a classification or distinction between cooperation and integration is not simple, and the difficulties involved are in particular due to the demarcation of these two terms.

### 1.2.1 Cooperation

The comprehensive classification of cooperation presented here is based on the one described by Jörn Dosch and by Du-Chel Sin<sup>16</sup>, and can be explained as follows. Principally, cooperation refers to any form of collaboration, associated with different scopes (political, economic, social, military, cultural, technological etc.), initiated and carried on by participating actors (individual, governmental or non-governmental organizations, international or intra-national organizations etc.) who share compatible expectations, in order to achieve collective interests or objectives and foreseeable advantages, under consideration of the costs and benefits. Cooperation, furthermore, refers to definite purposes, requires no extensive or complicated legitimation and does not imply any restriction of national autonomy or sovereignty.

Moreover, the study of regional cooperation, according to Ernst B. Haas, can be viewed as a subset of the study of regional integration or sometimes also as a separate interest. Regional cooperation, in many circumstances, promotes the processes of integration<sup>17</sup> and is additionally defined as a prerequisite for integration<sup>18</sup>.

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<sup>15</sup> Langhammer, R. J. and Hiemenz, U. (1990) p. 1-3

<sup>16</sup> Dosch J. (1997), p. 44-45 and Sin, D. (2000), p. 8-9

<sup>17</sup> Haas, E.B. (1973), p. 105

<sup>18</sup> Dosch, J. (1997), p. 45, and Sin, D. (2000), p. 10

### 1.2.2 Concertation

To understand the comprehensive study of the development of regional integration in ASEAN, an interesting concept needs to be brought up. This concept, called “concertation”<sup>19</sup>, falls between cooperation and integration and was initially developed for the process of political coordination in Latin America, particularly during the eighties. For instance, there was the concertation between Argentina and Brazil in Cono Sur in 1986, which was the trigger for the Treaty of Mercado Común Suramericano (MERCOSUR) in March of 1991, in which Uruguay and Paraguay also participated. Concertation denotes a type of multilateral diplomacy, above all on political issues, which is conceptually conducted by a very high or the highest position of a political decision-making organ, such as the head of the respective government and its ministers, mainly the foreign minister. The instruments of concertation are summits between the heads of government, ministerial meetings and the relationship of dialogue that exists between participating nations.

The main structure of concertation relies on the flexibility within the group, in association either with the scope of sovereignty in policymaking or the resiliency of membership. Its partners’ interactions are admittedly more substantial than is the case with cooperation, but the partners have more free room to move compared to integration. However, how one classifies the term “concertation” depends on one’s perspective. A suitable definition may be a kind of cooperation or a process towards integration, as appeared in Latin America in the case of the establishment of MERCOSUR or ASEAN in Southeast Asia.

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<sup>19</sup> Emmes, M. and Mols, M (1993), p. 47, and Dosch, J. (1997), p. 47-48

### 1.2.3 Integration

The term “integration” generally means the bringing together of separate parts to form a whole<sup>20</sup>. More literally, integration denotes a reestablishment or formation of detailed elements into a unit or a whole which, in turn, is more than a mere sum of these elements<sup>21</sup>. Approaching a comprehensive definition, integration, on the one hand, is viewed as a terminal or static term, which describes an already existent condition (level of integration) or one which is expected to be achieved (integration as a goal). On the other hand, integration denotes a process or dynamic term as well, in which a development from a lower to a higher level of integration is described. Respectively, disintegration refers to a movement from a high stage of integration to a lower level of integration. However, there is a lack of consensus as to whether integration might be viewed as a process or terminal term or even both. In the economic literature, there are diverse opinions about the definition of the term integration. Jacob and Teune, for instance, accept integration both as a process and as a terminal condition, while Haas and Deutsch denote it in a political sense just as a process. Paul Chamley describes integration as “any process leading to the formation of a political and economical whole”, while Amitai Etzioni, on the contrary, treats integration as a terminal condition, and not as a process of getting there<sup>22</sup>.

Similarly to cooperation, the term “integration” is never precisely defined and covers many different fields, especially economic, political, military and cultural or social attributes. Considering that this thesis is intended to analyze the economic aspect of inte-

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<sup>20</sup> Balassa, B. (1961), p. 1, and Beyarslan, A. (1977), p. 27

<sup>21</sup> Smend, R. (1994), p. 1204

<sup>22</sup> Haas, E.B. (1973), p. 105-106, and Chamley, P. (1997), p. 39

gration, it also has to be emphasized that there are several main features that are closely related to economic aspect and to each other. These must necessarily also be taken into consideration, in particular political and social features. An interesting analytical method of integration research, which systemically investigates these different attributes, is the perceptual approach of “multidimensional conception of integration” based on research by Nye, by Daniel Frei and by Sin<sup>23</sup>. According to their research, integration can be divided into three specific dimensions, namely economic, political, and social dimensions, which are significantly correlated.

### **1.3 Multidimensional Concepts of Integration**

This section introduces the three-dimensional concept of integration. Firstly, the facet of political and social integration discussed with reference to the description based on Nye, Frei and Sin. Then the dimension of economic integration will be comprehensively exposed in order to serve as a foundation for the research in the forthcoming chapters of this thesis, the emphasis of which is on economic aspects.

#### **1.3.1 The Political Dimension of Integration**

Political integration is usually considered as a move away from national sovereignty with the aim of attaining some kind of political union such as a supranational community or federal state. As mentioned by Brigid Laffan, political integration describes the emergence of

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<sup>23</sup> Nye, J. (1968b), p. 855-880, Frei, D. (1985), p. 113-131, and Sin, D. (2000), p. 41-71. The authors distinguish integration into three-dimensional concepts - economic, political, and social dimension - established for understanding and measurement of the intensity of integration.

a political community based on trust, loyalty and shared values<sup>24</sup>. The intensity of political integration conceptually refers to and can be estimated by the degree of political interaction. This essentially encompasses the integration of institutions, policies, and security systems. The scope of institutional resources, visible in the magnitude and development of the budget and the personnel working in the administrative institutions of the community, can be used as a measure of institutional interaction. It is also important to consider the structure and function of the institutions and how they incorporate the executive, legislative and judiciary powers. Essentially, these mutually functioning institutions are established to administer the regulations and rules, which run the process of integration. The extent of power these institutions should obtain, however, is decided by negotiations between the members of the group and is still the object of many debates. When it comes to policy integration, decisions have to be taken as to how much responsibility should be transferred to a supranational level and which policies in particular should be executed on this level. Other alternatives are joint-execution (intergovernmental) or coordination of a policy from more than one level.

Furthermore, there is also a joint international security policy which aimed at founding a security community characterized by the expectation of non-violent interstate relations. This community should not simply be regarded as a barrier against both internal and external vulnerabilities that threaten or have potential to bring down or weaken state structures, both territorial and institutional, and governing regimes. Its establishment, in some circumstances, also originates political integration for instance the establishment process

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<sup>24</sup> Laffan, B. (1992) p. 5

of ASEAN and the EU. Therefore, the intensity of political interaction is indicated not only by the degree of political integration, but also by security integration. Security integration indicates the intensity of political integration, in that the closer and more intensive the incorporation of security and military policy operated by the members in the region, the more integrated they are.

### **1.3.2 The Social Dimension of Integration**

Social integration refers to interactions between non-governmental actors or organizations within the region. These actors or organizations are likely to have both interchangeable and specific interests. The transactions between them are predominately to be seen in economic and social activities or businesses. Social integration concerns the social-psychological perception of the people living in the region in which the public decisions are made and their opinion of regional integration. Furthermore social integration refers to the awareness of collectiveness among members in the region and the perception of being associated, which leads them to express the integrated group as “us”.

The social dimension is one of the significant aspects of integration, particularly from a psychological standpoint. Notably, the public’s point of view on regional integration invariably influences the integration policy and appears to be one of the most important indicators that measure the intensity of integration in the region.

### 1.3.3 The Economic Dimension of Integration

One of the first definitions of economic integration was provided by Jan Tinbergen who describes economic integration as the removal of artificial barriers to the optimum operation of an economy and as a process by which the positive aspects of coordination and unification come to the fore. Tinbergen<sup>25</sup>, on the one hand, considers “negative integration” to be those aspects of international economic integration which simply involve the removal of discriminatory and restrictive institutions and the liberalization of economic transactions. On the other hand, the term “positive integration” is related to the adjustment of existing and, to a great extent, to the establishment of new policies and institutions endowed with coercive powers, in order to enable the market of the integrated area to function properly and efficiently and, furthermore, in order to support other broader policy aims of the scheme.

Economic integration can be defined both as a process (dynamic concept) and as a state (static concept) of affairs<sup>26</sup>. In terms of the static concept, economic integration encompasses the merging or amalgamation of economic domains or regions into a large economic area, which can be classified in terms of different degrees of integration. This depends on the intensity of integration, which is described by the absence of different forms of discrimination. With regard to the dynamic concept, economic integration describes the process of discriminatory removal of all trade impediments, including the free movement of goods, services and factors of production between at least two participating

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<sup>25</sup> Tinbergen, J. (1965), p. 76-82

<sup>26</sup> Balassa, B. (1973), p. 1-2, Langhammer, R. J. and Hiemenz, U. (1990) p. 1-3, Butterwegge S. (1993), p. 45, Swann, D. (1996), p. 3, and El-Agraa, A. M. (1997) p. 1

nations. The efficiency in the use of resources and the establishment of certain elements of cooperation and coordination between them are also in the nature of economic integration. Furthermore, the process of integration is viewed as a consequence of a transition that is the movement between different states, strictly speaking, from a lower degree to a higher degree of integration<sup>27</sup>. However, it should be emphasized that a clear-cut explanation that offers a complete interpretation covering all issues of economic integration among countries is still hard to find in economic literature. It is therefore useful for a comprehensive understanding to introduce the aims of and the reason for the emergence of economic integration.

#### **1.4 The Reasons for the Emergence of Economic Integration**

Certainly, one may recognize that an increase in social welfare subject to the limited resources available is one of the main objectives of economic activities. Gains in welfare either involve the increase in welfare of the community collectively or the optimization of utilities according to individual interests. In economic terms, higher employment levels, lower inflation rates, balanced trade, a higher rate of economic growth and better income distribution serve as indicators for the well-being of the community. The economic activities are therefore targeted to realize these objectives. International economic integration,

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<sup>27</sup> Pinder, J. (1969), p. 143-145, Robson, P. (1998), p. 2 view economic integration only as the discriminatory removal of all trade impediments, including the free movement of goods, services and factors of production between at least two participating nations, the efficiency in the use of resources. Balassa, B. (1973), p. 1-2, Langhammer, R. J. and Hiemenz, U. (1990) p. 1-3, view economic integration as a movement from a lower degree to a higher degree of integration.



in turn, appears to be one of the instruments for the enhancement of welfare either of the integrated group, of some countries within the group, or of the world as a whole.

One of the primary incentives for the member countries to move towards economic integration has to do with the expected economic gains deriving from, for instance, an increase in economic growth, as in the growth of gross national product. These real-economic gains can be explained, for example, by firstly, the extended size and the liberalization of the market of the participating countries may lead to an increase in production levels and enhanced efficiency in production, which can be brought about by better exploitation of economies of scale and by increased specialization, according to the comparative advantage; secondly, there are also gains from better terms of trade and improved international bargaining power vis-à-vis third countries due to the larger size of the community and its economy; and thirdly, the intensified competition between firms either in the integrated region or vis-à-vis third countries may enforce changes in efficiency, which affect both the quantity and quality of the factors of production, and in turn, encourage technological advances. Furthermore, when there is a higher degree of economic integration, there are economic gains which can also be achieved by the free mobility of factors across the borders of member countries.

Besides real economic gains, there are further economic gains associated with monetary economics, which are expected to be attained through monetary integration. For example, a fixed currency or a monetary union may lead to a decrease in transaction costs and risks triggered by an unstable exchange rate. This, in turn, encourages international engagements and lessens the misallocation of resources caused by exchange rate specu-

lations. It is also expected that under both real economic and monetary integration, the coordination of national monetary, exchange rate and fiscal policy and the unification of effort to achieve the economic aims may make it easier and cheaper to attain these economic targets and welfare gains.

However, it should be emphasized that there is no guarantee that these economic gains can ever be achieved. It is not a necessary condition for a country's economic success that it should be a member of an economic community. In any case, it can be concluded that international or interregional economic integration is established by a group of countries striving to increase their welfare, believing that partnership, weak or strong, between countries is a more efficient way to achieve this aim than carrying out unilateral or independent policy in each country.

## **1.5 Stages of Economic Integration**

Besides the distinction between economic integration as a process and as a state, economic integration can also be differentiated in two principal features which are interdependent and essentially inter-correlated, namely economic integration in real and in monetary terms. Economic integration in real terms is generally related to the transaction within the region of goods and services, production mobility of labor and real capital, and in addition the respective economic policies and activities. Economic integration in monetary terms is concerned with the configuration of exchange rate system, the liberation of financial and capital movement within the region, as well as the associated monetary economic policies and activities.

There are several levels within the economic integration process, ranging between the two extremes of absolute isolation and a fully integrated economic and monetary union – or even a total economic union. Taking roots from Balassa's classification of stages of economic integration (1961), one may classify the following states of economic integration: a preferential tariff agreement, a free trade area, a customs union, a common market, an economic and monetary union and a total economic union, from low to high intensity respectively.

### **1.5.1 Free Trade Area and Customs Union**

A first step towards a free trade area is often denoted by a preferential tariff agreement in which tariffs on trade among the signatory countries are lower in relation to tariffs charged on trade with third countries. This involves the recognition that a preferential tariff agreement indicates first and foremost a development of economic interrelation in trade within the region. In most economic literature however, the primary stage of economic integration is the creation of a free trade area in which the participating countries liberalize trade among themselves by eliminating all tariff and quantitative restrictions on mutual trade, while their national barriers to trade with the outside world still remain. The member countries maintain the power to fix their own separate tariff rates on imports from the rest of the world. Therefore consumer prices of these imports may differ between countries within the region. Even so, the segmentation of markets can be retained in a free trade area by adopting rules of origin. The rule of origin is constituted to prevent trade deflection in the form

of redirection of imports through a member country with relatively lower external tariff, in order to exploit the tariff differentiation.

The second step towards full economic integration is customs union, in which the member countries eliminate tariff and quantitative restrictions on internal trade and at the same time adopt a common external tariff on imports from the rest of the world, which should principally avoid problems resulting from the rule of origin. The participating countries may also take part in international negotiation on trade and tariffs as single entity.

Under a customs union the member countries can theoretically set the tariff at a level which should maximize the welfare of the participating countries as a whole, however, it is obviously complicated to find a suitable tariff. What should also be recognized is that, after the successful establishment of a customs union, the relative prices of goods in the domestic markets of the member countries may change triggered by the common tariff adopted on import from the third countries. The shift in relative prices, in turn, could impact on trade flows, production and ultimately on consumption. Nonetheless, one should also notice that the gains and losses of a customs union depend not only on its repercussions on the allocation of resources and international specification but also on the exploitation of scale economies, term of trade, the productivity factors and the distribution of income.

The free trade area and customs union are generally regarded as significant fundamental phases in the process of economic integration. This can be observed in the development of the regional grouping in the world, particularly the historical evolution of the European Union or the establishment of a free trade area in Southeast Asia. Admittedly, free trade areas and customs unions are accepted worldwide to be a way to improve so-

cial welfare – even though they do not maximize it. Emphasizing this point of view, one can recognize the support for free trade areas and customs unions from GATT-WTO Article XXIV which lays down a guideline permitting the formation of free trade areas and customs unions as the special exceptions to the rules against international discrimination.

However, there are still some debates and questions about the formation of free trade areas and customs unions in the area of welfare gains and losses. For instance, the Cooper-Massell criticism demonstrates that a policy of unilateral tariff reduction is in some circumstances superior to a customs union<sup>28</sup>. In accordance with the traditional theory of customs union, particularly from a standpoint of resource allocation and welfare, Viner investigates whether free trade areas and customs unions tend to lead to free trade between members and protection vis-à-vis the third countries, and how advantageous free trade areas and customs unions actually are. To do this he uses a Ricardian model of production, which focuses on the welfare effect of changes in the location of production. The traditional theory has stressed this point of view by analyzing the losses and gains within a free trade area or customs union in terms of trade creation and trade diversion.

Trade creation refers to a union-induced replacement of expensive domestic production by cheaper imports from a partner country. This can be brought about by the two following means: firstly, by the reduction or elimination of the domestic production of goods that are identical to those produced abroad, so the goods will be imported from the partner country, and secondly, by an increased consumption of partner country substitutes for domestic goods which formerly satisfied the need at a higher cost.

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<sup>28</sup> Cooper, C. A. and Massell, B. F. (1965), p. 56-63 and El-Agraa, Ali M. (2001), p. 106-109

Trade diversion refers to a union-induced shift in the source of import from lower-cost external sources to higher-cost partner sources. This shift also has two aspects: first, an increase in the cost of the goods previously imported from abroad due to the shift from third countries to partner sources and second, a loss of consumers' surplus resulting from the substitution of higher-cost goods from partner countries for lower-cost goods from third countries.

From the traditional point of view, trade creation is regarded as beneficial to welfare; trade diversion, on the contrary, is not. Following the extension and modification of Viner's analysis by a number of economists, in particular, by Meade and Lipsey<sup>29</sup>, in which not merely production effects, but also inter-commodity substitution or consumption effects are also taken into consideration, it should be emphasized that the traditional conclusion, in which trade creation is viewed as beneficial and trade diversion as detrimental, is no longer valid. For instance, Lipsey demonstrates that, similarly to production effects, consumption effects could also have either a welfare-increasing or a welfare-decreasing function. Even though he does not show that trade creation can lessen welfare, he does prove that trade diversion can increase welfare. Both of these terms therefore have to be taken into account and analyzed carefully. It should be considered that not only changes in the volumes of trade from different resources have repercussions on the magnitude between these two terms, but the changes in price and cost have to be brought into the picture as well.

Notwithstanding, the above-mentioned debates on welfare gains and losses within free trade areas and customs unions are merely concerned with the facet of gains in asso-

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<sup>29</sup> Meade, J. E. (1966), p. 29-52 and Lipsey R. G. (1970), p. 33-55

ciation with comparative advantage, and to a lesser extent, with economies of scale and change in the terms of trade. There are a number of other welfare gains that also can be brought about by free trade areas and customs unions. These include forced changes in efficiency due to increased foreign competition, change in the rate of economic growth, and to a great extent, economies of scale and change in the terms of trade, the effects of which go beyond trade creation and trade diversion. These gains, therefore, are the reason why free trade areas and customs unions are promoted worldwide and inaugurated despite the existence of several impediments such as the heterogeneity of the political systems, ethnicity as well as the economies of the countries within the region.

### **1.5.2 Common Market**

Common market, one stage further than customs union, is the third step towards full economic integration. According to the static theory, free trade areas and customs union entail merely the integration of product markets through trade liberalization without any mobility of production factors, either within the member countries or vis-à-vis third countries. A common market, on the contrary, encompasses not only the integration of product markets, but also the integration of factor markets between the members, for instance, labor, capital and enterprise markets. This is achieved by the removal of impediments to the free movement of factors. In addition, for an effective integration of factor markets, an adoption of complimentary harmonization of government policy measures such as taxation, social security and industrial policies is required.

From a statistical point of view, the gains that can be derived from a common market generally involve allocation. A reallocation of factors will eliminate differences, if there are any, in the marginal productivity of factors in the various member states. The factors from countries with relatively low productivity will migrate to countries with higher productivity. Besides, the mobility of factors may also be conducive to the tendency of reducing disparities in factor earning among the member countries. Notwithstanding, it should be emphasized that factor mobility may not profit every member country. Moreover, if capital only moves in one direction, one country could become a depressed area. Hence, the social costs and benefits of such a position have to be considered carefully and some intra-union redistribution may be essential.

### **1.5.3 Complete Economic Union**

Complete economic union is the most advanced and the last phase towards economic integration. Conceptually, complete economic union can be subordinated into two stages, namely, “economic and monetary union”, and “total economic union”. The first stage, economic and monetary union, denotes a further phase of common market. This implies further harmonization and coordination of policies, such as fiscal, monetary, industrial, regional, transport and some other policies, but also involves the initiation of central policy-making. The most intense phase, after the accomplishment of economic and monetary union, is total economic union in which there are absolutely no administrative barriers to the movement of goods, services and factors. In case of total economic union, there is a single economic policy and a supranational government with great economic authority within the union.



What should be emphasized in this phase is that not only are the aspects of real economic integration involved but also the development of monetary integration. Obviously, at the early stages of economic integration such as a free trade area and a customs union, monetary integration has not yet been taken into serious consideration. At the end or towards the completion of a common market, a closer cooperation on economic and monetary policy is an essential instrument to operate with, to progress to economic and monetary integration. From a monetary standpoint, the framework of economic and monetary union in general sets out how the transition to the single currency should proceed. This can be differentiated into three steps<sup>30</sup>.

The first stage can be described as a preparation phase in which the single market should be completed, and in which economic convergence, i.e. closer cooperation on economic and monetary policy between the member countries should be initiated. Of particular importance in this are the common objectives and the rules, by which member countries should determine their monetary, fiscal and exchange rate policies and the legal basis for the introduction of the single policy. The second stage, the aim is to establish the monetary institute within the union and develop the procedures and instruments of economic policy required for a single monetary policy. This involves the strengthening of the cooperation between the central banks of the member countries, the strengthening of the coordination of the monetary policies of the member countries in order to ensuring price stability or monitoring the competence of central banks and the stability of financial markets of the member countries. In the last stage, stage three, monetary union should be accomplished.

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<sup>30</sup> Levitt, M. and Lord, C. (2000), p. 80-82

This stage involves the irrevocable fixing of exchange rates among the participating countries, and besides that, the foundation of a central bank for the union. In particular, the introduction of a union single currency with closer coordination and mutual surveillance of economic and fiscal policies should be pursued.

## **1.6 Conclusion**

Conceptually speaking, the terms “cooperation” and “integration” encompass various characteristic features, mainly political, socio-psychological and in particular, economic. Both terms, in many cases, are determined with regard to the institutions of a region and are classified by the degree of intensity of international or interregional actions.

Cooperation and integration are seldom separable from each other and can be analyzed in many characteristic facets. Even though this thesis mainly concentrates on economic features, it is not possible to disregard the other relevant features, namely political and social features. This thesis, besides presenting an in-depth analysis of economic cooperation and integration within the respective region, also considers the political side of matters namely the nature and the interaction of the institutions within the integrated region. In addition to this, the decision-making of the people living within the participating nations is discussed, in association with the social-psychological aspect of integration.

Cooperation indicates any form of collaboration between members who share the same purposes, without any implication of restrictions of national sovereignty, whereas integration is comparatively much more intense in terms of collective actions. On the one hand, integration can be defined statically, as state of affairs in which different levels of

amalgamation of regions or economic or political domains are classified. On the other hand, the dynamic concept of integration denotes the process referring to the movement from a lower to a higher stage of integration.

The main objective of both cooperation and integration is to improve the social welfare of the members or of a group as a whole or only of some members of the group. Nonetheless, it should be recognized that even though the implementation of cooperation and integration may bring about benefits, it may also be accompanied by costs as well. The process of integration, in particular, may entail costs in many ways, and these could sometimes exceed the expected gains, since, compared to cooperation, integration is conducive to a loss of national sovereignty on the part of the member states. The restriction of national decision may lead to discrepancy between the aims of the whole group and the specific interests of a single member, for instance the provision of public goods or setting up of proper policies. This may lead to constraint of national policy, to the extent that the scope of the use national policy as an instrument to fight against national problems, for example, economic asymmetric shocks, is limited. Therefore, it is essential to analyze the costs and benefits of integration and cooperation carefully in order to ensure that an international or interregional relationship functions as effectively as possible.

# **Chapter 2**

## **The Development of ASEAN**

This chapter illustrates the emergence and development of ASEAN from the outset. The intention is to provide a better understanding of characteristics and natures of ASEAN. This culminates in the realization of its strengths and weaknesses. The conclusion and comments on ASEAN development are presented afterwards.

### **2.1 On the Way to the Establishment of ASEAN**

#### **2.1.1 The Emergence of Economic Development in Southeast Asia**

The process of decolonization of the Southeast Asian countries began with the independence of the Philippines in 1946 and lasted until Singapore became a sovereign state in 1965<sup>31</sup>. At that time, the Southeast Asian economies were predominantly highly specialized in the production of primary commodities for export, while having to import most of their manufactured products from developed countries. This kind of economic structure can be regarded as an outcome of colonial rule. The significant feature of this period

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<sup>31</sup> The Dutch were forced to engage in an extensive military operation in Indonesia to bring the tide of nationalism to a halt. However the Dutch had to retreat in the end and Indonesia became independent in 1949. The USA, on the other hand, kept to its pre-war agreement and granted independence to the Philippines in 1946. Malayan independence was at first delayed by the Chinese-led communist rebellion started in 1948. After the communist threat had diminished sufficiently, the Malaya also obtained independence from the British as of 1957. Singapore was initially included in the new Federation of Malaysia in 1963, but by August 1965 Singapore broke away from this tempestuous amalgamation and became a sovereign state. See Regional Surveys of the World, The Far East and Australasia (2000), see Cribb R. for the history of Indonesia and Malaysia, p. 443-455 and p. 661-669, see Brown I. For the history of the Philippines, p. 1063-1075, see Turnbull C. M. for the history of Singapore, p. 1105-1113, and see McVey R. for the history of Thailand, p. 1182-1194

Thailand (1960-1966)	Import substitution	Export expansion	Domestic demand expansion
Consumption non-durable goods	14.0	4.1	81.9
Intermediate goods I	39.1	27.6	33.3
Machinery	31.7	0.2	68.1
Total manufacturing excluding food	4.2	15.8	80.0

Thailand (1966-1972)	Import substitution	Export expansion	Domestic demand expansion
Consumption non-durable goods	35.6	12.6	51.8
Intermediate goods I	23.7	10.5	65.8
Machinery	49.0	2.7	48.3
Total manufacturing excluding food	42.1	10.7	47.2

Source: John Wong (1979), p. 164.

Origin: Narongchai Akrasanee (1975), "Import Substitution, Export Expansion and Sources of Industrial Growth in Thailand, 1960-72".

The import-substituting industrialization in Thailand can be observed during the period of 1960-1972.

In the initiating period (1960-1966), the import-substitution process was not intensive;

on the contrary, the second phase (1967-1972) was more effective.

It involves the recognition that also the domestic demand had been a relevant source for the industrial growth in Thailand in both periods.

Table 2.1: Import substitution as source of industrial growth in Thailand

was the initiation of industrialization in the Southeast Asian region, by which a process of industrialization and modernization was accepted as the central policy goal for national economic growth and development. The manufacturing industry was regarded as a vehicle that provided the economic process with sufficient dynamism to help an underdeveloped country emerge into the modern world of high standards of living and employment.

The industrial development process during the independent period and was characterized by two features: "nationalism" and "import-substitution". Nationalism<sup>32</sup>, which had been noticeable from the end of the Second World War, was intensified in the early independent era. At the same time, the region's intense industrialization drive under the so-called import-substitution strategy began between the late 1950s and the early 1960s, and only came to an end in the 1980s, see Tables 2.1-2.4.

<sup>32</sup> The expectations of freedom and independence among the people of Southeast Asia region were allegedly raised by the Japanese eviction of the Western colonial powers during the Second World War. See Jorgensen-Dahl (1982), p. 1-2

Malaysia (1959-1963)	Import substitution	Export expansion	Domestic demand expansion
Consumption goods	47.59	-1.47	53.84
Intermediate goods	39.59	6.22	54.12
Investment goods	43.30	-6.78	63.40
Total of 27 industries	40.68	-1.29	60.53

Malaysia (1963-1968)	Import substitution	Export expansion	Domestic demand expansion
Consumption goods	49.95	12.66	37.37
Intermediate goods	48.09	14.05	37.86
Investment goods	50.50	11.52	37.95
Total of 27 industries	48.92	12.23	38.85

Source: Lutz Hoffmann and Tan Tew Nee (1971),

“Pattern of Growth and Structural Change in West Malaysia’s Manufacturing Industry 1959-68”.

For Malaysia the import-substituting industrialization had been an essential source for its industrial growth throughout the period 1959-1968.

In the first phase (1959-1963), the domestic demand also played an important roll for its industrial growth,

whereas export expansion started to arise in the second phase (1963-1968).

Table 2.2: Import substitution as source of industrial growth in Malaysia

Indonesia	Consumption goods	Raw materials and auxiliary goods	Capital goods
1966	42.7	34.2	23.1
1968	37.2	36.3	26.5
1970	25.4	37.6	37.0
1971	19.1	38.8	42.1
1972	16.1	38.3	45.6
1973	23.8	35.7	40.5
1974	18.4	41.2	20.4

Source: Statistik Indonesia 1974-75 (1976)

Relative to the other ASEAN countries, Indonesia was a late comer.

Its import-substitution process started not until the late 1960s and,

at long last, has leaved its import substitution in the 1980s.

Table 2.3: Indicators of import-substitution industrialization process in Indonesia, imports by end-used in percent distribution

Philippines	Total (Producer goods)	Machinery and equipment	Unprocessed and semi- processed raw materials	Supplies (Producer goods)	Total (Consumer goods)	Consumer durable goods	Consumer non-durable goods
1949	62.67	9.86	42.67	10.14	37.33	2.47	34.85
1950	72.04	10.03	44.22	17.78	27.96	1.52	26.44
1955	79.51	8.95	54.25	16.32	20.48	1.55	18.92
1960	86.14	25.22	51.71	9.21	13.84	0.81	14.90
1965	81.49	18.73	57.34	5.41	18.51	0.91	17.56
1970	93.16	18.82	69.11	5.22	6.84	0.60	6.25
1974	92.68	15.03	71.21	6.44	7.32	0.30	7.02
1975	92.14	19.51	68.79	3.84	7.86	0.44	7.24

Source for the Philippines: Central Bank of the Philippines, Economic Indicators and Annual Reports, various years; and NEDA, 1975 Foreign Trade Statistics of the Philippines (1976).

The Philippines, on the contrary to Indonesia, initiated its import-substituting industrialization in the 1950s.

Table 2.4: Indicators of import-substitution industrialization process in the Philippines, imports by end-used in percent distribution

In the early development stage of their national independence, countries in South-east Asia had to confront the problems of national economic and political restructuring, as well as inter- and intra-state conflicts. These newly independent Southeast Asian countries often identified economic independence with the political independence<sup>33</sup> they had just attained. As a result, the policies these countries carried out on a national level were decidedly inward-looking, with a view to achieving self-sufficiency. In their attempt to boost their national economies, they adopted various policies to avoid foreign economic domination<sup>34</sup>. Increased engagement in and control over modern economic activities by the indigenous people was an economic priority. Government authority was used to trans-

<sup>33</sup> As a result of the fact that during the colonial period, the colonial powers controlled the economy and political system of their colonies and that the discrepancy between income levels was immensely large and certainly favoured the controlling classes, the developing countries often identified economic independence with political independence and adopted various policies to avoid foreign economic domination. See Wu Ta-Yeh, p. 15 and 20.

<sup>34</sup> See Fessen, H., Freitag, G. and Roseno Bambang (1983), p. 36-42 for the evolution of agricultural production and p. 54-72 for industrial evolution through state's efforts.

form the foreign-dominated economies into national economies and to assure that the gains from economic expansion largely benefited national society. Simultaneously, foreign investment was closely controlled and regulated. These countries were struggling to improve the performance of their economic policies and institutions, fiscal systems, social services, infrastructure, the banking system and economic planning, as well as rural development.

Leaders and policymakers realized that the post-colonial economic structure of their countries was still immensely dependent on the export of primary products and that this would not allow for a real development breakthrough. This was due to the limited carry-over effect of the traditional trade-led type of economic growth as well as the increasing skepticism about the long-term price development of the major primary export products<sup>35</sup>. Consequently, these countries decided on a policy of industrialization as their development strategy, and invested heavily in the infrastructure they believed necessary for the industrialization process. Such an industrial development strategy, which accounted for a period of growth and development, was prevalent from the late 1950s onwards and is often known as “import-substituting industrialization”. Import-substituting industrialization subscribes strongly to the policy of reducing or eliminating the import of foreign industrial products through the imposition of discriminating tariffs and quotas, in order to reserve domestic markets for local products. The degree of restriction ranged from moderate in Malaysia to highly rigorous in Indonesia<sup>36</sup>. Indonesia’s and the Philippines’s import-substitution poli-

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<sup>35</sup> Wong, J. (1979) p. 54

<sup>36</sup> The information about the nominal and effective tariff rates of the countries in Southeast Asia in the import-substitution period was derived from Wong, J., p. 17: Tariff rates for Malaysia based on M. Ariff (1975), for Philippines based on J. H. Power (1971), p. 275, for Singapore based on S. Y. Chia (1975) and for Thailand based on N. Akarasane (1975).



cies and their restrictions on the import of foreign industrial products put them in the category of “inwards-looking industrializers”. Indonesia had levied extremely high tariff rates that escalated from the lower to the higher stages of production and resulted in a negative value-added at world market prices for many domestically produced goods. In the Philippines, the average nominal and effective rates of the tariff structure were about 30 percent and 62 percent respectively. This led to a negative value-added at world market prices for several inefficient, capital-intensive products. Malaysia and Thailand, on the other hand, were categorized as “reluctant industrializers”<sup>37</sup>. In Malaysia, the general pattern of tariffs was such that the rates for intermediate goods were relatively low, those for machinery moderate and those for consumer goods high. The overall nominal rate was about 18 percent and the effective rate about 44 percent. These tariff rates were quite modest compared to those in many developing countries’. In Thailand, the tariff structure was milder than in the Philippines, but more stringent than that of Malaysia. For most items, the nominal tariff rates in Thailand ranged between 20 and 25 percent and the effective rates were higher still. The policy in Singapore, on the other hand, was quite different. As a result of its small domestic market and the presence of import-oriented industries, Singapore had been liberal in its trade policies. Consequently tariffs were imposed only on a limited number of manufactured articles, for the purpose of revenue. The average nominal tariff level for the entire manufacturing sector was as low as 5 percent, while the average effective tariff rate was about 18 percent.

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<sup>37</sup> Power, J.H. (1969), p. 377-378. The term “reluctant industrializers” may refer to a lack of sense of urgency about industrialization, which distinguished Thailand and Malaysia from the other inward-looking industrializers.

It should be emphasized, however, that the high dependence on manufactured imports from developed countries was not overcome by import-substituting industrialization. On the contrary, for most countries<sup>38</sup> this policy merely resulted in the replacement of imports of some consumer goods, such as food, beverages and tobacco, as well as simple manufactured products, while imports of machinery and, later, some industrial raw materials increased (see Table 2.5).

Most former Western colonial powers were not particularly successful in retaining their previous leading position in trade with their former colonies. It was Japan and the USA who played the predominant role at that time. The Southeast Asian countries exported primary products to the West and Japan, while their industrialization structure required the continuous inflow of capital, technology and modern equipment from these developed nations. This consequently led to closer trade relationships between the West and Japan and the Southeast Asian countries. The economic structure of the Southeast Asian countries happened to be much more complementary with the industrialized market economies than with any other nation groups. However, it should be stressed that their exports were substitutable, making the relationship one of one-way economic dependency vis-à-vis the industrial countries<sup>39</sup>.

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<sup>38</sup> With the exception of Singapore, which from the beginning of its industrialization effort did not focus only on producing simple consumer goods to replace foreign imports, but also on producing intermediate or even producer's goods.

<sup>39</sup> Wong, J. p. 19

Land Indonesia	Food	Other consumption goods	Materials mainly for consumption goods	Materials mainly for capital goods	Capital goods
1955	9.6	29.5	22.8	9.9	28.2
1960	23.1	21.8	23.9	4.1	27.1
1965	20.8	15.2	15.6	9.9	38.5
1970	15.5	11.5	15.6	9.8	47.7
1971	9.9	10.8	15.1	11.3	52.9
1974	13.5	6.7	28.4	7.1	49.3

Land Malaysia	Food	Other consumption goods	Materials mainly for consumption goods	Materials mainly for capital goods	Capital goods
1960	26.0	21.4	17.1	14.7	20.9
1965	23.5	18.0	19.2	9.0	30.3
1970	19.1	15.9	19.2	9.6	36.2
1972	17.6	14.5	19.1	8.7	40.1

Land Philippines	Food	Other consumption goods	Materials mainly for consumption goods	Materials mainly for capital goods	Capital goods
1955	18.7	28.6	16.5	11.4	24.8
1960	15.0	12.0	19.2	7.7	24.8
1965	19.3	8.0	23.4	5.5	43.8
1970	9.5	5.8	29.4	9.7	45.7
1973	12.9	9.9	32.5	6.4	38.7
1974	9.9	9.0	41.2	8.0	31.9

Land Singapore	Food	Other consumption goods	Materials mainly for consumption goods	Materials mainly for capital goods	Capital goods
1960	16.6	22.5	42.0	8.7	10.2
1965	17.5	27.0	27.7	8.1	19.7
1970	12.6	24.4	25.5	7.9	29.6
1973	10.3	19.1	28.3	6.0	36.4
1974	7.5	14.3	36.2	6.4	35.6

Land Thailand	Food	Other consumption goods	Materials mainly for consumption goods	Materials mainly for capital goods	Capital goods
1955	8.5	40.3	11.3	9.2	30.7
1960	8.2	31.0	12.1	11.1	37.6
1965	5.5	25.8	18.2	7.4	43.1
1970	4.0	18.8	23.0	7.8	46.3
1973	3.3	13.2	31.9	8.4	43.2
1974	2.9	10.5	36.8	8.8	41.0

Source: John Wong (1979), p. 142, originated from UN, Statistical Yearbook for Asia and the Pacific, 1975 (1977)

Table 2.5: Composition of imports by economic classification in percent distribution

### **2.1.2 The Regionalism Movement in Southeast Asia between 1945-1967**

The development towards regionalism could first be observed at the end of the Second World War. During the period preceding the establishment of ASEAN (1945-1967), two relevant phases of regionalism and regional cooperation in Southeast Asia can be distinguished. The first, from 1945 to 1959, was referred to as the nationalism phase. In this phase, most countries in Southeast Asia had just attained their independence and had to confront the task of restructuring their national economic and political systems. Besides their cultural, ethnic, religious and ideological differences, the Southeast Asian countries were also confronted with the territorial conflicts that were a consequence of long colonization<sup>40</sup>. In this period, there was a lack of regional initiatives coming from the region itself. Instead, most of the impetus came from outsiders, in particular the United States and Great Britain. One of the most relevant economic organizations of this period, in which many Southeast Asian countries participated, was the United Nations Economic Commission for Asia and the Far East (ECAFE). ECAFE was established in 1947 at the initiative of the US and aimed to promote regional economic growth and political stability (the name was changed to ESCAP in 1974). Another such organization was the Colombo Plan for Co-operative Development in South and Southeast Asia, established in 1951. This was firstly a Commonwealth undertaking sustained by British support and focused on economic co-operation and development in the member countries, although it later also encompassed countries from outside the Commonwealth. In the military and security sphere, the Southeast Asia Treaty Organization (SEATO) was founded in 1954, largely thanks to US support.

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<sup>40</sup> Dosch J. (1997), p. 17 and Sin D. C. (2000), p. 72

It was a treaty organization for collective defense as a counter-pole to the communist power in the region.

The second phase covered the period from 1960 to 1967, when most countries in Southeast Asia were beginning to implement import-substitution as a policy to drive industrialization. The two most significant organizations of this period were the Association of Southeast Asia (ASA) and MAPHILINDO. ASA, which can, to some extent, be considered as the forerunner of ASEAN, was established in 1961 with the Federation of Malaya (the name was changed to Malaysia in 1963), the Philippines and Thailand as members. MAPHILINDO, founded in 1963, involved the Federation of Malaya, the Philippines and Indonesia. The key characteristic of this phase was the fact that regionalism was, for the first time, initiated from within the region itself. Both associations aimed to promote economic and cultural cooperation<sup>41</sup>. Yet it should be noted that ambition for military cooperation obviously existed, in particular vis-à-vis the communist power in the region<sup>42</sup>. However, barely having been established, both organizations fell victim to conflicts between their members due to the increasing territorial conflict in the Sabah region in 1963 between Malaysia and the Philippines, as well as between Malaysia and Indonesia. A conflict broke out over the establishment of the Federation of Malaysia in July 1963, which encompassed the region of the Federation of Malaya, Sabah, Sarawak and Singapore. This

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<sup>41</sup> For instance, areas of cooperation within ASA included trade liberalization; joint action to develop industries and to establish shipping lines and airlines; joint efforts to stabilize primary commodity markets; technical training and research and promotion of education and of cultural ties among the countries.

<sup>42</sup> Furthermore, MALPHILINDO, which may be denoted as a purely political vehicle and racist oriented, aimed to establish of a “Greater Malay Confederation”, the hope of president Macapagal, as a means to force out the Western influences from the region and try to take over the leading position in the region. See Morgan T. and Spelstra N. (1969), p. 10-11, Dosch J. (1997), p. 19, Weggel O. (1984), p. 18, and Sin D. C. (2000), p. 74

federation was strongly rejected by the Philippines and Indonesia and this brought about MALPHILINDO's disintegration. Consequently, Konfrontasi – an armed conflict between Indonesia and Malaysia – and the antagonism between Malaysia and the Philippines over the sovereignty over Sabah took place. ASA was also set back at an early phase by the diplomatic break in 1962 between the Philippines and Malaysia over the Sabah affair. However, it was revitalized in June 1966 with the normalization of relations between the two.

## **2.2 Development of ASEAN**

### **2.2.1 Establishment of ASEAN**

ASEAN was established on August 8th, 1967 under the ASEAN Declaration (the Bangkok Declaration of 1967) signed by the Foreign Ministers of the five founding countries – the former ASA members together with Indonesia and Singapore. The establishment of ASEAN was essentially of political and, to a lesser extent, economic consequence. During the post-war period, Southeast Asia was a major cold war arena, and several countries were struggling for national survival and independence. Although the Bangkok Declaration emphasized close cooperation between members in the economic, social and cultural spheres, the intention to promote national and regional security and sovereignty, especially vis-à-vis internal and external communist influences as well as vis-à-vis hegemonic policies of powerful countries throughout the region can not be overlooked<sup>43</sup>.

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<sup>43</sup> Dosch J. (1993), p. 5 and Sin D.-C. (1997), p. 77

It was the change of political authorities in Indonesia and the Philippines, and consequently, the de-escalation of the Konfrontasi and the Sabah conflicts, together with the skillfulness of Thailand as a negotiation-initiator that brought about dialogue within the region, and thus, the possibility of ASEAN's establishment. The members displayed different motives for their accessions to ASEAN<sup>44</sup>. Indonesia intended to assert itself as the regional authority, whereas Malaysia hoped for acceptance as a fully-fledged state, with its independence and territorial borders being acknowledged. The Philippines hoped to disavow its reputation as a US-marionette and to gain its sovereignty. Singapore put paid to its reputation as a "mini-China" by joining ASEAN, while Thailand aimed to improve its security vis-à-vis its communist neighbors in Indochina through military support from ASEAN members.

### **2.2.2 First Development Phase, 1967-1975**

#### **The Initial Phase, 1967-1972**

Despite the fact that the Bangkok Declaration of 1967 dealt predominantly with economic cooperation, ASEAN was de facto primarily a security and politically oriented community at the beginning of its development. In this phase, the process of political cooperation was clearly apparent. In particular, this resulted in the successful institutionalization of the annual ASEAN Ministerial Meeting (AMM) established by the 1967 Bangkok Declaration, in which the ASEAN Foreign ministers could draw up policy guidelines and coordinate activities. The ministerial conference, at the very beginning of ASEAN's estab-

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<sup>44</sup> Sin D.-C. (1997), p. 77-78 and Narine S. (1998), p. 93

ishment, contributed to the overcoming of intra-regional (territorial) conflicts and has been a significant forum for ASEAN cooperation up to the present day. Furthermore, there were external pressures that intensified ASEAN regional coordination. One of these was the climax of the Vietnam War in the course of 1970s, which caused the security situation of the region to deteriorate. The ASEAN countries were therefore forced to cooperate, particularly in terms of security policy vis-à-vis communist powers. Consequently, on November 27th, 1971, “The Zone of Peace, Freedom and Neutrality (ZOPFAN)” was established by the ASEAN Foreign Ministers, with the Kuala Lumpur Declaration. With this undertaking, the profile of ASEAN in this phase as a security and political community rather than an economic community became more and more obvious<sup>45</sup>.

The concept of ASEAN that can be observed in this first phase was the intention to be politically neutral and to bring security to the region. The foundation of ZOPFAN was intended to serve as an instrument for the achievement of these aims. Moreover, solidarity between members was to be developed through three essential concepts, namely “finding peaceful solutions to intra-regional conflicts, non-interference in national affairs and the implementation of regional objectives under consensus”. A further ambition was to increase the bargaining power against the great power countries<sup>46</sup>.

Despite several efforts towards and proposals for further economic cooperation, this phase can be regarded as disappointing in terms of regional economic integration. This has to do with the fact that the ASEAN members concentrated mainly on their own economic growth. This was the period of industrialization by means of import-substitution policy, in

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<sup>45</sup> Narine S. (1998), p. 105

<sup>46</sup> Wongboonsin P. (1997), p. 12



which modernization and industrialization were assumed to be instruments for economic growth and development. There was a belief that governments, through regulation and control, could organize and lead economic activity more effectively than the market<sup>47</sup>. With government intervention in the economic process through direct control, through public financial institutions and through diverse state enterprises, the economic role of the government in these countries could not result in a functional economy with market competition and efficiency. Instead, it resulted in the elite groups who exercised power controlling and regulating economic activity on a preferential basis, with emphasis on their own national interests. In order to protect their domestic industries<sup>48</sup>, in many countries, imports of particular goods were licensed or prohibited where the domestic production capacity was considered sufficient for domestic demand. However, imports of modern technology, machinery, capital goods as well as intermediate goods and raw materials were encouraged through low protection rates. Because of these efforts, domestic producers began to start production or expand their capacity in import-competing industries. These opportunities were predominately exploited by domestic entrepreneurs, who could thus make profitable investments under the protection of the policy of import-substitution. Industrial output grew moderately. However, several industries used relatively unskilled labor and labor-intensive processes to produce goods for which a sizeable domestic market existed<sup>49</sup>. As industrial development was dependent upon protection, manufacturing outputs were likely to mirror

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<sup>47</sup> Golay F. H. (1977), p. 94-95, and Krueger, A. O. (1995), p. 6

<sup>48</sup> In the period of import-substitution strategy, it was believed that developing countries should protect their domestic industries, in particular their infant industries, because it was thought that export earnings from primary commodities would not grow fast enough to compensate the increasing demand for machinery, equipment, and other imports which should augment investment and industrial activity levels.

<sup>49</sup> Krueger, A. O. (1995), p. 8-9

the historical configurations of the manufactured goods that had previously been imported. These had been relatively homogenous in this region. Consequently, the patterns of emerging industries in the countries in this region were similar and output was concentrated in consumer goods and relatively simple industrial products, such as processed food, clothing, footwear, textiles, petroleum refining, rubber manufacture, simple metal fabrication, automobile assembly, pharmaceuticals, simple industrial chemicals and diverse manufactured products<sup>50</sup>.

In spite of import-substitution, the import of highly demanded capital, modern machinery, technology and intermediate goods grew rapidly, while export growth was too slow to generate adequate supplies of foreign currencies. The incentives for producing international value-added in import-competing industries were much stronger than the incentives for producing international value-added in export industries. The producers of import-competing commodities had no incentive to expand the existing lines of production more rapidly than domestic demand grew. Instead, they preferred to invest at less risk in a new line of production in the domestic market, under the protection of the import-substitution policy. Several countries in the region were faced with foreign exchange shortages and balance of payment problems. Therefore, trade regimes were forced to become more and more restrictive and it was often necessary to restrict import through licensing and other quantitative mechanisms. In some cases, these restrictions were even enforced on goods associated with development projects.

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<sup>50</sup> Golay F. H. (1977), p. 111-112

### **Initiation of Economic Integration 1973-1975**

At the end of the import-substitution era, many countries of the region with advanced import-substitution policies were suffering from hampered economic growth. Small nations, in particular, were generally handicapped in their economic growth through the limited size of their domestic markets. These countries hoped to overcome this obstacle by gradually changing to an export-oriented strategy – particularly through diversification of exports in manufacturing products – and by beginning to merge their domestic markets through economic integration. Balanced growth strategy, the aim of which was the simultaneous development of mutually supporting industries that would create markets for each other's production, was hindered particularly by deficiencies in resource supply. Unbalanced growth strategy, which is based on the concentrated development of a few industries that have strong backward and forward linkage effects and on the creation of pressures, tensions and incentives and challenges, was hampered by the problem of a narrow domestic market and the lack of adequate export outlets. Therefore economic integration, through the expansion of the market, which allows for specialization, should be considered as an essential means of accelerating economic growth, for both balanced and unbalanced growth strategies.

It was not until 1973 that the movement towards economic integration was technically and strategically initiated. It was at this time that the import-substitution strategy of some ASEAN countries had shown signs of its ineffectiveness. In addition, the oil-crisis had just begun, an external factor which also significantly threatened the economic growth of the ASEAN countries. One has to keep in mind that member states of ASEAN had not

begun their import-substitution policy simultaneously. Hence the development phases of their economic situations and their industrialization processes varied considerably. The outcome of this was that at the beginning of the economic integration movement, there were controversial opinions and points of view on economic integration among member countries, resulting from their own economic development situations. On the one hand, Singapore and the Philippines were striving for a free trade area, in which the existing customs would be linearly dismantled at a rate of around 10 to 15 percent on average per round of customs reduction, until 1990<sup>51</sup>. Indonesia and Malaysia, on the other hand, were of a different opinion. They preferred the option of a selective free trade area, in which the existing customs would be reduced through the so-called item-by-item procedure, without a fixed time period. Thailand was indifferent in this debate.

Singapore, at that time, already had a relatively prosperous industrialized economy with low protectionism and was carrying out a strongly export oriented policy, with a high level of competitive success in the international market. Hence Singapore aimed to gain market share through free trade in the region without any risk of competition against its industry sector, since the industrialization development of the partner states was at a lower level. Due to the fact that the Philippines had begun their industrialization through import-substitution relatively early, their industrial sector was comparatively well developed. Hence, the Philippines encountered a situation in which industrialization through their import-substitution policy was further advanced; so the problems of import-substitution had already emerged and the impulse of economic growth through import-

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<sup>51</sup> Kraft A. (1982), p. 58, data originated from Stockwin H. (1975), p. 50-54

substitution was now hampered. Even though the level of protectionism of the domestic industrial sector against foreign competitors was still kept high, the Philippines intended to boost their economic growth through regional free trade. They expected to gain from an increased regional market share and from diversifying their regional export structure. However, they had a tendency to protect their industrial sectors against the competition from partner countries.

Contrary to the Philippines, Indonesia had launched its import-substitution policy relatively late and was not yet prepared for a free trade area. With the result that its industry sector was relatively less developed at that time, Indonesia held the opinion that in a free trade area, with the pressure of competition from partner countries that such an area would bring, its own industrial development would be delayed. It also believed that with its large resources, population and a potential domestic market, it had a good prospect of attaining substantial economic growth without participating in a free trade area. Furthermore, the initial association of Indonesia in ASEAN was primarily political. Despite its ability to compete in the industrial sector and a relatively low rate of protectionism, Malaysia was not ready for a free trade area either. This may be explained by the fact that, at that time, the Malaysian economy was dominated by a Chinese minority experienced and successful in trade. Therefore Malaysia was afraid that the Chinese minority would gain from a free trade area much more than its indigenous people, who still played a subordinate role in the economy.

### **Economic Structure of the ASEAN Countries in 1967-1975**

In this phase, ASEAN was economically characterized by import-substituting industrialization. This development strategy essentially involved the import of machinery, equipment and building materials, mostly from developed countries, and resulted in a high rate of domestic or imported capital formation. In order to increase their ability to support the increasing import requirements, the ASEAN countries had to increase their exports, which at that time were concentrated in primary commodities. During this phase, the ASEAN countries had experienced a high growth performance, which can be put down to two key factors, namely the export boom and a high rate of capital formation. Despite the strong growth, there were several major problems that accompanied the ASEAN countries' development strategies<sup>52</sup>. One of the problems was that the export structure relied exclusively on primary commodities with developed countries as the major trading partners. Furthermore, the overall degree of commodity concentration for the ASEAN countries, except Singapore, was high. Only a few commodities dominated the ASEAN countries' export structure. This made the ASEAN countries' exports heavily dependent on the fluctuating conditions of supply and demand at home and in the countries of their trading partners. The ASEAN countries' economies fluctuated with the world price and the world economic situation, and consequently, these countries had to cope with their vulnerability to external instability. With this kind of traditional trade pattern, the ASEAN countries, particularly Indonesia, the Philippines and Thailand, also faced the problems of limited spread of carry-over effects. There were obstacles to the structural transformation of the ASEAN

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<sup>52</sup> Wong J. (1979), p. 12-51

economies. Furthermore, there was the problem of the distribution of gains from trade, which has been uneven in most developing countries. Essentially, the gains from trade disproportionately accrued to multinational corporations, middlemen, urban elites or foreigners. Another problem was the fact that some ASEAN countries had to cope with balance of payments difficulties. One of the reasons for this problem was that the ASEAN countries' industrialization and agricultural modernization program required an increase in imports of machinery, equipment, and fertilizer. The economic growth had caused a shift in the import structure from private consumption demand to the demand for capital and intermediate goods with high import content. The increasing imports had exceeded the growth of export. Moreover, in 1974, the year of worldwide recession, the region's export situation worsened. This recession worsened the ASEAN countries' trade deficits, which amounted to 655 million US dollars that year. However, trade deficits alone do not cause balance of payments difficulties. Singapore, for instance, experienced high trade deficits every year at that time. However, due to high earnings in the service accounts and unrecorded trade outflows, Singapore did not face balance of payments difficulties. The Philippines and Thailand, on the other hand, were typically faced with balance of payments difficulties. These can be observed in the most developing countries that use import-substitution as their economic growth strategy (Figure 2.1). There were also threats posed by a lower rate of growth in the developed countries' demand for primary commodities during the recession along with a steady rise in the price of manufactured goods.

As a result of these problems, the ASEAN countries needed a comprehensive growth and stabilization policy in order to cope with the rapidly changing international economic

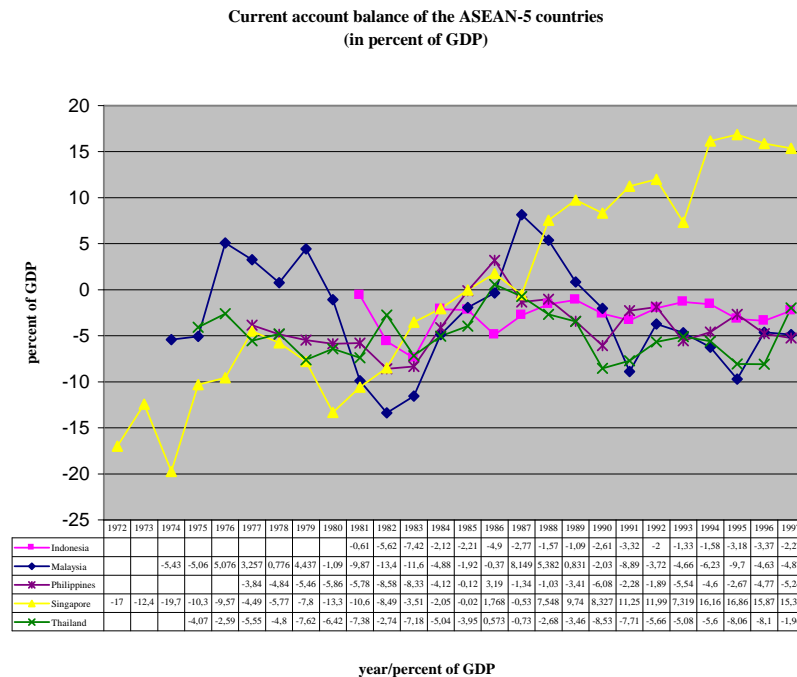


Figure 2.1: Current account balance of the ASEAN-5 countries (in percent of GDP)

situation. The major issues relating to the ASEAN countries' structural adjustment came to the fore in the second development phase. This refers to the diversification of exports, which displayed the intention to restructure the existing exports to increase the share of manufactured and semi-processed products. Furthermore, the enhancement of intra-regional trade and industrial cooperation was considered relevant for the further development of the ASEAN economies<sup>53</sup>.

<sup>53</sup> One of the relevant problems which emerged from the industrialization processes of the developing countries was that their economic structures were essentially conducive towards the deterioration of their balance of payments. This was due to a high level of trade dependency, which resulted from the export of primary products and high import demand for technology and modern machinery. Therefore, the developing countries were obliged to find a way to improve the efficiency of the import-substitution process which involved export expansion, in particular, for industrial intermediate and durable consumer products, as well as the restoration of traditional products and primary products export. When domestic markets proved to be too small and in order to allow an import-substitution policy, the developing countries made efforts to initiate international



### **2.2.3 Second Development Phase, 1976-1986**

#### **ASEAN Regional Movement in 1976-1986**

The second development phase started with the first ASEAN summit on the 23rd and 24th February 1976 in Bali. The collapse of the non-communist regime in Cambodia and South Vietnam in April 1975 led to political challenge in ASEAN brought about by united communist Vietnam and the communist-led revolutionary movements. This triggered the ASEAN nations to urgently increase their regional cooperation, especially with respect to regional security policies. Furthermore, pressure from different world economic crises, such as the collapse of the Bretton Woods system in the early 1970s, the Oil-crisis in 1973-1974 and the subsequent worldwide recession in 1974-1975 and the early 1980s, forced the ASEAN countries to give economic cooperation their serious consideration.

This first summit of the heads of government represented a turning point in ASEAN economic cooperation. Besides the Treaty of Amity and Cooperation in Southeast Asia and the Agreement on the Establishment of the ASEAN Secretariat, the heads of government also issued the Declaration of ASEAN Concord. With the signing of the Declaration of ASEAN Concord, the dispute over the initiation of economic integration between members finally came to an end. As opposed to the ASEAN Declaration of 1967, the Declaration of ASEAN Concord contained an unambiguous program of economic cooperation, which was divided into four predominating spheres. The first was cooperation in the trade of basic commodities, particularly food and energy, which included giving other

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economic cooperation within the region and considered the formation of a regional market as a way out of this impediment.

members priority to purchase in periods of shortage and provisions for the acquisition of exports in periods of surplus. The second sphere was industrial cooperation, which called for the setting up of large-scale ASEAN industrial plants and the preferential treatment of projects using materials available from member countries. The aims of this were to increase food production, enhance foreign exchange earnings and create employment. The third sphere focused on cooperation in trade. It included the establishment of preferential trading arrangements as a long-term objective, an increase in joint efforts to improve access to markets outside ASEAN for their raw materials and finished products and the adoption of common approaches and action in dealing with regional groupings and individual economic powers. The final sphere consisted of a joint approach on international commodity problems and other world economic problems, as well as a joint effort to improve access to markets outside ASEAN.

In February 1977, the ASEAN Foreign Ministers signed an agreement on Preferential Trading Arrangements (PTA)<sup>54</sup> which involved three main issues, namely, voluntary listing of products for preferential treatment, bilateral negotiation on a case-by-case basis, and across-the-board preferential tariff cuts on items with an import trade value of less than 50,000 US dollars. However, they were not successful in making significant progress, since the members were unwilling to include the reduction of tariffs which protected their domestic producers, in order to avoid the increase of competitive pressure on their protected producers. The members attempted to put forth a large number of tariff cuts, yet

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<sup>54</sup> Dosch J. and Rieger H. C. assert that foundation of the early political strategies of the ASEAN economic cooperation, and also the PTA is based on the so-called Kansu-Report or Robinson-Report, which was made by the expert team from the United Nations in 1972, see Dosch J. (1997), p. 230, and Rieger H. C. (1988), p. 44.

the actual preferential tariff cuts issued were of little effect, in that they merely applied to irrelevant items or defined goods narrowly<sup>55</sup>. Furthermore, several empirical studies of the PTA indicated that PTA had a minimal impact on intra-ASEAN trade. By 1981, some 9,000 preferential tariff reductions had been announced; they covered only 2 percent of intra-ASEAN trade, and even by the late 1980s a mere 5 percent<sup>56</sup>.

Five industrial projects under the ASEAN Industrial Projects programs (AIPs) were launched in 1977, focusing on promoting industrial cooperation, particularly in meeting regional requirements for essential commodities. This program obliged members to set up one of the five projects in their countries<sup>57</sup>. The development of AIPs proved unsatisfactory. Despite the assignment of one AIP to each member country in March 1979 and the Japanese financial aid for the program<sup>58</sup>, the first project did not operate until 1984. At that time Singapore had effectively withdrawn from the program and Thailand had taken up a decidedly negative position towards AIPs<sup>59</sup>. Besides the PTA and AIPs, there were other strategies to promote intra-regional trade and industrial cooperation. These were the ASEAN Industrial

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<sup>55</sup> Pomfret R. (1997), p. 303, Tan G. (1982), p. 325-330 and Pangestu M., Soesastro H., and Ahmad M. (1992), p. 335-336

<sup>56</sup> Pomfret R. (1997), p. 303 and Imanda (1993), p. 4-8

<sup>57</sup> It was originally envisaged that 60 percent of the equity of the ASEAN projects would be held by the host country and 40 percent by the other countries.

<sup>58</sup> The Japanese Government agreed in 1977 to make available 1 billion US dollars in loans, mainly concessional, for the large scale projects. However, this finance was tied to the use of Japanese suppliers, contractors and designers.

<sup>59</sup> Indonesia wanted a modification of Singapore's original AIP, a diesel engine factory, since a segment of its output range would contend with an Indonesia plant. However, restricting the output range would make the Singaporean factory unprofitable; hence Singapore replaced the engine project by a hepatitis B vaccine project and reduced its equity participation in other AIPs from 10 to 1 percent, with the host country holding 60 percent and the other ASEAN countries 13 percent each. Up to half of the share of the host country can be held by foreign investors. Thailand decided to reject its AIP, a soda ash plant, and launched a urea fertiliser plant. The Philippines dropped its super phosphate AIP, and decided on a pulp and paper project. Only Indonesia and Malaysia launched their original AIPs, the urea fertiliser projects, which had to encounter unwanted competition from the new Thai national project. See Wawn B. (1982), p. 169-170, and Pomfret R. (1997), p. 304

Complementation (AIC) and the ASEAN Industrial Joint Ventures (AIJV). These schemes, however, put in a disappointing performance due to bureaucratic delays and the failure of members to agree on the various proposals for joint projects, as well as the protection of competing infant industries, motivated by national interest<sup>60</sup>.

In accordance with the aim of developing regional monetary cooperation, the first ASEAN summit also resulted in the foundation of the ASEAN Finance Corporation. This was established in 1981 by 140 commercial banks and individual shareholders, and aimed to promote economic cooperation among members. However, it achieved poor results and was restructured in 1987-1988 into a merchant bank that provided limited lending to bankable projects within ASEAN. Furthermore in 1977, the ASEAN Swap Agreement was established with a total facility of 100 million US dollars, mainly to assist member countries in getting over temporary balance-of-payments problems. The countries needing support could borrow up to a maximum of 40 million US dollars for a one-, two- or three-month period with the option of one renewal. The other countries would contribute equally to the amount in question up to a maximum of 20 million US dollars each. The ASEAN Swap Agreement was later doubled from 20 million to 40 million US dollars and the maximum lending and borrowing limits were put up from 40 million to 80 million US dollars in 1978. The actual form of the support was the simultaneous sale and purchase of US dollars against the currency of the country in question and forward cover in that currency against US dollars for the period requested. Even though its development was slow at the beginning – as the local press commented that the members had hardly made use of the facility

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<sup>60</sup> Bhalla A. and Bhalla P. (1997), p. 72

so far – the Swap Arrangement can nevertheless be considered in a political sense as a concrete product of ASEAN cooperation in the monetary sphere. And at least in the 1980s, this facility had been actively utilized by its members<sup>61</sup>.

Another relevant aspect in this phase was the first ASEAN expansion on January 7th, 1984. Brunei Darussalam became the 6th ASEAN member after having gained independence from the British. The intention of Brunei to become an ASEAN member was not economically motivated. Instead the aspiration to national sovereignty lay behind Brunei's application for membership. From ASEAN's viewpoint, Brunei's integration was geoeconomically and -politically plausible. In spite of this, due to its small size and limited international economic relations (with exception of its oil-export business), Brunei did not bring significant economic potency to ASEAN<sup>62</sup>.

### **Economic Structure of the ASEAN Countries in 1976-1986: Economic Restructuring and Export Diversification**

The 1970s were a time of considerable economic turbulence, starting with the breakdown of the Bretton Woods system of fixed exchange rates, followed by a marked increase in the prices of oil and most other commodities. By the end of the decade, inflationary pressure was on the increase. As a consequence, in order to stop inflation, most industrial countries adopted tight fiscal and monetary policies. Finally, in the early 1980s, the cycle had got to a turning point and recession set in. In addition, commodity prices sharply

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<sup>61</sup> Early in 1983, the central banks of Indonesia, Malaysia, the Philippines and Thailand had all made use of the facility, but Singapore had not. This probably resulted from several changes in the operation of Swap Agreement agreed during a regional central banker's meeting held in Colombo, Sri Lanka, on 16th January 1981, see Skully M.T. (1985), p. 20-21

<sup>62</sup> Chirathivat S. (1997) and Wongboonsin P. (1997), p. 4-5

declined. One of the reasons for commodity price deterioration was that the buoyant commodity prices of the 1970s had led to substantial investment and expansion in the capacity for commodity production, resulting in an excess of supply over demand which led to lower prices. Another reason was that technological innovations had also led to a decline in the consumption of raw materials or to their being switched<sup>63</sup>. In order to provide a basis for further economic growth, the ASEAN countries were forced to modify their economic structure. The ASEAN countries that had benefited from the export of primary commodities gradually turned towards the export of manufactured products (Figure 2.2). Thus import-substitution strategy had now evolved into export promotion. The growth of manufacturing exports was an element that indicated the reorientation towards exports. The shift to the export of manufactured products was a consequence of declining primary commodity prices as well as a result of efforts to promote and diversify exports. At that time, the ASEAN countries recognized that export promotion was a means for their economic growth. Furthermore, there were several arguments that supported export promotion. First, exports yield higher income for domestic producers, and hence produce a source of demand for domestic products. Second, the foreign exchange supply provided by exports will secure the finance of additional imports of capital and intermediate goods. Third, increasing exports reduces the risk of encountering a foreign exchange crisis, and, therefore, encourages investment. Fourth, exploiting the comparative advantage, the economies of large-scale production and higher capacity utilization will enhance efficiency. And fifth,

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<sup>63</sup> Wai T. T. (1990), p. 39-44

increasing competition in foreign markets and technological change will drive domestic producers to operate efficiently.

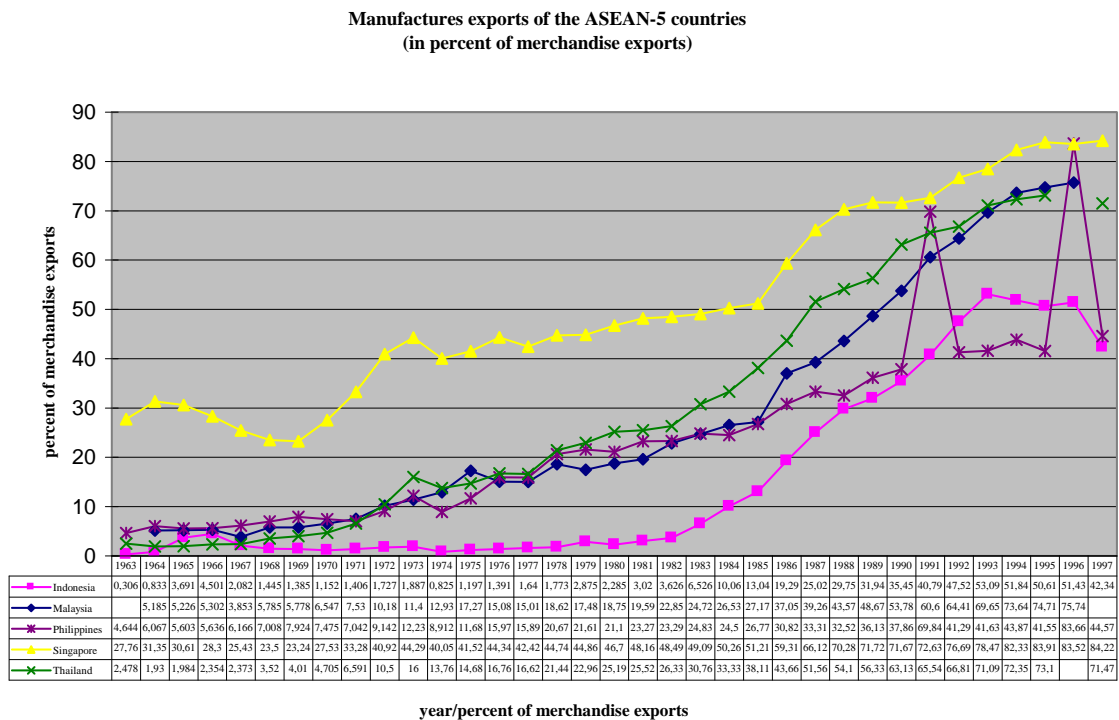


Figure 2.2: Manufactures exports of the ASEAN-5 countries (in percent of merchandise exports)

One of the most essential factors for attaining long-term growth has been capital accumulation, or specifically, investment in productive facilities, which has been used to countervail depreciation and increase a country's stock of productive assets. The primary source for financing gross investment is domestic saving. In many countries, developing countries in particular, that are attempting to grow rapidly, domestic savings have often not been large enough to completely finance the expected level of capital accumulation. The

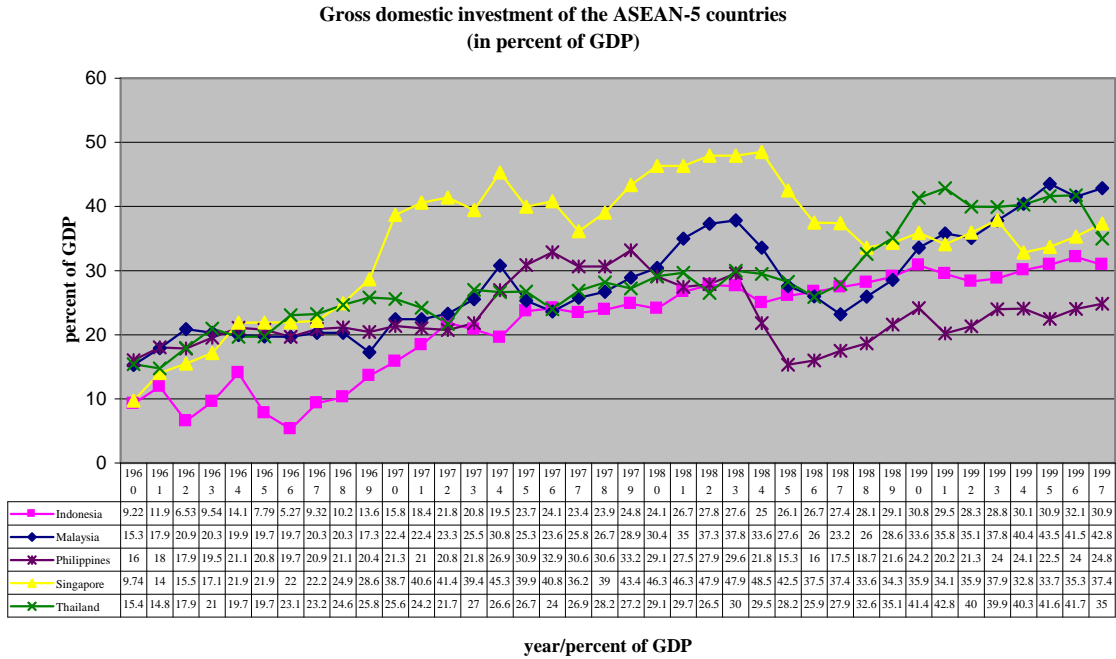


Figure 2.3: Gross domestic investment of the ASEAN-5 countries

difference between investment and saving is denoted as “the domestic resource gap”. To overcome the resource gap, countries may exercise the following policy options. They can use foreign savings – foreign loans, foreign grants or foreign direct investment – or they can conduct a policy that promotes the reduction of the investment level. In the late 1970s and the early 1980s, the ASEAN countries kept their investment levels above 30 percent of GDP. These high investment levels produced a resource gap of about 7 percent in the early 1980s (Figures 2.2.3 and 2.4). Therefore it was essential to use foreign savings, in particular foreign loans, to finance the gap.

Later, in about the middle of the 1980s, the ASEAN countries had realized the situation and tried to avoid their debt trap by beginning to reduce their investment in order



Gross national savings of the ASEAN-5 countries, including NCTR (in percent of GDP)

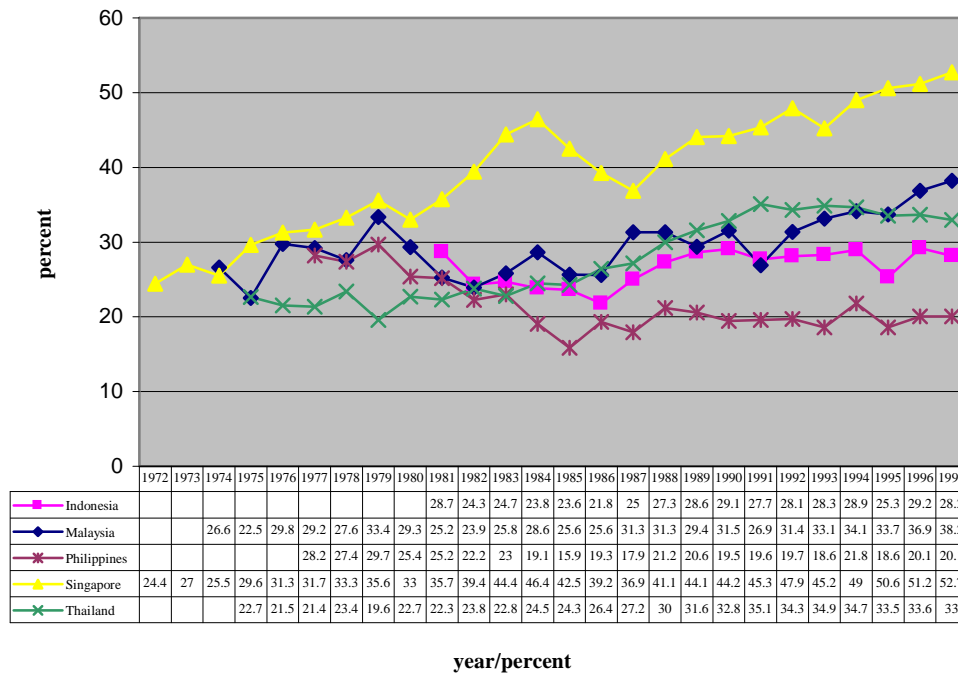


Figure 2.4: Gross national savings of the ASEAN-5 countries, including NCTR (in percent of GDP)

to decrease the resource gap as well as by pursuing other forms of foreign savings<sup>64</sup>. The most important alternative source of foreign savings for the ASEAN countries has been foreign direct investment (FDI). It is particularly attractive, since there is neither net interest, nor are there compulsory repayments for this form of foreign savings. The repayment, profit and interest are dependent on the investment viability. Furthermore, foreign investments are long term and the profits are often reinvested<sup>65</sup>. Singapore and Malaysia have

<sup>64</sup> Thailand had already reduced its investment levels during 1980 and 1981. On the reducing of the resource gap of ASEAN countries, see Villegas B. M. (1990), p. 27-32.

<sup>65</sup> Of the four ASEAN countries, Malaysia had made the most use of foreign direct investment, in particular

made use of FDI since as early as the 1970s. In the other ASEAN countries, the use of foreign direct investment as a source of economic growth gradually began to play a relevant role, particularly in the late 1980s and the 1990s (Figure 2.5).

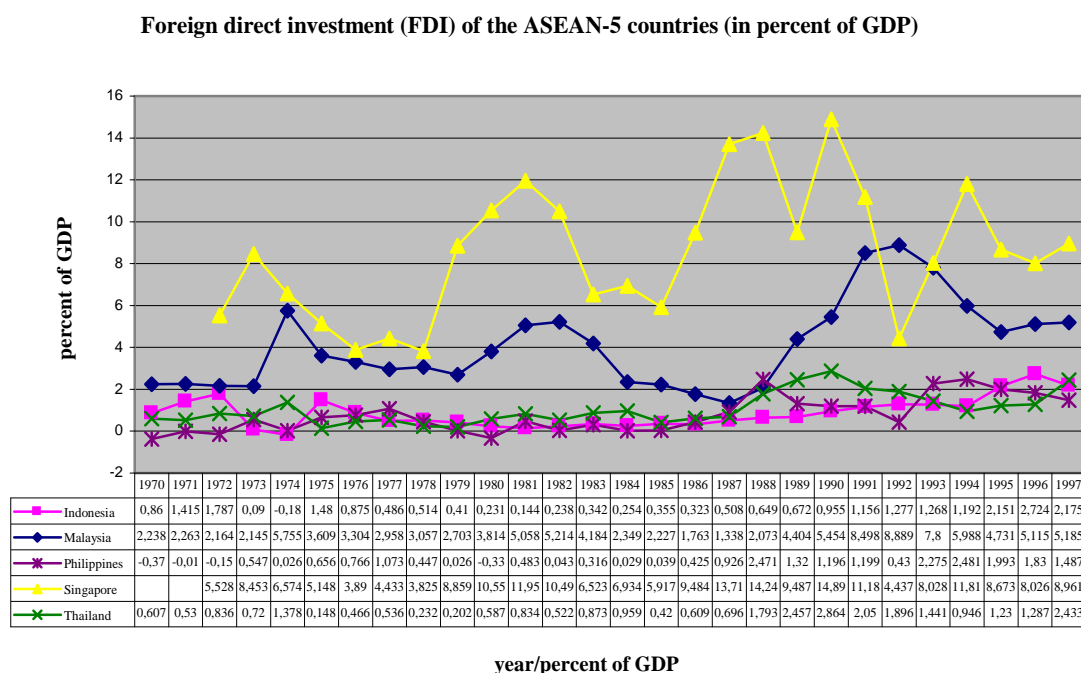


Figure 2.5: Foreign direct investment (FDI) of the ASEAN-5 countries (in percent of GDP)

## 2.2.4 Comments on the Development of ASEAN's Economic Cooperation and Integration in 1967-1986

From the establishment of ASEAN, it took a decade before the ASEAN countries could agree on a program of economic cooperation through a cautiously delineated Preferential

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in the early 1980s. This may explain why Malaysia was able to keep its high investment levels of around 30 percent, although its resource gap was about 10 percent to 14 percent of its GDP.

Trading Agreement (PTA), inaugurated in 1977. According to the stages of economic integration, the preferential trade agreement and/or respectively preferential tariff agreement are considered as a preliminary step towards the first stage of economic integration, namely a free trade area. Even though the PTA in ASEAN seemed unsuccessful, a concrete process towards economic integration had, at least, been initiated.

An obvious objective or advantage which came about through the ASEAN foundation was the fact that the ASEAN countries have been generally accepted as a unit. This led to an increase of their bargaining power. They increasingly negotiated with one voice and gained weight in trade negotiations, for instance, with the European Community on the latter's trade restricting measures. Furthermore, they played an active role in the UNCTAD Common Fund, and, to a greater extent, in the 1986-1994 Uruguay Rounds of multilateral trade negotiations<sup>66</sup>. ASEAN had proved effective in its relations with other countries as well, for instance through establishing regular dialogues with Australia, New Zealand, Japan, the EEC, the US and some UN bodies.

However, in the initial phase of development, there were several difficulties facing economic integration in ASEAN. One of the major problems was the fact that the members were pursuing different strategies in their economic policy. At one extreme, Singapore had departed from its import-substitution policy after its independence in 1965, and was highly dependent on the world market. It was more developed than the others and had the lowest trade barriers. Even though Singapore had strived for ASEAN economic cooperation and integration, it did not want this to lead to a misallocation of its resources. The other four

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<sup>66</sup> The increasing bargaining power of ASEAN was further intensified as ASEAN's individual countries experienced accelerated economic growth in the late 1980s, see Pomfret R. (1997), p. 306.

countries still pursued import-substitution policy throughout the 1970s and only moved away from protectionism gradually during the 1980s. They still had high tariff barriers, especially Indonesia, the Philippines and Thailand. At the other extreme, Indonesia was inward-looking and had relatively underdeveloped industries. With its large market, it was anxious that trade liberalization and subsequent increased competition would adversely affect its manufacturing sector. Another major difficulty facing economic integration in this phase was that intra-ASEAN trade was only a small part of each member's total trade and consisted of entrepôt trade through Singapore. Furthermore, this small intra-ASEAN trade concentrated on primary products, whilst the manufacturing sector played only a small role at that time, even though efforts had been made towards export diversification since the early 1980s. Besides these internal difficulties, it should be stressed that the economies of the ASEAN countries still depended on the world economy, particularly the effects of economic developments in the West. These developments consisted of the decline of the prices of a number of main commodities in the region in the second half of 1980 and in 1981 and the adverse effect on the labor intensive manufactures<sup>67</sup> caused by the protectionism in the West in the mid-1970s<sup>68</sup>. So the ASEAN countries had to look to their regional and national steady and sustainable economic growth in order to counter the significant external threats effectively.

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<sup>67</sup> For instance textiles, clothing and footwear, processed primary products and agricultural products

<sup>68</sup> Furthermore, high interest rates in the US were slowing down growth through their effects on domestic interest rates in the ASEAN countries and on the cost of external borrowing, and the rise in the US dollar caused a strengthening of ASEAN currencies against those of their important trading partners, see Wawn B. (1982), p. 179.

### **2.2.5 Third Development Phase, 1987-1997**

#### **Increasing Emphasis on Economic Cooperation, 1987-1991**

In this phase, the political tension resulting from the Cold War, and thus related to the communist power in the region and the Cambodia-conflict, had eased. The Asia-policy initiated by Michail Gorbatschow had, to a certain extent, brought détente to the region. Under pressure from the Soviet Union, Vietnam had moderated its policy in the Cambodia-conflict and began to concentrate on its own internal reforms. In the sphere of political cooperation, ASEAN's efforts proved effective, in particular in relation to the Cambodia conflict. A breakthrough of certain measures was achieved after Indonesia took an important role by initiating informal talks among various contending parties. This led to the much-publicized Vietnamese military withdrawal from Cambodia by September 1989<sup>69</sup>. By 1990, with the support of China and the Soviet Union and with greater interest from the United States, France, Australia and Japan through several joint initiatives, a conciliatory approach had been brought to bear on the conflict. The next step of the peace process was initiated by the UN Security Council, which gave the major assignment of conflict rapprochement to the UN, based on an Australian peace formula. Furthermore, at the International Conference on Cambodia in Paris, chaired by France and Indonesia as interlocutor of ASEAN, the Paris Peace Agreement was signed on 23rd October 1991. This served to open the door for the UN's effort in Cambodia in respect of peace-keeping, holding free elections and handing over to the new government by October 1993.

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<sup>69</sup> Thambipillai P. (1994), p. 119-120

Even though the complications with regard to political issues had been alleviated, the deteriorated situation of the world economy had affected and threatened the economic prospects and performance of the ASEAN countries. Most ASEAN countries experienced economic weakness in the late 1980s, especially after the economic downturn in 1984-1986, triggered, to a great extent, by global recession in 1980-1982. This had reduced the trade and financial flows of the ASEAN market. The commodity prices in real terms were at their lowest levels since the 1950s<sup>70</sup>. And moreover, the increasing protectionism in the West was endangering ASEAN export markets. For this reason, at the third ASEAN Summit in December 1987 in Manila, economic cooperation was the primary topic of discussion, along with the future of ASEAN and the preparation for the problems to come after the – by that time – foreseeable end of the Cold War. It can be concluded that, due to the differences in economic and security policies of the ASEAN members, many relevant initiatives were not yet practicable<sup>71</sup>; this remained so until 1992. In any case, despite the fact that there were some disagreements over decision-making among members and insufficient development of the intra-ASEAN issues, ASEAN can be regarded as a successful political organization in terms of ASEAN's foreign issues, particularly the peace process in Indochina.

The phase of ASEAN's economic development between 1987 and 1991 was characterized by a sudden increase in foreign direct investment (FDI) inflows into ASEAN. These FDI inflows brought about essential economic progress in the region through promoting in-

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<sup>70</sup> Frost F. (1990), p. 22-26

<sup>71</sup> For instance, Malaysia and Indonesia suggested establishing an Asia Nuclear Weapon Free Zone. However, this was rejected at the time, because of diverse military interests within and outside of the region, see Sin D.-C. (1997), p. 87-88.

dustrial growth and export capabilities. The most important factor leading to rapid flows of FDI into ASEAN was the appreciation of the Japanese Yen, partly caused by the agreement on the G-5 Plaza Accord. The appreciation of the currencies of the Asian Newly Industrialized Economies (NIE) in 1985-1986<sup>72</sup> contributed in a similar way. Many Japanese, Korean and Taiwanese export manufacturers therefore looked for lower-cost locations and invested in the ASEAN developing economies. In addition, there were several other reasons for the increased FDI inflows, such as the increasing labor costs and the fact that the status of the NIEs had changed from developing to newly industrializing countries, which meant the loss of US GSP (Generalized System of Trade Preferences to developing countries) privileges. These arguments also led to investments being relocated to the ASEAN countries that possessed relatively much lower-priced labor and still gained from GSP. It can be observed that by the second half of the eighties, Japan and the Asian NIEs had overtaken the position of major investors in ASEAN from the US and Europe. This situation may partly have derived from the stagnation of the Western economies and the diversion of Western investment into Latin America and Eastern Europe.

#### **ASEAN in the New World Order and ASEAN's Reorientation, 1992-1997**

The decline and eventual disappearance of the Soviet Union as a superpower finally led to the end of the Cold War. Besides the resolution of the geopolitical confrontation in Europe, this put an end to the ideological confrontation between communism and capitalism. It was the beginning of the New World Order, which has influenced the economic and political features of regional cooperation among developing countries considerably.

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<sup>72</sup> Bhalla A. and Bhalla P. (1997), p. 81-83

The significant characteristics of the New World Order that may have impacted on regional cooperation among developing countries were as follows:

- The end of the ideological and strategic confrontation between the United States and the Soviet Union (the end of the Cold War)
- the decline of American hegemony; the process of globalization of production and ideology
- and finally, the restructuring of the world political economy into three blocs, namely the American, centered on the US; the European, centered on the European Community; and the Asia-Pacific bloc, centered on Japan<sup>73</sup>.

On the one hand, the emergence of the EC and NAFTA, in particular, provided the impulse to establish a free trade area within ASEAN. On the other hand, the ASEAN countries had to react against the growing protectionism by the EC, vis-à-vis third countries and against the apprehension inspired by Mexico's membership in a free trade agreement with the US and Canada. This agreement raised concerns that the possibility for NAFTA's to expand towards South America would re-route US trade and investment from the ASEAN region. Furthermore, there was also the threat of increasing competition from the other developing countries such as China, India and the emerging economies of Eastern Europe<sup>74</sup>.

On the 28th and 29th of January 1992, the heads of government of the ASEAN countries came together for the ASEAN fourth Summit Meeting in Singapore, an event which brought about a turning point in regional cooperation, particularly in the push towards greater economic cooperation. The Singapore Declaration laid down the Framework

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<sup>73</sup> Axline A. W. (1994), p. 217-223

<sup>74</sup> Bhalla A. and Bhalla P. (1997), p. 75



Agreement on Enhancing the ASEAN Economic Cooperation, which set out a basis for intra-regional cooperation in trade, finance, energy, agriculture and communication. The most relevant outcome of this summit was certainly the establishment of the ASEAN Free Trade Area (AFTA) – in addition, in 1995 the ASEAN leaders also concluded the supplementary ASEAN Framework Agreements on Services (AFAS) and in 1998 ASEAN ministers established the ASEAN Investment Area (AIA). At the time of AFTA's foundation, AFTA was to reduce intra-ASEAN tariffs to 0-5 percent within fifteen years starting from 1st January 1993 for intra-ASEAN imports. This reduction process started with a range of priority items of capital, manufactured and processed agricultural products originating from member countries [the details were made explicit in the Agreement on the Common Effective Preferential Tariff (CEPT) scheme, the forerunner to the AFTA]. However, tariff reductions only apply to products that comply with the “ASEAN content requirement”, meaning that at least 40% of the value of a product must originate from ASEAN countries. AFTA planned to establish a regional market of 500 million consumers and a competitive production base. According to the original plan, AFTA would be completed by 2008, but, in 1994 the process was accelerated to reach completion by 2003. In 1995, the deadline was further brought forward to 2002 and it was decided that the tariffs on intra-ASEAN imports should be completely eliminated by 2010 for ASEAN-6 and by 2015 for ASEAN-CLMV (Cambodia, Laos, Myanmar and Vietnam). Finally, AFTA was implemented in 2003.

Taking into account the disappointing trade performance in the past – through the earlier PTA scheme in particular – one of the concerns about AFTA at that time was its practicability. Even though AFTA experienced start-up difficulties, it was given greater

credibility than PTA in its way of functioning. In the move towards the preferential tariff, AFTA required the listing of exclusions rather than detailed negotiation on what should be included. The principle of “six minus x”, by which two or more member states may carry out economic arrangements first if other member states are not ready to implement, allows the slower members to be excluded rather than impede the progress of the others<sup>75</sup>. While the unsuccessful earlier policies of ASEAN in the 1970s aimed essentially to increase intra-regional trade – through mechanisms such as, PTA, AIPs, AIC and AIJV –, increased intra-regional trade played only a subdominant role in AFTA. In accordance with the low intra-regional trade and the highly similar economic structures of the member countries as well as the fact that the policies of the ASEAN countries had changed from import-substituting industrialization to the outward-oriented development strategy, AFTA had set out three following principal objectives:

- Firstly, to enhance the investment attractiveness of the region through the creation of a larger market in order to attract FDI via tariff reductions.
- Secondly, to make ASEAN products more competitive internationally.
- And, thirdly, to strengthen extra-regional economic relationships<sup>76</sup>.

As a means to achieving the aims of AFTA, the Common Effective Preferential Tariff (CEPT) was established to implement AFTA in practice. This required reductions in regional tariffs on all manufactured and semi-manufactured products, including capital goods

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<sup>75</sup> Thambipillai P. (1994), p. 127-128, Pomfret R. (1997), p. 309. The difficulty at the beginning was that the original announcement of AFTA had not been preceded by sufficient preparation at the national levels. During the next twenty months, the national governments responded to the concerns of protected domestic producers by drawing up long exclusion lists. A relaunch in October 1993 redressed the situation by bringing reductions on high tariffs (those over 20 percent) forward to January 1994.

<sup>76</sup> Yeung M. T., Perdakis N. and Kerr W. A. (1999), p. 53, Ariff M. (1994), p. 150-170

and some processed agricultural products. A distinction was made between a “fast track” and a “normal track”, in order to allow for an implementation of the liberalization process at different paces. By 2002, the products on the Inclusion List (IL) had to be immediately liberalized through a reduction of the CEPT tariff rates to a maximum of 5%. On the other hand, the AFTA agreement allowed for the exclusion of certain “sensitive” products from tariff reduction and there are Temporary Exclusion Lists (TEL), Sensitive Lists (SL) and General Exclusion Lists (GE) which were established by the members. Products in the TEL can be excluded for a limited time period, but ultimately all of these products must be transferred to the IL. The SL contains raw agricultural products which have to be liberalized by 2010 for the ASEAN-6. And products in the GEL are excluded from the trade liberalization for reasons of protection of national security, public morals, public health, environmental protection and protection of articles of artistic, historic or archaeological value. Interestingly, for the ASEAN-CLMV the liberalization process is less stringent. The deadline to meet the AFTA objectives is 2006 for Vietnam, 2008 for Laos and Myanmar and 2010 for Cambodia, comparing to 2002 for the ASEAN-6. Provisions were made to act as security measures against “serious injury” to domestic producers and certain items excluded from tariff reductions. Within five years under CEPT, quantitative restrictions on products, such as prohibitions, quotas and restrictive licensing, were to be removed when tariff rates reached 20 percent, while other non-tariff barriers were to be eliminated step by step<sup>77</sup>.

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<sup>77</sup> CEPT implementation is on a quid pro quo basis, i.e. that a member will not be qualified to use the preferences granted by the other members until its own tariffs are reduced to 20 percent, see Bhalla A. and Bhalla P. (1997), p. 79.

It is worthy of note that AFTA appears to differ from other free trade areas, which have aimed to expand the domestic market through diminishing trade barriers. Promoting intra-regional trade might be obstructive for AFTA due to its small internal market, low intra-regional trade and uneven protection and economic performance of its members. Thus, AFTA runs a more outward-oriented strategy, in line with its strengths in the areas of extra-regional trade and investment within the region, and with the purpose of establishing an integrated area in order to increase its competitiveness in the world market.

One of the significant developments in this phase was the admittance of Vietnam as the 7th ASEAN member on 28th July 1995. This evidently indicated the evolution of ASEAN's ambition from one of being a counter-pole to communist power to one of growth- and welfare-oriented regionalism through political and, to an increasing extent, economic cooperation. Vietnam's political motives were to restore diplomatic relations with the United States, reduce risk and increase bargaining power against China, as well as become a part of regional and global society via ASEAN. Economically speaking, Vietnam saw ASEAN as a source of support for its economic development, of advantages from increasing trade and investment with ASEAN and non-ASEAN countries and of advantages from absorbing advanced technology. Furthermore, joining was a way to become a member of APEC and WTO. What ASEAN expected from Vietnam's admittance was investment opportunities and the expansion of its intra-regional market, as well as an increase of economic and political bargaining power and the prospect of a fully integrated ASEAN-10 coming into existence, thanks to the greater incentive for Laos, Myanmar and Cambodia to join ASEAN.

With regard to ASEAN political and security cooperation, the Fourth Summit called for intra-regional dialogues on ASEAN security cooperation and also cooperation with ASEAN's dialogue partners. The Post Ministerial Conference (PMC) plays an important role in the latter and is intended to serve as an instrument to promote external dialogue on regional security. Furthermore, the ASEAN Regional Forum (ARF) was established by decision of the Foreign Ministerial Meeting held in Singapore in 1993. The ARF is intended to be of assistance to a multilateral security regime for the Asia-Pacific region, in that it administers political and security issues and the exchange of information. It is important to note that the emphasis of the Fourth Summit was on the restructuring of the association. This restructuring particularly affected the position of the ASEAN Secretariat, by expanding its role together with the quantity and quality of its professional workforce. Nevertheless, the issue of the decision-making power of the Secretary-General was controversial; members still wanted to retain their national decision-making powers and did not consent to the transfer of power to a supranational institution. The restructured Secretariat was aligned towards intra- and extra-regional economic operations, especially in respect of the AFTA issues and economic interrelation between ASEAN and its foreign trading partners. Additionally, the heads of government consented to meet formally every three years with informal meetings in between, in order to ensure that regional activities proceed continuously and effectively.

### **2.2.6 Comments on the ASEAN's Economic Development (1986-1997)**

### **ASEAN's High Economic Performance (1986-1997): A New Tiger is Born?**

Growth rates in the ASEAN countries were high between the late 1980s and the first half of 1997, before the outbreak of the Asian Crisis. During this phase, Southeast Asia was regarded as one of the world's most dynamic regions. The region experienced 8% GDP growth and accounted for a rapidly growing share of world output. The growing weight of the ASEAN countries in the world economy also increased steadily. Singapore joined the ranks of the rich industrial countries. The real per capita incomes of Indonesia, Malaysia and Thailand rose by more than double over the period and more than threefold since 1970. Even though the Philippines had experienced difficulties with their economic performance, especially in 1991-1992, their growth rate began to rise closer to that of the other members at the end of this phase (Figure 2.6).

The economic success of the ASEAN countries may be attributed to the following causes<sup>78</sup>. Primarily, it was the result of their strong domestic fundamentals in combination with their openness to external trade. It was particularly their market-friendly and outward-oriented strategy, with liberal external regimes, that kept them in a strong competitive position. Capital inflows due to high investment rates, high saving, and, critically, the successfully tapped foreign savings and FDI also contributed to high economic performance. Secondly, there were several key policy factors that may have contributed to the ASEAN countries' economic development. These include financial policies that keep the inflation rate low, prudent government intervention, for instance, in anti-poverty programs or government spending on education and health, aiming at productivity and growth,

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<sup>78</sup> Hicklin J, Robinson D., and Singh A. (1997), p. 2-3, and Larson F., and Aziz J. (1997), p. 300

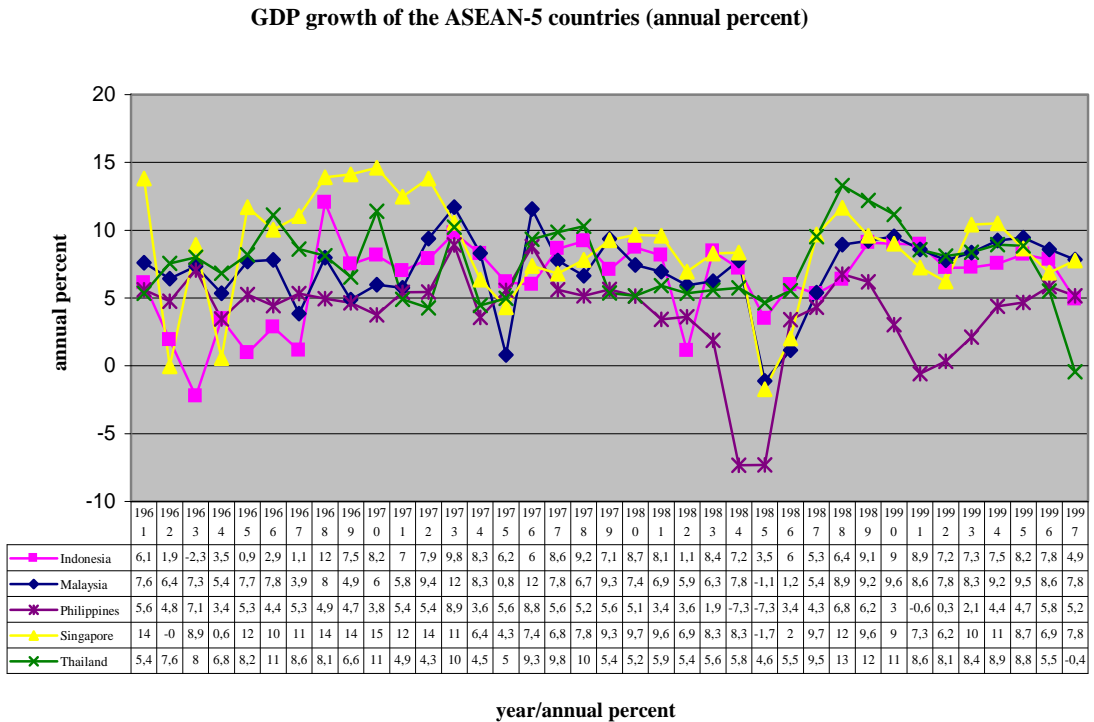


Figure 2.6: GDP growth of the ASEAN-5 countries (annual percent)

along with the willingness to adjust policies flexibly in response to external economic disturbances.

Furthermore, economic growth and efficiency in the region was encouraged by exposure to the external environment, through participation in the competitive global market and the global financial system. One of the factors that brought about the “economic miracle” in the ASEAN countries was the effects of the G-5 Plaza-Accord<sup>79</sup>, signed in September

<sup>79</sup> The Plaza Accord was essentially designed to coordinate economic policy in the major industrialized countries and to resist protectionism. As part of the agreement, Japan agreed to stimulate its economy in order to augment domestic demand for U.S. products and the G-5 also privately agreed to intervene in foreign exchange markets to drive down the U.S. dollar. Furthermore, the Plaza Accord also resulted in a decision to decrease Japanese interest rates. This contributed to the Japanese bubble economy in 1987-1989, see Miller G. P. (1996) and Funabashi Y. (1988).

1985. This led to the depreciation of the US dollar vis-à-vis the Japanese Yen, in association with the globalization of the world economy. It encouraged financial globalization and the increasing volume of capital flows, particularly to emerging market economies, such as those in the ASEAN region. The capital-flows stimulated international trade, for example by increasing purchasing power and demand brought about by direct investments, augmentation of capital movement and the growth of the capital market. Therefore, after the Plaza-Accord, the export growth of the ASEAN countries increased steadily. In addition, the expansion of capital volume and flows brought development to the financial sector. New and advanced financial institutions emerged, especially institutions dealing in risk management products, such as Futures, Options, Forwards and Swaps in the financial and capital markets. Net international bank lending was increased from 1,480 billion US dollar in 1985 to 5,015 billion US dollar in 1996, and net international bond financing rose from 550 billion US dollar in 1985 to 2,391 billion US dollar in 1996. The expansion of the capital supply resulting from its free movement led to a decline in the cost of capital, which in turn stimulated the demand for capital. Financial globalization changed the role of the financial sector, which now no longer operates merely as a service sector for the real sector, since money has become a commodity in the global financial market itself.

From the point of view of the globalization of the international financial markets, it is clear that the ASEAN countries have indeed attracted a large share of foreign capital flows. Nevertheless, it should be noted that relying on large foreign capital inflows as a growth strategy, with strong domestic demand, has brought about not only increased investment and growth, but also risks of economic and financial instability. This strategy



encouraged the economy to develop in the direction of a “bubble economy”, with a boom in the real estate sector and an expansion of stock market values associated with inflated assets stimulated by speculation. Large net private capital inflows tended to cause a rise in aggregate expenditure, raise inflationary pressures and increase current account deficits. Furthermore, globalization has brought a new complexity to the domestic financial system and to banks in particular. Large capital inflows have often been conducive to an expansion of domestic credit, which, in turn, may lead to problems in the financial sector, if capital adequacy requirements are not met and prudential supervision is lacking<sup>80</sup>. Despite the intense concern about regional economic fundamentals, such as the fiscal position and domestic saving, there has been greater volatility in the exchange markets and pressure on private sector credit and domestic prices.

### **The Economic Situation before the Crisis**

Even though the outbreak of the Asian financial crisis was sudden and unexpected, in the view of many observers, it should be recognized that before the emergence of the crisis there had been warning signals that the economic development in the crisis countries was unstable<sup>81</sup>.

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<sup>80</sup> Camdessus M. (1997), p. 20-24

<sup>81</sup> For example, in April 1995 the Hypo-bank alerted international investors to be cautious concerning the economic perspectives of the countries in East and Southeast Asia. In January 1997, Karl D. Jackson (a representative of a firm in New York) informed the Central Bank of Thailand about the foreseeable crisis, comparing it with the breakdown of the American Savings and Loan Organisation in the late 1980s. The Federal Reserve Bank of San Francisco warned its customers about a variety of problems associated with externally motivated capital inflows: firstly, they may suddenly reverse to capital outflows, secondly, the financial systems of emerging market economies may be incompetent and thirdly, capital inflows may be associated with a real appreciation of the domestic currency and lead to a deterioration of export competitiveness, see Rieger H. C. (2000), p. 17-18.

The critical economic features before the outbreak of the crisis can be observed by examining several economic situations. For instance, there was a sharp appreciation of the domestic currencies since 1995, in particular against the Japanese Yen. Since most crisis countries kept their exchange rates fixed or quasi-fixed against the US dollar, the sharp appreciation of the US dollar against the Japanese Yen and European currencies after 1995 brought about the appreciation of the dollar-pegged Asian currencies vis-à-vis the Japanese Yen. The resultant capital inflows were immense, despite the decreasing investment quality. The ASEAN countries experienced an export slowdown in 1996. Domestic production prices increased faster than the world export prices did. There were concerns about the surplus in the world markets for some of Asia's products and too many Asian countries exporting the same or nearly the same products. This contributed to the fact that the world prices for manufactured products, which climbed slightly in the 1990s, fell 3 percent in 1996 and 8 percent in 1997<sup>82</sup>. There was an over-expansion in some key sectors and wages increased. In addition, the emergence of new competitors, namely China, India and Mexico, together with the weakness of the Japanese economy, restrained the economic perspectives for the countries in Southeast Asia.

### **2.2.7 The Asian Financial Crisis: July 1997**

The extraordinary growth of the ASEAN countries over the decade came to an end with the Asian financial crisis that began in July 1997, and the deep recession which followed. In

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<sup>82</sup> Hussain M. and Radelet S. (2000), p. 71-84

terms of its emergence and its development, the Asian crisis may be distinguished by two significant components.

Firstly, a financial crisis occurred, starting with a currency crisis. This followed the three-stage process typical of such a crisis affecting a country that participates in large-scale international borrowing:

- In the first stage, the exchange rate became overvalued as a result of internal or external causes.
- In the second stage, the exchange rate was defended, but only at the cost of an exhaustion of the central bank's foreign reserves.
- In the last stage, the depletion of reserves, mostly in association with currency devaluation, induced a panicked rapid outflow of short-term financial capital.

Consequently, policy-adjustments had to be made, which in this case meant changing from a fixed to a floating exchange rate during the period of loss of confidence. Finally, the currency depreciations and high domestic interest rates resulting from currency floats led to the collapse of domestic financial institutions.

Secondly, an economic crisis originated from the financial crisis and led to macro-economic collapse, characterized by a contraction of output, rising interest rates, depressed equity prices and a descending currency. These led to the loss of government revenue, employment, and household incomes.

It should be noted that all of the countries that experienced the Asian financial crisis – in particular the ASEAN countries, Indonesia, Malaysia, and Thailand, and outside ASEAN, Korea – had the three following similar features. Their successful economies

were attractive to substantial capital inflows during the 1990s. Their exchange rates were fixed or quasi fixed to the US dollar. And last but not least, the combination of immense capital inflows under the situation of declining investment-quality and a fixed exchange rate policy had driven these countries into economic and financial vulnerability. Signs of this vulnerability were an overvalued currency, falling foreign exchange reserves and high foreign debt, particularly short-term debt<sup>83</sup>.

The factors that contributed to the Asian financial crisis can be divided into internal and external factors. The term “internal factors” refers in this case to deficiencies in the fundamental structure, such as high current account deficits (Figure 2.1) in accordance with a weak and unstable financial sector, poor banking supervision, a speculative real estate boom, a credit boom, a deterioration of investment quality, corruption and a misalignment of exchange rate policy. T. C. Daquila (2000) argues that economic crisis facing the ASEAN region partly related to the interactions between the households, corporate and government sectors, and thus, involvement in the three main economic activities (production, demand and income). The rising income expectations due to high growth in the pre-crisis period had led to high levels of consumption and investment, particularly speculative investments in property and capital markets, high levels of current account deficits, high levels of external debt due to the increase of expensive short-term private debt, and rapid domestic credit creation<sup>84</sup>. One of the relevant internal factors was the financial sector’s weakness. In the 1990s, the countries that later faced the Asian financial crisis had liberalized their financial markets. Consequently, domestic banks and corporations could

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<sup>83</sup> Sachs J. D. and Woo W. T. (2000), p. 22

<sup>84</sup> Daquila T. C. (2000), p. 118-119

borrow from foreign lenders. In addition, the capital inflows were reinforced by the fact that; in the expectation of further economic growth, the government pursued a strategy of keeping domestic interest rates high relative to the interest rates in the West or Japan<sup>85</sup> (Figure 2.7). These capital inflows were largely short-term (Figure 2.8).

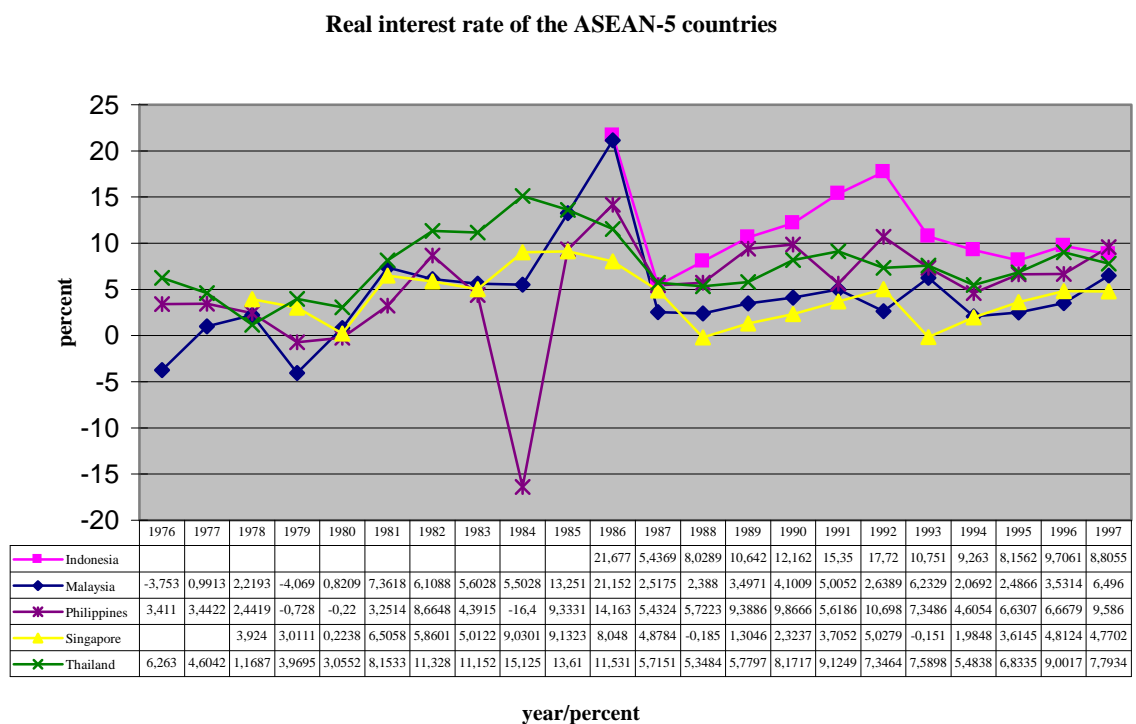


Figure 2.7: Real interest rate of the ASEAN-5 countries

The fact that several banks transformed these short-term capital inflows by handing out long-term loans to the domestic borrowers increased the fragility of the financial sector.

<sup>85</sup> Moreover, in some cases, for instance in Thailand, the Bangkok International Banking Facilities (BIBF), which were established to promote Bangkok as regional financial center and intended to increase funds from non-residents and lend them on to other non-residents, turned out to be an instrument for Thai banks and firms to borrow abroad, see Goldstein M. (1998), p. 13.

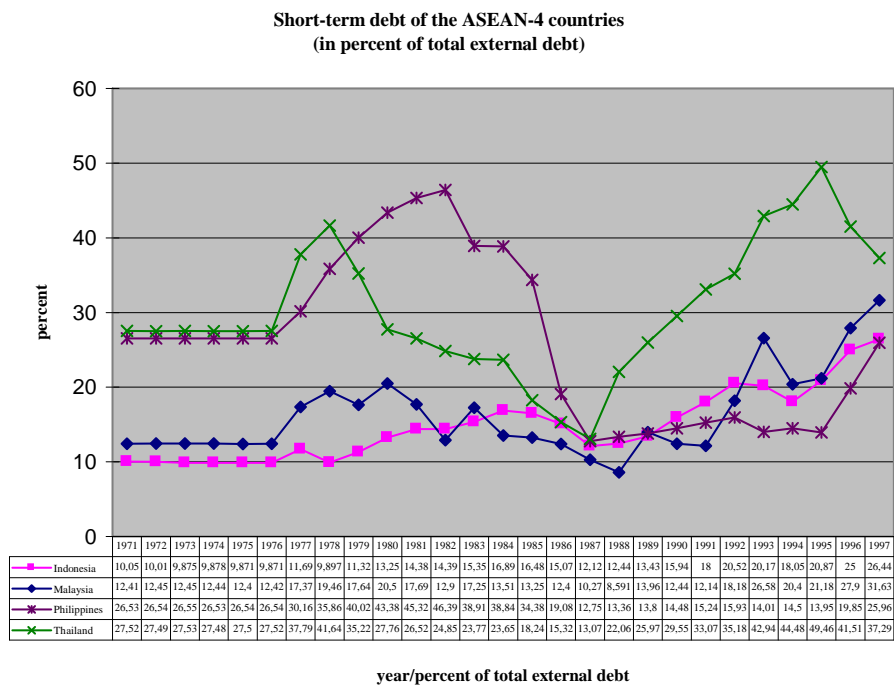


Figure 2.8: Short-term debt of the ASEAN-4 countries (in percent of total external debt)

It was argued that, following the relaxation of banking regulations, the local commercial banks in some ASEAN countries, in this case Thailand, were inexperienced in conducting foreign exchange transactions with offshore banks directly<sup>86</sup>. There were various instances of “connected lending” – for instance, lending to bank directors and their related businesses – and insufficient loan approval processes, which thereby led to high credit risks. The crisis countries found themselves in an “original sin” situation, in which the domestic currency cannot be used to borrow abroad or to borrow long-term. Moreover, there were currency mismatches and maturity mismatches in many investment projects. Invest-

<sup>86</sup> This, according to Dr. Olarn Chaipravat (president of Siam Commercial Bank), was Thailand’s mistakes in its financial and foreign market regulation, see Daquila T. C. (2000), p. 118.

Study of	Indonesia	Malaysia	Philippines	Singapore	Thailand
BIS (1997), official estimate for 1996	8.8	3.9	-	-	7.7 <sup>a</sup>
Peregrine (1997)	15.0	15.0	7.0	4.0	36.0 <sup>b</sup>
Ramos (1998), Goldman Sachs	9.0	6.0	3.0	2.0	18.0
Jen (1998), Morgan Stanley	12.5	6.0	-	-	18.0
Eschweiler (1998), JP Morgan	11.0	7.5	5.5	3.0	17.5

Source: Morris Goldstein (1998)

a: Estimate for 1995

b: Includes finance companies

Table 2.6: Estimates of ratio of actual non-performing bank loans to total bank loans in selected Asian emerging economies

ment with currency mismatches refers to projects that generate domestic currency while they are financed with foreign currency, and investment with maturity mismatches refers to long-term projects which are financed by short-term loans. As such, the situation was one of financial fragility<sup>87</sup>. There was excessive government involvement in banks, providing an oblique mechanism for helping the ailing industries with government assistance. This led to moral-hazard problems. There were several inefficient or over-ambitious public investment projects, such as infrastructure projects. Furthermore, some estimates of actual non-performing bank loans indicated the extent of repayment difficulties, a sign of economic hardship (see Table 2.6).

This overextension of credit made the ASEAN-4 economies sensitive to any change in credit conditions and to cyclical conditions. At that time, the financial situation was not thought to be risky, because the domestic currencies had been stable against the US dollar for many years. The currencies of the ASEAN-4 economies at first followed the US dollar

<sup>87</sup> Eichengreen B. and Hausmann R. (1999), p. 3

down vis-à-vis the Japanese Yen in the first half of the 1990s, but then followed the dollar's appreciation against Yen. In particular, in the period 1995-1997, these countries noticed an appreciation of their real effective exchange rates. The credit boom, liquidity/currency mismatches and large current account deficits created an environment conducive to speculative attacks. In addition, besides large current account deficits, decreasing quality of investment, and appreciating real exchange rates, the ASEAN-4 countries had to face a marked export slowdown in 1996, intense export competition from China, India, and Mexico, concerns about overproduction and a rising protectionism movement from the West. These circumstances served to deteriorate their economic situation<sup>88</sup>.

External factors<sup>89</sup>, such as the stringent monetary policy of the United States in order to bring budget deficit under control and to increase market competitiveness, the rising discipline over fiscal- and monetary policy in the EU countries in order to fulfill the Maastricht-criteria, the low economic performance and financial crisis in Japan and furthermore, the increasing competition from China, India and Mexico, brought about a deterioration of the economic situation and of the export markets of the ASEAN countries. Consequently, the ASEAN countries encountered increasing difficulties in keeping their fixed currencies, which were pegged or quasi pegged to the US dollar, compatible with their current account deficits. Furthermore, the depreciation of Chinese Yuan, starting in 1994, led to an increase of Chinese exports, thus an increasing competition for ASEAN export markets. The low interest rate policy and the weak economic development in West-

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<sup>88</sup> Furthermore, this situation of weak economic activity, a high level of bad loans and public antipathy to bailing out banks appeared to indicate the weak economic situation, as did the low interest rates in Japan, see Goldstein M. (1998) p. 9.

<sup>89</sup> Rieger H. C. (2000), p. 29-30, and Dieter H. (1998), p. 65-68



ern Europe in the mid 1990s as well as the unexpectedly low investment opportunities in Eastern Europe contributed to bringing about high levels of capital inflows to the ASEAN countries. Another important cause of these inflows was the Japanese low interest rate policy, conducted in order to counter the deflation of its real estate market. In April 1995, the Japanese discount rate was reduced from 1.75 to 1.0 percent and in September it amounted to only 0.5 percent. Consequently, the Japanese banks could provide themselves with domestic capital at a low cost and then invest, mostly short term, in the foreign capital market at high interest rates, particularly in the ASEAN-4 countries. This brought instability to the ASEAN financial markets, since the capital inflows were mostly short-term, and the current account surplus in Japan helped to induce current account deficits in the ASEAN countries. It can be concluded that it was not merely the deficient policy and weakness of the economic structure of the crisis countries that led to the crisis, but also the capital movement from the West and Japan aiming at high and instantaneous profit for their investors. ASEAN was particularly affected by this type of investment, the conditions of which are often detrimental to the countries targeted for investment<sup>90</sup>.

### **Structural Weakness and Triggers of the Financial Crisis**

In order to understand the Asian crisis, it is essential to analyze the framework of causes of the currency and financial crises. The framework presented in this work demonstrates that a possible reason for the financial crisis was a combination of fundamental structural misalignments and financial panic. At first, it was the misalignment of the fundamental structure that led to economic vulnerability. Then, as the economic situation

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<sup>90</sup> Rieger H. C. (2000), p. 30, and Huffschnid J. (1999), p. 64-68

deteriorated, the severe structural misalignment acted as a signal, which inspired financial panic, or even as a trigger of the crisis by itself.

The problem of the fundamental structure has two aspects: the deficiency of economic institutions and problems related to growth theory. These are characterized by the following main features<sup>91</sup>; 1) the appreciation of the real exchange rate and a high level of structural current account deficits in the 1990s 2) over-investment in risky and less profitable projects, 3) moral hazard effects and 4) a high level of short-term foreign debt in foreign currencies. It was presumed that increasing current account deficits, building up foreign debt, keeping domestic currency pegged or quasi pegged to the US dollar and the government acting as guarantor for loans were all integral parts of the “strategy aimed at sustaining high investment”. However, it was overlooked that this can also lead to declining quality and profitability of investment<sup>92</sup>. The road to economic crisis began when the misalignment of the fundamental structure brought about economic vulnerability which can be mainly denoted by three indicators. These three indicators, which may indicate the economic vulnerability of a country to currency and financial crises, are firstly, the adequacy of reserves relative to the stock of volatile capital, secondly, financial sector fragility and thirdly, real exchange rate misalignment<sup>93</sup>.

According to Peter G. Warr’s framework of these three indicators for vulnerability to currency and financial crises, the first indicator “adequacy of reserves” essentially refers to the stock of funds, precisely the volume of volatile capital, which can be turned over

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<sup>91</sup> Klump R. (2000), p. 37-39

<sup>92</sup> Corsetti G., Pasenti P. and Roubini N. (1998), p. 4

<sup>93</sup> Warr P. G. (2001), p. 5-16

at short notice against reserves. The change in the level of reserves (flow)  $\Delta R$  is equal to the net balance on capital (flow)  $K$  plus the net balance on current account (flow)  $C$ ;  $R\Delta = C + K$ .

The capital account balance  $K$  consists of volatile components such as equity (consisting of stock market purchases), debt instruments (such as bonds), short-term bank credit and non-resident bank accounts, and non-volatile components such as foreign direct investment and long-term bank credit, expressed as an equation:  $K = \Delta K_v + \Delta K_{nv}$ . Where  $\Delta K_v$  is the change in the stocks of volatile capital and  $\Delta K_{nv}$  the change of non-volatile foreign capital, including long-term bank credit. As a result, we can substitute this into the equation for the change in the level of reserves and rearrange slightly to show that:  $C + \Delta K_{nv} = \Delta R - \Delta K_v$ . The right-hand side of this equation reflects the change in the vulnerability of reserves<sup>94</sup>. It should be noted that large current account deficits are not necessarily required to raise the vulnerability, but it is, to a great extent, the size of the current account deficit relative to the volume of non-volatile capital inflows that gives rise to vulnerability. If the volume of non-volatile capital inflows is relatively small or decreasing and the accumulated stock of volatile capital becomes large relative to international reserves, this will make the reserves vulnerable to capital outflow.

In the “fragility of the financial sector” hypothesis, the ratio of total loans from the banking system to GDP is used as a measurement to reveal the banking system’s vulnerability to increased interest rates. The average quality of loans may be expected to deteriorate as this ratio rises. An increase in interest rates<sup>95</sup> will bankrupt the weak borrowers and

<sup>94</sup> The right side may be negative even though reserves are rising.

<sup>95</sup> If reserves are inadequate to sustain a sudden outflow of capital and the government still wants to retain

therefore the banks themselves. The ratio of foreign liabilities to total loans is used as a measurement of exchange rate exposure of the banking system. This exposure results from the fact that exchange rate depreciation increases the cost of servicing foreign loans relative to bank revenues.

Finally, in accordance with the theory of “misalignment of the real exchange rate”, the proper magnitude of a real appreciation can be analyzed by one of two types of measures. Either the relative prices of traded and non-traded goods within a country are compared (domestic competitiveness), or the prices at which country’s tradable goods can be exchanged internationally with the tradable goods of other countries are analyzed (international competitiveness).

Vulnerability and the actual start of a crisis are related to each other. Since vulnerability does not cause a currency or financial crisis by itself, a disturbance is needed to move from a vulnerable condition to one of collapse. At the second stage of misalignment of the fundamental structure, the economic situation is one of continuous deterioration. The hallmarks of this deterioration are a persistent overvaluation of the real exchange rate, over-investment in risky and non- or insufficient-profitable projects, moral hazard effects resulting from implicit and explicit credit-guarantee on the part of the government, and immense short-term foreign debt in foreign currency. A critical point may be reached, at which the economic situation alone will act as a signal for financial panic or as a trigger for

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the fixed exchange rate, one possible response is to increase the interest rate. Firstly, this may help to maintain relative expected returns on investment in the country by compensating for the potential loss of return due to the expected exchange rate depreciation. This, in turn, reduces the net capital account deficit resulting from investor panic. Secondly, increases in the interest rate may lead to a decline in domestic private consumption and investment, which, in turn, reduces the negative value of the net current account balance. See Warr P. G. (2001), p. 8-9.

collapse. The most important signal that can trigger financial panic is when a policy of long defense of a fixed exchange rate is followed. In this case, the real damage comes from the depletion of foreign exchange reserves resulting from the attempt to defend an overvalued currency. Following the depletion of reserves, devaluation can trigger panic<sup>96</sup>. Alternatively, financial panic can be triggered by the sudden discovery that reserves are less than previously believed and/or by an unexpected devaluation in a neighboring country, leading to contagion of panic. There are two plausible frameworks of contagion<sup>97</sup>. The first one is the “wake up call” hypothesis. In the case of the Asian financial crisis, Thailand’s situation acted as a wake-up call for international investors to reassess both Thailand’s creditworthiness and that of the other Asian borrowers. In the reassessment, the investors discovered economic infirmities in several Asian countries, such as weak financial sectors with poor prudential supervision, appreciating real exchange rates, export slowdown, over-expansion in certain industries and a lowering quality of investment. As a result, the crisis spread. The second concept of contagion relates to the theory of “competitive dynamics of devaluation”. After a depreciation of one country’s currency, the countries (in particular, when the countries have trade linkage with each other), which have not devalued may become less competitive. This will leave their currencies in a state of vulnerability.

After the panic reached its climax, the economic situation was one of devastation. The real exchange rate depreciated sharply and the current account shifted from deficit to surplus. As debt was drawn down, the banking system encountered illiquidity and market

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<sup>96</sup> Radelet and Sachs indicate that when the ratio of short-term debt to the level of the central bank’s foreign exchange reserves is greater than one, the country is prone to creditor panic, see Radelet S. and Sachs J. (1998), p. 1-90.

<sup>97</sup> Klump R. (2000), p. 17-22

real interest rates rose to high levels. Furthermore, the collapse of bank lending led to a deterioration of trade and production and consequently to economic contraction.

### **2.2.8 Fourth Development Phase**

#### **Economic Development since the Crisis**

In order to combat the crisis, the ASEAN countries adopted various policies, ranging from intervention in the foreign exchange market, reliance on international financial assistance and bank restructuring, to demand management policies, supply-side policies, capital controls and privatization. Which policies were implemented depended on the extent and nature of the crisis (for instance the level of foreign debt), the severity of its impact (for instance the impact on banking sector), the governments' priorities in terms of achieving either internal balance or external balance or both and the leaders' willingness to accept international financing and its conditions<sup>98</sup>. The economic development of the ASEAN countries following the deep recession brought about by the financial crisis<sup>99</sup>, in terms of how they responded and attempted to recover, can be divided into three phases.

The first phase, the end of 1997-1998, was a phase of unsuccessful attempts at recovery in which the crisis countries, particularly Indonesia and Thailand, operated tight fiscal and monetary policies, in particular by implementing the adjustment program put forward by the IMF. However, the economies of the ASEAN countries showed no signs of recovery. On the contrary, the adjustment program drove ASEAN economies into a deeper

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<sup>98</sup> Daquila T. C. (2000), p. 118-130

<sup>99</sup> Sabhasri C., Charoenseang J., and Manakit P. (2000), p. 21-29, Sachs J. D. and Woo W. T. (2000), p. 36-40

recession<sup>100</sup>. Malaysia, on the other hand, did not ask for the IMF financial package, since it did not want to follow the IMF's strategy of imposing high-interest rates and reduced spending. Nevertheless, Malaysia did also tighten fiscal and monetary policy, for instance by controlling credit expansion and increasing interest rates, despite the Malaysian government's stronger preference for a low interest rate and increased spending. The impact of the crisis on Singapore's economy was not severe. Indeed, Singapore was actually in a position to lend financial assistance.

In the second phase, 1999-2000, the panic ended and working capital began to flow again. However, the financial panic had left bad debts throughout the economy. The banking sector had been in difficulties, with bad loans and currency depreciation. The high interest rates, the shortage of working capital and a depressed domestic market worsened the situation of bank and non-bank institutions. To solve these problems, the governments of the crisis countries moved from tight fiscal and monetary policies to an expansionary policy strategy designed to promote economic activities. This new approach turned out to be successful.

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<sup>100</sup> At the end of October, Indonesia received a 23 billion U.S. dollar assistance package from the IMF, on the condition that it adopt fiscal and monetary discipline and also restructure its banking sector. Moreover, the Bank of Indonesia supported a large amount of liquidity for financial institutions that were experiencing difficulties, in order to prevent bank runs. However, the combination of this uncontrolled monetary expansion and insufficient structural reforms induced hyperinflation and currency depreciation, with GDP growth declining to -13.1 percent. Thailand received a 17.2 billion U.S. dollar assistance credit from the IMF in August 1997, on the condition that it tightens fiscal and monetary policies. Examples of such policies were maintaining an inflation rate at 9.5 percent in 1997 and 5 percent in 1998, and to reaching a budget surplus of 1 percent of GDP in 1998. However, the economy showed no signs of recovery. On the contrary, the adjustment program drove the Thai economy deeper into recession and GDP growth fell to -10.8 percent in 1998. Malaysia also tightened its fiscal and monetary policy, for instance by controlling credit expansion and increasing interest rates. The monetary and fiscal discipline, however, failed to augment the economic development. On the contrary, the control over credit led to economic recession and the Ringgit continued to depreciate. The impact of the crisis was not so severe in the Philippines compared to Indonesia and Thailand. GDP growth rate was at 5.1 percent in 1997 and declined to -0.6 percent in 1998.

In Indonesia, the economy started to recover in 1999 with a GDP growth rate of 0.3 percent. A steady increase of reserves and tight monetary policy supported the stability of the exchange rate. Inflation and interest rates reached at a lower level relative to previous years and the decline in imports led to a current account surplus of 4.9 billion US dollar in 1999. Despite a weak export performance, the substantial depreciation of the Rupiah increased the incentive for many countries to import from Indonesia. This led to an increase in the GDP growth rate to 4.8 percent in 2000, and FDI increased by 60 percent relative to 1999. However, as a consequence of expansionary policies there was a sharp increase in public debt, 4.8 percent of GDP in 2000 relative to 3.7 percent in 1998. In Thailand, GDP growth amounted to 4.2 percent in 1999 and 2000. The Thai expansionary policies began in the latter part of 1998. The stimulus packages encompassed the reduction of value-added tax rate from 10 to 7 percent and tax cuts on petroleum products. In addition to the tax and tariff reductions, the government engaged in a program of expenditure, spending 53 billion and 100 billion Baht. The inflation decreased from 8.1 percent in 1998 to 0.3 percent in 1999, despite the expansionary policy, and interest rates also fell to low levels. Besides the expansionary policies, Malaysia also implemented temporary capital controls. The GDP growth rate was much higher than in Indonesia and Thailand at a rate of 6.1 percent in 1999 and 8.3 percent in 2000. This performance was, to a great extent, due to a strong external demand for manufactured goods, increased consumer demand, and a recovery in gross fixed investments. In the Philippines, GDP growth rate was at 3.3 percent in 1999. This was, to a great extent, induced by the recovery of the agricultural sector from the El Nino phenomenon in 1998. The trade balance improved to a surplus of 14.7 percent in



1999. In 2000 the net export supported economic development, and was the main factor in a resultant GDP growth rate of 3.9 percent. The inflation rate was contained at 6.6 percent in 1999 and 4.4 in 2000. This drove the Philippines to reduce interest rates in 2000. The efforts to stimulate domestic demand led to an increased fiscal deficit of about -3.7 percent in 1999 and -4.1 percent in 2000. Although the short-term capital outflows continued, the current account was in surplus of 9.1 percent, as a consequence of a two-year standby facility granted by the IMF.

It can be concluded that the economic recovery in 1999-2000 was brought about by the expansionary policies and export expansion. At the beginning of the crisis, the export performance of the ASEAN-4 countries was very weak. The export value in 1998 decreased in every country, except in the Philippines. This was a result of the fall in export prices due to fallen regional demand from the ASEAN countries themselves, as well as from the NICs and from Japan. Thereafter, the export situation recovered; the real depreciations made ASEAN exports more competitive, while the currency depreciations made ASEAN exports cheaper in US dollar terms. The value of exports from the ASEAN countries to the industrialized countries grew rapidly, except to Japan. As the ASEAN currencies had stabilized by the middle of 1999, ASEAN exporters became more competitive than they had been prior to the crisis. An effective indicator of this phenomenon is the real exchange rate index<sup>101</sup> that displays real depreciations about 10-20 percent for June 1999 relative to June 1997. Furthermore, the expansionary policies have enhanced demand in the ASEAN

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<sup>101</sup> The real exchange rate is calculated as the ratio of the trade-weighted average of the major trading partners' wholesale price indices to the local consumer price index. An increase in the real exchange rate index displays depreciation. See Hussain M., and Radelet S. (2000), p. 80

countries. By increasing intra-ASEAN export, these policies raised the export value growth rate from the middle of 1999 onwards. Nevertheless, ASEAN exports are still weak and have not completely rebounded, because of low world prices and the continuing weakness of regional demand.

In the third phase, both banks and non-bank institutions have already cleared their debts, or are in the process of doing so. The most significant aims of this phase are to stabilize the economy and to improve and secure long-term competitiveness. Even though the ASEAN countries traditionally have real sector oriented economies, it is now relevant to pay serious attention to the development of their financial sectors. Since the Plaza accord, financial globalization has increased the role of the financial sector; hence as economic development progresses, the financial sector is not negligible and has to be harmonized with the real economic sector. Furthermore, the governments should improve the effectiveness of fundamental political and economic institutions, financial market oversight, prudential regulation and supervision. Accounting practices should be brought up to international standards. Financial institutions should report their balance sheets more fully and frequently. Regulations for the entry of foreign banks should be relaxed in order to increase competitiveness in the financial sector. The capitalization of banks and non-bank financial institutions should be improved and their risk management systems should be made more efficient. Moreover, as the real sector experiences a fundamental recovery, the ASEAN countries should take more advantage of their access to a well-trained workforce, their many years of experience of competing on world markets and their advantageous location near to major markets like China and Japan. One of the most important points to bear in

mind is the need to improve human and physical capital as well as technology. These must be compatible with each other and harmonized in order to upgrade the countries' export in the field of higher-end products. Furthermore, infrastructure and communications have to be improved both within the individual countries and internationally.

The ASEAN countries should not merely work individually to improve their real and financial sectors; instead they should cooperate and carry out the development together. Furthermore, they should seriously consider the option of economic and monetary integration. Economic and monetary cooperation must continue within ASEAN, and the ASEAN countries should act as a group to cooperate with the other major countries, such as China, Japan and the NICs, as well as the United States and the EU.

### **Development of ASEAN Regionalism since the Crisis**

The emergence of the Asian financial crisis gave rise to skeptical public discussion on the subject of regional economic integration in Southeast Asia<sup>102</sup>. For instance, one of the issues widely discussed is whether the financial crisis would lead to a weakening or even the downfall of AFTA and consequently perhaps to the break-up of ASEAN. However, ASEAN realized that a reversal of its development course in these difficult times would have been self-destructive for the member nations. To overcome these difficulties, ASEAN decided to speed up the process of creating an expanded regional integrated market to attract investments. Even though the crisis caused the economic situation of the ASEAN countries to deteriorate, it did not stop the development of ASEAN economic integration. On the contrary, as has always been the case when the ASEAN countries have had to face

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<sup>102</sup> Severino R. C. (2000), p. 218

severe external problems, the crisis drove the ASEAN countries to cooperate, to solve the problems jointly and to further their regional economic development.

At the height of the crisis, the ASEAN members issued the “ASEAN Vision 2020” statement at their second informal summit in Kuala Lumpur 15th December 1997. In this statement, they committed themselves to moving towards closer relations and agreed to advance economic integration and cooperation. The ASEAN leaders resolved to sustain regional macroeconomic and financial stability by fostering closer consultation on macroeconomic and financial policies. They further decided to continue to liberalize the financial service sector and to closely cooperate in issues relating to the money and capital markets, tax, insurance and customs. At the sixth ASEAN summit in Ha Noi in December 1998, the ASEAN heads of state issued a “Statement of Bold Measures”. This announced the acceleration of the programs to liberalize trade and investment with a view to economic integration and the bringing forward of the target date of AFTA programs from 2003 to 2002. Furthermore, ASEAN called for the introduction of the ASEAN Industrial Cooperation scheme (AICO), under which products originating from and traded between at least two ASEAN companies would be given a preferential tariff of 5 percent or less. The members also aim to create an ASEAN Investment Area (AIA), in which investments are to flow freely. As regards financial cooperation, the ASEAN Finance Ministers agreed in October 1998 to set up an ASEAN Surveillance Process, in order to prevent a recurrence of the financial crisis. In the third informal summit held in Manila on November 30th, 1999, the ASEAN leaders agreed to accelerate the AFTA process and to intensify cooperation, in particular on financial issues, with China, Japan, and the Republic of Korea. Coopera-

tion with the latter is managed within the ASEAN+3 framework of East Asian cooperation. Consequently, in May 2000, the ASEAN+3 Finance Ministers agreed to establish a regional financing arrangement called the “Chiang Mai Initiative (CMI)”, consisting of an expanded ASEAN swap arrangement and a network of bilateral swap arrangements among the ASEAN countries, China, Japan and the Republic of Korea.

The fourth phase of ASEAN development involves economic integration and cooperation in three significant ways, namely economic integration and cooperation in the real sector, financial cooperation and further economic cooperation with ASEAN’s neighbor countries, particularly financial cooperation.

**Economic integration and cooperation in the real sector encompasses:**

1) The acceleration of AFTA: At the third informal summit in 1999, ASEAN brought forward the date of AFTA’s final target, the establishment of a truly free trade region, from 2015 to 2010 for the ASEAN-6. The newer members, Vietnam, Laos, Myanmar and Cambodia, have committed themselves to eliminating all import duties by 2015, with some sensitive products to follow by 2018, the original target for these members. Meanwhile, ASEAN has also been working on reducing the tariffs on an increasing number of products and on simplifying and harmonizing the national tariff nomenclatures of the products. The CEPT agreement, the main mechanism by which AFTA is implemented, has brought down the average tariff among the ASEAN members from 12.76 percent in 1993 to 4.43 in 2000. ASEAN also aims to harmonize the product standards of member countries with international standards, and encourage and liberalize the linkages among intra-ASEAN countries, by adopting a Framework Agreement on Services to create a free

trade area for services. The AFTA program has brought about progress, not only in terms of increasing FDI, but also in intra-ASEAN trade, which expanded from 43.26 billion US dollar in 1993 to 85.4 billion US dollar in 1997. Intra-ASEAN trade shrank to 68.8 billion US dollar in 1998, because of the Asian financial crisis. However, it rose to 74.4 billion US dollar in 1999. However, it should be recognized that, despite the success in decreasing tariffs within AFTA, the non-tariff barriers still exist. ASEAN has done little to combat these<sup>103</sup>.

2) Industrial development: In 1997, ASEAN agreed to establish the ASEAN Industrial Cooperation scheme (AICO), which may be seen as a replacement for the unsuccessful programs of the 1970s, such as the Industrial Joint Venture and the Brand-to-Brand Complementation schemes. Under an AICO arrangement, manufacturing enterprises operating in at least two ASEAN countries participate in a strategic alliance and obtain full AFTA treatment, that is to say 0-to-5 percent tariffs. The advantages of AICO for the companies include economies of scale, a reduction in production costs and the efficient division of labor and industrial resources. Furthermore, at the 30th ASEAN Economic Ministers Meeting in Manila in October 1998, the Framework agreement for the ASEAN Investment Area (AIA) was signed. The AIA seeks to make the region an attractive investment area and encourages inflows of direct investment within and into ASEAN. In the fourth phase of ASEAN development, FDI still plays a great strategic role, despite a decline in FDI flows into ASEAN from a peak of 27.6 billion US dollars in 1997 to 19.5 US billion dollars in 1998 and 16.2 billion US dollars in 1999.

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<sup>103</sup> Wongboonsin P. (1997), p. 46-47. Even though the reduction of non-tariff barriers was an aim of PTA, it has never been pursued practically and seriously.

3) Infrastructure and communication: ASEAN has four significant long-term projects to develop its infrastructure. These are the ASEAN Power Grid, the Trans-ASEAN Pipeline Network, the ASEAN Highway Network and the Singapore-Kunming Rail Link. In the communications sector, ASEAN is working on interconnectivity to enhance the seamless roaming of telecommunication services. Additionally, at the ASEAN informal summit in November 1999, the ASEAN leaders and private sector representatives organized a high level e-task force with the aim of developing a broad-based action plan to promote an ASEAN cyberspace. The e-ASEAN Framework Agreement was signed at the fourth ASEAN informal summit in November 2000, committing to the development of the ASEAN information structure, facilitation of e-commerce, liberalization of information and communication technology goods, services and investments, capacity building, e-society and e-government.

**Financial cooperation and cooperation with neighbor nations encompasses:**

1) The ASEAN Surveillance Process: In order to prevent a recurrence of the financial crisis, the ASEAN Finance Ministers agreed on a framework for consultations on economic policies in October 1998. The ASEAN Surveillance Process has two main features. Firstly, it aims to look after the recovery process and to observe any indication of vulnerability in the ASEAN financial system. The second element is the peer review, which provides a forum for the ASEAN Finance Ministers to exchange information on the development of their domestic economies. This is intended to help counteract potential threats to member countries' economies collectively.

2) The ASEAN+3 Financial Cooperation (ASEAN+China, Japan and the Republic of Korea): The ASEAN+3 finance and central bank deputies met in Bandar Seri Begawan in March 2000. They agreed to set up a system of monitoring capital flows and to strengthen the regional surveillance mechanism in East Asia. Moreover, they put forward proposals for a regional support mechanism, which is to consist of a network of newly built East Asian training and research institutes along with a regional financing arrangement designed to enhance existing international facilities.

3) The Chiang Mai Initiative (CMI): On the 6th May 2000 in Chiang Mai, Thailand, the ASEAN finance ministers agreed to inaugurate a regional financing arrangement called the “Chiang Mai Initiative (CMI)”, a system of swap arrangements within the ASEAN+3 countries. The CMI encompasses two features. The first is an expanded ASEAN Swap Arrangement, which now includes all the ASEAN countries and has the expanded facility of 1 billion US dollar. The second is a network of bilateral swap arrangements and repurchase agreements among the ASEAN+3 countries, aimed at accommodating temporary shortfalls in finance for members that encounter balance-of-payments difficulties. The integrated foreign exchange reserves of these thirteen nations are evaluated at more than 800 billion US dollars. In the long-run, the ASEAN members would be well advised to give serious consideration to structural reforms and trade policy. Areas for such consideration include promoting wage and price flexibility, reforming and strengthening the financial sector, assuring central bank independence and harmonizing monetary policy, in order to cope with the global external disturbances effectively. The ASEAN Financial Arrangement serves as a means to prevent an extreme crisis, systemic failure and



over-accumulation of foreign reserves. As such, it counteracts the problem of speculative attacks. In the long run, it may also be seen as a first step to achieving the above mentioned long-term objectives. However, it is important not to neglect the arguments against the ASEAN Regional Financial Arrangement<sup>104</sup>. Examples of such arguments are that regional funds could exacerbate moral hazard problems or that the political preconditions that are essential for a durable regional arrangement are still far from being satisfied relative to the European Union.

It should be recognized that, in the fourth phase of development, ASEAN is largely concentrating on economic development. In particular, the Asian financial crisis has shown the significance of the financial sector at the further stage of economic development and in times of globalization, even for real sector oriented economies like the ASEAN economies. Consequently, it is now clear that, aside of intra-ASEAN economic integration, external economic cooperation between ASEAN and its neighbor countries has been increasing immensely.

In accordance with a policy of expansion of ASEAN membership, Laos and Myanmar were admitted as the 8th and 9th member of ASEAN in 1997. Following the admittance of Cambodia into ASEAN on the 30th April 1999, all ten Southeast Asian nations are now members of ASEAN. The entrance of Laos is expected to bring about new resources to ASEAN, for example hydroelectricity. Laos is an interesting investment area for the other ASEAN members and foreign investors. Laos' motivation for entering ASEAN was its hope to attain political and economic stability and to promote its economic development.

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<sup>104</sup> Park Y. C. (2002), p. 4-7

The admittance of Myanmar into ASEAN plays a great role in terms of geo-economic and geo-political strategy, since Myanmar can be seen as a gateway for ASEAN to the Middle East, China and India. Last but not least, Cambodia became a member despite its troubled political situation. Its acceptance was seen as completing ASEAN. It should be emphasized that the entrance of these members has brought a new economic and political situation to ASEAN. While some member countries of ASEAN are relatively well developed, the development in others is further behind. This has brought both advantages and disadvantages to ASEAN economic integration. Furthermore, it should be noted that ASEAN is now divided into socialist and democracy oriented countries and that political turmoil still exists, particularly in Myanmar and Cambodia. These situations hardly serve to ease the integration process.

## **2.3 Comments on ASEAN Development**

### **2.3.1 Economic Aspect**

The concept of the economic evolution of ASEAN in terms of its structure, strategies and integration process, may be divided into three eras. The first one can be classified as “the old perception of ASEAN economic cooperation and development”, the second one refers to “the new or second perception of ASEAN economic integration and development” and the third one is the era of “the new approach towards sustainable ASEAN economic development under opening and deepening regionalism”.

The old perception of ASEAN economic cooperation and development played a significant role in the 1960s but faded out in the 1970s and 1980s. At that time the ASEAN countries accepted import substitution as a policy that could potentially bring development and as a way to launch industrialization in their economies. Hence, when domestic markets proved to be too small to accommodate import substitution as the starting point of industrialization, regional market integration was seen as a means towards industrialization and economic development<sup>105</sup>.

The predominant characteristics of the old perception are as follows: firstly, regionalism was driven by the states or governments. Secondly, import substitution was a base for industrialization and economic development. Thirdly, there was discrimination against third countries. Finally, there were efforts made towards intra-regional trade and security. However, in the 1980s and 1990s, pressured by changing external circumstances – as previously analyzed –, the ASEAN countries had to modify their economic development concept.

The modification of the economic development concept of the ASEAN countries from the eighties until the out break of the financial and economic crisis of 1997-1998 achieved an impressive result in terms of increasing economic growth in the ASEAN coun-

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<sup>105</sup> One of them was the idea that welfare could be increased by allowing free trade and by raising productivity, in terms of achieving economies of scale and improving the allocation and availability of resources, through enlarging the size of the domestic market. Furthermore there was the idea of an increase in welfare from the economic growth that ensues ensuing from traditional customs union, through trade creation and trade diversion. This went hand in hand with the idea of growth and modernization as development. To help development, enhancing industrialization has been accepted as a central policy goal and has been regarded as a rational social choice by developing countries. Additional advantages are the joint production of public goods and protection against adverse developments in the world market, as well as improved collective bargaining power towards industrial countries and consensus building on regional political and security issues. These can be considered as largely political advantages. For more about the old regionalism see chapter 1 and for the economic development in ASEAN in the sixties and seventies see the previous sections in this chapter.

tries. It was the changing external factors accompanied by suitable ASEAN development policies that supported this outcome. The external factors were essentially trade liberalization under the auspices of the GATT and the increasing international capital mobilization, particularly after the Plaza Accord in 1985. These, in turn, led to the appreciation of the Yen and the immense inflow of FDI into the ASEAN countries. The “flying geese pattern” led by Japan further supported the economic development of the ASEAN countries<sup>106</sup>. In addition, the ASEAN countries have adapted themselves, particularly their development policies, to exploit these changing circumstances.

The new or second ASEAN regionalism has changed, so that it is based on a market driven concept, in which the economic development policies have been formulated in accordance with an outward-looking development strategy. Such policies include export promotion, trade liberalization, open trade investment and growth, non-discrimination against third countries and the aim of global competition. Charles Harvie and Hyun-Hoon Lee (2002) explain the change towards an outward-oriented development as follows: the countries had started from a low level of national income and income per capita, so domestic producers were faced with a limited domestic market. As a result, an export-oriented policy for industrial growth and development was chosen as a suitable process to overcome this impediment. The outward-oriented strategy provided the domestic firms with opportunities to absorb foreign technology and managerial know-how and drove them to operate efficiently, in order to be able to compete in the global market. Furthermore, this policy also brought about gains in external balances as well as purchasing power to acquire tech-

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<sup>106</sup> More about “the Flying Geese Pattern of Economic Development”, see Kwan C. H. (2001), p. 16-18.

nological inputs, while increasing demand and generating growth. Another consideration was the stable macroeconomic management, whereby rates of investment were high and allocation was encouraged by reducing inflation, promoting price stability and keeping the exchange rates competitive. In addition, Nicolas Craft (1998) asserts that the initial position of economic backwardness of these ASEAN countries was the main factor that led to their catching-up so rapidly. He adds that advantages from demographic change of rising labor force participation, falling birth and death rates and the significant increase of the proportion of the population who are of a working age supported their rapid growth<sup>107</sup>. To conclude, there are several points of view on the main reasons for the strong economic development in East Asia, including ASEAN, in the 1980s and 1990s<sup>108</sup>. Trade economists point to the outward oriented policies; macroeconomists to the stable macroeconomic management and the labor economists to education development. While interventionists give the selective interventionist policies of the government as the reason; free market economists view the small governments, the market mechanism and the private initiatives as reasons for the significant economic growth. Taking into account the above-mentioned suppositions, all of these policies have, in their own ways, supported the strong economic growth in East Asia. The combination between these policies and external circumstances has brought about remarkable economic outcomes for the East Asian countries. These include high levels of domestic saving and private domestic investment as well as increased foreign direct investment and rapid export growth. Catching up with foreign technologies has brought about increasing industrialization, economic growth and a decline in poverty.

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<sup>107</sup> Crafts N. (1998), p. 1-45

<sup>108</sup> Harvie C. and Lee H.-H. (2002), p. 130

Besides its outward-orientation, the new or second ASEAN regionalism is also characterized by non-discrimination against third countries. In line with this, there has been cooperation between countries from different regions, for instance, the establishment of APEC in 1989. Furthermore, the progress of regionalism has now become more by the market-driven, and the development policies have been encouraging the region's ability to compete globally.

Since the financial crisis in 1997, the external and internal situations that have changed considerably have led the ASEAN countries to rethink their development strategies. At present, the global economy is developing rapidly. The conclusion of the Uruguay Round and the establishment of the WTO have driven the ASEAN economies to open their domestic markets, particularly in trade and investment. The ASEAN economies are on the way towards becoming mature economies and they have to be alert and prepare themselves for global pressures. On the one hand, the ASEAN countries may have access to the global market, but on the other hand, they have to open their markets to foreign competitors as well. In addition, the expansion and strengthening of regionalism, specifically in Europe and America, is noticeable, while other rapidly-developing economies are emerging, in particular China and India. China has acceded to the WTO, has a lot of potential to develop and is on the way to being one of the leading economies in Asia. These circumstances increase competition on the ASEAN regional and global market and roll back their export growth. Meanwhile the ASEAN economies have also lost the "flying geese" pattern due to the economic difficulties of the "leading goose", Japan. The ASEAN countries, moreover, are encountering difficulties in financial sector, in which they have limited experience, be-

cause their economic structure has been based predominately on the real economic sector. The rapid progress of information and communication technologies is another important area in which the ASEAN countries have to be alert and adapt, in order to take advantage of these external changes. Now the ASEAN economies are getting more and more mature. The industrialization process continues and labor wages increase, but demographic changes are no longer serving to increase the area's productivity. Therefore even though there is still some scope of their catch-up potential, it is very hard for them to gain such high economic growth as in the 1980s.

As the ASEAN economies have grown towards advanced economies, encouraged by increasing technologies and higher skilled workers, other regional economies, such as China, have also emerged, with labor intensive, low skilled production and high skill production is on progress. Hence it is significant for the ASEAN countries to modify their development model in order to cope with this competition. They have to move towards higher skilled and creative production in every market sector and use high technologies in order to improve their competitiveness in the global market. Proceeding towards prosperous development, the ASEAN countries have to amend their planning, taking into consideration the fact that they are continuously moving towards open economies.

The development of ASEAN was rapid, allowing little time for a proper foundation of its structures. However, the recent emergence of the e-commerce market offers ASEAN a renewed chance to lay meaningful foundations for itself. By building on bilateral arrangements and moving away from multilateral action, ASEAN seeks to deepen its integration. Subject to these internal and external constituents, the ASEAN countries should operate

a “proactive development strategy”, which involves the simultaneous execution of “defensive” and “offensive” plans of action. “Defensive” strategy refers to the strengthening of internal economic and political sectors to reinforce the economic and political basis. This should enable ASEAN to cope with continuously changing external threats and to realize a stable development. The defensive strategy encompasses bringing in stable macroeconomic policies, aiming to achieve price stability, low budget deficits and surpluses, reduction of public and foreign debt (particularly short-term debt) to a sustainable amount and ensuring the competitiveness of the exchange rate. The ASEAN countries should encourage competitiveness via market-based mechanisms, establish institutional frameworks that support open market and competitiveness, encourage interregional cooperation in trade and finance and ameliorate the governance of private and public sectors. The latter can be achieved, for instance, through monitoring the performance and the usage of financial resources, in particular, of the private sectors. In addition, investment in human-capital is one of the crucial basic factors to realize a long-term economic development, along with the development of technologies in the areas of production, services, knowledge and information<sup>109</sup>.

This defensive strategy should be accompanied by an offensive strategy, under which the ASEAN countries may, on the one hand, be able to reduce the risks of external threats and, on the other hand, be able to initiate their own means of development. The offensive strategy is one of regional outward-orientation, with two focuses. First and foremost, it aims for Asia regionalism, in particular with China, Japan, Korea and also with the CER, both in financial and real sectors. Secondly, it considers the tendency towards worldwide

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<sup>109</sup> According to the policy factors for a new East Asian development model, see Harvie C. and Lee H.-H. (2002), p. 135-136.



globalization, particularly at the global multilateral level, including for example the EU and American regionalism. Even though the ASEAN economies should enhance their efforts in export policy, they should not ignore the import side, in which they can gain technology and know-how relating to products and management, besides gaining acceptance in the world-trade arena. Hence the ASEAN countries should intensify and expand both inter-regional and intra-regional trade and investment, under the support of competitive discipline, including movement towards dismantling tariff and non-tariff barriers. Consequently, they should improve their competitiveness, strengthen and stabilize their economic sectors, especially their financial markets, in order to effectively cope with the expansion of competition in their domestic markets and to gain access into international markets through greater economic integration. In addition, the ASEAN region should alter its governing institutions to make them more efficient, to support increased interdependence among the members for a stable integration and to increase their bargaining power in the face of world economic globalization.

To conclude, under the external circumstance of increasing globalization, the free market and internal circumstances such as the recovery and improvement of regional market from the consequences of the financial crisis, the ASEAN economies should move towards openness and intensifying inter and intra-regional trade and investment. The strategy that the ASEAN countries may exert is a balance between the defensive and the offensive strategies, encompassing the strengthening of their economic structure (stability) combined with the initiation of their economic development towards the future. This development includes opening and deepening regionalism (initiation and development).

### **2.3.2 Political, Security and Social Aspects**

Two main perspectives have affected the way the ASEAN has evolved in terms of its structure, integration process and cooperation between its members. The first one is the “national building approach”, which adheres to the concepts of national and regional resilience. The second one is the “movement towards balance between open and deeper regionalism<sup>110</sup>” influenced, to a great extent, by internal and external economic pressures, including the development of the ASEAN members’ economic structures and also the trend towards globalization. Institutional building has been an important issue and characteristic under the development of this second perception. The structural change accompanying the movement from the first to the second standpoint is dynamic and gradual. Both standpoints are not yet completely separated from each other. There is still an overlap between the two approaches, meaning that the national building approach is still operating. The overriding trend, however, is towards open and deeper regionalism.

#### **1) National building approach based on national and regional resilience**

Since ASEAN’s setup, the significant characteristic of the ASEAN development has been its emphasis on national building, which has been reinforced through the ASEAN philosophy of national and regional resilience. The national building approach could be observed since the end of the colonial era. It is possible that because the Southeast Asian countries had just obtained their independence, they were very sensitive about autonomy issues. Manfred Mols notes that the handing over of sovereignty is always sensitive, particularly in the case of inhomogeneous members. In the case of ASEAN, in which the

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<sup>110</sup> See Thanadsillapakul L. (2000)

members are inhomogeneous as regards their levels of economic development, religions and social and political aspects, the common interest of the member states extended no further than sorting out their geo-political situation<sup>111</sup>. The Southeast Asian countries were very unwilling to give up any part of their sovereignty, and by establishing ASEAN, the member states focused on preserving regional autonomy from external threats, as well as maintaining their national sovereignty. Mols further asserts that the ASEAN states have operated an interrelated “Double-strategy” aiming at existence-maximization, which includes striving for autonomy (national resilience) and preserving regional autonomy (regional resilience)<sup>112</sup>. Susanne Feske also notes that the first priority of the development of regional cooperation between the Southeast Asian countries has been the pursuit of their common interests of preserving their national security and territorial integrity, including the long-term assurance and consolidation of the individual nation-states without restriction of national sovereignty<sup>113</sup>.

With respect to ASEAN regionalism in the period characterized by the intensive national building approach, most authors have concentrated on the theme of sovereignty in the Southeast Asian countries. There have been several definitions and interpretations of ASEAN<sup>114</sup> that indicate that ASEAN is a region established as a defense mechanism and that the ASEAN members are unwilling to lose their national sovereignty. For instance, Donald E. Weatherbee describes ASEAN regionalism as a “Conflict Avoidance System”,

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<sup>111</sup> Mols M. (1996), p. 282

<sup>112</sup> Mols M. (1996), p. 284

<sup>113</sup> Feske S. (1995), p. 88-98

<sup>114</sup> These interpretations have been assembled by Dosch J. (1997), p. 30-31, 33-34, based on Weatherbee D. E. (1984), p. 259-287, Sopiee N. (1993), Leffer M. (1995), p. 129-142, Antolik M. (1992), p. 316-329, and from an interview carried out by Dosch with Chandran Jehurun in March 1993 in Singapore.

Noordin Sopiee speaks of a “Southeast Asia Concert of Nations”, Chandran Jeshurun coins the term “Integrated Solidarity”, Michael Leffer views ASEAN as a “Diplomatic Community”, and Michael Antolik asserts that the “Concordance System Model” might be suitable for ASEAN regionalism. Based on interviews with Xuto and Thanat Khoman carried out by Dosch, Xuto describes ASEAN as an “Umbrella Concept” and Khoman defines ASEAN as “Collective Political Defense”. Both definitions strongly emphasize the aspect of ASEAN as a defense mechanism<sup>115</sup>.

There are several political science analyses of the development of the ASEAN integration process, which refer to the period of the ASEAN establishment and national building. Two of them have been presented by E. D. Solidum and Somsakdi Xuto. Both authors define “cooperation” as an early stage of the integration processes in which ASEAN finds itself. Solidum<sup>116</sup> views that cooperation is a necessary precondition for integration. Cooperation establishes the social and psychological basis for the setup of a transnational society. This basis includes common values, habits and expectations. These may, subsequently, be conducive to mutual understandings and confidences and furthermore to the development of a political community with joint institutions. Xuto classifies the approach to regional integration as a three-stage process<sup>117</sup> – first, cooperation, second, coordination and third, integration. Similarly to Solidum, Xuto asserts that cooperation is a necessary stage, including the establishment of mutual understandings, confidences, and common interests. In this phase of intensive national building approach, Xuto, furthermore, states that inte-

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<sup>115</sup> Interviews of Dosch with Somsakdi Xuto in August 1993, Bangkok, and Thanat Khoman, also in August 1993, Bangkok, see Dosch J. (1997), p. 30

<sup>116</sup> Solidum E. D. (1974), p. 2, and Dosch J. (1997), p. 32

<sup>117</sup> Xuto S. (1973), p. 3, 17, and Dosch J. (1997), p. 35

gration might be out of the question for ASEAN, and that ASEAN is just concentrating on cooperation and developing strategies aiming at coordination, since the ASEAN countries have not been ready to give up their sovereignty. Regarding the characteristic of ASEAN, it can be concluded that the aims of the regional cooperation in Southeast Asia are, on the one hand, to establish a framework for strengthening and preserving national building as well as political stability under the pressure of external threats and, on the other hand, to strive for harmonization, particularly in matters of foreign affairs, interests and strategies leading towards a strong position on the international stage<sup>118</sup>.

**The characteristics of ASEAN can be classified under the five following facets:**

- National building
- National and international resilience
- Consensual society (decision making based on the “Musyawarah” principle)
- Paternalism and a regime based on political elites
- Defense mechanism

An argument for the ASEAN characteristics and for the reason “why ASEAN might choose this way of policy” has been made by K. H. Shaw. He asserts that while the EU has been following a bottom-up integration process, the ASEAN, contrarily, has not much time to put such a gradual evolution process into practice. He reasons that it is pragmatic for ASEAN to implement top-down politicalization; comparable to evolution of Singapore, in order to make progress in integrating the multi-ethnic community<sup>119</sup> on a regional basis. It could be concluded that the main attribute of ASEAN has been the fact that the young na-

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<sup>118</sup> Dosch J. (1997), p. 42

<sup>119</sup> Shaw K. H. (1976), p. 154

tional states of which it consists are focusing on preserving their autonomy, including their political independence, in particular vis-à-vis the hegemonial countries. Along with this goes the desire to preserve national sovereignty in economic sector. Until present, even though several scholars have been studying and supporting the ASEAN political integration process, concentrating largely on the adjustments of ASEAN's institutional system as basis for the future development, it should be noted that there is still a lack of political willingness<sup>120</sup> and no sign of a tendency towards political integration in ASEAN.

## **2) Tendency towards “balanced open regionalism and deeper regionalism”**

At present, changes in the global economy are continuing, and this also includes changes in legal frameworks for trade and investment. These have been a driving force towards the opening-up of several economies. The competitive pressure has also driven the ASEAN members to consider improving their harmonized regulations as well as institutionalized cooperation and integration, in the aim of facilitating an effective regional integration and global economic cooperation.

In order to cope with this challenge, the ASEAN countries are on the way to amending their development model<sup>121</sup> by strengthening regional economic integration and opening their markets towards globalization – in other words, “generalizing liberalization” with “deeper regional integration”, which is considered as a means to overcome current impediments and as a building-block for future development. This new approach particularly needs support for the harmonization of its operation and of its legal systems. One of the

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<sup>120</sup> Thanadsillapakul L. (2000), p. 1

<sup>121</sup> For further changes in the global economy and the ASEAN economic development plan, see “understanding ASEAN under its economic aspect” in the same chapter.

reasons is that it is not only the border barriers that hinder the free flow of economic transaction, but it is also the differences in internal regulations and in legal and political systems that bring about distortions to the economy. It is therefore necessary to harmonize standards, establish mutual qualification of products and services and their procedural requirements. Doing so will support the removal of non-tariff barriers and mobilize economic integration. It should be considered that ASEAN does not need to remove national regulations, nor need it establish new common ASEAN laws. However, it might be effectual to guarantee the enforcement and coherency of the national regulations among member countries, thus avoiding and eliminating the hindrances to regional economic performance<sup>122</sup>.

Currently, ASEAN exerts only a flexible legal framework which lacks basis in the form of a treaty<sup>123</sup>. Even though ASEAN agreements are legal and obligate the member countries, they fall short when it comes to consequential details and instruments to ensure their implementation. The most recent ASEAN framework agreements, for instance the AIA, AFTA, AFAS or IP (ASEAN Intellectual Property), are solely declarations and initiatives to implement closer economic cooperation and integration. Under the pressure of external circumstances and the increasingly closer relations and cooperation among the ASEAN economies and into the world economy, it is becoming crucial to put effective implementation mechanisms into place, including institutions and regulations to support these issues.

Thanadsillapakul makes a suggestion for a possible development for ASEAN in the form of a “bottom-up” liberalization and institutionalization. She indicates that at the pre-

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<sup>122</sup> Thanadsillapakul L. (2000), p. 87

<sup>123</sup> Pelkmans (1997), p. 211

liminary stage, ASEAN should concentrate on harmonization, cooperation and also establishing mutual regulations in the following fields: the entry, establishment and operation of foreign investment, mutual recognition of substantive and procedural requirements for merchandise and service trade, harmonization of double taxation avoidance, competition rules, competition policy, labor standards, intellectual property protection cooperation, transportation and communication, and dispute settlement for the private sector. After fulfilling these fundamentals, ASEAN might be ready to move on the next step that begins to tackle sensitive issues surrounding the harmonization of national laws and regulations in several spheres that impact the implementation of the ASEAN framework agreements.

In his definitions of economic integration, Tinbergen classifies “negative integration” as the aspects of international economic integration which simply involve the removal of discriminatory and restrictive institutions, along with the liberalization of economic transactions. “Positive integration” relates to the adjustment of existing and, to a great extent, to the establishment of new policies and institutions endowed with coercive powers, in order to enable the market of the integrated area to function properly and efficiently and, furthermore, in order to support other broader policy aims of the scheme<sup>124</sup>. It could be concluded that, at present, ASEAN regionalism may be categorized as negative integration<sup>125</sup>. This state of affairs can reasonably be expected to continue into the near future, while ASEAN countries work to strengthen and harmonize their institutional economic structure and regulations. Even though ASEAN countries are considering a shift towards “positive integration”, this is a very sensitive issue and there are numerous disparities between the legal and

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<sup>124</sup> Tinbergen, J. (1965), p. 76-82

<sup>125</sup> See also Thanadsillapakul L. (2000), p. 80-83



political systems of the different ASEAN countries that will hinder the evolution process. These differences stem largely from the countries' different former colonial masters<sup>126</sup>. Besides, there are differences in culture, ethnicity and religion, geographical distance, and the by no means insignificant fact that these countries are not eager to loose their authority and independence. Until now, the ASEAN countries have preferred a flexible framework with coordinated regulations based on mutual recognition.

Thus, if ASEAN has to develop or integrate its institutional framework, in order to cope with the internal and external changes, a careful cost-benefit analysis should be carried out, in order to find the key areas for integration and the appropriate degree and type of institutionalization for ASEAN. In other words, a balance between deepening and opening regionalism has to be struck.

## 2.4 Conclusion

ASEAN could be regarded as a successful association. When ASEAN was founded, the region was in turmoil, with several countries striving for national stability and independence. At first, the five original signatory countries signed the ASEAN Declaration, which aimed principally to improve political stability and to provide a counterweight to communist power, particularly in the region. Today, ASEAN encompasses all ten nations of Southeast Asia, regardless of their political regimes. ASEAN has survived internal and, in particular, external threats and disturbances. Indeed, such exogenous factors often operated as an impetus towards regional cooperation and integration. This was the case for

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<sup>126</sup> Thanadsillapakul L. (2000), p. 81

the end of the Cold War as well as for the Asian financial crisis. Since the 1990s, ASEAN has increasingly concentrated on economic cooperation and integration, not only among its member nations, but also with neighboring countries. AFTA is on its way to success in tariff reduction, while intra-ASEAN trade is increasing, albeit slowly.

However, it is also possible to view the development progress of ASEAN as unsatisfactory, since the evolution of ASEAN has been slow and unsteady. It has to be noted that the impulses for ASEAN cooperation and integration have often come from external pressures. For instance, the Cold War and counteraction vis-à-vis communism influenced ASEAN to increase political cooperation, while the world economic crisis in the 1970s – that is, the collapse of the Bretton Woods systems in the early 1970s, the oil crisis in 1973-1974 and the following worldwide economic recession in 1974-1975 – led ASEAN to make serious efforts in terms of economic cooperation. Other crucial external factors include the increasing role of the world economy since the late 1980s. The globalization of financial sector partly as an effect of G-5 Plaza Accord, the end of the Cold War leading to the “New World Order” were all part of this phenomenon. The financial crisis in July 1997 was a later external factor. Every time such external events occurred, the ASEAN countries were enthusiastic to cooperate with each other in order to overcome their difficulties<sup>127</sup>. However, whenever the intensity of the external disturbances eased, the cooperation efforts also slowed down. The internal impetus to develop economic and political cooperation and integration has been and is still inadequate, particularly due to the lack of regional institutions with the necessary power to act and efficiency in doing so. Furthermore, sev-

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<sup>127</sup> It should be recognised that the economic structures of most ASEAN countries are nearly the same; hence the external shocks affected these countries symmetrically.

eral pieces of research<sup>128</sup> have indicated that the ASEAN functional cooperation plans need to progress more effectively and that the development of the fundamental factors in most ASEAN countries is not yet efficient. Particularly poor are social development, development of human resources and technological development. Remarkably, the extent to which human resources and technology are developed within the original ASEAN signatories, as well as between the original ASEAN countries and the new ASEAN members, varies markedly, both quantitatively and qualitatively.

Now ASEAN is experiencing a further stage of integration and cooperation, with the globalization of its financial and real sectors. It is not enough to be reactive to the external sector. In order to overcome vulnerability to external disturbances, ASEAN also needs to be proactive and to seize its own initiative to create effective economic and monetary integration. ASEAN has recently signed and established several agreements and plans for its real and monetary economic sectors to grant them much-needed advanced and effective management. Besides the strengthening of fundamental factors these programs require a simultaneous development of the management sector. In other words, the countries' institutions must also be improved. The development of the European Union's institutions and economic structures offers an interesting comparison, particularly as it has occurred and is occurring contemporaneously with that of ASEAN. Bearing this European model in mind, it may be time for ASEAN to rethink its strategy of "non interference in national issues" and the excessive decentralization of the ASEAN decision making processes<sup>129</sup>, in

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<sup>128</sup> Thai AIPO National Group (1997), p. 21-23, and Wongboonsin P. and Wongboonsin K. (1995)

<sup>129</sup> Pelkmans J. (1992) describes how the excessive decentralization of the ASEAN decision making process, the neglecting of the Secretariat, the lack of clear, long-run guidelines for economic cooperation and the emphasis on ad-hoc projects led to a tendency of trying to exploit ASEAN. See also Chirathiwat S. (1996),

order to give more supranational power to ASEAN. In addition, there is great diversity and heterogeneity within ASEAN in terms of economic levels, social and ethnic features as well as government regimes, particularly after the entrance of the new members. All of this poses a tough challenge for ASEAN's future development.

## **Chapter 3**

# **ASEAN Regionalism and European Integration**

The main objective of this chapter is to provide an analysis of the ASEAN integration process and to explore possible opportunities for its future development. It is important to understand the structure, characteristics and the fundamental intention of the ASEAN integration, in order to recognize its strengths and weaknesses. First, this chapter examines the differences and the similarities between ASEAN and the EU – obviously the most successful regional integration process worldwide. This comparison predominately relates to their economic, political and, to a lesser extent, social issues. Subsequently, the prospect of further integration of ASEAN will be analyzed, using the EU development as a supporting example to show “what ASEAN can learn from European integration”. Nevertheless, it must be recognized that even though the EU has carried out its integration process successfully, it should not be taken arbitrarily as a general benchmark model for integration processes in every other region. It is important to study carefully how best to take advantage of the lessons to be learned from the EU, whilst being careful to understand the region’s own specific economic, political, and social structures and circumstances. This approach could help ASEAN in finding itself an efficient path to integration.

### 3.1 ASEAN and the European Union

The configuration and the scope of the ASEAN and EU integration processes have had significant implications for countries involved in integration processes of their own worldwide. At present, ASEAN, consisting of newly industrializing and developing countries, exemplifies a lower level of economic integration and is in the form of an inter-governmental association with a loose form of cooperation and no supranational approach. To a certain extent, ASEAN's integration process may serve as a useful instance and a case study for other regionalization processes among developing countries. The EU, on the other hand, represents the most advanced regional integration, in terms of both economic and political features. The EU is now a community of industrialized countries in monetary union<sup>130</sup>, based on a very formal institution with a supranational approach. Although its integration process has not always run smoothly, the EU continues to grow and develop further into a more advanced state of integration. As such, it is worth studying the evolution of the differences in characteristics and objectives between both ASEAN and the EU, in order to aid efficient planning for the future development of ASEAN.

Looking back on the period before the establishment of both institutions, it is apparent that while the Southeast Asian countries were in a colonial period with no sign of any concept of integration, the idea of integration was already present in Europe since the 1920s and had gained momentum after the end of the war. From a superficial perspective, the circumstances surrounding European integration bore a resemblance to those of

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<sup>130</sup> More precisely, the EU is still not a complete economic union, but can be positioned at the first stage of the complete economic union, which is called economic and monetary union, as mentioned in chapter 1. The EU, at present, can be positioned more than halfway between common market and economic union, see Cuyver L. (2002), p. 1.

the ASEAN integration. Both associations were encountering external threats and were striving for external and internal stability in the political and economic spheres. Through the establishment of ASEAN, the region expected to reduce and solve political tensions between the members, particularly on territorial issues, as well as to reduce the influence of the dominant powers in the region. In Europe, there were, first of all, attempts to avoid a resurgence of excessive nationalism by building European international relations. Besides this, the emergence of a new World Order with two superpowers (the USA and the Soviet Union); the division of Europe, and the threat of communist influences and the Soviet red army were the other crucial factors that had given impulse to the European cooperation. In order to overcome the poor economic situation that was a consequence of the war and to initiate European economic and political cooperation, the reconstruction of West Germany was seen as indispensable for a successful future for Europe. Additionally, the reconciliation of France and Germany was perceived as the right point of departure for European stability.

A. Etzioni<sup>131</sup> points out that economic cooperation has frequently served as a starting point for integration. Etzioni argues that economic cooperation supports regional integration through the so-called “take-off processes” and will bring about cooperation and integration on the political stage afterwards. Etzioni asserts that there is a higher expectation of success if there is a harmonization of interests among the integrating members on a lower integration level first (cooperation without losing sovereignty), before moving gradually towards a higher level. In the context of the ASEAN development, E. D. Solidum<sup>132</sup>

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<sup>131</sup> Etzioni A. (1965), p. 269-300, and Dosch J. (1997), p. 32

<sup>132</sup> Solidum E. D. (1974), p. 93-94, and Dosch J. (1997), p. 33

denotes an analogous starting point between ASEAN and the EU. The ASEAN members started by cautiously determining a common interest project; without any risk of dispute or restriction of national autonomy. Now ASEAN has initiated further processes of cooperation and integration. This argument relating to the cautious consolidation of ASEAN has also been supported by Michael Antolik<sup>133</sup>.

There are certainly significant differences to be seen between the EU and the ASEAN regionalism. Indeed, external threats have played a significant role in initiating the development of ASEAN and since the beginning ASEAN has focused predominantly on imminent problems. For instance, in the Bangkok Declaration, the short-term objectives are clearly defined, contrary to the long-term objectives. In fact, this kind of “short-term planned” and “reactionary” policy has been a characteristic of ASEAN until the present day. Accordingly, Somsakdi Xuto<sup>134</sup> asserts that the process of ASEAN regional cooperation can be regarded as directionless and unplanned. The political objectives and the implementation of political strategies thus remained unclear. Contrarily, since its beginnings, the EU has set great store on long-term development of Europe, striving for amity between France and Germany and stability and peace in Europe by integrating the economies of the member countries. In this way, it has established a long-term plan with political aims through an initial economic approach, proceeding by the “Community Method”.

As already mentioned, the external threats have always given impulses to the direction of ASEAN development. Until now, there have been three types of substantial external

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<sup>133</sup> Antolik M. (1992), p. 316-329

<sup>134</sup> Dosch J. (1997), p. 35, based on Xuto S. (1982), p. 56, in retrospect, views and comments from selected writings, Bangkok



influence that have forced ASEAN to react. Firstly, the political aspect; in the beginning, it was the Cold War and the threat of communism in the region that influenced ASEAN to move towards political cooperation. Second is the real economic aspect. Later on, in the 1970s, the world economic crisis, including the collapse of the Bretton Woods system in the early 1970s, the Oil-crisis in 1973-1974 and the subsequent worldwide economic recession in 1974-1975, led to serious efforts to initiate ASEAN economic cooperation. Furthermore, since the end of the 1980s, the end of the Cold War has led to the New World Order. This has brought the start of economic globalization, and the economic issue has become prominent. Afterwards, ASEAN reacted to these circumstances by establishing the AFTA in 1992, and has made a great move towards economic integration. The third type of external influence relates to monetary and financial aspects. Stemming from the outset of financial sector globalization since the late 1980s, partly as an effect of G-5 Plaza Accord, ASEAN encountered a financial crisis in July 1997. This brought down the ASEAN economies, but provided impetus and direction for ASEAN development again. Every time a problem or external threat occurred, ASEAN members were eager to cooperate in order to overcome the hardship. The incentives towards further integration were therefore revived. It is noticeable that ASEAN has always withstood all the imminent external threats successfully<sup>135</sup>. Nevertheless, once a problem is solved, the integration process quietens down again. In terms of short-term planning and the knowledge of how to react to threatening

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<sup>135</sup> Besides these three influences on ASEAN integration, it should be noted that the EU development has inspired and partly served in many situations as a sample or working model for the evolution of ASEAN, particularly in the initial period.

problems, ASEAN is definitely experienced, but it lacks experience in long-term planning and setting long-term objectives<sup>136</sup>.

Almost 40 years of hardships and experiences, the ASEAN characteristics and points of view have become increasingly clear. The ASEAN characteristic of solving imminent problems under the acceptance and respect of national sovereignty, and by consensual decision – through the so-called “ASEAN Way” – has been more and more obvious throughout ASEAN development. It has been suggested that the implementation of “the ASEAN Way” is based on the inherent political culture of the region delineated by the “Musyawarah principle” of decision-making process<sup>137</sup>. The Musyawarah principle derives from the java philosophy of “Musyawarah (discussion)”, “Mufakat (consensus)”, and “Gotong Royong (collective)”<sup>138</sup>. This principle has influenced and has been implemented in the ASEAN philosophy for centuries. Now it has become an essential foundation for the ASEAN philosophies of “national resilience” and “regional resilience”<sup>139</sup>, and particularly comes to the fore in the decision-making process. This consensus-based, no-vote system is viewed as effective in avoiding conflicts and confrontations. In some literature, this flexible principle is claimed to be an instrument for ASEAN success and stability<sup>140</sup>. Another significant ASEAN characteristic lies in the economic sphere. ASEAN has gained momentum in

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<sup>136</sup> For instance, the failure of the ASEAN Industrial Projects programs (AIPs), ASEAN Industrial Complementation and the ASEAN Industrial Joint Ventures (AIJV), launched at the end of the 1970s, see chapter 2.

<sup>137</sup> Thanadsillapakul L. (2000), p. 1, Sin D. C. (2000), p. 177-180, and Dosch J. (1997)

<sup>138</sup> Thambipillai P. (1992), p. 72-75

<sup>139</sup> The ASEAN states have operated an interrelated “double-strategy” aiming at existence-maximization, which includes striving for autonomy (national resilience) and preserving regional autonomy (regional resilience). See Mols M. (1996), p. 284

<sup>140</sup> Sin D. C. (2000), p. 178

changing its direction of development from political to economic since the end of the Cold War. Moreover, the lesson from the 1997 financial crisis has brought ASEAN to realize its weaknesses and strengths on the international stage. As a consequence, ASEAN has been given serious momentum in both real economic, as well as financial economic development and integration. Aiming at efficient and stable development, ASEAN is now moving towards “opening and deepening economic integration”.

### **3.1.1 Political, Security and Social Aspects**

#### **The Political Aspect: Comparison between ASEAN and the EU Institutional System**

ASEAN is an intergovernmental association, the decision-making processes of which are based on the consensus principle. The Foreign Ministerial Meeting or the ASEAN Economic Ministerial Meeting possesses the authority to making decisions associated with economic cooperation. While the EU continually sets its sights on political union, issuing Treaty and binding rules which gradually have become part of national law systems, ASEAN, contrarily, has developed itself mainly “by way of declarations”<sup>141</sup>, putting out non-binding declarations, action plans and agreements, except on the external security issue. The EU prefers formal agreements – leading it to be known as a “contractual society” – with generally more idealistic approaches, while ASEAN prefers informal arrangements or “consensual society” with relatively pragmatic approaches. This can also be observed in ASEAN business relations<sup>142</sup>. Additionally, V. Boltevogel asserts that instead of work-

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<sup>141</sup> Sin D. C. (2000), p. 242-243

<sup>142</sup> See Urban W. (2001), p. 1-2, Waltraut Urban raises the question as to whether these differences exist because of different levels of integration or because of differences in attitude.

ing by contract, ASEAN has established Forums with the following attributes: consultative instead of binding, pragmatic instead of dogmatic and flexible instead of exclusionary<sup>143</sup>. These Forums may serve as a means for ASEAN to find a collective orientation, to clear up any controversies and to build up confidence between members, subject to the respect of the national sovereignty.

Comparing the ASEAN and the EU institutional structures, the following aspects should be noted:

**First is the quantitative difference in budgets and staff:**

Shortage of resources is one of the key difficulties that ASEAN has to cope with. While the EU has its own resources to finance its budget and a permanent stream of incoming revenue, the budget of the ASEAN Secretariat has derived from equal contributions from all of its members (since 1980). That means the share is consequently limited by the contributing capacity of poorest member country. Various projects also receive support in the form of funding from the ASEAN Fund, the ASEAN Foundation and from funds set up in ASEAN external relations with dialogue partners. However, the implementation of several projects has been based on cost sharing, in which each participating member has to finance its own disbursements. Even though the number of the ASEAN professional staff has been increasing steadily – from 64 in 1992 to 99 in 1998<sup>144</sup> with additional support from 99 indigenous Indonesian employees –, it is doubtful that they are capable of operating the ever-increasing number of ASEAN activities effectively and sufficiently. Termsak

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<sup>143</sup> Boltevogel V. (2001), chapter 12

<sup>144</sup> ASEAN Secretariat, ASEAN Annual Reports 1998-1989

Chalermphanupap<sup>145</sup> suggests that, in the long run, creative resource mobilization measures might be essential in order for ASEAN to initiate a permanent flow of capital. Thus a change of structure in terms of a legal framework must also be considered.

**The second difference has to do with the way that institutions function and are structured, i.e. an intergovernmental versus a supranational approach:**

ASEAN started out as an intergovernmental association with an unsophisticated legal framework and institutions. The latter encompass the Meeting of the heads of state or government in the form of the highest decision-making body, the ASEAN Ministerial Meeting (AMM), as well as an annual meeting of the Foreign Ministers (AFMM) and, since 1977, the ASEAN Economic Ministerial Meeting (AEM). These are the central decision-making bodies. Furthermore, the ASEAN Standing Committee (ASC), Senior Official Meeting (SOM), Senior Economic Official Meeting (SEOM), committees of specialists, and ASEAN Secretariat were established to support the decision-making institutions. None of this second group of institutions holds legislative functions or sets up binding rules for the association. There are parallels between the ASEAN Secretariat and the European Commission as well as between the AMM and the Council of European Ministers. However, while the European Commission has an executive and legislative framework, the ASEAN Secretariat is limited merely to consultation and the implementation of the decisions of the Meeting of the heads of state or government and the AMM. It possesses no direct role in implementing ASEAN treaties and agreements, but merely monitors the implementation process. Even though the AMM, AEM and AFMM are the central

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<sup>145</sup> Chalermphanupap T. (2001), p. 8

decision-making bodies, comparable to the Council of European Ministers, they have no definite legislative competence<sup>146</sup> and the extent of their power is much less. Furthermore, there is no ASEAN-Parliament. That being said, there is the ASEAN Inter-Parliamentary Organization (AIPO), the activities of which are on the increase. However, it is not a part of the ASEAN structure, but an NGO that has merely a consultative function. There is also no Court of Justice in ASEAN. Perhaps the closest equivalent is the ASEAN High Council, but it does not take a judicial role. Article 15 of the Treaty of Amity and Cooperation in Southeast Asia (TAC) states that: “The High Council will merely recommend to the parties in dispute appropriate means of settlement such as good offices, mediation, inquiry or conciliation, and when necessary appropriate measures for the prevention of a deterioration of the dispute or the situation”. For disputes related to ASEAN economic agreements, a Dispute Settlement Mechanism is now in place for their resolution. The Dispute Settlement Mechanism, signed by the AEM in 1996, is based on the WTO Dispute Settlement Understanding<sup>147</sup>. In addition, it should be noted that most ASEAN treaties and agreements deal with the region’s governments and not directly with individual citizens. There is no ASEAN Ombudsman to represent the opinions of individuals or their dissatisfaction over ASEAN activities, or over issues of integration and cooperation.

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<sup>146</sup> Their agreements are binding, but only the cooperation of the national legislature and the relevant authorities in each member is required to implement.

<sup>147</sup> If settlement cannot be reached on bilateral negotiation, disputes can be referred to the Senior Economic Meeting (SEOM). Assisted by a panel of experts, SEOM will make a decision based on a simple majority – without the participation of the disputing parties. If the ruling is found to be unsatisfactory, a party to the dispute can appeal to the AEM, who will then make a decision, also based on a simple majority. Moreover, the ASEAN Secretariat is responsible for monitoring the implementation of the ruling of the SEOM and decision of the AEM, see Chalermphanupap T. (2001), p. 6.

**Third is the difference in the decision-making process – consensual society versus qualified majority voting with the right to veto:**

The EU decision-making process “qualified majority voting with the right to veto” has been developed to enable effective decision-making and to keep plans moving faster. The EU has also adopted the “Subsidiarity Principle<sup>148</sup>” in respect of regional and national competencies, to support the vertical decision-making process. The ASEAN Way, however, has derived from the ASEAN philosophy of national and regional resilience. Even though many economists have judged the ASEAN Way to be a means of promoting ASEAN stability and success, Dosch and also Sin hold the opinion that in practice, the consensus principle has been counterproductive to numerous decision-making processes. In many cases, delicate and sensitive issues have been filtered out of official dialogues, in order to avoid controversy. Moreover, decisions made in the AMM are not bound by contract. These circumstances have hindered ASEAN’s further development and its integration process<sup>149</sup>.

**Fourth is the difference in political will:**

In ASEAN, political will is still modest and there is a lack of effective institutional organizations and legalization. There are no clear aims, visions and consequential implementations. In addition, there hardly is any support from the social side which due to the

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<sup>148</sup> Since EU membership has increased both in number in diversity, to reduce the complications and costs of the implementation of decisions, the EU may take decisions in which there are economies of scale and which involve issues that the members cannot handle in an efficient way individually. Of course, there are many cases that should be implemented at the local or national level. Therefore the decision of how to assign competence might be taken on the basis of a cost-benefit analysis. Although the definition of the term subsidiarity is very sensitive and it can be interpreted in several ways, this principle plays a key part in paving the way for more powerful EU institutions. This principle states that “the EU would take action only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the member states and can therefore, by reason of scale or effects of the proposed action, be better achieved by the community” (Article G).

<sup>149</sup> Dosch J. (1997), p. 40, and Sin D. C. (2000), p. 179

EU's experiences is very relevant for a strong political structure; on the contrary, there is still social reluctance to full trade liberalization and very limited social participation in the integration decision. There are heterogeneities in size, standard of living, and political objectives. Divergences of national interests and differences of conceptions of national economic policy still exist. Additionally, there are differences in political structure, in particular discrepancy between democracy and authoritarianism. These are some points that discourage the augmentation of political will in the region. The process of the European integration shows that in order to achieve a successful integration in the long-run, it is necessary to operate a strong collective political will in the region. This political will might not merely operate at national government and ASEAN level, but also at regional level, particularly at the levels of the ASEAN+3. Apparently, the role of the significant economies in East-Southeast Asia, namely ASEAN, China, Japan and Korea will be the leading caucus for the open and deepen regionalism and will be a consequential force towards global liberalization.

### **The Security Aspect: “Cooperative Security” versus “Pluralistic Security Community”**

Neither ASEAN nor the EU can be characterized as a military alliance. According to Deutsch's political security concept (1957), the EU might be classified as pluralistic security community<sup>150</sup>. Contrary to the EU, ASEAN has not shown any sign of developing

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<sup>150</sup> In 1957, in cooperation with other scholars, Karl Deutsch introduced the concept of “security community” to the study of “the possible ways in which men some day might abolish war”. Deutsch and the scholars defined the security community as a group of people that had become integrated to the extent that there is a real assurance that the members of that community will not fight each other physically, but will settle their disputes in some other way. They classified two types of security communities. The first type is an amalgamated (unified) security community. The United States is an instance of such a community. The second type is a “pluralistic security community”, where the community government retains the legal independence of a



into a security organization, despite the fact that one main motive for the establishment of ASEAN was political security, particularly in the context of the Indochina conflict, the threat of communism and the hegemonies in the region. ASEAN has no institution comparable to the Common Foreign and Security Policy (CSFP) or the West European Union (WEU). There have merely been bilateral or trilateral military relations, including military training and information exchanges.

Susanne Nicolette Strauß<sup>151</sup> views the ASEAN security cooperation as a “security complex” characterized by the geographical proximity of the participant countries and their very similar security circumstances, particularly in terms of similar external threats. The ASEAN security concept is founded on ideals of peace and freedom in the region and moves towards them by increasing interregional cooperation and bringing the members closer together. The legal frameworks that back up this concept are Zone of Peace, Freedom and Neutrality (ZOPFAN), Treaty of Amity and Cooperation (TAC), Southeast Asian Nuclear Weapon Free Zone (SEANWFZ), and ASEAN Regional Forum (ARF). The ARF in particular is considered successful in achieving its aims of diplomacy, confidence building and settlement of controversies in the Asia-Pacific region, and has played a significant role in the development of political security. Nonetheless, in comparison to the EU, ASEAN is presently still far from being a pluralistic security community. In the opinion of Acharya, Simon, Weatherbee, Leifer and Sin, the structure of the ASEAN security policy

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separate government. See Hallenberg J. (2000), p. 1

<sup>151</sup> Strauß S. N. (1995), p. 173

should be classified as a “cooperative security” approach, in the sense that military force or operations are unlikely to be considered as options for conflict-solving<sup>152</sup>.

### **The Social Aspect**

While the people in the EU have already been involved in the EU integration process, in ASEAN only policy-makers and an elite circle, including academics and some professionals from the economic sector, have been involved in giving direction to ASEAN’s development. It is noticeable that the ASEAN integration process has brought about increasing interaction between the three elite circles, namely the state, academics and the economic circle, but there are not any signs of a trend to involve the people. The people in ASEAN have never been asked whether they want integration to take place or not. Only the state and the elite circles have been running ASEAN. There is no public opinion poll about how integration should proceed or what direction ASEAN should follow. European integration, on the contrary, has been supported by the majority of the public according to opinion polls, even though there have been concerns about the EU’s declining popularity with the public since the 1990s.

From the outset, it has been always the state sector that has taken the initiative in the ASEAN integration process. Not until the 1970s did the private sectors and the Non-Government Organizations (NGOs) increase their involvement. The number of NGOs active in the region rose from 4 in 1980 to 53 in 1999<sup>153</sup>. This increased involvement was par-

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<sup>152</sup> Archarya A (1991), p. 159-177, Simon S. W. (1992), p. 122, Weatherbee (1993), p. 414, Leifer M. (1999), p. 25-38, Sin D. C. (2000), p. 249.

<sup>153</sup> ASEAN Secretariat 1999, and Sin D. C. (2000), p. 220. The most important NGO is the ASEAN Chamber of Commerce (ASEAN CCI) established in 1972. The ASEAN CCI serves as a cooperation-link between the Government and the private sectors. It, furthermore, has brought about efficient and effectiveness in the

ticularly noticeable in the economic sphere, including economic development and the transformation of the ASEAN economies<sup>154</sup>. Nonetheless, the private sectors in other spheres have not yet been significantly integrated to the ASEAN development, and there are still no consulting-institutions to handle cooperation between ASEAN and the NGOs. Contacts between the two sectors have only been organized and supported under the ASEAN Secretariat and the Standing Committee. This shows a marked contrast to the EU, where a number of economic and European social interest groups have been involved in and have supported EU integration since its outset – there were about 1500 registered European interest groups in 1999<sup>155</sup>. The private sectors and the NGOs are able to influence the integration process in their own interest, formally through the economic and social committee, which serves as an institutional link between the EU and the private sectors, and informally by means of lobbying, which can mostly be observed in the Commission<sup>156</sup>.

### **3.1.2 The Economic Aspect**

#### **A Comparison between the Economic Structures of ASEAN and the EU**

At present, ASEAN and the EU share some significant similarities in their economic objectives<sup>157</sup>. Firstly, they are both open to foreign trade and investment, embarking on the road to an open international economic and financial system. Secondly, since both economies experienced severe economic and financial crisis in the 1990s (the EU was hit

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economic cooperation between both bodies.

<sup>154</sup> Chatterjee S. (1990), p. 58-82

<sup>155</sup> Sin D. C. (2000), p. 238-239

<sup>156</sup> Sin D. C. (2000), p. 239

<sup>157</sup> Barrell R. and Choy Amanda (2003), p. 9-11, and Verbeken Dirk (2003), p. 2

by the EMS crisis in the early nineties and ASEAN was hit by the financial crisis in 1997, however it must be emphasized that the reasons for the crisis in the two regions were very different), they are aiming to strengthen and obtain better control of their economic and financial systems. Both instances of regionalism are aimed at immunity against the detrimental forces of financial globalization, and at attaining economic stability and sustainable growth. Thirdly, both regions have a complex economic and social structure. Consequently, while they have incentives to retain the positive characteristics of their individual members, they also have to increase their flexibility with regard to the force of globalization and the maturing world economic and political situation. Nevertheless, despite the resemblances in their objectives, our two examples of regionalism are very different in numerous facets. The EU members are mostly developed countries, while the ASEAN members range from a newly industrializing country (Singapore), to countries at a very early stage of development (for instance Cambodia). The consequential dissimilarities in economic structure of the ASEAN and the European regionalism can be characterized as follows: diversity versus homogeneity, export-oriented growth versus more internal-trade oriented growth, orientation towards external FDI versus mainly investment within the community and an economy based on the real sector versus real as well as monetary based economy. Moreover, there are also differences at the level of economic integration as well as the incentives for and efforts towards deeper economic integration.

At least three facets of economic structure should be distinguished in considering the progress towards economic integration<sup>158</sup>. The first is the increasing interdependence of

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<sup>158</sup> Iwami T. (1998), p. 2

real transactions (for instance, trade and FDI). The second is the growth of financial and monetary interdependence (for instance, co-movements of interest and exchange rates). The third is the establishment of a trade and/or monetary bloc, which calls for mutual development to a higher level of economic and political integration. When ASEAN and the EU are considered in terms of these facets, it is noticeable that there are several structural dissimilarities between their economies. These distinctions have significantly affected the way economic development and integration have unfolded. The characteristics of the economic structure focused on here are founded on the criteria of the theory of the Optimum Currency Area (OCA), including “trade openness and FDI”, “income convergence”, “synchronization of the business cycle”, “exchange rate variability”, “convergence of interest rate”, “convergence of inflation rate”, and “the integration-effort on the monetary and financial sphere”.

### **1) Interdependence of real transactions (trade and FDI)**

The differences in intra-regional trade between the two regions are very conspicuous. The trade pattern in Europe can be classified into two phases. In the first phase, the European regional integration focused on the removal of trade barriers, leading to the increase of intra EU-trade between 1960 and 1980. The second phase was characterized by the elimination of barriers to competition<sup>159</sup>. The ratio of intra-regional trade to total trade in Europe, which had already been very high since the 1960s, stabilized between 1980 and 2000. The shift to stabilization of the EU intra-regional trade share is a result of various

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<sup>159</sup> On the one hand, an increase in competition may bring about higher specification and therefore an increase in trade, and higher price competition may also make the market more contestable, leading to more efficient factor usage. On the other hand, elimination of barriers to capital mobility may reduce trade, if it allows firms to locate in other countries in the region with lower production costs, see Barrell R. and Choy A. (2003), p. 5.

factors, for instance, the fact that many possible trade gains had already been exploited by 1980, and that further advantages were then brought about by the increasing competitiveness. Another such factor is that the implementation of common standards may change import demand, particularly in the EU<sup>160</sup>.

As opposed to the EU, the ASEAN countries are externally oriented in trade. Even though the intra-regional trade as a share of regional GDP is nearly similar to that of the EU and larger than that of MERCOSUR and NAFTA, ASEAN has a low level of share of intra-regional trade to total trade. Although this share is increasing, it remains low – at about 21 percent in 1997. The ratio of intra-regional trade to total trade within the EU was much higher, about 62 percent in 1997, despite the slight declining tendency from 1991 until 1997. The relatively low share of intra-regional trade to total trade in ASEAN is mainly a consequence of the very similar and competitive production and export-import structures of most Southeast Asian countries. Notably, ASEAN integration is not aiming to establish a discriminatory trading bloc, but rather to strengthen international competitiveness. Hence, instead of working predominantly towards increasing intra-regional trade, ASEAN aims to develop the ASEAN market into an attractive area for international trade and investment within for the world economy. This development is facilitated by economic integration, particularly the increasingly free mobility of investment within ASEAN<sup>161</sup>. The high degree of openness of the ASEAN countries has been reflected particularly in the diversified geographical direction of the ASEAN trade, mainly to the United States, Japan

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<sup>160</sup> Swan P, Temple P., and Shurmer M. (1996), p. 1297-1313, and Barrell R. and Choy A. (2003), p. 6

<sup>161</sup> Thanadsillapakul L. (2000), p. 69-70

and Europe<sup>162</sup>. From their study based on the basic gravity model, Frankel and Wei (1998) observe that, besides the fact that ASEAN countries are found to be more open than average countries, trade among the members is higher than expected from their economic and geographic attributes<sup>163</sup>, and has been increasing continuously.

Another contrast between the EU and ASEAN has to do with intra-regional direct investment. While the EU demonstrates a strikingly high level of intra-regional direct investment between members – about 67 percent in 1997, with an observable increase of intra-regional direct investment in 1991-1997 –, the intra-regional direct investment among the ASEAN members has been comparably disappointing. Admittedly, efforts have been made in recent years in intra-regional direct investment, particularly on the part of Singapore. However, the investment in ASEAN has depended largely on extra-regional investors. The economic growth of the ASEAN countries, apart from growth stemming from export-led strategy, has essentially taken root in FDI from outside the region, mainly from Japan since the late 1980s and from the East Asian newly industrializing economies (NIEs) since the 1990s. Contrary to the case in the EU, FDI strategy in ASEAN has predominantly been focusing on increasing export-competitiveness to outside world, instead of increasing the effectiveness of the firms that service their domestic market<sup>164</sup>. In addition, much of the

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<sup>162</sup> It can be concluded that the fluctuation among the ASEAN countries is higher than that of the EU countries, so that none of the major currencies could be definitively preferred for a common peg. On the contrary, since European countries have a very high share of trade within the region and are highly dependent on the euro, they have significant incentives to enter into the EU and take part to euro membership, see Bayoumi T. and Mauro P. (1999), p. 6-7.

<sup>163</sup> Frankel J. and Wei S.-J. (1998)

<sup>164</sup> A large amount of FDI was welcomed in the export sector, whilst FDI in the domestic markets was subjected to many restrictions, see Barrell R. and Choy A. (2003), p. 13.

FDI was directed towards a small number of products, for instance electronic products. Consequently not many local firms have gained spillover advantages.

## 2) **Income convergence**

Income convergence is one of the indicators that show the potential for economic integration. Higher levels of integration and openness are related to higher mobility of the factors of production, resulting in more income convergence. The gains from economic integration are larger among the countries with more similar levels of income and economic development, since they have incentives to trade and invest more with each other<sup>165</sup>. Furthermore, convergence supports the prospect of strong economic interaction and coordination in the long run, whereas divergence may bring about tensions and conflicts in the short run<sup>166</sup>.

Implementing Theil (1967) measures of inequality and the data source from the Penn World Table (PWT) version 5.6.3, Park D. and Rahman S. (2003) have examined the income convergence of the ASEAN countries and also the ASEAN-5 countries in the period from 1960 to 2000<sup>167</sup>. They found that for both ASEAN-10 and ASEAN-5, there is no income convergence within the region. Instead of this, significant divergence could be observed. They reason that the performances of the higher income countries, namely Singapore, Malaysia and Thailand, exceeded the performances of the lower income countries.

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<sup>165</sup> Stylized facts suggest that a similar level of economic development often support flows of goods, services and capital, see Jovanovic M. N. (1998), and Park D. and Rahman S. (2003), p. 2.

<sup>166</sup> Donghyun P. (2000), p. 2

<sup>167</sup> The advantage of using PWT data is that all economic variables are denominated using a common set of prices and in a common currency, thus this enhances the comparison. However its limitations are the fact that, despite its accuracy relative to other sources, for example the International Financial Statistics (IFS), PWT data are still inaccurate for less developed countries and the Theil indices merely show the inequality measure.



The lack of convergence was worsened by the severe contraction of output in Indonesia after the crisis, and the Philippines did not perform well during the whole period relative to the other core ASEAN members.

Another interesting analysis of income convergence among the ASEAN countries was made by Heng T.M. and Siang T.C. Based on the Barro and Sala-i-Martin model. They classify the difference between absolute and conditional convergence which can be determined as followed. The hypothesis of absolute convergence is that poor economies tend to grow faster than the rich ones. This is, however, subject to the condition that if production technologies, saving rates and population growth rates are the same across countries, all countries have the same steady state and differ merely in terms of initial conditions. Contrarily, the hypothesis of conditional convergence is that an economy grows faster the further it is from its own steady state. This is subject to the theory that even if production technologies, saving rates and population growth rates differ across countries and even if the countries may consequently each have a different steady state, each economy, nevertheless, will eventually still converge to a steady state. On the one hand there was no support for the absolute convergence hypothesis among nine countries from the ASEAN-5 and the East Asian countries<sup>168</sup>. On the other hand, based on the level of physical and human capital, the authors estimated that the speed of convergence for these nine countries between 1960 and 1990 results at 4.8 percent per year. Additionally, they found that more intensive convergence could be observed among the East Asian countries than among the ASEAN countries.

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<sup>168</sup> Including Indonesia, Malaysia, the Philippines, Singapore, Thailand (ASEAN-5), and Hong Kong, Japan, South Korea, and Taiwan (East Asia)

Even though a level of regional income convergence similar to that of the EU countries may not be obtained in the near future, Park views the lack of income convergence in ASEAN as being largely structural and not undesirable. Notably, all the ASEAN countries still have potential to develop and to attain accelerated growth in productivity and consequently in their per capita incomes. In terms of fulfilling these objectives, Heng T.M. and Siang T.C. suggest that the ASEAN-5 countries have the potential to catch up with the East Asian countries, if they were to achieve a high saving rate and develop their educational and technological levels. This would require an increase in capital accumulation either through domestic saving or via FDI, accompanied by an improvement of human capital and the quality of labor. This could be achieved, for instance, through investment in education, in order to reap the benefits of the technological spillover and transfers. It is important to ensure the continuity and constancy of the incoming technology transfers and that sufficient capacity exists in the qualified workforce to absorb these.

### **3) Synchronization of the business cycle**

The synchronization of the business cycle indicates the interdependence of the economies between countries and may confirm that each economy is, to a great extent, driven by external shocks<sup>169</sup>. The higher the synchronization, the higher is the interdependency of the economies and the lower the cost of deepening integration and conducting common policies.

Using the structural vector auto regression (VAR) approach, Zhang, Sato and McAleer (2001) estimated the structural shocks, including supply, demand and monetary shocks, for

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<sup>169</sup> Artis M. and Zhang W. (1998), and Dorrucchi E., Firpo S., Fratzscher M. and Mongelli F. P. (2002), p. 12

the East Asian and ASEAN countries between 1980Q1 and 1997Q1 (before the financial crisis) and between 1980Q1 and 2000Q3 (encompassing the period of the financial crisis and its aftermath). Their findings reveal that the supply shocks are significantly correlated only in some ASEAN countries and in some Asian NIEs, and that the 1997 financial crisis augmented the number of the significant correlations between supply shocks. However, no significant correlation of supply shocks between Japan and the other East Asian countries including ASEAN could be observed, except of those between Japan and Malaysia. The demand shocks and monetary shocks are highly correlated among the ASEAN countries and also the Asian NIEs, the monetary shocks, however, are much less strongly correlated than the demand shocks. As in the case of the supply shocks, the 1997 financial crisis also increased the number of significant correlations of demand and monetary shocks. Since Japan is a key source of imports for the Asian economies, the increased price level engendered by demand shocks in Japan may lead to a negative impact on demand in the other Asian countries. This is indicated by the negative correlation of demand shocks between Japan and the East Asian and ASEAN countries. Following the impact of the financial crisis, however, this correlation became positive. Contrarily, the number of significant correlations of monetary shocks between Japan and the East Asian and ASEAN countries declined after the crisis.

In the case of the EU, the significant correlations between structural shocks, which mainly consist of correlations between demand shocks, predominate only in a sub-group of the region. This consists to a great extent, of the “core” EU countries, among which Germany plays a leading economic role. In a comparison between macroeconomic distur-

bances occurring in ASEAN and those in the EU, Bayoumi and Mauro (1999)<sup>170</sup> indicate that the correlations of aggregate supply shocks in ASEAN during 1968-1996 are relatively similar within the region, and are comparable to those in the EU in 1969-1989 – the period before the Maastricht Treaty. Malaysia, Indonesia and Singapore had experienced relatively similar disturbances, whereas the Philippines and Thailand had faced more idiosyncratic shocks. Further, they assert that this pattern is analogue to that which can be observed in the EU, where highly correlated shocks could be observed between France and Germany, while there were more idiosyncratic shocks between Italy and Spain. Notably, Demertzis, Hallet, and Rummel (2000) indicate that the symmetry correlation of structural shocks in Europe is predominately caused by policy intervention rather than natural developments<sup>171</sup>.

Based on the analysis of Zhang, Sato and McAleer (2001), it is apparent that, compared to those of the EU, the average size of the supply, demand, and monetary shocks is much larger in the East Asia and ASEAN region. The speed of adjustment to shocks is mostly within one or two years. The larger size of the disturbances and the higher speed of adjustment in the case of ASEAN as compared to the case of the EU have been also confirmed in studies by Bayoumi T, Eichengreen B, and Mauro P. (1999), and Bayoumi T, and Mauro P. (1999). The comparably high speed of adjustment in ASEAN may be explained by the flexible labor market and wage rates in the economies. Furthermore the findings of Zhang, Sato and McAleer indicate that the size of supply shocks is the greatest in the most

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<sup>170</sup> Bayoumi T. and Mauro P. (1999), p. 7-8

<sup>171</sup> Demertzis M., Hallet A.H., and Rummel O. (2000), p. 657-679, see also Zhang Z., Sato T. and McAleer M. (2001), p. 572

open economies, such as Singapore, Malaysia, the Philippines and also Hong Kong, and the size of the demand and monetary shocks tend to be greater in the Philippines, Indonesia, China and Taiwan. The financial crisis has contributed to an increase in the size of the structural shocks for those countries hit by the crisis.

#### **4) Exchange rate variability**

A low level of exchange rate variability expresses on the one hand the convergence of inflation rates and on the other hand the stability of the currencies. Thus the lower the levels of exchange rate variability, the lower are the costs of abandoning exchange rate flexibility and the costs of moving toward monetary integration.

The findings of Zhang, Sato and McAleer's 2001 analysis show that the exchange rates of the East Asian including ASEAN countries were relatively stable against each other between 1980Q1 and 2000Q1. With the exception of the Indonesia rupiah, the volatility of exchange rates between the region's currencies is below 5% and below 4% against the US dollar. Despite the impact of the 1997 financial crisis which brought volatility to the exchange rates for the Indonesia Rupiah, Korea Won and Thai Baht, the currencies of the other countries in the region showed a low volatility. Furthermore, it should be noted that the ASEAN economic recession in the middle of the 1980s and China's unification of its dual exchange rate in 1994 did not cause high exchange rate volatility in the region<sup>172</sup>. Contrarily to ASEAN, the EU already has its own currency, namely the "Euro", launched in January 1999. Consequently, the nominal exchange rate variability has diminished and the real exchange rate variability has sunk to the lowest level. On the topic of the development

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<sup>172</sup> Zhang Z., Sato T. and McAleer M. (2001), p. 570-571

of the exchange rate dynamic from 1957 until 2001, Dorrucchi E., Firpo S., Fratzscher M. and Mongelli F. P. (2002) present an indicator of exchange rate variability for the EU. Their findings indicate that generally the variability has declined over the whole period, However, there were significant resurgences in the post Bretton Woods period and due to the EMU crisis in 1992 and its aftermath. Moreover, their analysis points to an observable fact that the EU tends to follow a pattern of nominal convergence, which according to Dorrucchi E., Firpo S., Fratzscher M. and Mongelli F. P., is a major requirement for successful economic integration<sup>173</sup>.

#### **5) Convergence of inflation rate and convergence of interest rate**

Moderate, convergent inflation rates among member countries enhance the integration process and are an important criterion for deepening economic integration in the region. In addition, the convergence of interest rates is an indicator that denotes the level of integration of the financial market among member countries. The more uniform the development of the level of interest rates among members is, the lower the costs are of moving towards common monetary policy.

Referring to data from the European countries, the mean averages of the annual inflation rates of the eleven EU countries during 1995-1999<sup>174</sup> were between 1.73 percent (1999) and 3.44 percent (1995). These are considerably lower than those of the ASEAN-5 countries. It should be recognized that among the ASEAN-5 countries, the inflation rates of

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<sup>173</sup> In 1957-1998, real exchange rate variability always exceeded that of the nominal exchange rate. It could be concluded from this that the EU members with higher inflation rates accepted swings in and an appreciation of their real effective exchange rate, in order to achieve disinflation and restructure domestic industry to improve its global competitiveness. Consequently, this sometimes led to unsustainable movement in real exchange rates. See Dorrucchi E., Firpo S., Fratzscher M. and Mongelli F. P. (2002), p. 17-18

<sup>174</sup> Tse, W. (2000), p. 13

Malaysia, Thailand, and particularly Singapore are not much higher and sometimes even lower than those of some EU countries. It was the unstable economic development of Indonesia and, to a much lesser extent, of the Philippines that drove the mean regional inflation rates to a high level. Based on the standard deviations, it could be observed that there is no sign of the inflation rates among the ASEAN-5 countries converging. This is in stark contrast to the EU countries, the data for which indicate a continuous convergence, shown by decreasing means and standard deviation.

As regards the development of the real interest rates among the ASEAN-5 countries, positive evidence of convergence could be found during the period 1992-1997. The decreasing trend in the standard deviation, although slight, indicates the convergence of the real interest rates among the ASEAN-5 countries.

#### **6) Integration effort on the monetary and financial sphere**

The first significant initiative towards financial integration among the original ASEAN-5 was the ASEAN Swap Agreement (ASA) established in 1977. However, this was hardly used by the members. It should be recognized that, contrary to trade and macroeconomic developments, there were no substantial incentives for financial integration in ASEAN. Park Y. C. (2002) argues that liberalization and market opening were the main factors responsible for increasing the opportunities to gain from economic integration among the ASEAN and the East Asian countries, although financial deregulation has hindered these economies from further regional financial integration<sup>175</sup>. Admittedly, the linkages between these countries and the international financial markets have been increased, but the devel-

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<sup>175</sup> Park, Y. C. (2002), p. 8

opment of financial cooperation among countries within the region has been disappointing. Moreover, Park comments that the financial markets of the East Asian including ASEAN countries at present are still less developed than those of the European countries in the 1970s and 1980s. Nevertheless, the situation has changed for the ASEAN and East Asian countries, at least since the breakout of the Asian financial crisis in July 1997. On 6th May 2000, the ASEAN countries plus China, Japan and South Korea agreed on a system of swap arrangements, called Chiang Mai Initiative (CMI). The CMI has two components, an expanded ASEAN swap arrangement and the establishment of a network of bilateral swap and repurchase arrangements among the members.

At least since the 1997 crisis, several scholars have contemplated the possibility of establishing a common currency area in ASEAN or even in East Asia. Even though several different opinions still exist related to this matter, most scholars are still suspicious about the readiness of the ASEAN and the East Asian countries to establish a common currency area. As already mentioned, Zhang, Sato and McAleer (2001) argue that symmetry in structural shocks may be observed among sub-regions in East and Southeast Asia such as ASEAN and NIEs, but not between these countries and Japan. Park comments that financial market integration among the East and Southeast Asian countries is much less than that of Europe in the past. The study carried out by Madhur (2002) supports the fact that ASEAN has already met some of the economic requirements for an optimum currency area, including high factor mobility, wage and price flexibility, high rate of trade to GDP ratio and increasing intra-regional trade, as well as acknowledging that a comparable symmetry in shocks among the countries in the region with those of the EU can be observed. In spite



of this, Madhur views that the realization of a currency area in ASEAN or East Asian region might be burdensome, particularly because of the difficulties in sustaining a currency area after its adoption. This idea is also shared by Eichengreen and Bayoumi (1999) and Bayoumi, Eichengreen and Mauro (1999)<sup>176</sup>. Clearly, the objective of creating a currency area faces numerous constraints and hindrances, such as the disparity in the level of economic development among the countries in the region, the weakness of the financial sector, inadequate institutional support and the lack of economic, political and social preconditions for deepening a monetary integration. The latter include central bank independence, nominal convergence criteria, an interim form of exchange rate arrangement, fiscal rules, capital and labor mobility and a regional competition policy<sup>177</sup>.

To better measure the suitability of ASEAN for the establishment of a common currency, Eichengreen and Bayoumi (1997) have developed an OCA index (using data from 1995), which indicates the expected level of exchange rate variability for the Asian countries<sup>178</sup>. They found that ASEAN is less suitable for a common currency than the European countries were in 1987, the period before the Maastricht Treaty. Nevertheless, the discrepancy is not large. Thus the ASEAN countries are not far from the appropriate stage for establishing a common currency area. In conclusion, there are several economic, political, and institutional barriers to monetary integration in ASEAN and East Asia. A number

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<sup>176</sup> Bayoumi T., Eichengreen B. J. and Mauro P. (1999), p. 1, and Madhur S. (2002), p. 7

<sup>177</sup> Bayoumi T. and Mauro P. (1999), p. 9-14

<sup>178</sup> The index is derived from the results of a cross-sectional regression covering advanced and East Asian economies that relates observed exchange rate variability to four optimum currency indicators, namely the standard deviation of the difference in growth rates across the two economies; the dissimilarity of the composition of trade; the level of bilateral trade and the size of the two economies. Using the data for 1995, they found that the predicted level of exchange rate variability across the ASEAN-4 countries (Indonesia, Malaysia, the Philippines and Thailand) lay uniformly in the 8-11 percent range. In comparison, those of the EU, using the data from 1987, fall within the 6-9 percent range. See Eichengreen B. and Bayoumi T. (1997)

of empirical studies indicate that ASEAN plus 3 does not yet meet the conditions for an optimum currency area, as compared to European qualification for a common currency in the 1970s and 1980s. Nevertheless, the ASEAN countries have already fulfilled several economic conditions and are on the right path towards further integration.

### **3.2 The Prospect of ASEAN Economic Integration and the EU's Lesson**

The characteristics of ASEAN integration can be defined as “high pragmatism and flexibility, but the absence of a hard core integration process”<sup>179</sup>. Unlike the EU, whose development and expansion have been very prudently considered and planned, the integration of the ASEAN countries has been open, flexible, and pragmatic. On the one hand, these characteristics reflect the strength of the region regarding adjustment to external and internal disturbances, but on the other hand, they have hindered the effectiveness of the development process of regional integration. Whereas the EU has already acted as a one-voice union representing one of the important pillars in the world arena, it still cannot be said that ASEAN has acted as a unit in international affairs. The ASEAN member countries have typically been entering into overlapping agreements, negotiations and bilateral non-cooperative games, all of which fail to contribute to regional institutional building. Re-distributive rules among members are also in largely absent, because of their open policy and dependency upon the world markets. As a result of this, there is a lack of common objectives and initiatives to move towards a hard-core integration for the ASEAN region.

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<sup>179</sup> See also Boyer R. (2002), p. 25

In order to make effective progress in economic integration, ASEAN has to realize its strengths and its weaknesses, while also learning from the EU's integration experiences. The foremost strengths of the ASEAN countries lie in their openness and their flexibility, whereas their weaknesses lie in their diversity, indetermination in exerting economic and political objectives, and their insistence on preserving of national authority. Hence, in order for the ASEAN countries to develop their integration process, they need to find a common objective to implement, which can be planned for in the long-term, medium-term and short-term and which would necessitate the adoption and promotion of their openness and flexibility. ASEAN should not try to completely emulate European integration, particularly in the political sphere, in which the two regions differ significantly – firstly in the diversity of their political regimes and secondly in the unwillingness of individual members to lose authority. Therefore, at least to start with, instead of attempting political integration, in which ASEAN has no experience and for which it has little enthusiasm, it is better to intensify and complete the objective of economic integration, which is based on ASEAN's strengths. This improvement may subsequently assist regionalism in the political sphere within ASEAN in its own way. Etzioni has pointed out that economic cooperation has served as a starting point towards integration. Economic cooperation would support regional integration through the so-called “take-off process” and bring about cooperation and integration on the political stage afterwards<sup>180</sup>. It has been said that one of the conditions for successful integration is to set up a common economic and political objective among the members<sup>181</sup>. There is a higher expectation of success if there is a harmonization

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<sup>180</sup> Etzioni A. (1965), p. 269-300, and Dosch J. (1997), p. 32

<sup>181</sup> Boyer R. (2002), p. 13

of interests among the integrating members, at first on a lower integration level, for example, cooperation without losing sovereignty – prior to gradually moving towards a higher level<sup>182</sup>. In order to achieve the aim successfully, an organization should take an appropriate step rather than a progressive step and the projects aiming towards integration should not be too ambitious. As to this point, the EU has shown its failure in – and learned its lesson from – the EMS crisis in the early 1990s that made it realize that the road to the establishment of monetary union was, inevitably, to be long.

At present, the problem does not lie in setting an objective, but rather in its exertion, completion and sustainability. ASEAN is doing well with the new aim of establishing the ASEAN plus three free trade area; however, the way to achieve this goal remains unclear<sup>183</sup>. Additionally, most of the objectives have not been completed yet, and several projects have failed. Therefore, ASEAN should not set itself the high aim of political integration like the EU, but the ASEAN members should instead concentrate on how to achieve economic integration and how to reap advantages from it. With respect to monetary integration or a common currency, it may be considered that the high openness of the ASEAN countries reflects in the particularly diversified geographical direction of ASEAN trade (mainly to the United States, Japan and Europe) and entails high fluctuations of diverse currencies among the ASEAN countries. Therefore, it is difficult for ASEAN to define a major currency that might be preferred as a common peg. Another option would be to set up a new ASEAN

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<sup>182</sup> Etzioni A. (1965), p. 269-300, and Dosch J. (1997), p. 32

<sup>183</sup> Furthermore, since the imminent external threats have again subsided, the pressure for further integration has abated. After the 1997 financial crisis, there have been high concerns about monetary integration within Asia. The Chiang Mai initiative was established in 2000 with the expectation of being a bridge towards monetary integration in Asia. However, since its introduction, the leaders of the CMI group have yet to create a supporting operational structure, in particular a mechanism for monitoring and surveillance, see Park Y. C. (2000), p. 7.

currency. However this requires a long period of development – as experience in the EU has shown – and several studies indicate that ASEAN is not ready for a currency union yet<sup>184</sup>. Consequently, the right objective for ASEAN in terms of monetary integration is to improve its economic structure, which can probably be benchmarked by proper criteria such as, for example, the criteria of the Maastricht Treaty leading up to the EU monetary union.

The objectives of the further ASEAN integration should be classified into; first, the completion of ASEAN economic integration and realization of the economic integration among ASEAN and the East Asian countries and moving towards openness and deepening vis-à-vis the world economies; and simultaneously second, running strategies of fundamental strengthening and the introduction of convergence criteria along with economic and political preconditions for further economic and monetary integration, besides strengthening political will and institutionalization of economic integration. To achieve these aims, the ASEAN countries may employ an “offensive strategy” simultaneously with a “defensive strategy”, which are induced from the concept of “openness and deepening” and “strengthening foundation”.

### **3.2.1 Defensive Strategy: Strengthening Foundations and Institutionalization of Economic Integration**

The defensive strategy is based upon strengthening the internal economic sector and supporting institutional mechanisms, in order to create stable development and to be able to

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<sup>184</sup> Park Y. C. (2002), p. 7, and Eichengreen B. and Bayoumi T. (1997), Bayoumi T. and Mauro P. (1999), p. 8

withstand external threats brought about by continuously changing globalization pressures. The defensive strategy can be realized in the form of stable macroeconomic policies, aiming at price stability, low budget deficits and surpluses, the reduction of public and foreign debt (particularly short-term debt) to a sustainable amount, and ensuring the competitiveness of the exchange rate. As to this matter, ASEAN can learn several things from the EU's experiences, to help promote its own strengths. These include the fact that it should support the market-based mechanism which encourages competitive discipline, establish institutional frameworks that support the open market and competitiveness, encourage interregional cooperation in trade and finance, and improve the governance of private and public sectors, for instance by monitoring the performance and the usage of financial resources of the private sector in particular. In addition, investment in human capital is one of the key basic factors to ensure long-term economic development as well as the development of technologies in production, services, knowledge and information<sup>185</sup>. Moreover, ASEAN should reduce its structural weaknesses, by strengthening the supports for real and monetary economic convergence, reducing diversity, promoting the mobility of capital and labor, and initiating a proper distribution measures. The defensive strategy would not merely make ASEAN immune against external and internal threats but also support the process of ASEAN regionalism into the future.

On the other hand, institutionalization of economic integration and strengthening and initiating common political will towards integration are very relevant for the sustainable of economic development and regionalism. The success of the European integration has pro-

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<sup>185</sup> For details of the policy factors toward the new East Asian development model, see Harvie C. and Lee H.-H. (2002), p. 135-136

vided several integration schemes that ASEAN can study on the institutionalization of the European regionalism, despite different configuration of regionalism the East-Southeast Asian integration possesses. Examining the evolution of the EU precisely, it can be observed that first the European regionalism has begun with free trade zone, custom union, common market, economic and monetary union and now the proceeding of the political union, respectively. The interrelation of every single step has shown the evolution of relevance and complexity of the institutionalization movement. Every stage of economic integration has called for an effective managerial strategy and measure. Further, as integration becomes mature and more complex, more effective managerial measures and strategies are required afterwards.

Considering the establishment of supranational authority within the East-Southeast Asian region or even merely among the ASEAN members, admittedly several scholars hold the opinion that the East-Southeast Asian integration might need supranational institutions, in order to carry on a prosperous economic and political integration. In the near future, this might be a very hard aim to be achieved. Instead of vigorously moving toward supranationalism, the ASEAN and East Asian countries should mutually strengthen their political will, and gradually exert collective policies in an efficient way as a basis. The ASEAN and East-Southeast Asian regionalism is now merely at establishing free trade zone which corresponds to the first stage of regionalism. Contemporary, this not necessarily requires a high degree of institutionalization or establishing of a supranational institution which might not be urgent for the ASEAN and East-Southeast Asian region at the moment. As shown in the experiences of the European integration, every new stage of economic integra-

tion calls for an adjustment of the existing domestic regulations that in turn involve further coordinating measures. Similarly, every move of the advancement of the ASEAN and East-Southeast Asian economic integration will ask for a competent institutionalization, and this will gradually enhance the potential of political cooperation over time. The movement towards economic integration in East-Southeast Asia has turned to financial integration. In particular after the financial crisis in 1997, the interrelation among the financial sectors of the ASEAN and East Asian countries has been enhanced and there are less discriminatory issues in the international monetary spheres. This might be a turning point and may be able to break through the institutionalization process of the East-Southeast Asian regionalism. Finally, depending on the future outcome, the establishment of a supranational institution may be a suitable solution for East-Southeast Asian in the future.

At present, one solution to the concern on finding a third party can be assigned to a multilateral institution, particularly APEC or WTO. However, it involves the recognition that the agreements on APEC and WTO are mostly voluntary. ASEAN and East Asia, therefore, has to give more relevance to such multilateral institutions. If the voluntary agreements are still ineffective, compulsory agreements have to be concluded, particularly on the sensitive and sophisticated issues. Among the ASEAN and East Asian countries, the governmental initiatives toward economic integration have been operating well until now. However, there are lacks in mutual social understandings and an initiative to bring about closer relation among populations. Hence, there is no collective thinking. The establishment of supranational authority in the EU has shown that not merely convergence in economic and political structure are necessary (convergence criteria), but to a great extent,



regarding the “subsidiarity principle”, political and social understandings are inevitable as well. This indicates that besides the initiatives from the member governments, the mutual understanding among populations of the member countries have to be improved and strengthened. These are the fundamentals for developing a political will and hence, furthering economic and political integration in the region, particularly for the countries with a democracy regime.

Regarding political and economic issues, ASEAN has been proceeding well until now. It has gained significance on the global stage in both economic and political relations. Concerning the economic integration among the East-Southeast Asian region, ASEAN has been accepted as a functioning group. Remarkably, besides Japan, China and Korea, ASEAN is one of the most significant participants that initiate the East-Southeast Asian economic integration. However, the progress towards economic integration among ASEAN members has been initiated merely by the policy-makers, a group of the elite-circle which includes academics and some professionals from economic sectors. There are increasing interaction between the three upper class-circles, namely the state-, the academics- and the economic circle, unfortunately there are not any signs of trend in folks-involvement. The way to cope with these fundamental impediments and to support economic integration is to work on the constitution of the social and political fundamentals, bringing the international knowledge to the folks and promoting NGO-cooperation within and between the members. The ASEAN countries, until now, have been exerting closer relations among the governmental institutions, academics and some economic sectors; however, there is still neither elementary education about the present status of neighboring countries and about

the relation among the members nor the tendency to bring the folk relations closer or the feeling of “unity”. Thus, as a basis for the long-term development, the member countries should seriously enhance both the quantity and the quality of education and increasingly support and promote the cooperation and mutual understanding among themselves in both governmental and non-governmental sectors.

### **3.2.2 Offensive Strategy: Opening and Deepening Regionalism**

Using ASEAN’s openness as its strength, the offensive strategy embodies the region’s outward orientation, not solely aiming at Asian regionalism, in particular with China, Japan, Korea, in both the financial and real sectors, but also considering the increasing tendency towards worldwide economic and political relations, particularly at the global multilateral level, including for example the EU and American regionalism. Even though China is the strongest competitor vis-à-vis ASEAN in the global markets, ASEAN should not act against China, but rather the two should cooperate with each other. It is best for ASEAN to enhance its competitiveness, technology, productivity and quality of products, play a fair competitive game and increase its regional cooperation. In addition, this East-Southeast Asian regionalism movement should be simultaneously accompanied by the strengthening of ASEAN integration focusing, to a great extent, on economic affairs.

The offensive strategy might be classified into short-, medium-term and long-term operations. The short- and medium-term plan encompasses two points. The first is to strengthen ASEAN regionalism, not with the aim of creating an ASEAN political union, but rather of establishing ASEAN economic integration, including a single market with

high competition. The second is to strengthen monetary cooperation with respective support institutions and mechanisms. As a result of its openness, the way for ASEAN to go is no doubt towards competition in international markets. Thus, the best plan to follow is the enhancement of competition and the harmonization of economic standards and rules in trade and investment at the global level. The economic integration within the region with high competition can be seen as a qualifying round for the regional firms before entering the world arena. However, there are winners and losers from economic integration, so it becomes necessary that an effective distribution measure must be initiated. In support of the idea of distribution, the study of Higgott R. A. and Nesadurai H. E. S. (2002) indicates that the development process of the Southeast Asian economies has been centered on growth as an objective, an approach which is increasingly being perceived as inadequate<sup>186</sup>. Besides setting growth and market efficiency as objectives, the economies should not neglect distribution policy for a successful long-term development.

The long-term plan focuses on economic integration within Asia. Besides the lessons learned from the 1997 financial crisis, Wei Kait Yip (2001)<sup>187</sup> denotes two other new driving forces that may give a push towards further economic integration between ASEAN and East Asia. The first of these is the failure to launch a new round of trade negotiations during the WTO Ministerial Meeting in Seattle, which has raised doubt about its ability to function and a risk of emerging protectionism between economic blocs. The second is the widening and deepening economic integration in Europe and North America that represent two pillars and play a significant role in the global market. These factors have spurred the Asian

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<sup>186</sup> Higgott R. A. and Nesadurai H. E. S. (2002), p. 27-39

<sup>187</sup> Yip W. K. (2001), p. 109

countries to consider their economic integration. In addition, the hegemonic position of the United States<sup>188</sup> and its influence in Asia, which was a main reason for the sluggish growth of East-Southeast Asian regionalism, has already faded. Thus, it is time for Asian countries to take the initiative in starting their own regionalism. At present, there is a project for a free trade area between ASEAN, China, Japan, and North Korea; nevertheless, as asserted, not only the initiation, but also the completion and the sustainability of the project have to be seriously considered.

For ASEAN, economic integration with the East Asian countries is the most significant step towards its long-term objective. From the experience of the European regionalism, fundamentals that might be able to bring forth both ASEAN and East-Southeast Asian integration process entail following relevant political conditions. First, common political objective among the members is needed. Second, relative size in economic and political power of the members is relevant. Third, a third party is necessary, in order to sustain a cooperative strategy. Effective managerial institutions or measures are required and should be enhanced over time to be able to handle with the increasingly complicated integration structures. EU experience shows that a strong leader is required on the path to successful integration. In the European integration process, France and Germany have been the two leaders in the European integration arena. With the political power of France and strong economic power of Germany – even though at present Germany has also taken a dominant role in EU politics –, the process of EU integration functioned well. On the one hand, the existence of two leaders may help to counterbalance the monopolistic position and interests

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<sup>188</sup> Since the end of the Second World War, the United States has sought to protect and advance its major interests in East Asia. See Yip W. K. (2001), p. 107

of one leader. On the other hand, however, a third party might be necessary to manage the cooperation and hinder conflicts of interest between both leaders. Hence, in the European integration, a supranational institution is the solution to this concern<sup>189</sup>.

Within ASEAN and East-Southeast Asian regionalism, common political objectives and political will are still modest, thus the members should as aforementioned start on harmonization of interests among the integrating members primarily on a lower integration level and gradually moving towards a higher level with more sensitive issues.

According to the relative size of economic and political power, the East-Southeast Asian region has made a substantial progress. Contrary to the past, where the political power was handled by the West, economies were led by Japan, and China has had no interest in participating in the East-Southeast Asian integration (before its entrance on the WTO and gradual openness to the world market), now the role of political and economical power are becoming clear and more balance. Japan and China are or will definitely be economic hegemonies, whereas ASEAN has become stronger and increased gain in economic relevance in the region. Considering the rivalry between Japan and China, it is now, ASEAN who set the initiatives and both Japan and China are the authorities who mark on the agreement decisions. This way of regionalism process seems to work out under the momentary, political and economic circumstance in the region.

Indeed in ASEAN there is no member country that plays an outstanding leadership role. Singapore, despite its eminent economic position in the world, is subject to its very small size and hence relatively small absolute values. Contrary to this is Indonesia, which

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<sup>189</sup> See also Boyer R. (2002), p. 13

despite its large size only has a moderate economic performance and often suffers from turmoil in political and social spheres. Thailand and Malaysia may be the best candidates; however neither has a strong enough position to become an effective leader in the region. The development of ASEAN regionalism has shown that the source of integration initiatives was the United States in the early years and subsequently external threats and pressures. Therefore no ASEAN country needed to take a leadership role. Instead, the ASEAN countries might be viewed as followers who pursue a “reactive strategy”. So, alongside economic gains, the economic integration with the East-Southeast Asian countries has brought potential leadership candidates to the region in the form of China and Japan. However, as previously mentioned, the ASEAN and East Asian countries are not eager to lose their authority, meaning that the establishment of a supranational organization might be very difficult in the near future. At this stage, a strong ASEAN might serve as a third party, helping to achieve smooth cooperation within the region.

Now, it is still unclear who will occupy the pole position because of differing interests of the two leading economies, China and Japan. The future relationship between the two countries regarding the pole position in Asia is not yet clear for three reasons.

- Firstly, the evidence tends to suggest that China may become the production state for the world and hence a strong economy. However at present China is still developing, so large areas are still underdeveloped and there is a high requirement for capital and investment to continue its evolution. On the other hand, Japan has already played a significant role in the international arena, but now the economy is experiencing regression and indicating uncertainty in development. Several studies predict cooperation in the form

of “Japanese products made in China” or “China, the factory of the world and Japan, a savior in times of hardship” however it must be noted that the development directions of the two economies differ significantly. Whereas the economy of Japan has come to a halt or even deteriorated, the economy of China is growing at an enormous pace. These different positions have been partly responsible for the discrepancy between the two parties’ interests.

- Secondly, while China is mainly developing its real economic sector, not only working towards a free trade area with ASEAN, but also tightening cooperation with Russia and the South Asian countries, for instance through the establishment of the Shanghai co-operation organization, a cooperative arrangement among Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and China, Japan is more interested in the financial sector, including the creation of an effective surveillance mechanism for the region. However, it can be observed that Japan tends hardly to be able to pursue its strategic interests in the region, because of its deteriorated economic situation and its lack of geographic contiguity to the other member countries<sup>190</sup>.

- Thirdly, contrary to France and Germany in the EU, the large differences in size and military power between the two countries may be one of the significant hindrances to their cooperation and hence to economic integration in the region. These obstacles may obscure the way forward for ASEAN and East Asian regionalism, and it now remains unclear who might play the role of leader in the political and economic spheres.

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<sup>190</sup> Park Y. C. (2002), p. 7-12

Besides exerting concrete common objectives and concern on relative size in economic and political power of the members, another relevant condition lies in the issue of finding a third party and exerting competent and efficient institutional management. Both issues have been simultaneously solved within the EU successfully by establishing a supranational institution. However, the experiences of the European regionalism show that moving towards political integration is much more difficult and complicated than setting up an economic and monetary union. The configuration of the East-Southeast Asian regionalism is different from the EU. The EU prefers formal agreement or “contractual society” with generally more idealistic approaches, whereas the strength of the East-Southeast Asian regionalism contrarily is characterized by “pragmatic” and “flexibility”. The less of political intervention among members has brought about high flexibility to the region. On the one hand, highly flexible integration process can be viewed as advantageous; on the other hand, this has conducted to lack of establishment of formal harmonization and cooperation among the members, which in turn has led to difficulty in setting and implementing concrete common political objectives. In addition, although the economic integration with the East-Southeast Asian countries, besides its economic gains, has brought about potential regional leader, namely China and Japan, the ASEAN and East Asian countries are still not eager to loose their authority; the establishment of a supranational organization might be very difficult in the near future. At this stage, a multilateral institution or as asserted a strong ASEAN might serve as the third party aiming at smooth cooperation within the region.



In the end to achieve a successful economic integration, improvement and harmonization in the political sector, harmonization and convergence movement in economic policies and in the social sphere, including enhancement of social relation between the member countries are the other spheres that have to be seriously considered. In other words, to achieve successful economic integration, the social and political spheres cannot be ignored. These three pillars – economic, politic and social – are linked together and hence have to be advanced simultaneously for a prosperous long-term development.

### **3.3 Conclusion**

The EU is no doubt the most advanced example of regionalism in the world. The community has carried out its integration process successfully, accomplishing the highest level of economic integration and continuously deepening its political integration. The experiences of European integration are definitely a useful guiding example for ASEAN regionalism. Nevertheless, before adopting any European lessons of integration, the best way forward for ASEAN countries is to realize their own strengths and weaknesses and understand the characteristics of their own regionalism as well as those of the EU, in order to be able to learn effectively from the EU experience and to develop their own integration effectively.

From the start, ASEAN and the EU have chosen their own way to develop, with different issues relating to dissimilarities in culture, history, politics, society and, to a great extent, economic structure. These different experiences have consequently differentiated the evolution of both regionalisms. While the EU is now a community of industrialized

countries in a state of monetary union<sup>191</sup>, based on very formal institutions with a supranational approach, ASEAN, consisting of newly industrializing and developing countries, is currently at an earlier stage of economic integration, and is an inter-governmental association with a loose form of cooperation and no supranational approach.

Moving towards a long-term successful integration process, ASEAN has to overcome its weaknesses and use its potential in openness and flexibility. The ASEAN countries may apply a “proactive development strategy”, which involves simultaneously carrying out “defensive” and “offensive” plans of action. The defensive strategy involves the strengthening of internal economic and political sectors, with reinforcement of the economic and political basis. The defensive strategy should be accompanied by an offensive strategy, under which the ASEAN countries may, on the one hand, be able to reduce the risk of external threats, and on the other hand, initiate their own development process by themselves. Using its strength in openness, the ASEAN offensive strategy embodies regional outward-orientation. However, there are winners and losers from economic integration, so it should be noted that an effective distribution measure has to be initiated.

For ASEAN, economic integration with the East Asian countries is the most significant step towards its long-term objective. The EU’s experiences have shown that successful integration requires a strong leader. In ASEAN, no member country seems able to play an outstanding leadership role, and the history of ASEAN regional development has shown that the integration initiatives often need external pressures. Within East-Southeast Asian

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<sup>191</sup> Precisely, the EU is still not a complete economic union, but can be positioned at the first stage of the way to complete economic union, which is called economic and monetary union, as pointed out in the chapter 1. The EU, at present, can be positioned more than halfway between common market and economic union, see Cuyver L. (2002), p. 1.

regionalism may China and Japan will obviously become potential regional leader. And as the ASEAN and East Asian countries are not eager to lose their authority, the establishment of a supranational organization might be very difficult in the near future. At this point, a strong ASEAN might serve a third party to help smooth cooperation within the region. However, the future of the relations between the two countries regarding the pole position in Asia is still not clear, due to their different interests and economic structures.

Besides these suggestions for the achievement of successful economic integration, improvement and harmonization are needed in the political sector and in the social sphere, since these three pillars are linked together, and hence, have to be advanced simultaneously for prosperous long-term development. Finally, it should be noted that the integration process of ASEAN, in its successes as well as its failures, might well serve as a useful instance and a case study for other regionalization between developing countries, as the EU regionalization has done before it.

## **Chapter 4**

# **East-Southeast Asian Economic Integration and its Implications for ASEAN**

This chapter considers contemporary circumstances that play a decisive role on the further development and the prospect of further economic integration and a conceivable economic concept for East-Southeast Asian regionalism. This concept is introduced in order to cope with the surge of new bilateral arrangements and to promote regional economic integration. This chapter shall focus uniquely on the economic sphere, examining “openness and deepening” and “strengthening foundation” as its main characteristics and “liberalization and facilitation” as the dominant mode of implementation. In particular, the ASEAN outlook is contemplated.

The first part (sections 4.1 and 4.2) of the chapter looks at economic relations among the East-Southeast Asian countries. Internal and external economic circumstances, incentives and impediments are examined.

The second part (sections 4.3 and 4.4) deals with problems hindering recent economic integration and possible solutions to these problems. Complex interactions of political and economic issues and pressures from internal and external circumstances have led to the emergence of a new wave of regional integration. This new scheme of regionalism – the so-called “bilateral based regionalism” – may disturb further regional integration and may harm global liberalization. It is considered as a stumbling block rather than a stepping-stone to global economic integration because of the lack of long-term objectives

and proper measures. The first issue dealt with in the second part is the new surge of bilateral arrangements in East-Southeast Asia, the second introduces an economic policy that might solve the uncertainty of East-Southeast Asian regionalism and, finally, the third suggests a development scheme for East-Southeast Asian economic integration. The last point examines, in particular, the case of ASEAN. An overview of the role of ASEAN in the development of the East-southeast Asian regionalism is given and a strategy for strengthening the ASEAN economic structure is presented afterwards.

## 4.1 East-Southeast Asian Regionalism

The East-Southeast Asian countries' economies have long been highly interrelated and interdependent. The high level of intra-regional trade since the beginning of the nineteenth centuries affirms the significance of the development of economic interdependence within the region (in 1913 intra-regional trade accounted for 42 percent of the region's total trade, 46 percent in 1938 and 47 percent in 1993)<sup>192</sup>. Since 1997, the Asian crisis has played an important role in bringing the East-Southeast Asian countries to understand the significance of their economic interrelation, particularly in their financial sectors<sup>193</sup>. This has led to a new wave of enthusiasm for financial integration, which might be viewed as a timely driving force towards the further development of East-Southeast Asian economic integra-

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<sup>192</sup> In the late nineteenth century, it was the Western imperialistic powers who laid down networks of treaty ports and a basis for intra-regional trade. Then in the early twentieth century imperial Japan initiated economic integration among the Northeast countries, such as Korea and Taiwan. Since the eighties, the rapid economic development has generated linkages that have an intra-regional bias. See Yip W. K. (2001) and Petri P. (1993)

<sup>193</sup> Important initiatives for East Asian regionalism's progress are the establishment of ASEAN+3 and, in the field of regional financial cooperation, the Chiang Mai Initiative.

tion. This includes promoting deeper regional integration and initiating collective institution building with more mature, complex and effectively organized economic integration structures<sup>194</sup>.

At present, almost every economy in the world is searching for a new, effective way to enhance its economic development. In particular, regional and bilateral cooperation, the development of which is planned under the scheme to “open and deepen regionalism” in order to counteract its discriminatory effects, are viewed as options to sustain economic progress. This new surge of regional development is now accepted by several economies including the East-Southeast Asian economies.

#### **4.1.1 Development of East-Southeast Asian Regionalism**

With regard to liberalization of trade and investment, the East-Southeast Asian countries, until now, have been doing quite well with the reduction and removal of barriers to trade in goods and services and barriers to labors and capital movement, especially with the reduction of the tariff barriers. This achievement has been assisted by the open economic policy, which has been chosen as a strategy for sustainable growth among the East-Southeast Asian countries since the eighties and nineties. Besides this, restrictions on capital movement have been eased over time. Although there are still restrictions on the long-term mobility of unskilled labor, restrictions on short-term labor movement have been gradually

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<sup>194</sup> An example for this initiative was the Japan’s proposal in September 1997 to establish a 100 billion dollar fund to help regional governments to cope with the currency crisis, which was considered as a first step toward the establishment of the Asian Monetary fund (AMF) and prospective monetary integration in East Asia – financed and managed by the East Asian countries and independent from the International Monetary Fund (IMF). Although this initiative was rejected, it indicated a new surge in the momentum of financial integration in the region.

removed. The East-Southeast Asian countries also have been making an effort to reduce several non-tariff barriers<sup>195</sup> – particularly by means of economic facilitation, such as mutual harmonization of standards, economic regulations and reducing risks in international commerce. However, because of a lack of political will, of effective administrative institutions and implementation measures, the existing non-tariff barriers are still a significant hindrance.

Today, the closely interlinked economic relations of the East-Southeast Asian countries, which have been supported by the liberalization of trade and investment since the second regionalism era, are now being focused on facilitation of trade. The traditional free trade approach, which has been characterized by the reduction of border barriers relating to trade in products, is becoming less relevant. Instead of this, modern trade development aims to promote economic integration by such means as the harmonization of standards, efficient competition policies, efficient customs procedures, higher factor mobility, promoting e-commerce, and improving education, human capital and technology. Along with these initiatives, development in capacity building and social issues such as labor and the environment is emphasized. These all are means of economic facilitation and, moreover, can be assisted by investments in human and physical capital and the advancement of business networks and infrastructure, transportation and communication technology, as well as the reinforcement of socioeconomic knowledge, for instance about language, culture, standards and business practices.

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<sup>195</sup> Previous EU experience has revealed this undertaking to be one relevant factor for establishing a common market.

AFTA	The ASEAN countries refuse to lower tariffs on their sensitive products to below 5 percent, for instance: 1) Indonesia: textile and petrochemical 2) The Philippines: cement 3) Malaysia: Automobile
ASEAN-China FTA	1) China excludes rice and palm oil. 2) ASEAN members each request exclusion of many manufactured products from China.
Japan-Singapore FTA	1) All agricultural products are excluded.
Korea-Chile FTA	1) Refrigerator and washing machine are excluded. 2) Apple, pear and rice are excluded. 3) Further, concession on more than 370 agricultural products has been withheld.

Source: Soogil Young (2003)

Table 4.1: Some sensitive products under bilateral and sub-regional agreements of the East Asian countries

Several countries in the East-Southeast Asian region at present are showing some willingness to reduce tariff and non-tariff impediments individually and as a group. Under the auspices of APEC, they have been implementing several voluntary programs of concerted unilateral liberalization in several spheres. ASEAN, in particular, has been effective in dealing with these issues and has become a model example for the reduction of tariff-barriers. Nonetheless, when examining the reduction of tariff-lines closely, it can be observed that certain high tariff barriers still exist and have hardly been decreased. These high tariff lines apply to the “sensitive sectors” which vary among economies and remain a significant hindrance to economic integration in the region (see Table 4.1 for some sensitive sectors of East-Southeast Asian countries). Admittedly, the global institutions like the WTO or APEC have helped accelerate the reduction of tariffs in several sectors over time. Several of their policies, for instance the Doha Development Round of the WTO, support the reduction of the remaining high border barriers. Nonetheless, several significant economies are unlikely to be ready to remove the tariffs on their sensitive sectors yet.



This outcome has exposed the current absence of a competent multilateral institution for the promotion of trade liberalization and cooperation at the global level.

## **4.2 Significant Circumstances Affecting East-Southeast Asian Regionalism**

The current state of East-Southeast Asian regionalism has been brought about particularly by the fast pace of globalization and can be understood in terms of two main movements<sup>196</sup>. The first is the “interdependence and interweaving” of the global economy, a scheme that supports global integration. The second is the “diversity in the international economy” which, in contrast to the first scheme, discourages progress towards integrated global governance and hinders the advancement of regionalism. In certain respects, both aspects progress mutually and are interrelated. However, they are not in line with each other in terms of whether they support global economic integration.

### **1) Interdependence and interweaving**

Interdependence and interweaving denotes the state of affairs in which the global economies are networked and nested together. The increasing interdependence between markets has partially decreased the significance of national autonomy which, in turn, calls for international economic policy. At present, there is growing need for “interweaving multinational regulations” at the international level. Thus, multinational institutions and collective policies will come to play in international issues, particular in the area of economic liberalization and integration.

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<sup>196</sup> See also Boyer R. (2003)

## 2) Diversity in international economy

At the same time as regional economies have become interdependent and interweaving, the emergence of diversity and unbalanced governance has become apparent and important. Diversity and unbalanced governance are factors that significantly hinder the progress of global liberalization. It is hardly possible to find a one-fit-for-all policy, and obviously the more diverse the different economies, the more difficult it is to execute collective multinational policies. Experience shows that permanent changes in global economic pressures have hindered multinational institutions in executing such one-fit-for-all policies successfully. In recent history, several multinational systems or institutions were unable to prevent the recurrence of economic crises, for example the Bretton Woods system in the seventies and the IMF in the nineties. And recently, the failure of the WTO to promote global trade liberalization has raised concern among the East-Southeast Asian and other economies about the competence of global institutions to manage the further progression of the global economy.

The contradictions between “interdependence and interweaving” and “diversity in international economy” create a “dilemma” in the East-Southeast Asian region. On the one hand, globalization pressure has driven the region towards opening and deepening regionalism leading to interdependence and interweaving. On the other hand, the diversity of different economies within the region has diminished the ability of multinational institutions like WTO or APEC to pursue their objectives of trade liberalization. Consequently, the East-Southeast Asian region and the economies elsewhere in the world are trying to take forward economic cooperation through initiatives of their own. These are bilateral and

sub-regional, and mostly take the form of CEPs and PTAs, in particular between partners who set out mutual economic gains, irrespective of whether it is a South-South or North-South relation. This circumstance may bring uncertainty to the process of the long-term economic integration regionally and also globally.

#### **4.2.1 Incentives and Driving Forces for Further East-Southeast Asian Regionalism**

Efforts towards further regionalism among the East-Southeast Asian countries have been gradually strengthened. At the end of a long process, they have now established regional relations in both the economic and political spheres. These countries comprehend the prospect of operating collectively and the possible advantages to be gained from doing so, and are on their way to finding a strategy that will further their sustainable economic development and interrelation.

The reasons and incentives for East-Southeast Asian regionalism and the securing of the East-Southeast Asian regional markets can be summarized as follows<sup>197</sup>:

1) Several politically-motivated ambitions bring about a closer economic relationship between the East-Southeast Asian countries. The East-Southeast Asian economies, therefore, need instruments to establish a sense of security and to assure trade and investment with their existing trading partners. By means of trade and investment policy dialogues, East-Southeast Asian economic cooperation will bring about better understanding and more efficient management of trade conflicts in the region. In some cases, the aspect of economic complementarities between partners is subordinate to achieving a sense of secu-

<sup>197</sup> See also Kawai M. (2004), Giang B. T. (2003), and Yip, W. K. (2001), p. 106-111

rity – this purpose is one reason behind economies such as Korea’s entering the ASEAN+3 arrangements.

2) The East-Southeast Asian countries have looked to regional financial cooperation as an effective means of prevention, management and resolution of the financial crisis. The hope is to meet these objectives through systematic regional cooperation, effective monitoring, mutual surveillance and liquidity support arrangements, as well as a concerted undertaking to internalize externalities and spill-over effects.

3) East-Southeast Asian regionalism will enable capacity building and a constructive response to globalization pressure, in that the regional markets for trade and investment will be enlarged, efficiency increased and productivity and competitiveness improved. These outcomes can be achieved through reducing tariff and non-tariff barriers, reducing the costs and risks of trade and investment and increasing economic facilities among members.

4) Through higher international competitiveness in particular, the East-Southeast Asian economies intend to be economically competent in the global trading system, to be able to stand up to global competition and to become one of the three major economic leaders of the future, namely the EU, NAFTA and Asia.

5) The East-southeast Asian countries are looking for a strategy to cope with the increasing number of regional trade arrangements in other regions, particularly in Europe and North America. Simultaneously, they hope that their own regional arrangements will constitute a foundation for economic progress and trade with an increasing range of partners.

6) The failure of multilateral institutions in promoting trade liberalization and cooperation at the global-level, particularly the decline of the WTO's role, the inability of the IMF to solve the Asian Financial Crisis in 1997 and the ineffectiveness of the APEC process, have retarded the development of global liberalization. The increase in bilateral agreements, while multilateral agreements are losing their relevance, is symptomatic of this failure.

7) Furthermore, the original objective of regionalism remains, in that the countries still hope to gain international political influence.

Moreover, it can be concluded that, contemporarily, the driving force towards regionalism comes from two sides, namely from the financial and real economic sectors. The driving force from the financial sphere was triggered by the financial crisis in 1997, which led people to understand the importance of increasing financial interrelation in the region. The driving force from the real economic sector, particularly in the area of liberalization and facilitation of trade and investment, stems from the increasing number of bilateral agreements being concluded in the form of PTAs and CEPs. Both spheres are pushing the region to accomplish its first stage of economic integration.

#### **1) Driving force from the real economic sector: liberalization and facilitation of trade and investment**

As mentioned in the previous section, the new surge of bilateral regionalism has led the East-Southeast Asian countries to react. Due particularly to the imminent negative effects from the hub and spoke bilateralism<sup>198</sup>, the best way forward for the East-Southeast

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<sup>198</sup> The "hub and spoke effect" occurs when one country concludes PTAs with several other countries that are not in the same PTA as each other. This has a negative effect, if a hub country concludes a separate FTA

Asian economies is to accelerate the regional FTA programs. This circumstantial pressure can be viewed as the driving force behind East-Southeast Asian regionalism in the real economic sector.

**2) Monetary cooperation: a driving force towards East Asian economic integration**

The East-Southeast Asian countries realize that trade agreements are politically difficult to reach, particularly due to the heterogeneity in trade liberalization policies and concern over the “sensitive sectors”. It can be observed that the East-Southeast Asian countries are engaging in economic integration by means of financial cooperation which progresses much more rapidly than trade liberalization and discriminates against third parties less than trade liberalization. Even though ASEAN and the East Asian countries already have some experience relevant to financial cooperation, for instance through the ASEAN surveillance mechanism and the ASEAN+3 currency swap arrangement, the East-Southeast Asian economies, with the exception of Japan and Singapore, are based on a real economic sector and are still immature in the monetary field compared to the US or the EU. Using financial cooperation as a driving force towards regional economic integration is still a complex issue and requires great care, especially on the part of ASEAN as the initiator.

The different countries’ financial sectors are increasingly initiating economic cooperation within East-Southeast Asia. Yet due to a real economic based economic structure, East-Southeast Asian countries have to continue cooperation in the real market sectors as

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with each spoke country without liberalizing trade among them. The hub country will gain preferences and investments, but spoke-to-spoke trade will be distorted by discriminations that each spoke has to encounter in other spoke’s markets, due to competition with the hub country. Discrimination against spoke countries increases when the hub country concludes better PTAs with other new spoke countries.

well. However, there are still obstacles to the development of this scheme of economic integration. The lack of collective institutional and managerial measures that has traditionally plagued East-Southeast Asian regionalism has become increasingly relevant, as the economic interrelation and integration structures of the East-Southeast Asian countries are getting more complex.

The success of East-Southeast Asian economic integration depends on mutual functionality of the two facets of the integration development scheme, namely, the political facet involving the development of functioning institutions and the economic integration facet including both monetary and real economic aspects. Therefore, if the first step of East-southeast Asian economic integration is achieved successfully, its further progress can be a turning point towards institutionalization and the establishment of long-term supranational political cooperation initiatives. The experiences of European integration have shown that it was first the economic integration, and then the complexity of integration procedures that created the need for effective institutions. This, in turn, has led to the move towards political integration.

#### **4.2.2 Difficulties in the Progress of East-Southeast Asian Regionalism**

At present, East-Southeast Asian regionalism has been developing significantly on a bilateral and sub-regional basis, but it seems that a collective move towards global economic integration has been neglected. As far as trade policy is concerned, the new surge of bilateral arrangements has led to a situation of “competitive hub and spoke bilateralism”. Several countries are competing to develop as many “spokes” as possible, in order to reap

economic gains and secure their export markets and investment. In addition, this situation has deteriorated because of the domino effect and by problems in handling sensitive issues which lead to an increasingly serious “spaghetti bowl effect”<sup>199</sup>.

Besides contemporary complexities emerging from the new surge of bilateral agreements, there have been numerous hindrances and complications to integration. These encompass not only internal deficiencies, for instance inefficiencies in structural management, lack of political will and lack of coordinating institutions, but also unavoidable external pressures or economic shocks. As East Asian economic cooperation progresses and world economic pressures increase, the difficulties in continuing regional integration efficiently become increasingly complex. These difficulties in the East-Southeast Asian regionalism can be described as follows<sup>200</sup>:

- 1) As asserted, political will is still modest. There is a lack of effective institutional organizations and of a legal framework. There are no clear aims or visions and implementation has been inconsistent. In addition, there is hardly any support from society; on the contrary there is still social reluctance to full trade liberalization.

- 2) There are heterogeneities in the size, standard of living, and political objectives of the region’s countries. There are divergences of national interests and different conceptions of national economic policy. Additionally, there are differences in political structure, in particular a discrepancy between democracy and authoritarianism. There are political and economic rivalries between Japan and China; distrust of the hegemonic position of Japan and China is still strong in the region and there is a high level of social

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<sup>199</sup> See the forthcoming part about “hub and spoke effect” and “spaghetti bowl effect”

<sup>200</sup> See also Kawai M. (2004), Giang B. T. (2003), and Lee J.-S. (2002)



and cultural difference, which particularly affects relations between North and South in East-Southeast Asia.

3) Another substantial pressure in the East-Southeast Asian region is the fact that most countries in the region compete directly with each other. In particular, China's emerging economy has strongly affected the prospects of all of the East-Southeast Asian economies, causing serious issues for regional integration. For instance, ASEAN members have lost a large sum of FDI to China, since most ASEAN members are direct competitors to China in the market for labour-intensive products.

4) The East-Southeast Asian market is very dependent on the global market. Therefore the East-Southeast Asian countries are obliged to carry out their integration process while maintaining openness. Such policies often restrict or even hinder collective integration decisions.

5) With increasing intra and inter-regional trade, the difficulties related to "sensitive sectors" are getting more complex.

6) The financial sector has become increasingly important. However, many Southeast Asian countries lack experience in this sector. While the East-Southeast Asian economies are gradually learning and gaining knowledge of financial issues, worldwide finance becomes increasingly integrated and complex. Therefore, it is important for ASEAN and East Asian integration to be in-line and consistent with global financial arrangements, in order to control the region's financial development easily.

7) After the financial crisis, the national monetary policies of several countries in the region have lost credibility. In addition, increasing capital mobility has been reducing the significance of national monetary policy authorities over time.

To sum up, various difficulties have accompanied the integration process from the outset and gradually become more complex over time. External pressures result in a need for effective adjustment mechanisms and flexibility. On the one hand, the best way to be able to cope with external shocks or threats is definitely to have a firm foundation and strengthen the economic, political and social sectors. On the other hand, flexibility is also relevant, in order to cope with and adjust to the inevitable shocks as and when they occur. “Flexibility” and a “strengthened foundation” are two fundamental points to which the East-Southeast Asian economies should give serious attention. So far, the East-Southeast Asian economies have shown their capability for economic flexibility. However, their lacks of operating institutions, the vulnerability of their economic structure and social disintegration have been weak points since the beginning.

### **4.3 General Approaches to East-Southeast Asian Regionalism**

The East-Southeast Asian countries are increasingly carrying out their own initiatives for economic and political cooperation. Three types of approach to regional integration have been put into practice within the East-Southeast Asian region, mostly on a preferential trading agreement basis. These are a bilateral approach (among individual countries or between individual countries and a group), a sub-regional approach (within the northeast or southeast sub-region), and a regional approach (within regions). Whereas the first two ap-

proaches are taken as a first step towards deeper regional integration, the regional approach is set as a long-term target, in the hope of assisting global liberalization. Nevertheless, there is still some debate among scholars as to whether these approaches play a relevant role in giving momentum and direction to the development global economic integration and if so, whether they impact in a positive or negative way.

The bilateral approach is very popular in the region. Today it has been developed to such a great extent that the East-Southeast Asian region can be characterized as a “bilateralism based regionalism”. The emerging webs of PTAs or FTAs in the region are expected to contribute to regional trade liberalization. However, these arrangements and agreements vary significantly, so that it becomes considerably difficult to merge them together because of differences in standards and regulations, particularly disparities in how “sensitive sectors” are defined and handled.

The sub-regional approach in East-Southeast Asia is viewed as a movement of economic cooperation and integration between the emerging northeast economic group, encompassing China, Japan and Korea, and the already existing organizations ASEAN and AFTA in the southeast region. Recently, there has been intensive cooperation among the Northeast Asian countries, particularly a potential FTA between Japan and Korea which can be seen as a starting point for economic integration in the East Asian region. Still, neither the East nor the Southeast economic amalgamation is yet accepted as a solid economic group or entity. There are divergences in historical and political characteristics among the east group, difficulties regarding convergence of economic structures among the ASEAN members and a certain sense of distrust of the leading nations such as Japan and China

among the other countries. Nonetheless, there is no doubt that an effective strategic joint action between both groups would lead to a potential East-Southeast Asian economic integration and be a key step along the path to region-wide integration. Whether this happens depends heavily on the openness of the bilateral approach and whether effective strategies can be found to merge these bilateral agreements together.

The regional-wide approach is a long-term objective that needs careful economic planning and a strong political will. The emergence of an East-Southeast Asian trade bloc might contribute to stabilizing the structure of Three World Economic Blocs. These blocs should be open and not discriminate each other. The cooperation between blocs is greatly dependent on the willingness of the participants and the effectiveness of the multilateral institutions.

While bilateral and sub-regional initiatives are regarded as a “quick-fix” concept for short- and medium-term development, it is also hoped that as a part of the strategy to open and deepen regionalism, these bilateral and sub-regional approaches will become a stepping stone towards multilateral liberalization and thus contribute to global economic integration in the long-run. Taking a first step by promoting sub-regionalism and regionalism before moving towards globalization is a positive move, which should facilitate further progress<sup>201</sup>. Even though the East-Southeast Asian regionalism is at an early phase, the prospect of achieving successful regional economic integration is very feasible. Intra-regional trade within the East-Southeast Asian region has been increasing significantly dur-

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<sup>201</sup> For instance, Etzioni asserts that there is a higher expectation of success, if there is a harmonization of interests among the integrating members on a lower integration level first (cooperation without losing sovereignty), before moving gradually towards a higher level. See Etzioni A. (1965)

ing the last two decades. Much statistical evidence supports the general assumption that it is the “internationalization force” that currently drives deepening economic exchanges among countries within the same region and impels the regionalism movement<sup>202</sup>. The ASEAN+3 has the potential to contribute to a full-fledged East-Southeast Asian FTA and will possibly become a sort of East-Southeast Asian Community<sup>203</sup>. With proper strategic planning, this might be a relevant driving force that will aid the progress of economic integration in the East-Southeast Asian region into the foreseeable future.

#### **4.4 The New Surge of Regionalism Arrangements in East-Southeast Asia**

This section focuses on a new surge of economic cooperation in East-Southeast Asia, which has taken the form of bilateral and sub-regional trading arrangements. The main aims of this development are to reap advantages from economic integration among members and to circumvent inefficient multilateral institutions. However, unless it is implemented in a competent manner, this undertaking might create uncertainty in the development towards regional and global economic liberalization.

##### **4.4.1 Bilateralism and Sub-Regionalism Based Regional Movement**

There is currently a new trend towards regionalism in the global economy. Several countries are showing signs of closer cooperation in the form of bilateral and sub-regional Preferential Trading Arrangements (PTAs) or Closer Economic Partnerships (CEPs). On the

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<sup>202</sup> Boyer R (2003), and Flingstein N. and Sweet A. S. (2002)

<sup>203</sup> Harvie C., and Lee H.-H. (2002)

one hand, if these kinds of emerging PTAs and CEPs are open to the non-member countries, they will be able to support economic liberalization and facilitation. On the other hand, if member economies are not ready to open their sensitive sectors to global competition, and establish PTAs among themselves without liberalizing their sensitive sectors, this will definitely cause economic discrimination against the third parties.

Due to differences in economic structures in the East-Southeast Asian region, it is probable that numerous PTAs will emerge with nonconforming sensitive sectors, where high-tariff barriers remain. These sensitive sectors are a significant problem that will mean that several PTAs become stumbling blocks to global economic integration. CEPs are a kind of economic cooperation that can support global integration and are very welcome, on the condition that they also offer free access for non-members to the economic facilitation programs they operate, without obliging them to adhere to discriminatory conditions existent among members<sup>204</sup>. Furthermore, the CEPs should be set up in line with or as a pathfinder-action for regional or global facilitation.

The type of regionalism in East-Southeast Asia today has become clear and can be described as a “bilateralism based regionalism movement”. There are currently various types of preferential trading arrangements among East-Southeast Asian members and between East-Southeast Asian countries and outsiders. These can be classified as Intra-East-Southeast Asia, Intra-Western Pacific, and Trans-Pacific. There have been several bilateral arrangements for each of these types, between large and small countries, between small countries, and between large countries. The number of such arrangements is on the in-

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<sup>204</sup> For instance, the new members are obliged to enter the existing PTA and the full program of the CEP, even if the new members merely want to access a particular program of the CEP.

crease. There are also plurilateral PTAs, including amalgamations of existing groups or existing bilateral agreements. From a positive viewpoint, these trading arrangements are not merely concluded among members of a single bloc, but rather constitute the basis of a web that is spreading globally between economies from different economic blocs. This certainly supports global liberalization. However, one common characteristic of these bilateral and sub-regional arrangements is the use of “preferential trading agreements”, which are mostly conceived as “discriminatory agreements”. Therefore, if the member countries are predominately aiming at individual economic gains, without any effective control, this might turn out to be global inefficient in the long run. At this point, it would be a great advantage to have effective multilateral institutions.

Even though membership of multiple PTAs with inconsistent arrangements is conducive to higher transaction costs for trade relations among the members, countries are continuously seeking for these kinds of arrangements, in order to gain political influence and dominance in trade and investment, through increasing market-size, acquiring potential access to other major markets. Generally, small economies derive significant welfare advantages from these trade arrangements with large economies. Within a large economic bloc (for instance the East-Southeast Asian trade bloc), the members make large economic gains. However, for non-members, the outcomes tend to be negative, especially for non-members with major trade links (for example the negative impact of the establishment of East-Southeast Asian trade bloc on Australia). Contrarily, welfare gains from bilateral trade arrangements between small economies are mostly insignificant. Nonetheless, such

arrangements are viewed as tactical initiatives<sup>205</sup>. Smaller countries enter into them to avoid future exclusion from larger arrangements and to send a signal showing that they are already prepared for economic partnerships.

As aforementioned, this kind of economic cooperation in the East-Southeast Asian region can become both a stepping stone and a stumbling bloc for further regional and global economic integration. For an efficient and successful path to integration, it is clear that long term objectives should be set and implemented seriously; thus a strong political will and efficient implementing measures are indispensable.

#### **4.4.2 Uncertainty in Further East-Southeast Asian Economic Integration**

Several financial agreements have been established on a sub-regional and regional basis (particularly at the period during and after the crisis), and efforts are being made towards deeper integration by means of closer economic partnerships and preferential trading arrangements predominately as bilateral arrangements<sup>206</sup>. The surge of these bilateral preferential trading arrangements is viewed as a factor that brings uncertainty to the development of deeper integration in East-Southeast Asia.

Several proponents regard such arrangements as global trade liberalization supporting since these arrangements bring countries closer together and negotiations among a small group of closely associated members are viewed as practicable. This opens an opportunity to promote mutual advanced economic facilitation, for instance mutual harmonization of

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<sup>205</sup> Scollay R. (2002)

<sup>206</sup> Elek A. (2003)



legal frameworks, coordinated corporate privacy standards or even mutual recognition of certification authorities for digital signatures. These trade facilitations correspond to advanced procedures that are foundations for the so-called “new economy”<sup>207</sup>. Accordingly, a bilateral FTA agreed between Japan and Singapore in October 2000 and the Japan-Korea FTA are significant examples. They are even taken as a major breakthrough in the bilateral trade agreements among the East-Southeast Asian countries and are expected to bring about “positive spill-over effects” and a “demonstration effect” within the region<sup>208</sup>. In many respects, modern PTAs are also viewed as spreading and functioning well beyond conventional FTAs and Custom Unions and can be a possible springboard for advanced multilateral arrangements, for instance a scheme of “wider WTO-plus provisions”<sup>209</sup>.

However, several possible negative facets must also be investigated. Besides increasing transaction costs due to inconsistent provisions among different PTAs, there are uncertainties surrounding the so-called “spaghetti bowl effect” and the “hub and spoke effect” which can be described as follows. The term “spaghetti bowl effect” denotes webs of multi-PTAs, which are multiple and overlap to a great extent. Under the influence of this spaghetti bowl effect, the webs of rules of origin, technical standards and conformance requirements become complex and complicate economic transactions among members. In addition, the crisscrossing FTAs bring about higher administrative and transaction costs, for human, financial and also political resources. The spaghetti bowl effect is apparently a significant factor that hinders the prospect of convergence in the region. The “hub and spoke effect”

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<sup>207</sup> Yip W. K. (2001), p. 109-110

<sup>208</sup> See Baldwin R. (2003) and Yip W. K. (2001)

<sup>209</sup> Scollay R. (2002)

occurs when one country concludes PTAs with several other countries that are not in the same PTA as each other. This has a negative effect, if a hub country concludes a separate FTA with each spoke country without liberalizing trade among them. The hub country will gain preferences and investments, but spoke-to-spoke trade will be distorted by discriminations that each spoke has to encounter in other spoke's markets, due to competition with the hub country. Discrimination against spoke countries increases when the hub country concludes better PTAs with other new spoke countries. This leads to a situation in which several countries or trade blocs are trying to become a hub and trying to develop as many spokes as possible. The bilateralism-based trade policy in East-Southeast Asia, so far, has led to a "competitive hub and spoke bilateralism", in which the large economies (for instance Japan and China), are competing to become a major hub in the web of bilateral FTAs. These countries are seeking economic dominance in the region based upon their market size and their ease of access to major markets. Despite of this, the small economies are eager to negotiate new PTAs or enter existing PTAs, since they are afraid of the consequences of being excluded. These circumstances, consequently, lead to the "negative domino effect".

The negative effects which are brought about by "hub and spoke bilateralism" are potentially harmful to East-Southeast Asian regionalism. These effects have been analyzed by Richard Baldwin and can be described as follows<sup>210</sup>:

**1) Allocation effect**

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<sup>210</sup> Baldwin R. (1999)

If tariffs on imports are reduced only among members and not on imports from other countries, this can create an artificial incentive for domestic purchasers to shift away from trade partners who are not members and buy the cheaper products. Hub and spoke arrangements can lead to trade diversion, through preferential trading with the hub country.

### **2) Costs from the rules of origin**

Due to the rules of origin, trading partners have to bear the cost of administrative procedures for firms and governments. This circumstance increases the potential for corruption, since firms have a cost-saving incentive to try to illegally avoid the rules of origin. Due to a high rate of corruption in several East-Southeast Asian countries, this problem may significantly hinder regional integration.

### **3) Investment-deterring effect**

Hub and spoke trade agreements can have the effect of marginalizing the spoke countries. The factories in the spoke economies have artificially lower market access than the factories in the hub economy. As a consequence, an investment gap develops between the spoke economies, creating an artificial deterrent to investment. It should be noted that this investment-deterring effect would emerge on the margin only. In other words, there are some marginal investments that will be deterred by the spoke-to-spoke trade barriers.

### **3) Hysteresis in location**

Due to the investment-deterring effect, there might be uncertainty about where to invest. This temporary effect can have long-term negative consequences. It can be observed that the heavily industrial economies have a high potential to achieve economic growth, whereas the other economies are hardly able to catch up. Since the hub economy is the

avored industrial location under hub and spoke bilateralism, the hub economy has a good chance to grow and the spokes will lose out in the long run. Therefore, the countries are competing to become a hub and trying to hinder other countries from doing so. This retards economic integration in the region.

#### **4) Accumulation effect**

Since hub and spoke bilateralism is seen as an incomplete liberalization, it will enhance economic growth less than a complete economic liberalization.

#### **5) Discouragement of spoke-spoke trade**

Most countries are interested in trading with large economies. Therefore, it is the hub rather than the spokes that will gain trade partners. If exporters are generally in favor of liberalization and the import-competing industries against liberalization, under hub and spoke bilateralism the pro-liberalization party will prefer trading with the hub rather than with a spoke and the anti-liberalization party will be generally against every kind of trade arrangement between countries. The outcome would be that, on the one hand, trade with hub will be stimulated by the pro liberalization forces, but on the other hand, spoke-to-spoke trade will be hindered by the anti-competitive force and lack in interest from the pro-liberalization side.

### **4.4.3 Coping with Uncertainty Concerning the New Surge of Bilateral and Sub-Regional Movement**

A predominant and fundamental course of action to cope with the uncertainty surrounding the new surge of bilateral and sub-regional PTAs is to promote “open regionalism”. This will support plurilateralization, which is achieved by amalgamating the emerging PTAs.

Plurilateralization should consequently turn bilateral initiatives into a stepping-stone towards economic liberalization. Another relevant condition for turning bilateral agreements into a building block comprises the gradual reduction of external barriers to non-members and opening access for new members.

In order to achieve this target, a strong collective political will is needed in the region. This political will might not only operate at national government level, but also at regional level, particularly at the level of the ASEAN+3. Apparently, the role of the significant economies in East-Southeast Asia, namely ASEAN, China, Japan and Korea will be to form the leading caucus for the open and deepen regionalism. They should act as a powerful force towards global liberalization. This action should be taken in line with the policies of APEC and WTO, since these multilateral institutions, if working effectively, will potentially support trade liberalization and assist in the collective solution of sensitive issues. Besides, the policies of the multilateral institutions will take into account the welfare of the members as a whole and will set an effective benchmark for the path towards global economic liberalization through regional development

From an economic viewpoint, two possible ways that may hinder the negative effects of the new surge of bilateral regionalism are as follows: First, spoke economies should conclude a free trade agreement among themselves first, and then establish a free trade agreement with the hub. This will have the same effect as a FTA between all of the economies. And/or second, economies should carry out unilateral tariff reduction and create a unilateral FTA. This automatically avoids the problems brought about by the conclusion of bilateral agreements, and furthermore, there is no discrimination against third countries.

Since, a unilateral FTA is not easy to introduce, in general, the best way to solve the problems emerging from hub and spoke bilateralism and the spaghetti bowl effect is to create a free trade area among hub and spokes. Within a FTA, the new members will automatically provide a tariff-free agreement for all incumbent members. Simultaneously the new members will gain tariff-free access to the markets of all members. FTAs are able to reduce the fraction of diverted trade and thus the trade diversion effect. Furthermore, within a FTA the rules of origin will be harmonized and the economic and political marginalization effects will be eliminated. These include the investment-detering effect, hysteresis in location and the discouragement of spoke-to-spoke trade. Since a FTA brings about complete trade liberalization within the region, the production factors accumulate, raising growth in the region.

However, there is concern about sensitive sectors, which serves as a significant hindrance to the potential establishment of a FTA in the region. How to deal with politically sensitive high border barriers is an important difficulty that blocks the way towards further economic integration. This problem has been exacerbated by the increase in bilateral arrangements, particularly those with complex tailor-made conditions. At present, countries which have some sectors that are not yet prepared to enter international competition participate merely in the sectors where they are capable of competing, or exclude particular sectors from the agreements. Since the sensitive sectors vary from one PTA to another and seem to proliferate over time, it becomes harder to integrate these emerging PTAs. An example is the PTA between Japan and Korea which excludes rice. Such an agreement is not suitable for extension to all of the East-Southeast Asian economies, since those economies

that are not willing to exclude rice, for instance Thailand, might not be able to participate in this PTA.

### **Coping with Sensitive Sectors**

The issue of these highly protected sensitive sectors is unlikely to be solved through unilateral voluntary cooperation, at either the East-Southeast Asian or APEC level<sup>211</sup>. From a political and economic point of view, this problem should be worked out under “organized formal arrangements” through a step-by-step progress, particularly through CEPs conducted and monitored on a regional level. Nonetheless, the support of institutions at the global level (APEC or WTO) is also needed. One possible approach is as follows: The PTAs should anticipate future change and gradually develop the sensitive sectors in the countries concerned to be increasingly competitive. This could be accomplished through an agreement by which sensitive products excluded initially must be included subsequently over time (for example in 5 to 10 years). In this way, the range of PTAs’ conditions will be extended and it will be easier to merge the bilateral arrangements. It is important that the PTAs move towards global liberalization and aim to merge with other PTAs and offer lower border barriers to other economies. Such conditions should be set at the outset of the PTAs. This would set a higher standard than current WTO disciplines; so they fit into the general category of “wider WTO-plus principles”. This kind of principles should be introduced step by step, first within PTAs themselves and then regionally. Under such WTO-plus principles, sensitive issues will be dealt with within a time limit. Furthermore, because the region-wide merged PTAs will be gradually linked to global-level principles,

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<sup>211</sup> Elek A. (2003)

PTAs will contribute to global economic integration. In particular, these kinds of principles might be suitable and feasible for East-Southeast Asia, since East-Southeast Asian cooperation has recently gained more momentum and interests and is seeking wider economic integration, particularly through PTAs, in order to be ready to compete in the global market.

### **Pathfinder Strategy**

One of the first steps in promoting region-wide economic integration is to support region-wide facilitation in trade and investment. Facilitation has proved to be easier to implement than liberalization among PTAs. Economic facilitation is a significant factor that encourages economic convergence and, in turn, makes liberalization easier to achieve. Simultaneously, it is very important to reduce the barriers to accession and increase the opportunities for collective participation in the facilitation arrangements. CEPs are viewed as providing a suitable means of and framework for economic facilitation, since there is less economic discrimination among their participants and they seem to bring about development and growth in the members' economies. It is therefore very desirable to promote all arrangements that facilitate trade and investment, even as a part of CEPs or other regional-wide arrangements. There are two paths that should be followed to facilitate trade and investment. The first path works on a global and regional basis, the second on a bilateral and sub-regional basis.

The first path involves supporting the ongoing operation towards region-wide and global facilitation. APEC has done well on this issue. APEC's region-wide collective facilitation is conducive to region-wide gain, from which many East-Southeast Asian economies



are already benefiting, for example, the concept of “pathfinder initiatives” which was established in the Shanghai Accord (2001). Pathfinder initiatives reaffirmed a “flexibility principle” that allows APEC members who are not ready to implement the facilitating arrangements to join at a later stage. Under this scheme, the economies will be able to deal with easier sectors first, and then gradually move towards more and more sensitive issues. This region-wide planning may become a benchmark and a pathfinder for progress towards economic integration among the region’s members.

According to the second path, region-wide and global facilitation in trade and investment should be supported by cooperative arrangements at bilateral or sub-regional levels. This can be enhanced and developed through CEPs as well. In East-Southeast Asia, the emergence of several CEPs has led the way in prospective innovative arrangements and new methods of facilitation. This, in turn, supports and accelerates APEC-wide facilitation, since joining a cooperative facilitation arrangement pioneered by the other economies will necessitate capacity building. Any innovative facets of facilitation will function as a precedent for future implementation and inspire more ideas along similar lines. Development of these pioneer facilitation measures can be supported by regional wide institutions, through information sharing, experience and technology exchanges. The economies, therefore, should encourage each other to assent to any practical arrangements that facilitate trade and investment, be it on a bilateral, sub-regional, regional or global basis.

Nonetheless, most CEPs nowadays include a general clause, encompassing conditions for accession, which makes it very difficult for third economies to enter the arrangements. Several CEPs have a general clause declaring that only third economies that are

willing to accept all the provisions of existing agreement can join the CEP. In addition, the permission to enter is subject to authorization by the existing partners. In other words, if an economy wanted to participate in particular arrangements for facilitation that were already in place, it also might be obliged to join the PTA, besides all other facilitation arrangements of the existing CEPs. This would be very hard or even impossible for third economies that are only ready to join some facilitation agreements of the existing CEPs, but not the existing PTA because of differences in sensitive issues.

To overcome these difficulties and meet the objectives for integration, concrete political will is one of the most decisive factors. A model approach for establishing a consensus as the basis for political will and the accompanying requisite measures within the East-Southeast Asian region, from the point of view of what roles the various multinational institutions can play, is as follows<sup>212</sup>. As mentioned, the best way to deal with the proliferation of bilateral and sub-regional PTAs in East Asia is to “open and deepen regionalism”. This essentially requires a collective political will to come into existence and be exerted, encompassing cooperation at the levels of the ASEAN+3 and APEC, as well as support from the WTO. While the ASEAN+3 members are aiming to establish their own East-Southeast Asian FTA, they should also keep APEC’s objectives in mind, for example APEC’s Bogor Goals and APEC’s vision of regional open trade and investment. Moreover, WTO concepts can support the cooperative and collective facets of the various PTAs. The WTO schemes can serve to enhance the development towards open sub-regionalism, in particular by helping to resolve the issues surrounding sensitive products and industries

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<sup>212</sup> Young S. (2003)

or issues where individual governments' political positions make it difficult for them to make progress. For instance, in East-Southeast Asian economic integration, ASEAN+3 will be the main force to develop regional economic integration, with mutual support from APEC and the WTO at the regional and global levels. Young<sup>213</sup> has outlined the following course of action to create the requisite political will: Firstly, misconceptions about PTAs and FTAs should be set straight, leading instead to a serious discussion of the uncertainty and the progress of the PTAs and FTAs. Secondly, the regional and global institutions should declare a set of rules to open sub-regionalism. These rules should be such that the governments of the members can follow them and apply them to all PTAs afterwards. And thirdly, the regional and global institutions should take efforts to provide and publicize information resulting from a systematic and rigorous analysis of the possible benefits and risks of PTAs and how to cope with them effectively.

#### **4.4.4 The Prospect of East-Southeast Asian Regionalism: the Implications for ASEAN**

This part analyses the surge of bilateralism in East-Southeast Asia. The negative effects of “hub and spoke bilateralism” and the “spaghetti bowl effect” in particular create a situation where ASEAN economic integration is impeded. This then distorts the prospect of East-Southeast Asian economic integration. This section describes the development of the difficulties and suggests potential solutions.

#### **Development of the New Surge of Bilateral Regionalism in East-Southeast Asia and**

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<sup>213</sup> Young S. (2003)

### Solutions to the Rising Problems

A new wave of regionalism has been spreading over the East-Southeast Asian region. The negative effects brought about by hub and spoke bilateralism are hard to avoid. The role of hub and spokes seems to be clearly defined.

This part gathers some of Baldwin's results on the "hub-ness" of the world economy and analyses the prospect of East-Southeast Asian integration<sup>214</sup>. Baldwin measures "hub-ness" by examining the extra export to a hub due to conclusion of a bilateral agreement with that hub economy. In order to calculate the "hub-ness", he uses a gravity model initiated by Helpmen and Krugman, which is based on the Dixit-Stiglitz model of monopolistic competition, as a fundamental for his research. The results are illustrated in the Figures 4.1-4.6.

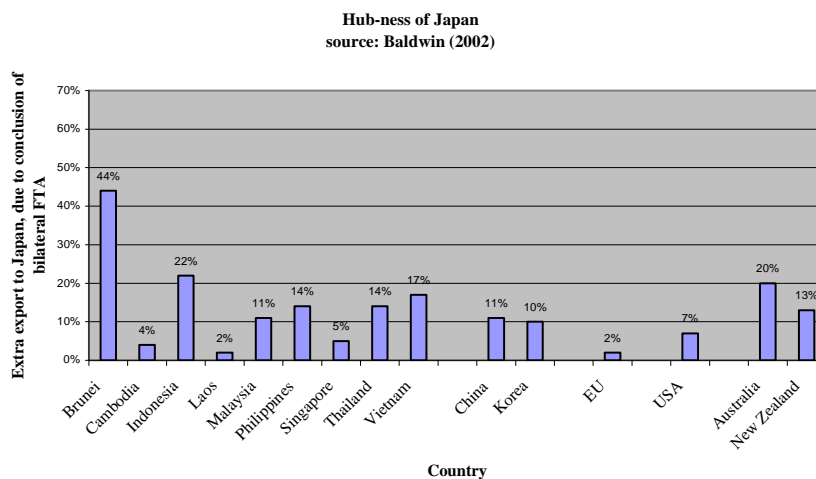


Figure 4.1: Hub-ness of Japan

<sup>214</sup> Baldwin R. (2002)

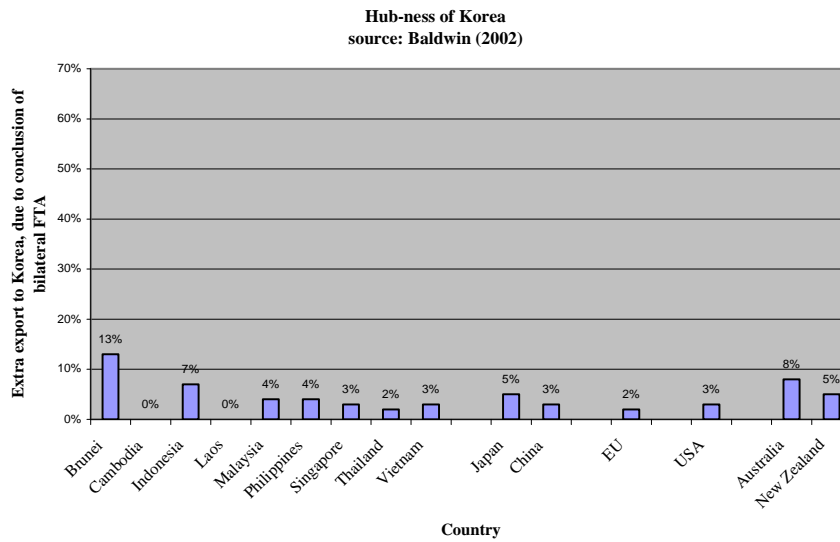


Figure 4.2: Hub-ness of Korea

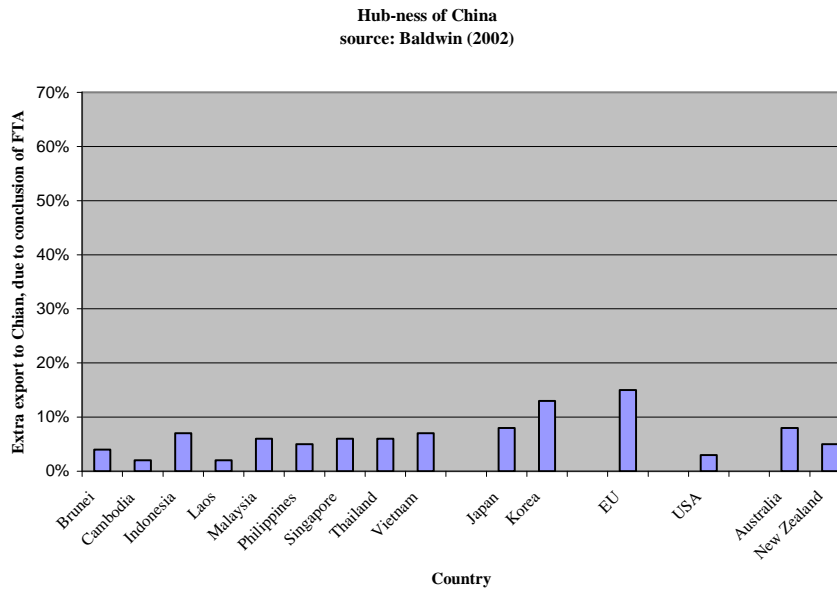


Figure 4.3: Hub-ness of China

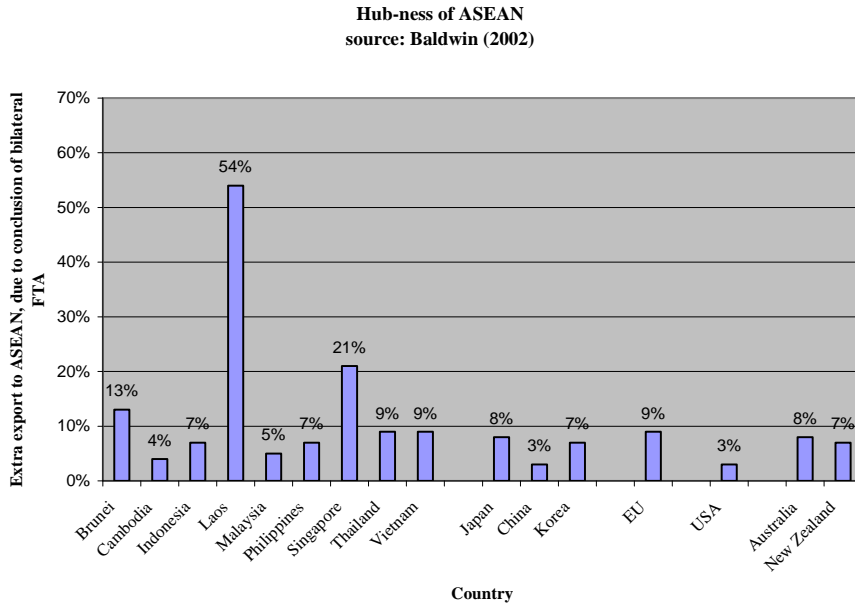


Figure 4.4: Hub-ness of ASEAN

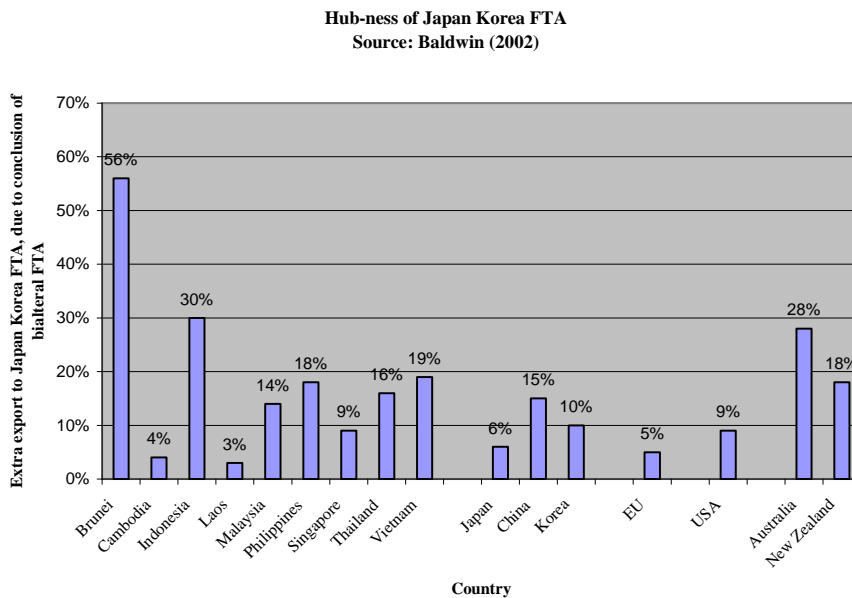


Figure 4.5: Hub-ness of Japan Korea FTA

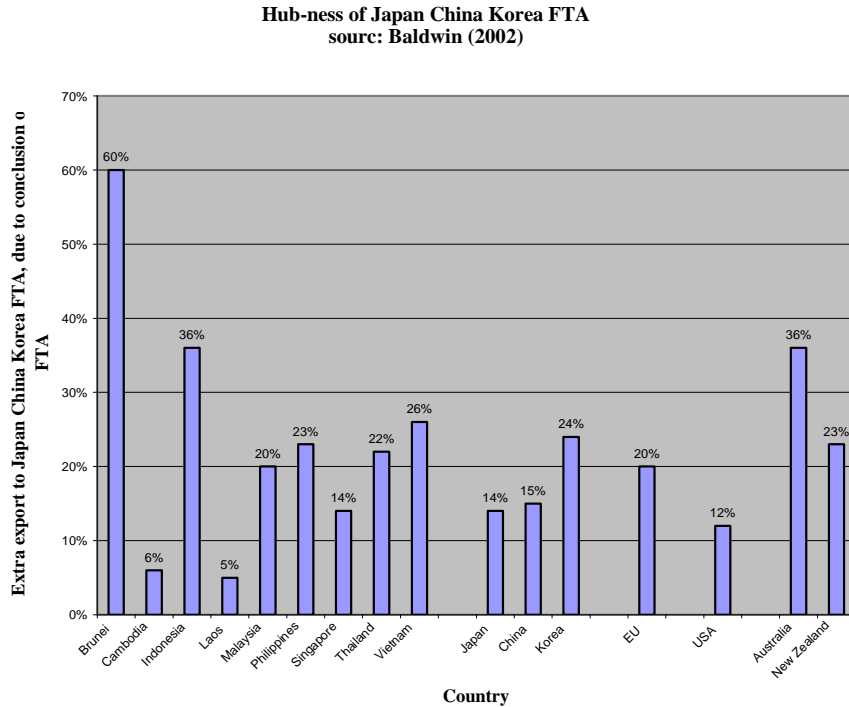


Figure 4.6: Hub-ness of Japan China Korea FTA

The outcome shows that Japan possesses the greatest hub-ness as an individual country. The hub-ness of China is considerably smaller. As an economic group, the Japan-China-Korea FTA is the biggest hub, followed by the Japan-Korea FTA and, to a much lesser extent, ASEAN. Furthermore, the data from the analysis reveals that it is more advantageous for individual ASEAN members to conclude a bilateral agreement with Japan than within ASEAN itself. This may be the incentive for the ASEAN members to turn individually towards bilateral agreements with Japan. Thereby integration within ASEAN itself may be neglected. This incentive will be stronger as soon as the Japan-China-Korea FTA or just a Japan-Korea FTA is set up.

The current situation is that East-Southeast Asian countries have concluded several bilateral agreements individually, not only with countries outside the region, but also with other countries within the region. The present situation of economic integration in the region has the two following characteristics.

1) It seems that some ASEAN members are individually concluding bilateral agreements with a potential hub economy such as Japan and China. Although the PTAs between ASEAN-Japan (2001) have been concluded and a framework agreement for ASEAN-China Comprehensive Economic Cooperation came to effect in 2003<sup>215</sup>, some strong economies in ASEAN tend to initiate bilateral trade agreements individually. Examples of this are the Japan-Singapore FTA signed in January 2002, the China-Thailand PTA that commenced in 2003, the initiation of negotiations for establishing the Japan-Thailand Economic Partnership Agreement in December 2003, a joint study on the Japan-Malaysia Economic Partnership and the initiation of a Japan-Philippines Economic Partnership Agreement. This may destabilize ASEAN integration, due to the “hub and spoke effects”.

2) Even though a bilateral agreement between Japan China and Korea is hard to achieve due to political obstacles and unstable relations, the FTA between Japan and Korea only is progressing rapidly. This is assisted by the two countries’ similar economic specialization and stable political structures. The prospective Japan-Korea FTA is very promising. Both countries share similar heritage and cultural values and both economies have much in common. Japan is currently the second largest trading partner for Korea, while Korea is the third largest partner for Japan. Moreover, Japan is the second largest source of FDI for Ko-

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<sup>215</sup> In 2002, ASEAN and China agreed on a FTA which is to be completed by 2010.



rea. Bilateral trade between Japan and Korea has increased over time (Japan's trade with Korea was 42.66 billion US dollars in 2001 and 43.86 billion in 2002. Korea's trade with Japan was 43.14 billion US dollars in 2001 and 45 billion in 2002). As soon as the Japan-Korea FTA is accomplished, the ASEAN members will increase their efforts to conclude bilateral PTAs with the Japan-Korea FTA. Operating individually, each ASEAN member will certainly become a spokes. As a spoke, each ASEAN economy will be on the receiving end of the negative effects of bilateralism. This may damage the prospect of ASEAN economic integration and, subsequently, East-Southeast Asian regionalism.

At present, it seems that Japan and Korea are successfully moving towards the first step of economic integration. The Japan-Korea FTA may be achieved in the foreseeable future. This undertaking has put pressure on ASEAN to react, due to the aforementioned supposition about the ASEAN members becoming spokes. The best way forward for ASEAN is to accelerate AFTA and finish it as soon as possible. Simultaneously, ASEAN should take control of bilateral trade negotiations between their individual members and potential hub-countries, particularly Japan and China. These agreements should be collectively planned and should support regional integration. If ASEAN is successful in this course of action, the new surge of bilateral arrangements will change their focus to one which supports integration. The process of East-Southeast Asian economic integration can be described as follows (see Tables 4.2 and Figures 4.7 and 4.8 for the main characteristic of the new surge of bilateral-regionalism, the solution to this and the suggestion for the prospect of the East-Southeast Asian Economic integration).

New Surge of bilateral based regionalism	
Hub and Spoke effects & Spaghetti bowl effects 1) Allocation effects 2) Costs of the Rules of Origin 3) Investment-detering effects 4) Hysteresis in location 5) Accumulation effects 6) Discouragement on spoke to spoke trade	Contemporary circumstances 1) Each ASEAN member is aiming at concluding bilateral PTAs with Hub-potential countries, particularly Japan. 2) ASEAN countries become spokes. 3) Establishment of Japan-Korea FTA is very promising and can become a great Hub in the region. 4) Initiative for ASEAN members to trade individually rises.  This intensifies the hindrance of the ASEAN integration

Table 4.2: New surge of bilateral regionalism in East-Southeast Asia

1) At the first step, ASEAN should complete AFTA as soon as possible. This move will also be forced by the development of the Japan-Korea FTA.

2) At the second stage, there will be two FTAs in the East-Southeast Asian region, namely AFTA and the Japan-Korea FTA. Since the hub-ness of the Japan-Korea FTA is relatively high for ASEAN members, it will not be difficult for both FTAs to merge together. At this phase, ASEAN should intensify trade relations with China and accelerate the ASEAN-China FTA, which is currently planned to be accomplished by 2010. Several studies show that the ASEAN-China FTA will provide net gains for both countries<sup>216</sup>.

3) At the third stage, the ASEAN-Japan-Korea FTA will be complete and so will the ASEAN-China FTA. At this point, ASEAN will operate as a connecting-bridge for economic integration throughout East-Southeast Asia. ASEAN has already shown the potential to be a middleman for Japan and China and to be an initiator of East-Southeast Asian economic integration, for instance with the initiation of the ASEAN+3 summits.

<sup>216</sup> For instance, Chirathivat (2002) and Tongzon (2001)

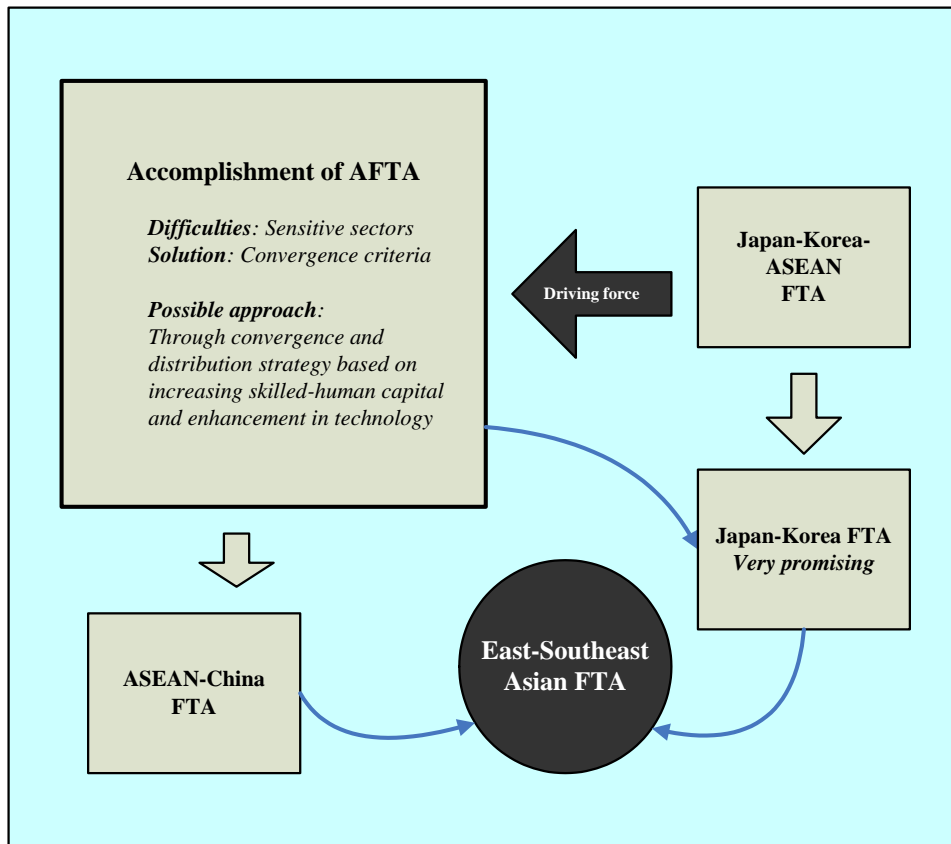


Figure 4.7: Suggested solution for ASEAN and East-Southeast Asian regionalism

This is a sign that ASEAN could play a positive role in the encouragement of relations between China-Japan and Korea.

Looking back on the first step, one of the significant hindrances retarding the progress of ASEAN economic integration and the accomplishment of AFTA is the level of “diversity among member countries”. To solve out this complication, this thesis suggests “economic convergence” and “distribution”, which not only help to solve the sensitive sector problems, but also strengthen the internal economic structures of the countries and the region. In this way, the economies will be able to achieve sustainable development more easily

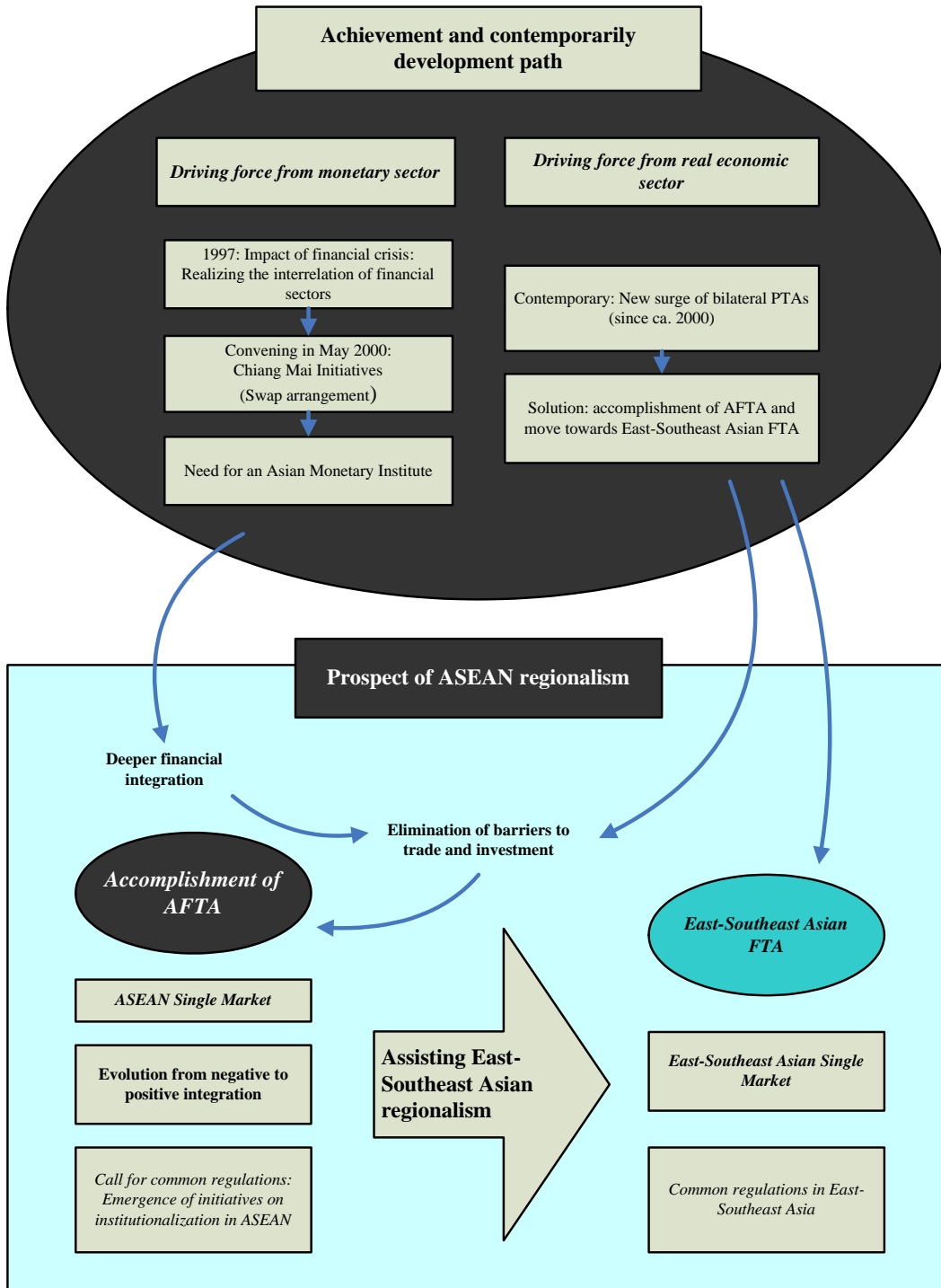


Figure 4.8: Proposal on East-Southeast Asian regionalism

and become, to a certain extent, immune to external pressures. In the context of European integration, meeting the “convergence criteria<sup>217</sup>” has been a strict condition for the EU membership and has improved the prospect of successful integration. “Convergence” and “distribution” as development strategies would not only support the establishment of AFTA, but also be a first step towards economic integration within the East-Southeast Asian region.

The strategy for economic convergence and distribution must have a wide scope. In order to carry out development in an appropriate manner, the implementation of both schemes requires careful attention to be paid to the economic and political circumstances of the country or region under consideration. The East-Southeast Asian economic structures of the northeast region are considerably different from those of the southeast region. While the northeast region consists of industrialized countries, the economies in the southeast region are still some way behind in this respect. This thesis predominantly focuses on the convergence and distribution scheme of the southeast region, specifically the ASEAN economies. A proposal for a sustainable development strategy will be made for this southeast region.

The scheme presented in the thesis is just a part of numerous development strategies that should be exercised to progress towards prosperous economic integration. It includes a suggested scheme for strengthening the economic structures, which relies on economic convergence and distribution within the countries and sub-region. Furthermore, there is a positive interrelation between convergence and economic integration. Economic inte-

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<sup>217</sup> Only three East Asian countries currently meet the convergence criteria of the EU (1992-1996), namely Japan, Taiwan and Singapore. See Boyer (2002)

gration is able to support the economic convergence of the whole region in the long run, for instance in terms of mobility of production factors and/or convergence of technological progress. In turn, convergence of living standards and regional economies will have the positive effect of finally easing the problem of the sensitive sectors, thus simultaneously supporting integration. The supporting measures involve enhancing education and technology, which serve as significant fundamentals for the economic, political and social structure. Advancement in education and technology will support economic convergence and distribution by raising income and living standards. In turn, the development of the economic structure and economic convergence will support and strengthen economic integration in the region. The process works both ways, in that, due to positive spill-over effects, economic integration will encourage the progress of education quality and technology development. Hence, it can be concluded that both terms (economic integration and enhancing education and technology) will assist each other on the way to further economic development in the region and will, in the long-term, support inter- and intra-regional economic integration. This development strategy will be described and modeled in the forthcoming chapter.

## **4.5 Conclusion**

The East-Southeast Asian economies are facing a dilemma as a result of the difference between the “interdependence and interweaving” of the global economy, which support economic integration and “diversity in the international economy”, which is, on the contrary, a hindrance to regionalism and global cooperation and tends to undermine East-Southeast

Asian regionalism. Both circumstantial pressures have arisen, to a great extent, from the movement towards globalization and the increasingly integrated world markets. To counteract this state of affairs, economies worldwide are seeking an appropriate solution. The most common source of economic gain found is the conclusion of bilateral arrangements. The new surge of bilateral regionalism can currently be observed in every region. Such regionalism, however, has led to uncertainty about the correct path for the economic development. The negative effects caused by bilateral trade agreements, especially the “hub and spoke effects” and the “spaghetti bowl effect”, can have a severe effect on further integration.

The economic integration of ASEAN in particular can be harmed by this situation. ASEAN members are concluding bilateral trade agreements with several economies individually. This may not only retard collective ASEAN integration, but also deteriorate ASEAN, and subsequently East-Southeast Asian, economic integration. The best way out of this negative situation is for ASEAN to move forwards, accelerate its FTA plan and achieve the first stage of economic integration. This, in turn, will reduce or even eliminate the negative effects of hub and spoke bilateralism and turn bilateral regionalism into a stepping-stone towards regional economic integration. With the accomplishment of the AFTA, ASEAN will form a bridge connecting Japan and China, which would result in East-Southeast Asian economic integration in the long run.

This thesis focuses on diversity of the economic structures of the different countries as a significant hindrance to ASEAN economic integration and suggests a possible way out. To resolve the diversity issue, this thesis puts forward “economic convergence” and “dis-

tribution” as dominant strategies. The combination of these two approaches not only helps solve the sensitive sector problems, but also strengthens the internal economic structures of the countries and the region. In this way, the economies will be able to achieve sustainable development more easily and become immune to external pressures, at least to a certain extent. Furthermore, there is a positive interrelation between convergence and economic integration. By means of economic integration this strategy will also be able to support the economic convergence of the whole region in the long run. One positive effect of the strategy is that convergence in living standards and regional economies will finally make the resolution of the sensitive sectors issues easier. The supporting measures involve enhancing education and technology, which serve as significant fundamentals for the region’s economic, political and social structure. Advancement in education and technology will support economic convergence and distribution by raising income and living standards. In turn, development of the economic structure and economic convergence will support and strengthen economic integration in the region. The benefits also impact in the opposite direction: due to positive spill-over effects, economic integration will enhance education quality and technological development, which will lead to an augmentation of economic convergence in the end.



# **Chapter 5**

## **Theory on Economic Development and Integration**

In the previous chapters of this thesis, strategies for the sustainable development of ASEAN and East-Southeast Asian integration have been examined. The two strategies that constitute the focal point of the thesis have been established as “openness and deepening” and “strengthening foundation”. The concrete implementation of both strategies is as follows: in association with “openness and deepening”, to develop ASEAN and East-Southeast Asia economic integration and simultaneously, in association with “strengthening foundation”, to strengthen macroeconomic structures. The thesis concentrates on convergence and distribution as key factors to achieve both objectives. Accordingly, the thesis examines how to achieve convergence; in particular, the effects of the convergence of human-capital and technological progress on the convergence of income and the trend towards integration are contemplated.

This chapter five presents models of strategies that strengthen economic fundamentals and promote convergence within an economic structure. Additionally, it illustrates the interrelation of convergence and economic integration. These strategies aim at coping with economic disparity within and between countries. In the main, discrepancies in the human capital and wage-rates of blue-collar (workers from low-income-earner sector or from poor countries) and white-collar workers (workers from high-income-earner sector or from rich countries) and in the technology used in different production sectors are considered.

Whether a distinction is made between blue-collar and white-collar workers or between workers in poor and rich countries depends on the character of the model-analysis. If the model analyzes economic situation of a single country, the examination carried out will be between blue- and white-collar workers. On the other hand, if an integrated region is analyzed, the model originally used for blue- and white-collar workers will be applied for the case of average workers in the poor and rich countries respectively. For a better understanding, the thesis will focus either on an economy which has both blue-collar and white-collar workers or on a region with workers in the poorer and richer countries.

Diversity in economic structure can be found in several developing countries and is regarded as a significant hindrance in the context of the ASEAN and East-Southeast Asian economic integration. Economic convergence and distribution are considered as schemes that could be implemented to solve recent economic problems within the region and lay down a strong foundation for long-term development. Both schemes lead to improvements as well as convergence in the standard of living and the economic structure of the region. This will provide an important basis for the solution of the sensitive-sector-problems. Sustainable development can then be achieved easily and the economy will be, to a certain extent, immune to external pressures. Negative effects from “hub and spoke bilateralism” will be lessened or hindered and bilateral regionalism will become a stepping stone towards economic integration. Economic cooperation and integration within the region will strengthen regional economic convergence and economic fundamentals. These, in turn, are the very factors that allow countries to achieve regional and global economic integration

in the long run. This reflects the mutual relationship between economic convergence and integration.

One of the relevant supporting measures is the enhancement of education and technology. Both serve as essential basic components of economic, political and social structures. Advances in education and technology will assist economic convergence and distribution by raising income and living standards, particularly in poorer sections of the population. Consequently, development of the economic structure and economic convergence will support and strengthen economic integration in the region. Due to positive spill-over effects, economic integration will, in turn, enhance the quality of education and technological development. In addition, higher levels of integration and openness are related to higher mobility of the factors of production, resulting in more convergence of production factors and income.

The origin model is based on the growth model by Galor and Weil (1999) which analyzes the historical evolution of population, technology and output, encompassing the endogenous transition between three regimes, a Malthusian regime, a Post-Malthusian regime and a Modern Growth regime. In this thesis, modeling of a short- and a long-term development are distinguished. The growth model by Galor and Weil is modified and adapted in order to analyze the short- and long-term development of the economy under inequality between labor groups and to discover strategies that will strengthen economic fundamentals and assist economic integration within the region. The short-term model is built, to a certain extent, in such a way that the structure of the utility function is consistent with the utility function of the long-term model. Both models use the Cobb-Douglas production

function; the short-term model assigns a common two-period inter-temporal model and the long-term model is based on an overlapping generation model.

The first part of this chapter describes the fundamental structure of the model which refers to the production relations under inequality between labor groups. Using the results derived from the production relations, short- and long-term effects caused by an increase in the quality of human capital are captured and strategies are suggested for the development of an economy which is initially characterized by inequality between labor groups. These strategies are, firstly, augmentation and convergence in the quality of human resources within a sector and between different sectors and, secondly, assisting technological progress and fusing technology levels in the two economic sectors.

The second part of this chapter introduces the short-term model and implements it for simulations and analyses. The results show that, in general, two strategies are effective and should be simultaneously implemented. The first of these is reducing the costs of subsistence consumption, which is a relevant strategy to lessen economic divergence and support economic convergence. The second is reducing the costs of education and implementing distribution, which brings about an increase in the quality of human capital and also an increase in income. While reducing the costs of education only benefits individuals who are able to invest in education, reducing the costs of subsistence consumption, on the other hand, supports all individuals. If the reduction of the costs of subsistence consumption is large enough, several individuals who were previously unable to invest in education will be able to invest in education after the costs of subsistence consumption decline. This implies that the quality of human capital and income will rise and the number of individ-

uals who benefit from the educational support will increase. Economic convergence will be supported – or, more precisely, divergence will be eased – since the level of investment in education for low-income-earners depends on the level of subsistence consumption. By means of combining the reduction of subsistence consumption costs with higher investment in educational support for low-income-earners the number of individuals who invest in education and the quality of human capital of the blue-collar group will be increased, and this also lessens divergence and bolsters convergence.

The second part, in addition, conducts a theoretical analysis of the short-term development under inequality between labor groups from an economic policy perspective. The role of government is analyzed, focusing particularly on convergence and augmentation of the quality of human capital and income. In the model, individuals' utility is, besides their income and consume, also established in terms of a trade-off between paying income tax and gains from government spending. The government plays a significant role in implementing distribution and achieving convergence. The government's main instruments are taxation and public spending. In the short-run, taxation and direct government supports (including redistributing income from rich to poor individuals) lead to income distribution, which, in turn, brings about an increase in education levels in the low-earning-sector. In the model, convergence through indirect supports (through reduction of the costs of education) leads to an increase in level of investment in education and to distribution of education among the individuals earning above an amount of  $z^{tb}$  (budget constraints are not binding).  $z$  is the level of an individual's income, which depends on the level of human capital and wage rate of an individual, and  $z^{tb}$  depicts the level of individual earnings at which budget

constraints are exactly binding, meaning that budget constraints of individuals earning below  $z^{tb}$  are binding. However, the model induces a trade-off, since indirect support leads to a reduction of the level of investment in education for the individuals earning below  $z^{tb}$  (budget constraints are binding). Furthermore, the model shows that the reduction of the costs of education directly via taxation supports convergence only among the group of individual earning above  $z^{tb}$ , in the contrary the incentives to invest in education of the individuals earning below  $z^{tb}$  decrease. Therefore, These results lead to the fact that it is necessary to secure the income level or living-standard of the individuals (in the model, the breakthrough point is  $z^{tb}$ ) which will be a significant fundamental for economic development.

Furthermore, the “Median Voter Theorem” is used to capture a theoretical outcome of the decision-making process for political strategies, which indirectly affect the development path of economic growth and economic convergence. The main outcome is the revelation of one of the explanations for why several political programs diverge from the first best solution. The result shows the consequence of the distortion of the government’s decision, brought about by its predominant interest in winning votes. It can be observed that there are several opportunities for political programs that are more efficient and utility in the economy can be increased, if the governments are social welfare oriented. In addition, this model also shows that if there is no inequality in the economy, government interference is not needed, since this merely brings about distortion due to the deadweight-loss. Yet, if there are disparities in the economy, it is worthwhile to accept the deadweight-loss, in order to achieve distribution, convergence and sustainable development. In the context of

economic integration, the role of government in this issue can be assigned to a supranational institution in an economic union.

The third part illustrates analyses of the long-term model accompanied by its simulations and analyses. Human capital must be improved as a whole and convergence of skills among individuals from high and low income sectors must be achieved. The development process is examined in a deeper manner by focusing on the next generation of human capital. Diversity among the population is manifest, particularly in the developing countries; low-income earners usually have less economic and social (in this case educational) opportunities. For this reason, the government must interfere to enhance an equal distribution of opportunity among individuals. Taxation policy and direct government support aimed at income distribution must be implemented. If individuals have higher income, they can invest in the next generation of human capital, engendering a sustainable long-term development and convergence in skill and income. Enhancement in the wages of labor-groups can be achieved through technological change. Progress in technology bolsters the production sector and increases the wage rate. Also, convergences in technology standards among different production sectors bring about convergence in wage rates. The main factors that are conducive to technology development are research and development (R&D) and economic integration. Whereas the pursuit of R&D needs a high investment in terms of finance and time, technological progress through economic integration requires less time. For instance, it can be achieved by taking over higher foreign technologies. Moreover, economic integration also lays a foundation for more effective R&D, for example by joint venture or international R&D and production. A greater augmentation of technology in the low-

income-earner-sector than in the high-income-earner-sector leads to a higher increase in the wage rate, level of investment in children's education and utility in the low-income-earner-sector and is conducive to convergence. These, however, affect only individuals earning above  $z^{tb}$  and there is a trade-off, since the level of investment in the education of the individuals earning below  $z^{tb}$  declines. An example of this long-term development can be seen in Thailand, where government interference is leading to economic distribution and convergence, and in addition total per-person level of investment in education is on the increase, but, as a trade-off, the total per-person utility is declining. In this model, the reason for the decline of total per-person utility is the inherent deadweight-loss of taxation and the indirect distribution of government spending (in this case, government support in education and technology progress) which due to the individuals' viewpoint is less preferable comparing to the direct distribution. This decrease in total utility may be avoided by a better tax rate and tax structure. Nevertheless, there is significant distribution effect regarding the individuals' utility. There are winners and losers from the action of government interference (via progressive tax structure) and the lower the tax rate one has to pay, the higher the gain potential.

In the fourth part, the model is applied to analyze the prospect of international and regional basis, in which the data and development of ASEAN is chosen as an example. Finally, the last part depicts the theoretical relationship between economic integration and convergence, and concludes on the results of the short- and long-term modeling, discussing relevant economic strategies that should be implemented. To conclude, the existence of significant mutual positive relations between economic cooperation and integration and



economic convergence is borne out. Convergence supports economic integration by easing the problems of sensitive sectors and hub and spokes bilateralism. Obviously, economic convergence not only assists economic integration, but is also a general fundament for sustainable development. The fact that economic cooperation and integration simultaneously support economic convergence and development (in this model, by means of convergence and augmentation of technologies and reduction of subsistence consumption and costs of education) confirms the importance of moving towards economic integration. In the model, economic integration between countries always brings about advantages, as soon as there are technological differences in any sector or in production processes, regardless of whether this integration is between two industrial countries, two developing countries or between industrial and developing countries.

## 5.1 The Fundamental Structure of the model

### 5.1.1 General Production Relations

The aggregate production  $Y_t$ , at period  $t$  occurs according to the Cobb-Douglas production function with a constant-returns-to-scale technology. This can be written as:

$$Y_t = K_t^\alpha (A_t H_t)^{(1-\alpha)} \quad (5.1)$$

$\alpha \in [0, 1]$ .  $H_t$ ,  $K_t$  and  $A_t > 0$  are the “efficiency unit of labor”, the “aggregate capital input” and the “productivity parameter of technology” over the period  $t$ , respectively. The

product of technology parameter  $A_t$  and labor  $H_t$  represents the “total efficiency of labor forces”.

The output per worker  $y_t$ , produced at time  $t$  is

$$y_t = k_t^\alpha (A_t h_t)^{(1-\alpha)} \equiv y(k_t, h_t, A_t), \quad (5.2)$$

where  $y_k(k_t, h_t, A_t) > 0$  and  $y_h(k_t, h_t, A_t) > 0 \forall (k_t, h_t) > 0$ .

$L_t$  is the aggregate worker,  $k_t \equiv \frac{K_t}{L_t}$  the quantity of capital per worker,  $h_t \equiv \frac{H_t}{L_t}$  the effective unit of labor per worker (embodying quantity and quality of labor per worker) and  $A_t h_t \equiv A_t \frac{H_t}{L_t}$  is the absolute efficiency unit of labor per worker, at time-period  $t$ .

It is assumed that the economy is small and open to the world capital market; hence the interest rate is regarded as exogenously given. The capital market equilibrium condition implies that

$$\frac{\partial Y_t}{\partial K_t} = \alpha \left( \frac{K_t}{A_t H_t} \right)^{(1-\alpha)} = r \quad (5.3)$$

In a competitive labor market, each worker receives wage rate  $w$ , which is equal to the marginal product of labor. The marginal product of labor is defined as follows:

$$\frac{\partial Y_t}{\partial H_t} = \alpha \left( \frac{K_t}{A_t H_t} \right)^\alpha A_t = w_t \quad (5.4)$$

### 5.1.2 Production Relations under Inequality between Labor Groups

It is taken for granted that the economy consists of two classes of labor forces, the blue-collar workers (if the economy is a country) or workers in the poor countries (if the economy refers to an integrated economic region) and the white-collar workers or workers in the rich countries – for simplicity the thesis uses only the terms blue-collar and the white-collar

workers for both interpretations. At time  $t$ , white-collar workers work with technology  $A_{ht}$ , while blue-collar workers work with technology  $A_{lt}$ . It is also assumed that in an economy with disparities in the incomes and wage rates of different groups of workers, white-collar workers are educated to a higher level, possess a higher quality of human capital and utilize higher technology. The high level of economic disparity, notably, leads to a larger difference in the levels of education and income between the two groups.

The aggregate output of the economy, over time period  $t$ , given by the Cobb-Douglas production kernel is

$$Y_t = K_{ht}^\alpha (A_{ht}H_{ht})^{(1-\alpha)} + K_{lt}^\alpha (A_{lt}H_{lt})^{(1-\alpha)}, 0 \leq \alpha \leq 1 \quad (5.5)$$

$A_{jt}$  describes the productivity parameter of technology, with  $j = h, l$ .  $H_{ht}$  and  $K_{ht}$  are the aggregate effective labor and the aggregate capital input in *sector h* applied with higher technology parameter  $A_{ht}$ . In analogy,  $H_{lt}$  and  $K_{lt}$  are the aggregate effective labor and the aggregate capital input in *sector l* with the lower technology parameter  $A_{lt}$ .

Capital is perfectly mobile between sectors. Hence, in a competitive equilibrium, the marginal product of capital must be identical in each sector. This implies that

$$\frac{\partial Y_t}{\partial K_{ht}} = \frac{\partial Y_t}{\partial K_{lt}} \quad (5.6)$$

Applying the Cobb-Douglas production function, this can be written as

$$\alpha \left( \frac{K_{lt}}{A_{lt}H_{lt}} \right)^{(\alpha-1)} = \alpha \left( \frac{K_{ht}}{A_{ht}H_{ht}} \right)^{(\alpha-1)} \quad (5.7)$$

The capital market equilibrium condition implies that the capital stock per “total efficiency unit of labor” must be identical in each sector; therefore

$$\frac{K_{lt}}{A_{lt}H_{lt}} = \frac{K_{ht}}{A_{ht}H_{ht}} \quad (5.8)$$

As already mentioned, it is assumed that the economy is small and open to the world capital market. It follows that

$$\alpha \left( \frac{K_{lt}}{A_{lt}H_{lt}} \right)^{(\alpha-1)} = \alpha \left( \frac{K_{ht}}{A_{ht}H_{ht}} \right)^{(\alpha-1)} = r \quad (5.9)$$

Equation 5.9 shows that the aggregate capital amount of both sectors are determined negatively by the world interest rate and positively by the total efficient labor forces in the respective sector ( $A_{jt}H_{jt}$ , with  $j = h, l$ ).

It is assumed that competitive labor is only mobile within each economy, whereas capital is perfectly mobile within economies and also among regions (globally). In a competitive labor market, the wage rate  $w$ , received by each group of workers is equal to the marginal product of labor in the respective sector.

In *sector h*, the marginal product of white-collar workers’ labor at time  $t$  is

$$\frac{\partial Y_t}{\partial H_{ht}} = (1 - \alpha) \left( \frac{K_{ht}}{A_{ht}H_{ht}} \right)^\alpha A_{ht} = w_{ht} \quad (5.10)$$

and the marginal product of blue-collar labor in *sector l* at time  $t$  is

$$\frac{\partial Y_t}{\partial H_{lt}} = (1 - \alpha) \left( \frac{K_{lt}}{A_{lt}H_{lt}} \right)^\alpha A_{lt} = w_{lt} \quad (5.11)$$

$w_{ht}$  denotes the wage rate of white-collar workers working with high technology  $A_{ht}$  at time  $t$  and  $w_{lt}$  the wage rate of blue-collar workers working with low technology  $A_{lt}$  at time  $t$ . Equations 5.10 and 5.11 show that wage rate depends positively on the technology

parameter and the aggregate capital amount and negatively on the aggregate human capital in the respective sector ( $H_{jt} = h_{jt}L_{jt}$ , with  $j = h, l$ ).

### **Production Relations under Inequality of Labor Groups Regarding Disparity in Skills and Wage Rates**

This section presents an analysis of short- and long-term development brought about by production relations under inequality of labor groups. The first part focuses on the short-term development and the effects of change in human capital quality. The second part concentrates on the long-term development. Finally, the last part unveils strategies that may bring about convergence and development in the economy.

Inequality between the two labor groups in terms of disparity in skills and wage rates can be found in several developing countries. A significant factor behind this situation is the difference in levels of education, which makes for unequally skilled workers. This not only leads to disparity in income, but also retards further development in the affected countries.

In the model, it is assumed that, in an economy with disparity in income and wage rates between groups of workers, white-collar workers are educated to a higher level and possess a higher quality of human capital than blue-collar workers. None of the white-collar workers has any incentive to leave their current work position and take on a blue-collar job. The level of economic disparity is directly influenced by the difference between the levels of education, incomes and the technologies used. Factors that play an essential role in income and economic disparity are a difference in wage rates and in education levels of human capital. Admittedly, workers' wage rates and skills affect the progression of income,

but it is technological progress that mainly determines the development of wage rates and production in both sectors. The development of these determinants – education levels, wage rates and technology parameters – reflects the evolution of the respective economy. In order to achieve sustainable economic development, it is important not only to consider the advancement in production and income, but also to take thorough account of the improvement of the economic structure, particularly in association with the disparity among production sectors and different skills of the workers. Appropriate strategies that steer these factors onto an efficient course of development will support economic convergence and assist economic development. The model reveals two main schemes that influence the convergence of the economic structure.

First, in equilibrium, equations 5.10 and 5.11 reveal that disparity in wage rates between high- and low-skilled workers can be reduced through a convergence of technologies between the two sectors. This can be induced, first, by enhancing technology used in the low-skilled labor sector, with a view to catching up with the standard of technology available to high-skilled workers, and second, by means of supporting the transformation of low- into high-skilled labor. The economy should be bolstered towards economy with high-skilled labor working with a higher technology level with high quality in both manufacturing and services in the main economic sector. The second main scheme works on the basis that income can be continuously increased by enhancing the quality of human resources. Convergence in income disparities can always be combated by improving the quality of low-skilled labor to catch up with high-skilled labor, mainly through investment

in education. This will be substantially assisted by a convergence of wage rates between the two sectors.

### **Short-Term Effects Induced by Increase in Qualities of Human Capital**

In the short-term, it is assumed that significant technological progress can not be achieved through Research and Development (R&D). Technology parameters remain the same, since R&D needs a certain period of time to initiate substantial change in technological progress. Technology parameters, nevertheless, can be augmented by taking over foreign technology, although good quality labor must be available within the economy to implement this. It is further assumed that progression in skills through investment in education in this short period is not high enough to allow individuals to change jobs by moving to the production sector, which requires higher skills and utilizes higher technology. In other words, despite the fact that individuals in both sectors can develop skills, individuals working in *sector l* are not capable of advancing to *sector h*. In comparison, individuals working in *sector h* have no incentives to take a demotion by moving from the high- to the low-skilled sector. This means that no job-switching between workers from the two sectors is allowed. In addition, it is assumed that the quality of human capital of workers from both groups  $h_{jt}$ , can only be ameliorated.

Considering equations 5.10 and 5.11, both equations shows that in the equilibrium an increase in the efficiency unit of human capital  $h_{jt}$ , all in all, does not affect the ratio between the two wage rates. In the beginning, a ceteris paribus increase in  $H_{ht}$ , through investment in education, brings about a temporarily decrease in the wage rate of high-skilled

labor, thus breaking the equilibrium. Precisely, an increase in the quality of human capital in *sector h* leads to an increase in the efficiency unit of labor  $h_{ht}$ , therefore temporarily lowering the wage rate of *sector h* but not that of *sector l*. In analogy, an increase in  $H_{lt}$  by investing in education an amount that is not high enough to transform low- into a high-skilled labor, brings about a temporarily decrease in the wage rate of low-skilled labor, also breaking the equilibrium status. As time passes, the equilibrium condition of the competitive international capital market will lead to a quotient of low- and high-skilled wage rates equivalent to that which existed under the old equilibrium. In other words, an increase in  $H_{ht}$  ( $H_{lt}$ ) will raise productivity in *sector h* (*sector l*) which reduces the wage rate of high-skilled (low-skilled) labor first, leading to productivity enhancement and additional opportunity gains in *sector h* (*sector l*). As a consequence, firms ask for additional capital investments. And since this is a small and open economy with capital perfectly mobile capital, foreign capital will be raised until old equilibrium is reached where the wage rate rises to the old equilibrium level again.

Although convergence of wage rate disparity through improvement in human capital is transient and instable, an increase in the quality of human capital will raise the efficiency unit of labor  $h_{jt}$ , leading to higher income in the end (the income of an individual is defined by the product of wage rate and efficiency unit of labor  $w_{jt}h_{jt}$ ). To conclude this section, enhancement in the quality of low-skilled labor does not reduce disparity of wage rates, but at best supports the convergence of income disparity between both groups in the short- as well as in the long-term.



### Long-Term Effects Induced by an Increase in the Quality of Human Capital

According to equations 5.10 and 5.11, an increase in the quality of human capital supports the improvement of income levels, but it does not affect wage rate disparity positively or negatively. In the long-run, the crucial factor to increase wage rates and their parity is improvement and convergence of the technology parameters of both sectors. Besides investment in R&D, technology advancement in both production sectors can also be brought about by external effects initiated by international trade, joint ventures and, significantly, through economic integration with advanced economies. It must be considered that technologies taken over from partner countries must be implemented and operated using the available abilities of existing human resources. As a result, one of the main issues that should be considered, in order to achieve a prosperous long-term development, is the necessity to implement strategies which enhance human resources and technological progress while simultaneously reducing the gap between sectors.

In the short-term development, the realistically achievable improvement in human capital and accompanying progression in skills are not great enough for individuals from low-skilled sector to alter their jobs to the high-skilled production sector. In the long-run, however, the individuals in *sector l* have time to invest in education, allowing them to switch to *sector h*. Transformation from low- to high-skilled labor raises the amount of high-skilled labor available and at the same time, reduces the amount of low-skilled labor (increase in  $L_{ht}$  and reduction in  $L_{lt}$ , since  $L_t = L_{ht} + L_{lt}$  must be valid). As long as the economy has not yet reached a status of parity in technologies, skills, wage rates and income, an increase in individuals' skills in the long-run will lead to transformation in

the structure of production sectors. As their skills improve, individuals will search for the best choice, assuming that they will always strive for higher income. If blue-collar workers gain enough skills to become a white-collar worker, they will always choose work in the white-collar sector, because under inequality of labor groups with disparity in skills and wage rates, white-collar workers earn a higher salary than blue-collar workers (referring to equations 5.10 and 5.11 with  $A_{ht} \geq A_{lt}$ ). This leads to the fact that, in the long-run, improvement of low-skilled labor brings about not only convergence in income, but also transformation in the production structure of the economy, moving away from the less productive sector to a highly productive sector with high technology and high skill requirements. Another finding is the fact that, in the long-term development, income convergence, led by the merging skills levels of both groups of workers, will be significantly supported by convergence in wage rates applied by convergence in technologies used in both production sectors as shown in the equations 5.10 and 5.11.

Convergence among technology parameters brings about wage parity and supports income convergence, but it also retards the structural transformation effect in those two production sectors. Nonetheless, in the end, when different technology parameters between both sectors become equal, wage rates will be equal in equilibrium and preferences of the individuals, which are based on wages, will remain the same in term of their choice of preferred working sectors. At this point, the convergence of the economy is only dependent on the quality of human resources and the prospect of economic convergence becomes achievable.

To conclude, the long-term strategies that the economy should work on are convergence and enhancement of technology and human capital quality in both sectors. Convergence will support economic fundamentals and enhancement will lead to further economic development. Cooperation of the two main strategies will not only strengthen internal economic structures and ease the problems triggered by the external pressure, but also bring about the opportunities for the economy to initiate development measures within the country and the region.

In this model, the analysis of long-term development will study the development of the relation among two generations. This means that the focus is now on the progress of the human capital of the children and the outcome of the economic convergence and growth will be resulted in the era of the second generation. The conditions for the economic development still remain the same as the above mentioned long-term analysis.

### **Strategies to Pursue**

As examined in the discussions of short- and long-term development, this model suggests strategies that can assist economic convergence, which makes a substantial contribution to national economic development and serves as a basis for achieving international economic integration. Solving economic disparity is the main issue addressed by this model. There are two main strategies that should be pursued simultaneously.

**1) Augmentation and convergence in the quality of human resources within a sector and between sectors**

This can mainly be supported by investment in education and income distribution. Enhancement of the workers' human capital quality and education not only increases productivity and workers' income, but also raises their standard of living. In addition, higher education also supports development in the political and social sectors. Improvement in expertise, in the long-run, leads to an increase in the number of high-skilled workers in *sector h* and a decrease in the number of low-skilled workers working in *sector l*. This brings about structural change in the economy. The sector with greater productivity, which applies high-skilled labor and advanced technology, will become the main economic sector. This structural change does not impair convergence; on the contrary, it even assists income convergence and furthers economic development (by increasing the number of high-skilled workers and reducing that of low-skilled workers). The course of the structural change slows down as the convergence of wage rates increases. It is important that the quality of individuals' human capital not only be improved, but also converge. If only higher educated individuals develop their skills and the less-educated individuals do not, the levels of income in the two groups will diverge.

## **2) Technological progress and fusing of technology levels in the two economic sectors**

Technological progress raises the productivity of the economy and increases the wage rate of the individuals. This, in turn, augments individuals' income and living-standards. Moreover, convergence of technology levels in both sectors leads to convergence of wage rates, which significantly assists income convergence. Difference in technologies between sectors, contrarily, brings about disparity in wage rates and increases income inequality. It

should be noted that the effect of income divergence, triggered by the difference in technology levels between both sectors, can also be lessened by the relatively greater improvement of individuals' skills and the education of the low-skilled workers. This will lead to income convergence and changes in production structure, as previously stated.

## 5.2 Modeling a Short-Term Strategy

This section focuses on short-term economic development, where economic progress is dependent on the improvement of the labor force's education and skills. The short-term period is defined as having a length of 5 years. The model studies solely a small, open economy that functions in a completely competitive world, where international capital movement is unrestricted, contrary to international labor movement, which is not free.

### 5.2.1 Basic Preferences

The short-term development of an economy is analyzed in this section, over a five-year period in the individuals' working lives, hereafter called the "work period". The working generation consists of  $L_t$  individuals who join the labor force. The whole work period is subdivided into the "first work period" and the "second work period". The first work period (at time  $t$ ) refers to the present working status of individuals. In the first period, each individual is endowed with one unit usage of time, which is allocated between individual's labor force participation, savings and expenditures on further education. The second period denotes the future status of the individuals (at time  $t + 1$ ) where individuals receive their second period wage, which will be higher if they have invested in education, to reflect the

increased quality of their skills. They also receive their individual savings with accrued interest in the second period. The increase in income is brought about by a new wage rate, if there is positive real wage growth and by higher human capital, if the individuals have invested in further education in the first period. For simplicity, it is assumed that if an individual has not invested in further education, his or her skills in the second work period remain the same as they were in the first period. In this case, the adjustment of individuals' new income in the next period depends entirely on the change in the wage rate. Further, it is assumed that the income of the individuals in the first work period consists solely of income from working and that the individuals possess no assets from previous savings.

The utility of each member of the working generation  $t$ , is defined over consumption in the first work period  $c_t$ , and over obtained assets in the second period, which comprise second period income and savings  $w_{t+1}h_{t+1} + s(1+r)w_t h_t$ . The utility of an individual  $i$  is presented by the function

$$U_{it} = (c_{it})^{(1-\gamma)} (w_{it+1}h_{it+1} + s_i(1+r)w_{it}h_{it})^\gamma \quad (5.12)$$

In the first work period, the consumption potential of the individuals is dependent on their chosen amount of savings and expenses for their further education. The consumption defined in the individual's utility needs to be above subsistence level  $c^s > 0$ , which is assumed to be identical for every individual. Each person is endowed with one unit usage of time which is allocated between labor force participation, savings and investment in education. Hence, the utility function of an individual  $i$  can also be written as

$$U_{it} = (w_{it}h_{it}(1 - e_i\tau - s_i))^{(1-\gamma)} (w_{it+1}h_{it+1} + s_i(1+r)w_{it}h_{it})^\gamma \quad (5.13)$$

$\tau$  is the fraction of the individual's unit usage time endowment required for each unit of further education.  $e_i \geq 0$  is the level of further education that an individual attains and therefore,  $e_i\tau$  is the time cost for an individual  $i$  to invest in further education.  $w_{it}$  is the wage rate per efficiency unit of labor for individual  $i$  in the first work period. This is given for all individuals as well as the level of efficiency unit of individual  $i$  in the first work period  $h_{it}$ .  $w_{it+1}$  is the expected wage rate per efficiency unit of labor in the second work period which can be estimated by the production relations, precisely by the marginal product of labor.  $h_{it+1}$  is the efficiency unit of human capital of an individual  $i$  during the same working period. It is assumed that  $h_{it+1}$  is the sum of the previous level of efficiency unit of an individual  $i$  and the additional performance brought about by investment in education  $h_{it}e_i$  which is defined by the product of the efficiency unit of human capital that an individual already possesses  $h_{it}$ , and the level of additional education that an individual  $i$  attains depending on investment efforts in the first period  $e_i$ .

$$h_{it+1} = h_{it}(1 + e_i) \quad (5.14)$$

$h_{it}e_i$  is the additional performance brought about by investment in education or individual  $i$ 's absolute gained level of further education and  $w_{it}h_{it}e_i\tau$  is the absolute cost of investment in education of an individual  $i$ . It should be noted that even if the unit of further education,  $e_i$  between individuals are identical, the individual  $i$ 's absolute gained level of further education  $h_{it}e_i$  may vary due to different level of efficiency unit  $h_{it}$ . And also the absolute cost of investment in education  $w_{it}h_{it}e_i\tau$  may vary due to different level of efficiency unit  $h_{it}$  and wage rate  $w_{it}$ .

The utility function of an individual  $i$  can now be written as

$$U_{it} = (w_{it}h_{it}(1 - e_i\tau - s_i))^{(1-\gamma)} (w_{it+1}h_{it}(1 + e_i) + s_i(1 + r)w_{it}h_{it})^\gamma \quad (5.15)$$

The utility function is strictly monotone increasing and strictly quasi-concave; satisfying the conventional boundary conditions that assure that, for sufficiently high income, an interior solution exists for the utility maximization problem.

Nonetheless, for a sufficiently low level of income, the subsistence consumption constraint is binding; in this case there is a corner solution with respect to the consumption level. If an individual  $i$  devotes his or her entire time endowment to labor force participation, the amount of income that he or she would earn in the first work period would be  $w_{it}h_{it}$ . Since the potential income in the first period is divided between expenditure on further education, at opportunity costs  $e_i\tau$ , savings at the saving rate  $s_i$ , and consumption  $c_{it}$ , then individual  $i$  will meet the following budget constraint

$$w_{it}h_{it}(e_i\tau + s_i) + c_{it} \leq w_{it}h_{it} \quad (5.16)$$

## 5.2.2 Optimization

### Optimization with Respect to Education Level “ $e$ ” under Exogenous Saving rate

An individual  $i$  who earns an amount of income at a certain (high) level, meaning that the subsistence consumption constraint is not binding, will set his or her own saving rate. In the model saving rate is assumed to be exogenously given and will be defined by  $\bar{s}$ . In contrast, individuals whose income is low, so that the subsistence consumption constraint is binding, will first spend on subsistence consumption  $c^s$ . The remaining income, therefore,



will be left for savings which will not exceed the saving rate  $\bar{s}$ . If any income still remains after expenses on subsistence consumption and savings, then individuals will invest this amount in education. This is summarized under the equation

$$\bar{s} = \begin{cases} \bar{s} & \text{if } z_{it} > z^b \\ \max[0, \bar{s}] & \text{if } z_{it} \leq z^b \end{cases} \quad (5.17)$$

where  $z_{it}$  is the level of potential income of an individual  $i$  at the period  $t$  and  $z^b$  the level of potential income at which the subsistence constraint is just binding, with

$$z^b = \frac{c^s}{1 - e_i^* \tau - \bar{s}} \quad (5.18)$$

Under the aforementioned assumption of an exogenous saving rate, an individual  $i$  chooses the level of investment in education and therefore sets his or her own consumption and future assets in such a way as to maximize the utility function. Simultaneously, the individual  $i$  has to assure the level of subsistence consumption. This can be written as

$$\begin{aligned} & \max_{e_i} U_{it} & (5.19) \\ & = \max_{e_i} (w_{it} h_{it} (1 - e_i \tau - \bar{s}))^{(1-\gamma)} (w_{it+1} h_{it} (1 + e_i) + \bar{s} (1 + r) w_{it} h_{it})^\gamma \\ & \text{s.t. } w_{it} h_{it} (1 - e_i \tau - \bar{s}) \geq c_{it} \end{aligned}$$

Optimization with respect to  $e_i$  implies

$$\frac{\partial U_{it}}{\partial e_i} = 0 \quad (5.20)$$

This represents the following interior solution

$$e_i^* = \frac{\gamma}{\tau} (1 - \bar{s}) - (1 - \gamma) \left[ 1 + \bar{s} (1 + r) \frac{w_{it}}{w_{it+1}} \right] \quad (5.21)$$

For a sufficiently low level of income, the subsistence consumption constraint is binding and there is a corner solution with respect to the consumption level. Subject to the

budget constraint

$$w_{it}h_{it}(1 - e_i\tau - \bar{s}) \geq c^s \quad (5.22)$$

the corner solution is

$$e_i^* = \frac{1}{\tau} \left( 1 - \bar{s} - \frac{c^s}{w_{it}h_{it}} \right) \quad (5.23)$$

It follows that

$$e_i^* = \begin{cases} \frac{\gamma}{\tau} (1 - \bar{s}) - (1 - \gamma) \left[ 1 + \bar{s} (1 + r) \frac{w_{it}}{w_{it+1}} \right] & \text{if } z_{it} > z^b \\ \frac{1}{\tau} \left( 1 - \bar{s} - \frac{c^s}{w_{it}h_{it}} \right) & \text{if } z_{it} \leq z^b \end{cases} \quad (5.24)$$

To conclude, all individuals whose subsistence consumption constraint is not binding will invest a certain amount in their education in order to make careers and gain income at the second working period at the level of  $e_i^* = \frac{\gamma}{\tau} (1 - \bar{s}) - (1 - \gamma) \left[ 1 + \bar{s} (1 + r) \frac{w_{it}}{w_{it+1}} \right]$ . In this case, the chosen level of education  $e_i^*$ , is negatively dependent on the quotient of the individual's unit time endowment required for each unit of further education  $\tau$ , and on the world interest rate  $r$  (since in this model it is assumed that the economy is small and open to the world capital market and capital is perfectly mobile,  $r$  is therefore defined as exogenously given) which reflects the opportunity gain, if an individual  $i$  invests in savings. Moreover, it is positively dependent on the preference parameter  $\gamma$  of the second period and negatively dependent on the ratio of the present wage rate to the expected wage rate in the next period. The chosen level of education  $e_i^*$ , is, in the main, considered and calculated by evaluation of the balance between the following two terms. First, the decision on the chosen level of education  $e_i^*$ , is positively affected by the first term on the right hand side of the equation  $\frac{\gamma}{\tau} (1 - \bar{s})$ , which represents the importance of the setting of consumption rate in the first period, influenced by the preference parameter, the costs of education and

savings. Second, it is affected by the second term  $(1 - \gamma) \left[ 1 + \bar{s} (1 + r) \frac{w_{it}}{w_{it+1}} \right]$ , which denotes potential earnings in the second period in negative association with gains from the savings reflected by the world interest rate and ratio of the present wage rate  $w_{it}$ , to the expected wage rate in the next period  $w_{it+1}$ .

The first concern of individuals who earn a low level of income is their subsistence consumption level. In other words, as long as the potential income of an individual  $i$   $z_{it} \equiv w_{it}h_{it}$ , is lower than  $z^b$ , then this individual will secure his or her subsistence consumption before paying attention to his or her career. It follows that the chosen level of education is highly dependent on the subsistence consumption level  $c^s$ . The fraction of time invested in further education is conditioned on the remaining budget, depending on the saving rate and the ratio of the subsistence consumption level  $c^s$  to the potential income of individual  $i$   $w_{it}h_{it}$ ,  $e_i^* \tau = 1 - \bar{s} - \frac{c^s}{w_{it}h_{it}} \iff e_i^* = \frac{1}{\tau} \left( 1 - \bar{s} - \frac{c^s}{w_{it}h_{it}} \right)$ .

The level of an individual's income plays a major role in the decision on the optimal education level, for individuals whose budget constraint is binding. If the wage rate per efficiency unit of labor rises, individuals can cover subsistence consumption with smaller labor force participation. As a result, the fraction of time invested in further education will rise, the individuals will invest more in education and their human capital will increase. The optimal education level is, in the main, positively dependent on the individuals' income  $w_{it}h_{it}$ , and negatively on the costs of education (fraction of the individual's unit usage time endowment required for each unit of further education)  $\tau$ , and the subsistence consumption level  $c^s$ .

### Simulations and Analyzes

This section presents simulations of the individuals' optimized levels of investment in education  $e_i^*$ . The simulations distinguish two cases: the case of individuals who earn an amount of income at a certain high level, greater than  $z^b$  and the case of individuals who earn an amount of income at a certain low level, lower than or equal to  $z^b$ .

As an example for the simulations in this section, modeling of situation within a country is illustrated. In this case, the parameters used in the model are based on Thai statistics. Parameter change is included, in order to study the consequences of the development between the two period. The constant saving rate is set to 10%. Subsistence consumption level  $c^s$ , is evaluated by estimating the average consumption rate for the year 2000. This is estimated with the help of an analysis by Andrew J. Healy and Somchai Jitsuchon (2004) which provided the first comprehensive estimates of Thai poverty and inequality and divided the region into rural and urban<sup>218</sup>. Average consumption is 76% for the rural area and 69% for the urban area. To estimate the subsistence consumption level  $c^s$ , the model uses the average consumption in percent between both rural and urban areas, which amounts to 72.5%. Multiplying this value with the weighed average of nominal salaries of blue-collar workers<sup>219</sup> for the year 2000 (7530.70 Baht or 188.27 US dollars) gives 5,459.76 Baht or 136.50 US dollars. So this is the level of subsistence consumption. The average monthly income of 12,150 Baht or 303.75 US dollars is estimated using the exchange rate

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<sup>218</sup> For simplicity, the model utilizes the Socio-Economic Survey (SES) average and not from the Map average.

<sup>219</sup> For more about the wage rates of the blue-collar workers, see the coming sections

in 2000<sup>220</sup>. Actually, in the model the expected real wage rate in period  $t + 1$  must be determined by the equation  $\frac{\partial Y_{t+1}}{\partial H_{jt+1}} = (1 - \alpha) \left( \frac{K_{jt+1}}{A_{jt+1} H_{jt+1}} \right)^\alpha A_{jt+1} = w_{jt+1}$ ,  $j = h, l$ . However, for simplicity in the simulations, the expected real wage rate in the period  $t + 1$  is estimated using the real wage growth with the wage rate at the period  $t$  as a benchmark. This means that  $w_{jt+1} = w_{jt}(1 + \text{expected real wage growth rate})$ . The wage rate at period  $t$  is approximately 6,714 Baht per month in the fourth quarter (October-December) or 167.85 US dollars per month<sup>221</sup>. The expected rate of real wage growth for Thailand was estimated to -2.49% from 2000-2004. For calculation of the expected five-year-real-interest-rate, the deposit rate for Thailand is used, estimated at 16.03% from January 2000 to January 2004<sup>222</sup>. For simplicity, the model sets the individual's weighed preference at the rate of 0.5 in the first work period  $(1 - \gamma)$ ; this is equal to weighed preference in the second work period  $\gamma$ , meaning that individual's preferences are indifferent regarding earnings in one period as opposed to the other.

**Case No. 1: Simulations for the case of individuals with income higher than  $z^b$**

Figures 5.1-5.4 show simulations of the optimal level of education of individuals who earn income higher than  $z^b$  under varied parameters. Figure 5.1 simulates the individual's optimal level of education for different fractions of the individual's unit time endowment required for each unit of further education. This shows that the lower the costs of each unit of further education, the (progressively) higher the level of education individuals will choose. Notably, above a certain (high) level of cost for each unit of further education (in

<sup>220</sup> National Statistical office Thailand, see <http://www.eppo.go.th/indicators/indicator-labor.html>

<sup>221</sup> Report of the Labor Force Survey, 1999-2000, National Statistical office, see <http://www.nso.go.th/eng/stat/lfs/lfstab7/.htm>

<sup>222</sup> E-Thailand Monthly Economic Review by Economic Information Section, Fiscal Policy Office, see Bank of Thailand, Economic Data, [www.bot.or.th](http://www.bot.or.th)

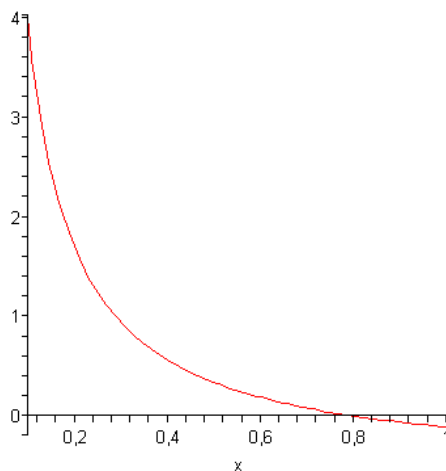


Figure 5.1: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the individuals whose budget constraint is not binding)  $x$  = level of the costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

this simulation, 0.79), the individuals have no incentive to invest in their further education.

Figure 5.2 shows that the higher (lower) the time preference for the next period, the higher (lower) the individuals' incentive to invest in their further education. Figure 5.3 shows that the lower the saving rate set by an individual, the higher his or her investment in education. In addition, at a high saving rate, individuals have no incentive to further their education. One factor that affects the decision on the level of further education is the expected real wage growth. It is reasonable that the higher the expected real wage growth, the higher the individuals' incentive to invest in further education, as illustrated by Figure 5.4. This factor, however, has only a moderate effect on individuals' decisions.

#### Case No. 2: Simulations for the case of individuals with income lower than $z^b$

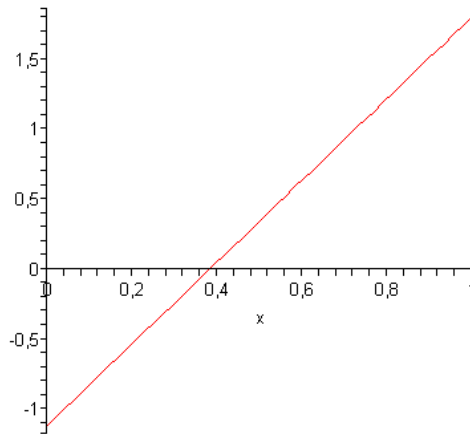


Figure 5.2: Simulation of the individual's optimal level of education under different levels of preference parameter (case of the individuals whose budget constraint is not binding)  $x =$  level of preference parameter for both working time periods ( $x = 0, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

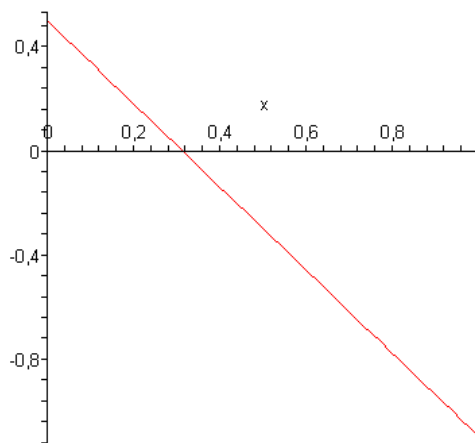


Figure 5.3: Simulation of the individual's optimal level of education under different levels of saving rate (case of the individuals whose budget constraint is not binding)  $x =$  level of saving rate ( $x = 0, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

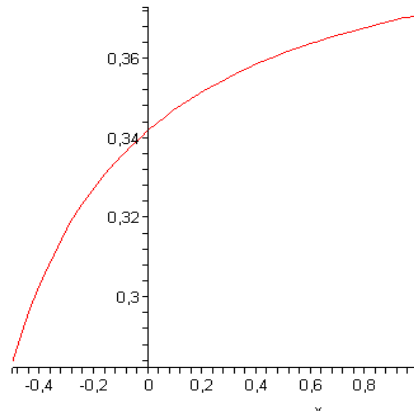


Figure 5.4: Simulation of the individual's optimal level of education under different levels of real wage growth in a five-year-interval (case of the individuals whose budget constraint is not binding)  $x$  = level of real wage growth in a five-year-interval ( $x = -0.5, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

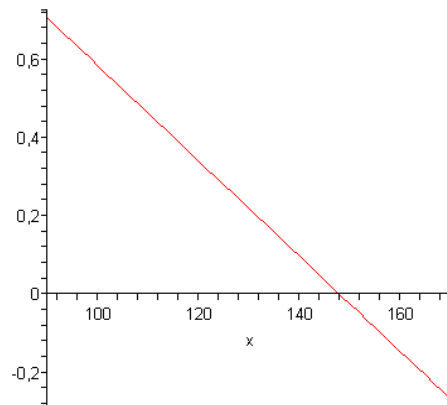


Figure 5.5: Simulation of the individual's optimal level of education under different levels of subsistence consumption (dollars per month) (case of the individuals whose budget constraint is binding)  $x$  = level of subsistence consumption in dollars per month ( $x = 90, \dots, 170$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)



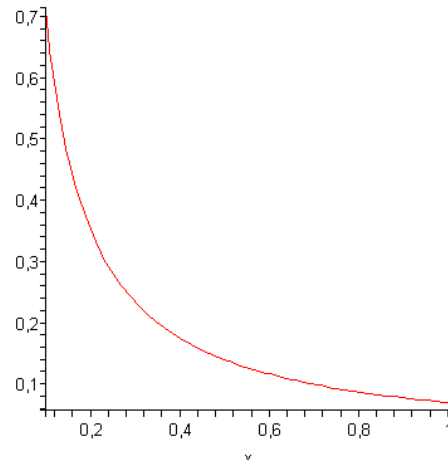


Figure 5.6: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the individuals whose budget constraint is binding)  $x$  = level of costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

Figures 5.5-5.9 show the simulations of the optimal level of education of those individuals who earn less than  $z^b$  under varied parameters. Since the budget constraint of these individuals is binding, the level of subsistence consumption is very relevant for their decision on further investment in education. Figure 5.5 shows that the lower the level of the subsistence consumption, the higher the incentives of the individuals to invest in further education. Individuals who have deficits in subsistence consumption will not be able to invest in education. Hence, the government can support the individuals' education by *ceteris paribus* reducing the costs of subsistence consumption. This action will provide an impulse to increase the number of people who develop the quality of their human capital. Reducing costs of subsistence consumption can be achieved, for instance, by supporting market competition, hindering and eliminating monopoly and oligopoly, as well as taking advantage of

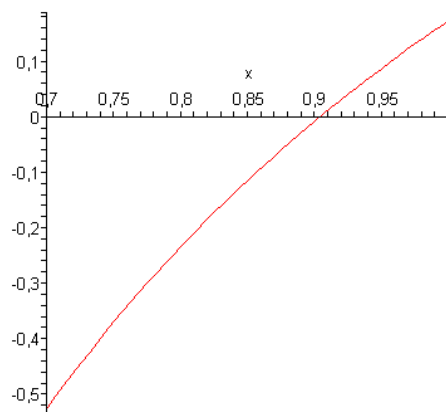


Figure 5.7: Simulation of the individual's optimal level of education under different levels of effective unit of labor of an individual (case of the individuals whose budget constraint is binding)  $x$  = level of effective unit of labor of an individual ( $x = 0.7, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

the potential for specialization, economies of scale and economies of scope. International trade is a relevant factor that supports this undertaking, in particular by means of economic cooperation or/and economic integration. As soon as subsistence consumption is covered, individuals may have opportunities to invest in education and also in savings. Other factors, besides the subsistence consumption level, that affect the individuals' decisions are the costs of each unit of further education, the level of individuals' effective unit of labor at the starting period and the wage rate of the individuals at the starting period. Figure 5.6 shows that the higher the costs of each unit of further education, the lower the level of investment in education. Figures 5.7 and 5.8 illustrate that the higher the level of effective unit of labor and the wage rate of the individual at the starting period, the higher, although degressively, the investments in education. Similarly to the case of individuals whose in-

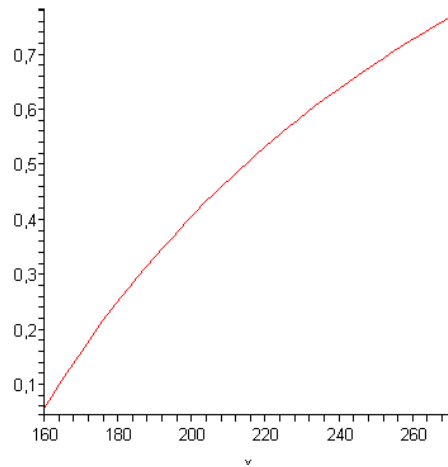


Figure 5.8: Simulation of the individual's optimal level of education under different levels of wage rate (dollars per month) (case of the individuals whose budget constraint is binding)  $x$  = level of wage rate in dollars per month ( $x = 160, \dots, 270$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

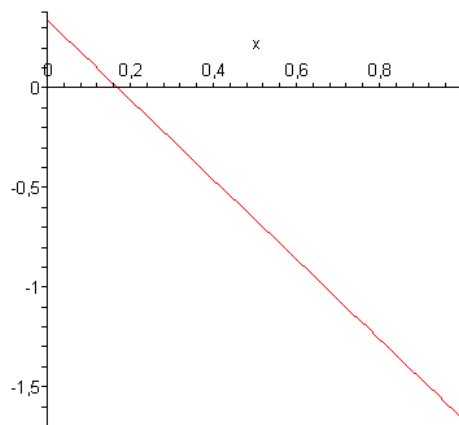


Figure 5.9: Simulation of the individual's optimal level of education under different levels of saving rate (case of the individuals whose budget constraint is binding)  $x$  = level of saving rate ( $x = 0, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

come is higher than  $z^b$ , the higher the saving rate set by the individuals, the lower the level of investment in further education. Notably, at a high saving rate, the individuals do not have large enough budgets to invest in further education, as shown in Figure 5.9.

### **5.2.3 Theoretical Analysis of Short-Term Development under Inequality among Labor Groups: Application for the East-Southeast Asian Countries (in particular the ASEAN)**

This section analyzes a possibility for short-term economic development in the East-Southeast Asian countries, in particular the ASEAN. The structure of the modeling is derived from the basic model presented earlier. This section includes analyzes of division between the two labor groups. The main characteristic of this model refers to reduction of inequality in skills and wage rates between labor groups within and among the countries. This leads to a decrease in income disparity, supports domestic and regional economies and enhances the prospect of economic integration.

#### **Preferences, Budget Constraints and Optimization**

Configuration of the utility function and the budget constraint remain the same as the basic utility introduced in the previous section. In this section, individuals are divided into two groups, one high-skilled, the white-collar workers and one low-skilled, the blue-collar workers. Notably, the higher the level of economic disparity, the higher the difference between the levels of education and technologies used in the two groups and vice versa. The discrepancy between individuals from these two different groups lies in the income disparity which is reflected by disparity in wage rates and qualities of human capital. When it

comes to the quality of human capital or the effective unit of labor  $h_{it}$ , in the model, the pre-result of the rate of effective unit of labor can only be compared within the respective worker's group. This means that the rate of effective unit of labor of an individual  $i$ , who works in the white-collar group (blue-collar group)  $h_{iht}$  ( $h_{ilt}$ ), can only be directly compared with a white-collar worker (blue-collar worker). It is assumed that there is a level of qualification that a blue-collar worker has to achieve (through education, training or experience), in order to work in the white-collar sector and transform into a white-collar worker with time. Therefore, in order to make a comparison of the qualities of human capital between both groups, following calculation has to be made; to compare the level of the effective unit of labor of the blue-collar  $h_{ilt}$  to the one of the white-collar  $h_{iht}$ , the effective unit of labor of the blue-collar  $h_{ilt}$ , has to multiply with the ratio between wage rate of the blue- and white-collar:  $h_{ilt} \frac{w_{ilt}}{w_{iht}}$ .

Utility function and budget constraint of an individual  $i$  with high-skills are

$$U_{iht} = (w_{iht}h_{iht}(1 - e_i\tau - s_i))^{(1-\gamma)} (w_{iht+1}h_{iht+1} + s_i(1+r)w_{iht}h_{iht})^\gamma \quad (5.25)$$

$$s.t. w_{iht}h_{iht}(e_i\tau + s_i) + c_{iht} \leq w_{iht}h_{iht}$$

Utility function and budget constraint of an individual  $i$  with low-skills are

$$U_{ilt} = (w_{ilt}h_{ilt}(1 - e_i\tau - s_i))^{(1-\gamma)} (w_{ilt+1}h_{ilt+1} + s_i(1+r)w_{ilt}h_{ilt})^\gamma \quad (5.26)$$

$$s.t. w_{ilt}h_{ilt}(e_i\tau + s_i) + c_{ilt} \leq w_{ilt}h_{ilt}$$

Under a given saving rate  $\bar{s}$ , individuals choose the level of investment in education and as a result, choose their own consumption level and their future assets; maximizing their own utility function. Simultaneously, they have to assure subsistence consumption as

well. This can be written as

$$\begin{aligned} & \max_{e_i} U_{ijt} & (5.27) \\ = & \max_{e_i} (w_{ijt}h_{ijt}(1 - e_i\tau - \bar{s}))^{(1-\gamma)} (w_{ijt+1}h_{ijt}(1 + e_i) + \bar{s}(1 + r)w_{ijt}h_{ijt})^\gamma \\ & s.t. w_{ijt}h_{ijt}(e_i\tau + \bar{s}) + c_{ijt} \leq w_{ijt}h_{ijt}, e_i \geq 0, j = h, l \end{aligned}$$

Optimization with respect to  $e_i$  implies

$$\frac{\partial U_{ijt}}{\partial e_i} = 0, j = h, l \quad (5.28)$$

This represents the interior solution (for the case of  $z_{ijt} > z^b$ , with  $j = h, l$ ):

$$e_i^* = \frac{\gamma}{\tau} (1 - \bar{s}) - (1 - \gamma) \left[ 1 + \bar{s}(1 + r) \frac{w_{ijt}}{w_{ijt+1}} \right], j = h, l \quad (5.29)$$

For a sufficiently low level of income, the subsistence consumption constraint is binding and there is a corner solution with respect to the consumption level. In contrast to the interior solution which comes to play for any individual who earns enough salary or in other words  $z_{ijt} > z^b$ , the corner solution exists for an individual who earns a sufficiently low income level, meaning that  $z_{ijt} \leq z^b$ . Subject to the budget constraint, with  $\bar{s} = \max[0, \bar{s}]$ ,

$$w_{ijt}h_{ijt}(1 - e_i\tau - \bar{s}) \geq c^s, j = h, l \quad (5.30)$$

the corner solution for an individual with  $z_{ijt} \leq z^b$  is

$$e_i^* = \frac{1}{\tau} \left( 1 - \bar{s} - \frac{c^s}{w_{ijt}h_{ijt}} \right), j = h, l \quad (5.31)$$

Considering both cases, it follows that

$$e_i^* = \begin{cases} \frac{\gamma}{\tau} (1 - \bar{s}) - (1 - \gamma) \left[ 1 + \bar{s}(1 + r) \frac{w_{ijt}}{w_{ijt+1}} \right], j = h, l & \text{if } z_{ijt} > z^b \\ \frac{1}{\tau} \left( 1 - \bar{s} - \frac{c^s}{w_{ijt}h_{ijt}} \right), j = h, l & \text{if } z_{ijt} \leq z^b \end{cases} \quad (5.32)$$

### Theoretical Analysis of Short-Term Development

The model in this section presents strategies which aim to develop the foundations of the economy including convergence of income and human capital development. Two issues considered, which are in equilibrium, are as follows:

- a) The decision on investment in education made by an individual  $i$

$$e_i^* = \begin{cases} \frac{\gamma}{\tau} (1 - \bar{s}) - (1 - \gamma) \left[ 1 + \bar{s} (1 + r) \frac{w_{ijt}}{w_{ijt+1}} \right], j = h, l & \text{if } z_{ijt} > z^b \\ \frac{1}{\tau} \left( 1 - \bar{s} - \frac{c^s}{w_{ijt} h_{ijt}} \right), j = h, l & \text{if } z_{ijt} \leq z^b \end{cases}$$

- b) and the optimal wage rate of both sectors defined by

marginal product of white-collar workers in the *sector h*

$$\frac{\partial Y_t}{\partial H_{ht}} = (1 - \alpha) \left( \frac{K_{ht}}{A_{ht} H_{ht}} \right)^\alpha A_{ht} = w_{ht}$$

and marginal product of blue-collar labors in the *sector l*

$$\frac{\partial Y_t}{\partial H_{lt}} = (1 - \alpha) \left( \frac{K_{lt}}{A_{lt} H_{lt}} \right)^\alpha A_{lt} = w_{lt}$$

Equations shown in (a) and (b) indicate the relationship between the production sector and the labor sector in equilibrium. In the short-run, individuals take wage rates for granted (exogenously given). Therefore they simply decide on their level of human capital, in order to enhance income. The predominant factor that affects this decision is the level of the individuals' expenditure. This depends mainly on the level of consumption, which is, in turn, dependent on savings and investment in education. Since the saving rate is assumed to be exogenous, the level of investment in education plays the major role of decisive factor.

Equation shown in (a) denotes that the chosen level of education  $e_i^*$ , of individuals who earn income higher than  $z^b$  is negatively dependent on the fraction of the individual's unit time endowment required for each unit of further education  $\tau$ , and on the world interest

rate  $r$ . In addition, it is dependent on the preference parameter of the second work period  $\gamma$ , and also on the ratio of the present wage rate and the expected wage rate in the next period. The chosen level of education  $e_i^*$ , is considered by weighed evaluation between the two terms. The first term on the right represents the importance of setting the consumption rate in the first period, influenced by the preference parameter, costs of education and investment in savings. The second term denotes preference of earning in the second period, in association with gains from savings reflected by the world interest rate  $r$  and the ratio of the present wage rate  $w_{it}$ , and expected wage rate in the next period  $w_{it+1}$ . In contrast, an individual  $i$ , who earns income at a low level, lower than  $z^b$ , is concerned primarily with his or her subsistence consumption. The chosen level of education is highly dependent on the subsistence consumption level  $c^s$ . The fraction of time spent on investment in further education is conditioned on the saving rate, the ratio of subsistence consumption level  $c^s$ , and the individual potential income  $w_{it}h_{it}$ .

According to the aforementioned outcomes, ways to support development and convergence of the economy include structuring wage rates, in particular, convergence of wage rates. In addition, raising income and reducing the costs of subsistence consumption  $c^s$ , are also relevant, since these assist all individuals, particularly those who earn less than  $z^b$ .

### **Case No. 1: Structuring the wage rate**

The model implies that structuring the wage rate seems difficult to achieve in the short-run. Equations shown in (b) indicate that convergence of wage rate ratio can be augmented through changes to technology parameters. However, it is assumed that the technology parameter can not be significantly improved by R&D in the short-term; there-



fore, convergence of wage rates cannot be supported this way. One way to structure wage rates and/or promote their convergence is to support economic integration, which can bring about technological enhancement, for instance, through joint ventures with countries that possess higher technology. This is one of the reasons to encourage economic integration. Notably, individuals cannot change working sectors in the short-run. So, without the influence of economic integration, the wage rates of both sectors remain the same. Even though structuring wage rates is hard to pursue, in the short-run, economic development may be supported through investment in education in both sectors. This action, however, only supports individuals whose level of participation in education is positive,  $e_i^* \geq 0$ . This raises the level of production and the individuals' income, brings about growth in GDP and increases standards of living. Enhancement of labor qualities can be augmented by reducing costs of education  $\tau$ , the fraction of the individual's unit time endowment required for each unit of further education  $e_i^*$ . Measures to this end can be initiated and supported by the government, as well as by firms and NGOs.

Since the world interest rate and saving rate are exogenously given, the model shows that every individual earning more than  $z^b$  will invest at the same rate in education  $e_i^*$ , as show on equation shown in (a). This means that, the effective unit of labor of the blue-collar and the one of the white-collar, will not converge. And if there is disparity of the effective unit of labor of the blue-collar and the one of the white-collar, the absolute gained effective unit of labor of workers  $h_{iht}e_i$  and  $h_{ilt}e_i$ , even continues to diverge. In this case, convergence of wage rates and income cannot be achieved within the groups of individuals earning more than  $z^b$ .

**Case No. 2: Raising income and reducing the costs of subsistence consumption**

This strategy supports income earners who gain income below  $z^b$ . The optimization result shows that these individuals choose their optimal level of education, which is subject to  $e_i^* = \frac{1}{\tau} \left( 1 - \bar{s} - \frac{c^s}{w_{ijt}h_{ijt}} \right)$ ,  $j = h, l$ . These individuals are concerned about their subsistence consumption first, before deciding on their education level. It can be concluded that the higher the income and the lower the costs of subsistence consumption, the higher the chosen level of an individual's investment in education. This points out the fact that if there are many low-income earners (below  $z^b$ ) in the economy, then this does not only reflect high income disparity, but also gradually leads to an increase in divergence. This happens because actually low-income earners have less means to invest in education than the high-income earners do and for individuals who earn less than  $z^b$ , the chosen level of investment in education depends on income which is much lower than income of the high-income earners and the costs of subsistence consumption. This situation makes the income gap bigger. In other words, without an effective distribution system, the higher the number of the low-income-earners, the more disparity and divergence problems arise.

A strategy that an economy with disparity in income, labor skills and wage rates should pursue is to support the low-skilled workers, in particular those with significantly low income, in order to hinder divergence in the economy. According to this model, stimulating incentives to invest in education is one of the most significant factors. In association with equations shown in (a) and (b), this plan of action can be carried out by reducing costs of subsistence consumption and/or increasing the income of low-income-earners.

To conclude, in the short-term, the wage rate ratio remains the same, ignoring the effects of economic integration. So the only way to raise income is to increase the level of quality of human capital. This, however, can only be improved by investment in education. A proper approach is to reduce the costs of subsistence consumption. While reducing the costs of education only supports the individuals whose  $e_i^* \geq 0$ , reducing the costs of subsistence consumption, on the other hand, benefits all individuals, particularly those who are not able to invest in education. Reduction of the costs of subsistence consumption very much gives a start-up for very low earners to enter human capital development. Soon after, they are able to gain benefit from support, through reduction of the costs of education, i.e. in the same way in which the higher income earners benefit. Reduction of the costs of subsistence consumption directly increases the value of a given income level and improves the standard of living, since the individuals have more income remaining to spend in other ways, for example on education. The smaller the costs of subsistence consumption, the higher the chosen level of investment in education. Consequently, improvement in education raises the quality of labor and raises income which in turn, reinforces the chosen level of education.

### **Simulations and Analyzes**

This section presents simulations of the individual  $i$ 's optimized level of investment in education  $e_i^*$ . In the simulations, two distinct cases are considered; namely, the case of white-collar workers and the case of the blue-collar workers. As aforementioned, there is no job-switching between sectors in the short-run, since there are time constraints on a

blue-collar worker investing in education and becoming a white-collar worker. However, there can be job-switching within a group, for instance, an agricultural laborer can invest in education and gain enough knowledge to switch to a higher-wage job within the blue-collar group, for instance, becoming a manufacturer. Respectively, an employee in clerical, sales or service jobs can invest in education and gain enough knowledge to switch to a higher wage job within the group, for instance becoming a proprietor, a technical or a professional.

In the simulations an analysis of one country is done (in the forthcoming part an analysis of a regional grouping is illustrated under simulation of ASEAN). Thai economy is used as an example. The economic indicators of Thailand are set as follows.

- a) The constant saving rate is set at 10%.
- b) The subsistence consumption level  $c^s$  is evaluated by estimating the average consumption rate for the year 2000. The outcome is estimated with help of an analysis by Andrew J. Healy and Somchai Jitsuchon (2004) which reveals that the average consumption is 76% for the rural area and 69% for the urban area. The average consumption in the urban area is less than that in the rural area, since wages are higher in the urban area and therefore people in the urban area have more money left, despite higher consumption. The model uses the percentage average consumption for rural and urban areas which amounts to 72.5%. The nominal monthly wage by occupation in 2000 is derived from the National Statistical Office. The model distinguishes these data into two groups, the first being the group of white-collar workers, encompassing professional and technical workers, proprietors and employees in clerical, sales, and service jobs. The second group consists of blue-collar workers, encompassing manufacturing workers, miscellaneous workers, agriculture (own

account, in other words; self-employed) and agriculture (agricultural laborers), see Table 5.1-5.2. The national average of nominal salaries in Thailand in 2000 was 12,150 Baht in 2000 or 303.75 US dollars (estimated using the year 2000 exchange rate)<sup>223</sup>. The weighed average of nominal salaries of the white-collar workers in 2000 was 18,242.43 Baht or 456.06 US dollars. The weighed average of nominal salaries of blue-collar workers in 2000 was 7,530.70 Baht or 188.27 US dollars. Obviously, there is a discrepancy between the wage rates of white-collar workers and blue-collar workers; the wage rate of the latter group is about 2.4 times less than that of the white-collar workers. To calculate the level of subsistence consumption, the model uses data on average consumption from Healy and Jit-suchon (2004). An average is taken between rural and urban areas (72.5%) and multiplied with the income of the blue-collar workers whose effective unit of labor  $h_{ilt}$ , amounts to 1. The resulting level of subsistence consumption is 5,459.76 Baht or 136.50 US dollars.

Occupation	Monthly salaries	Percentage share of workers to total workers
Professional and technical	31,366 Baht 784.15 US dollars	6.60%
Managerial and administrative	-	3.10%
Proprietors	17,039 Baht 425.98 US dollars	-
Employees in clerical, sales and service jobs	14,678 Baht 366.95 US dollars	Clerical 3.90% Sales 14.90% Services 5.50%

Source: National Statistical Office, Report of the Household Socio-Economic and National Statistical Office Survey Labour Force

Table 5.1: Nominal monthly salaries and percentage share of employed persons of white-collar workers to total workers in Thailand, 2000 (in baht and US dollars)

<sup>223</sup> National Statistical office Thailand, see <http://www.eppo.go.th/indicators/indicator-labor.html>

Occupation	Monthly salaries	Percentage share of workers to total workers
Manufacturing workers	10,500 Baht 262.50 US dollars	21.90%
Transportation and communication	-	4%
Miscellaneous	6,869 Baht 171.70 US dollars	-
Agriculture	Self-employed 7,014 Baht 175.35 US dollars Agricultural laborers 3,575 Baht 89.36 US dollars	40%

Source: National Statistical Office, Report of the Household Socio-Economic and National Statistical Office Survey Labour Force

Table 5.2: Nominal monthly salaries and percentage share of employed persons of the blue-collar workers to total workers in Thailand, 2000 (in Baht and US dollars)

c) The wage rate of each group is set by calculating the average monthly salaries of the workers in the respective group. This means that the wage rate of a white-collar worker amounts to 18,242.43 Baht or 456.06 US dollars and the wage rate of a blue-collar worker is 7,530.70 Baht or 188.27 US dollars. The different income among workers in different occupations is defined through different levels of the effective unit of labor of an individual  $i$ ,  $h_{it}$ , which encompasses the quantity and quality of work. The calculation of  $h_{it}$  for each occupation is defined by the ratio of the monthly salary of an individual  $i$  to the wage rate of the respective group, see Table 5.3 and 5.4.

d) Actually the expected real wage rate in period  $t + 1$  must be determined by the equation  $\frac{\partial Y_{t+1}}{\partial H_{j,t+1}} = (1 - \alpha) \left( \frac{K_{j,t+1}}{A_{j,t+1} H_{j,t+1}} \right)^\alpha A_{j,t+1} = w_{j,t+1}, j = h, l$ . For simplicity in this simulation, the expected real wage rate in period  $t + 1$  is estimated using real wage growth, with the wage rate at period  $t$  set as a benchmark, which means that  $w_{j,t+1} = w_{j,t}(1 + \text{expected real wage growth rate})$ . The wage rate at period  $t$  is estimated in US dollars per month and differs between white- and blue-collar groups. These are subdivided by

Occupation	Monthly salaries	Individual $i$ 's effective units of labor of the white-collar group [ratio between monthly salary and benchmark wage-rate (average wage-rate of the white-collar workers)]
Professional and technical	31,366 Baht 784.15 US dollars	1.72
Managerial and administrative	-	-
Proprietors	17,039 Baht 425.98 US dollars	0.93
Employees in clerical, sales and service jobs	14,678 Baht 366.95 US dollars	0.80

Source: The data of the monthly salaries are based on National Statistical Office, Report of the Household Socio-Economic and National Statistical Office Survey Labor Force, Survey for monthly salaries of Thai workers

Table 5.3: Individual's effective units of labor working in the white-collar workers' group in Thailand, 2000, by occupation (in baht and US dollars)

Occupation	Monthly salaries	Individual $i$ 's effective units of labor of the blue-collar group [ratio between monthly salary and benchmark wage-rate (average wage-rate of the blue-collar workers)]
Manufacturing workers	10,500 Baht 262.50 US dollars	1.39
Transportation and communication	-	-
Miscellaneous	6,869 Baht 171.70 US dollars	0.91
Agriculture	Self-employed 7,014 Baht 175.35 US dollars Agricultural laborers 3,575 Baht 89.36 US dollars	Self-employed 0.92 Agricultural laborers 0.47

Source: The data of the monthly salaries are based on National Statistical Office, Report of the Household Socio-Economic and National Statistical Office Survey Labour Force, Survey for monthly salaries of Thai workers

Table 5.4: Individual's effective units of labor working in the blue-collar workers' group in Thailand, 2000, by occupation

occupations within a group. The real wage growth rate of Thailand is estimated using data from 2000 to 2004 provided by a labor force survey from the National Statistical Office<sup>224</sup>. In this case, the value is -2.49%. Although the real wage growth rate is negative in this case, it does not have a large effect on optimal education level, see Figure 5.4.

e) The expected 5-year real interest rate (in this case deposit rates are used) from 2000-2004<sup>225</sup> was calculated and estimated to 16.03%

f) For simplicity, the model sets the individual's weighed preference in the first work period  $(1 - \gamma)$ , at the same rate as the weighed preference in the second work period  $\gamma$ , namely 0.5 ( $\gamma = 0.5$ ). This means that individual's preferences are indifferent, regarding earnings in one period as opposed to the other.

g) The fraction of the individual's unit time endowment required for each unit of further education  $\tau$ , is taken as a variable in the model, in order to analyze the development of the economy under different levels of  $\tau$ .

In the model, simulations of the chosen optimal education level are analyzed under varying parameters to find feasible strategies that can bring about economic convergence and development. Assuming  $\tau = 0.5$ , since  $z^b = \frac{c^s}{1 - e_i^* \tau - \bar{s}}$ , it follows that  $z^b = 187.05$  US dollars. This indicates that all white-collar workers and manufacturing workers from the blue-collar group earn income more than  $z^b$  and their budget constraints are not binding. In

<sup>224</sup> Real wage (average wage of employed person) growth in Thailand in 2000 was -1.4%, in 2001 -0.6%, in 2002 -1.5%, in 2003 0.4%(estimate) and in 2004 0.6%(quarter 1), from Labor force survey, National Statistical Office.

<sup>225</sup> E-Thailand Monthly Economic Review by Economic Information Section, Fiscal Policy Office, see Bank of Thailand, Economic Data (deposit rates: 4.375% (estimated from 4%-4.75%) for 2000, 4% for 2001, 3.25% for 2002, 1.75% for 2003 and 1.75% for 2004, these rates are from January each year), www.bot.or.th



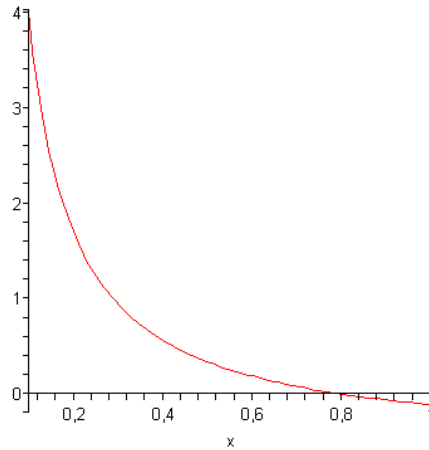


Figure 5.10: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the white-collar workers and the manufacturing workers from the blue-collar group in Thailand)  $x =$  level of the costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

the contrary, the rest of blue-collar workers earn less than  $z^b$  and their budget constraints are binding.

Figure 5.10 shows the chosen percentage education level of the workers whose income is above  $z^b$  in Thailand under different levels of cost for each unit of further education. The figure illustrates that the lower the costs of education, the (progressively) higher the chosen level of education investment on the part of the workers. While, under the same rate of parameters, those who earn above  $z^b$  choose the same level of education  $e_i^*$ , the chosen optimal level of education diverges among individuals with different occupations whose income is below  $z^b$ . The miscellaneous and self-employed agricultural workers choose a much lower education level, see Figure 5.11-5.12. It is clearly apparent that, agricultural laborers do not have enough income to invest in education. Their income does not even cover

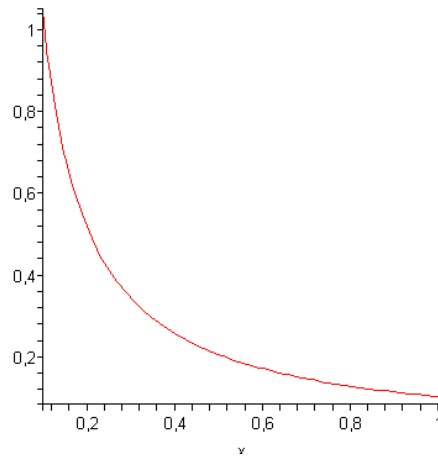


Figure 5.11: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the blue-collar workers, miscellaneous workers, in Thailand)  $x$  = level of costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

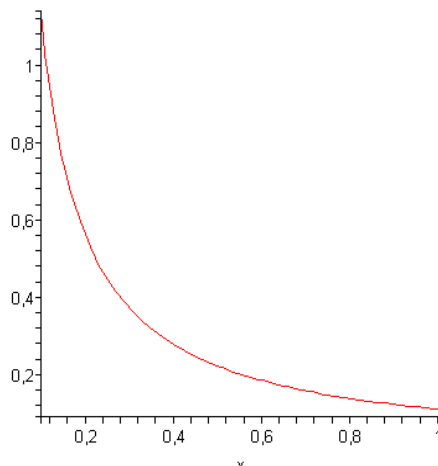


Figure 5.12: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the blue-collar workers, agriculture (on own account), in Thailand)  $x$  = level of costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

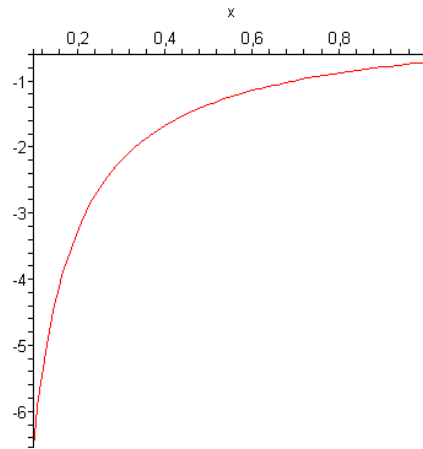


Figure 5.13: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the blue-collar workers, agricultural laborers, in Thailand)  $x$  = level of costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

the subsistence consumption level and savings set in the model, see Figure 5.13. Moreover, the simulations reveal that whereas white-collar workers and the manufacturing workers stop investing in further education at a certain level of costs of education, the rest of the blue-collar workers, in the contrary, always invest in education at any rate of the costs of education. However, they can only do so if they have enough income remaining to invest in education; the lower the costs of education, the higher the investment in it. Yet, due to the budget constraint, this situation hardly comes to play.

The results of the simulations (shown in the Tables 5.5) can be analyzed as follows. Under identical parameters, the workers who choose the same rate of the level of further education  $e_i^*$ , are; all the white-collar workers (consisting of professional, technical, managerial and administrative workers, proprietors and employees in clerical, sales and service

Occupation	Chosen level of education $e_i^*$ ; Absolute gained level of investment in education $h_{it}e_i^*$ ; Effective unit of labor period $t + 1$ , $h_{it+1}$	Comparison of individual $i$ 's effective units of labor no comparison $h_{it}$ ; comparable $h_{it}$ ; comparable $h_{it+1}$
Professional and technical	0.34 (0.3405); 0.59 (0.5857); 2.31 (2.3057)	1.72; 1.72; 2.31 (2.3057)
Managerial and administrative	-	-
Proprietors	0.34 (0.3405); 0.32 (0.3167); 1.25 (1.2467)	0.93; 0.93; 1.25 (1.2467)
Employees in clerical, sales and service jobs	0.34 (0.3405); 0.27 (0.2724); 1.07 (1.0724)	0.80; 0.80; 1.07 (1.0724)
Manufacturing workers	0.34 (0.3405); 0.47 (0.4733); 1.86 (1.8633)	1.39 0.57 (0.5738) <sup>a</sup> ; 0.77 (0.7692) <sup>a</sup>
Transportation and communication	-	-
Miscellaneous	0.21 (0.2065); 0.19 (0.1879); 1.10 (1.0979)	0.91; 0.38 (0.3757) <sup>a</sup> ; 0.45 (0.4532) <sup>a</sup>
Agriculture	0.22 (0.2239); Self-employed 0.21 (0.2060); 1.13 (1.1260) Agricultural laborers 0; 0; 0.47	0.92; Self-employed 0.38 (0.3798) <sup>a</sup> ; 0.47 (0.4648) <sup>a</sup> 0.47; Agricultural laborers 0.19 (0.1940) <sup>a</sup> ; 0.19 (0.1940) <sup>a</sup>

a: In the model, in order to make a comparison of the qualities of human capital between both groups, following calculation has to be made; to compare the level of the effective unit of labor of the blue-collar  $h_{ilt}$  to the one of the white-collar  $h_{iht}$ , the effective unit of labor of the blue-collar  $h_{ilt}$  has to multiply with the ratio between wage-rate of the blue- and white-collar:  $h_{ilt} \frac{w_{ilt}}{w_{iht}}$ .

Table 5.5: Comparison of the individual's effective units of labor working in the blue-collar workers' group and in the white-collar workers' group calculated in the model in Thailand, 2000, by occupation (under the benchmark of the white-collar workers)

jobs) and in addition, from the blue-collar group, the manufacturing workers. It must be noted that even though the chosen levels of further education of the individuals earning above  $z^b$  are identical, the absolute levels of human capital of different occupations diverge. Since  $h_{it+1} = h_{it}(1 + e_i^*)$ , after investment in education, the human capital in the period  $t + 1$  of individuals who possessed higher human capital in the period  $t$  will be higher. This can be interpreted by the higher ability of the higher educated individuals to absorb knowledge. And since the higher income earners possess higher income in the beginning, this means that they have higher potential to invest more in education regarding qualitative issue for instances. According to the group of low-income-earners earning below  $z^b$ , the chosen levels of further education are not identical, but diverge, thus the absolute level of human capital of different occupations in this group diverge to a higher extent. In Thailand the chosen level of education  $e_i^*$ , of the individuals earning above  $z^b$  accounts to 0.34 (0.3405), hence for professional and technical the absolute level of investment in education  $h_{it}e_i^*$ , is 0.59 (0.5857) and the human capital in the period  $t + 1$   $h_{it+1}$ , raises from 1.72 to 2.31 (2.3057), for proprietors is 0.32 (0.3167) and raises from 0.93 to 1.25 (1.2467), and for employees in clerical, sales and service jobs is 0.27 (0.2724) and raises from 0.80 to 1.07 (1.0724) and in addition, from the blue-collar group, for the manufacturing workers is 0.47 (0.4733) and raises from 1.39 to 1.86 (1.8633). The chosen level of education of the individuals earning below  $z^b$  accounts to 0.21 (0.2065) for miscellaneous, 0.22 (0.2239) for self-employed agricultural workers and 0 for agricultural laborers. They are all from the blue-collar group. Due to these results, for miscellaneous the absolute level of investment in education  $h_{it}e_i^*$ , is 0.19 (0.1879) and the human capital in the

period  $t + 1$   $h_{it+1}$ , raises from 0.91 to 1.10 (1.0979), for self-employed agricultural workers is 0.21 (0.2060) and raises from 0.92 to 1.13 (1.1260), and for agricultural laborers is 0 and remains 0.80. The results from both groups illustrate the divergent trend of the economy, particularly divergent trend is much higher among individuals earning below  $z^b$ .

In order to compare the level of human capital of the both worker-groups together, calculation<sup>226</sup> must be done. Table 5.5 also shows the adjustment of the results of the level human capital, in order to make a comparison among the two labor groups. The results of the white-collar workers remain the same, whereas the results of the blue-collar workers will be adjusted. The comparable absolute human capital of a manufacturing worker changes from 0.57 (0.5738) in the first period to 0.77 (0.7692) in the second period, of a miscellaneous changes from 0.38 (0.3757) to 0.45 (0.4532), of a self-employed agricultural worker changes from 0.38 (0.3798) to 0.47 (0.4648) and of an agricultural laborer remains 0.19, since he or she is not able to invest in education. To conclude, the results illustrate that without support the divergence movement of an economy with disparity in wage rates and qualities of workers continues.

Considering the results of the simulations for Thailand, the model shows two cases of economic development and reveals relevant opportunities for development. The path this development follows should create a balance between a significant increase in the quality of human capital, leading to a significant increase in income and, on the other hand, convergence of quality of human capital and thus convergence of income.

<sup>226</sup> In the model, in order to make a comparison of the qualities of human capital between both groups, following calculation has to be made; to compare the level of the effective unit of labor of the blue-collar  $h_{ilt}$  to the one of the white-collar  $h_{iht}$ , the effective unit of labor of the blue-collar  $h_{ilt}$  has to multiply with the ratio between wage-rate of the white- and blue-collar:  $h_{ilt} \frac{w_{ilt}}{w_{iht}}$ .

1) If the costs of education are low and do not exceed the rate of about 0.7 (the rate at which the level of investment in education on the part of individuals who earn above  $z^b$  in Thailand is higher than the level of investment in education by those who earn below  $z^b$ ), the economy succeeds in enhancing human capital quality considerably. The lower the costs of education, the higher the quality of human capital that results and hence, the higher the individuals' income.

2) If the costs of education are high and exceed the rate of about 0.7 (the rate at which the level of investment in education by individuals who earn above  $z^b$  in Thailand is lower than the level of investment in education by those who earn below  $z^b$ ), then the quality of human capital and the income of those who earn above and below  $z^b$  converge. However, once the costs of education have reached a certain high level, at which those individuals earning above  $z^b$  stop investing in education, the individuals earning below  $z^b$  reduce their level of investment in education and the convergent trend slowly decreases. Another point is the fact that there is no convergence within the group of individuals earning below  $z^b$ ; in fact, there is divergence within the group. In addition, the total development of the quality of human capital in the economy, thus the total income, is much lower in this case. The higher the costs of education, the lower the total development of human capital quality and the higher the divergence within the group of individuals earning below  $z^b$ . However as asserted, due to the budget constraint, this situation hardly comes to play.

The results illustrate that, even though there is a way to achieve convergence between the two sectors, this seems to slow down the development process of total human capital quality significantly, and in turn, the total income. So the convergence process might be

very slow and insignificant. On the other hand, it is easier to achieve a higher total gain for the economy through an overall increase in total human capital quality. The simulations show that total increase in human capital quality can be achieved by reducing the costs of education. This, however, leads to divergence. The wage rate discrepancy between white- and blue-collar workers, or precisely between individuals earning above and below  $z^b$ , is not eased. In contrast, the divergence in human capital quality and income increases. This happens as a consequence of a greatly slower improvement in the quality of labor in the blue-collar sector, while the white-collar workers invest in further education at a much higher rate. Even though, due to the model, manufacturing workers choose the level of education at the same rate as the white-collar workers, it must be noted that this rate cannot be compared with the rate of the white-collar workers directly, since this rate must be adjusted first. After the adjustment, it can be observed that the rate of the level of education of the manufacturing workers is much lower than the one of the white-collar workers. Moreover, the absolute gained education is still lower and the manufacturing workers only make up 21.9% of the active population. The largest percentage share belongs to the agriculture sector, with 40%. Self-employed agricultural workers and the miscellaneous workers invest at a much lower rate in education. Agricultural laborers can only afford to be concerned about their subsistence; they do not have sufficient means to invest in further education.

Without any support, there can be a trade-off between rapid economic development and increasing divergence within and between labor-groups. For this reason, distribution strategies must be implemented, in order to ease divergence and support convergence. These strategies are increasing the income of low earners and reducing subsistence con-



sumption and education costs. Economic cooperation and integration are other potential means to achieve convergence and growth.

In the short-run, a strategy that may be able to bolster income level for all workers is to support education. In particular, effective distribution policies should be implemented in order to support income convergence. Accordingly, the blue-collar workers should receive the most support in particular for those who earn a very low income. In the case of Thailand reduction of the costs of education, however, will not affect or help the agricultural laborers, since these workers have to secure their subsistence consumption and do not have enough means left to invest in education. Therefore, another point that should be seriously considered is to secure the subsistence level of the people, which is one of the most relevant foundations for the development of the economy. The government has to solve this foundation problem directly through subsidies or indirectly by decreasing the subsistence consumption level, which would stand all the people in good stead. A remarkably achieved result should be the situation, in which all the people gain income higher than  $z^b$ .

To conclude, the analysis and simulations reveal two important strategies that should be pursued in the short-run.

**1) Reducing the costs of education and implementing income distribution**

This leads to high investment in further education. The higher the reduction of education costs, the higher the investment in education. This brings about an increase in quality of human capital and also an increase in income. Yet, in the short run, this strategy has a shortcoming. It is the fact that the high income earners generally invest more in education than the lower income earners, and again, the higher the reduction of education costs,

the higher the investment in education of the high income earners and the higher the divergence movement. This leads to divergence in the economic structure, in particular in human capital quality and income. One possible way to counteract or even overcome this shortcoming is to invest specifically more in education and distributing income for the low income earners, the blue-collar workers. The higher the income distribution in favor of individuals earning below  $z^b$ , the higher the investment in education. Notably, the best move is asserted to distribute or bolster the economy so that all the people gain income higher than  $z^b$ .

## 2) Reducing the costs of subsistence consumption

This is a relevant strategy to ease economic divergence. It does not discriminate between the two groups, since every individual receives the resulting advantages. While reducing the costs of education only benefits individuals who are able to invest in education, reducing the costs of subsistence consumption, on the other hand, supports all individuals. If this reduction is high enough, individuals who previously were not able to invest in education will be able to invest in education after the reduction. This implies that the quality of human capital and income will rise and the number of individuals who receive advantages from the educational support will increase. Moreover, economic divergence will be lessened, since, according to the model, while the high income earners, i.e. the white-collar workers and the manufacturing workers, (under the same rate of parameters) invest at the same rate in education  $e_i^*$ , despite different occupation and income, the level of low-income earners' investment in education depends on the level of subsistence consumption.

Combining the reduction of subsistence consumption costs with higher investment in educational support for low-income earners not only increases the number of individuals who invest in education and the quality of human capital in the blue-collar group, but also reduces the divergence movement.

#### **5.2.4 Theoretical Analysis of Short-Term Development under Inequality between Labor Groups: A Political Economy Issue**

The previous section analyzed short-term strategies that should be implemented in order to strengthen the economic structure and indicated proper distribution strategies that are needed. The results showed that without support there is divergence problem in an economy with human capital, technology, wage rate and income disparity. What should be done are reducing costs of education and costs of subsistence consumption in order to support the human capital development. In particular, reduction of subsistence consumption will ease divergence movement as well. Technology improvement brings about economic development and also positively influence wage rate. Economic improvement is not difficult to be achieved, contrarily to economic convergence which will necessitate support-mechanism. Distribution is one relevant mechanism that can initiate convergence or at least hinder the divergent trend of the economy. The government is an institution that plays a relevant role in contributing to development of the economy. This is a decisive factor for convergence and distribution; in particular, supporting education and implementing strategies that lower the costs of subsistence consumption will secure the foundation of the economy and bolster short and long-term development.

This section analyzes the role of the government in developing the economy, including convergence and augmentation of the quality of human capital and income. The section is divided into two parts. The first part presents an analysis of the individual's choice of an optimal education level under existence of the government sector. The individuals are concerned with a trade-off between paying income tax and gains from government spending. Modeling the individual's optimal chosen level of education under inclusion of the government sector and the determination of individual's preferred level of income tax rate are described first. Afterwards, the simulations and analyzes of the both cases are presented. The second part describes a theoretical outcome of the political decision-making process by means of the "Median Voter Theorem". This decision-making process applies to decisions on political strategies that indirectly affect the development of economic growth and economic convergence. It shows that this outcome might not be the first best solution, since political decisions can be distorted by the motivation of obtaining the majority of votes for the coming election period. The model mainly examines spending on education, individuals' income level and distribution issues. The political strategies taken into consideration are restricted to one dimension, namely the chosen rate of income tax.

### **Preferences and Budget Constraints**

Configuration of the utility function and the budget constraints are the same as the utility function and budget constraints of individuals in the previous sections. An additional factor that has to be further analyzed is the rate of taxation. It is assumed that each individual has to pay income tax at rate  $t$  ( $0 \leq t \leq 1$ ), on which the government spending

is dependent. Part of the government spending is invested in educational support which is denoted in percentage of  $\eta$ . The rest of government spending will be provided for direct income distribution, denoted by  $g$ . However, the government budget collected through taxation bears the “deadweight-loss of taxation”, thus a part of the taxed amount is lost and cannot be transferred to the people. This can be expressed using the equation:

$$\text{total government spending} = \left(t_t - \frac{t_t^2}{2}\right) \bar{w}_t \bar{h}_t,$$

where  $\bar{w}_t \bar{h}_t$  is the average income per worker in the period  $t$ .

Hence, the utility function and budget constraints of an individual  $i$  with high-skills are

$$\begin{aligned} U_{iht} &= \frac{(w_{iht} h_{iht} (1 - e_i \tau - \bar{s} - t_t) + g_t)^{(1-\gamma)}}{(w_{iht+1} h_{iht+1} (1 - t_{t+1}) + \bar{s} (1 + r) w_{iht} h_{iht} + g_{t+1})^\gamma} & (5.33) \\ \text{s.t. } & w_{iht} h_{iht} (e_i \tau + \bar{s} + t_t) + c_{iht} - g_t \leq w_{iht} h_{iht} \end{aligned}$$

The utility function and budget constraints of an individual  $i$  with low-skills are

$$\begin{aligned} U_{ilt} &= \frac{(w_{ilt} h_{ilt} (1 - e_i \tau - \bar{s} - t_t) + g_t)^{(1-\gamma)}}{(w_{ilt+1} h_{ilt+1} (1 - t_{t+1}) + \bar{s} (1 + r) w_{ilt} h_{ilt} + g_{t+1})^\gamma} & (5.34) \\ \text{s.t. } & w_{ilt} h_{ilt} (e_i \tau + \bar{s} + t_t) + c_{ilt} - g_t \leq w_{ilt} h_{ilt} \end{aligned}$$

### Optimization

Optimization in this case is subdivided into two situations. From the individual's viewpoint, it is assumed that both situations considered are independent of each other. The first is optimization of the level of education level and the second optimization of the tax rate.

1) With regard to the decision on the optimal education level, individuals consider the tax rate as given and take the costs of education and own net income into account.

2) When it comes to the decision on optimal tax rate, individuals – particularly during the voting period – will make a decision about the optimal tax rate. This happens after each individual has already made a decision about household planning. Political parties offer programs which should achieve the best voting results. In the model, the political program is reduced to one dimension and is assigned to the income tax rate. As this time comes, each individual will evaluate his or her preference on the political programs offered by parties and vote for the party which has policies that best suit his or her preference. Each individual has already chosen levels of consumption, savings and investment in education and takes his or her level of income after expenses (these expenses include consumption, savings and investment in education) and the advantages attaining from public goods into account to find his or her preferred political program.

### **Optimizing the Education Level**

It is assumed that, choosing an education level, each individual only takes his or her net income as a benchmark, which refers to the income after tax and savings. The individuals do not endogenize the tax rate in the optimization of their education level, but take the tax rate as given. Under given saving rate  $\bar{s}$  and tax rate, an individual  $i$  chooses the level of his or her investments in education and chooses his or her own consumption and future assets that maximize the utility function. Simultaneously, individual  $i$  has to assure

his or her subsistence consumption. This can be formulated as

$$\begin{aligned}
& \max_{e_i} U_{ijt} & (5.35) \\
= & \max_{e_i} (w_{ijt} h_{ijt} (1 - e_i \tau - \bar{s} - t_t) + g_t)^{(1-\gamma)} \\
& (w_{ijt+1} h_{ijt} (1 + e_i) (1 - t_{t+1}) + \bar{s} (1 + r) w_{ijt} h_{ijt} + g_{t+1})^\gamma \\
& s.t. w_{ijt} h_{ijt} (1 - e_i \tau - \bar{s} - t_t) + g_t \geq c_{ijt}, e_i \geq 0, \\
& g_t = (1 - \eta) \left( t_t - \frac{t_t^2}{2} \right) \bar{w}_t \bar{h}_t, g_{t+1} = (1 - \eta) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \bar{w}_{t+1} \bar{h}_{t+1}, \\
& \tau = \mu - \eta \left( t_t - \frac{t_t^2}{2} \right), j = h, l
\end{aligned}$$

It is assumed that the fraction of the individual's unit time endowment required for each unit of further education (the cost of the education unit)  $\tau$ , depends positively on fixed costs  $\mu$ , and negatively on the share of government budget for investment in education, which can be formulated as  $\eta \left( t_t - \frac{t_t^2}{2} \right)$ . Government support for education has both qualitative and quantitative characteristics, for instance the provision of new schools, new materials for study, reduction in tuition fees or no fees at all and also increase in instructors' qualities. This government support also bears the deadweight-loss of taxation. Thus, the function of  $\tau$  can be written as  $\tau = \mu - \eta \left( t_t - \frac{t_t^2}{2} \right)$ .

Optimization with respect to  $e_i$  implies

$$\frac{\partial U_{ijt}}{\partial e_i} = 0, j = h, l \quad (5.36)$$

This represents the interior solution (for the case of  $z_{ijt} > z^{tb}$ , with  $j = h, l$ ):

$$e_i^* = \frac{\gamma}{\mu - \eta \left( t_t - \frac{t_t^2}{2} \right)} \left( 1 - \bar{s} - t_t + (1 - \eta) \left( t_t - \frac{t_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} \right) - \frac{(1-\gamma)}{(1-t_{t+1})} \left[ 1 - t_{t+1} + \bar{s} (1 + r) \frac{w_{ijt}}{w_{ijt+1}} + (1 - \eta) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \frac{\bar{w}_{t+1} \bar{h}_{t+1}}{w_{ijt+1} h_{ijt}} \right], j = h, l \quad (5.37)$$

where  $z_{ijt}$  is the level of potential income of an individual  $i$  at the period  $t$  and  $z^{tb}$  the level of potential income at which the subsistence constraint is just binding, with  $z^{tb} = \frac{c^s - g_t}{1 - e_i^* \tau - \bar{s} - t_t}$ . It should be noted that the level of potential income at which the subsistence constraint is just binding under inclusion of income tax and government spending  $z^{tb}$ , might not be the same as the level of potential income at which the subsistence constraint is just binding without income tax and government spending  $z^b$ , calculated in the previous section. The additional variables that the potential income of an individual now encompasses are additional expense due to income tax and gain from public goods. Assuming  $\tau = 0.5$ , it follows that  $z^{tb} = 184.58$  US dollars. This indicates that all of the white-collar workers and the manufacturing workers from the blue-collar group earn income more than  $z^{tb}$ , therefore their budget constraints are not binding. This means that there is an interior solution for these high income earners. In the contrary, the rest of the blue-collar workers earn less than  $z^{tb}$  and their budget constraints are binding. For a sufficiently low level of income, the subsistence consumption constraint is binding and there is a corner solution with respect to the consumption level. The corner solution exists exclusively for individuals who earn a sufficiently low income level. So subject to the budget constraint  $w_{ijt}h_{ijt}(1 - e_i\tau - \bar{s} - t_t) + g_t \geq c^s, j = h, l$ , with  $\bar{s} = \max[0, \bar{s}]$ , the corner solution for an individual is

$$e_i^* = \frac{\gamma}{\mu - \eta \left( t_t - \frac{t_t^2}{2} \right)} \left( 1 - \bar{s} - t_t + (1 - \eta) \left( t_t - \frac{t_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} - \frac{c^s}{w_{ijt} h_{ijt}} \right), j = h, l \quad (5.38)$$



It follows that

$$e_i^* = \begin{cases} \frac{\gamma}{\mu - \eta \left( t_t - \frac{t_t^2}{2} \right)} \left( 1 - \bar{s} - t_t + (1 - \eta) \left( t_t - \frac{t_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} \right) - \\ \frac{(1 - \gamma)}{(1 - t_{t+1})} \left[ 1 - t_{t+1} + \bar{s} (1 + r) \frac{w_{ijt}}{w_{ijt+1}} + (1 - \eta) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \frac{\bar{w}_{t+1} \bar{h}_{t+1}}{w_{ijt+1} h_{ijt}} \right], & \text{if } z_{ijt} > z^{tb} \\ \frac{\gamma}{\mu - \eta \left( t_t - \frac{t_t^2}{2} \right)} \left( 1 - \bar{s} - t_t + (1 - \eta) \left( t_t - \frac{t_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} - \frac{c^s}{w_{ijt} h_{ijt}} \right) & \text{if } z_{ijt} \leq z^{tb} \end{cases}, j = h, l \quad (5.39)$$

Equation 5.39 shows the results of the chosen level of education  $e_i^*$ , of individuals who earn income higher and lower (or equal to) than  $z^{tb}$ . The chosen level of education  $e_i^*$ , of individuals who earn income higher than  $z^{tb}$  is negatively dependent on the fraction of the individual's unit time endowment required for each unit of further education  $\tau$  and on the world interest rate  $r$ . The structure is quite similar to the former case where government spending and income tax are not included.  $e_i^*$  is positively dependent on the preference parameter of the second work period  $\gamma$ , and negatively on the ratio of today's wage rate to the expected wage rate in the next period. In this case (with government interference)  $e_i^*$  in addition depends negatively on the level of income tax rates of both periods, since income tax decreases the remaining income an individual can use for investment in education. The level of public goods of period  $t$ , weighted by the average individual's income level in the same period, supports the decision on the chosen level of education, whereas the level of public goods of period  $t + 1$ , weighted by the wage rate of the period  $t + 1$  and the effective unit of labor of individual  $i$ , hampers the decision. To conclude, the chosen level of education,  $e_i^*$ , is considered by the weighted evaluation between, positively, the first term on the right hand side of the equation, which represents the consumption potential in the

first period, and, the second term which denotes the earning potential in the second period. This earning potential (the second term) includes, the gains from saving reflected by the world interest rate  $r$ , and weighted by the ratio of today's wage rate  $w_{ijt}$  and the expected wage rate at the next period  $w_{ijt+1}$ , which negatively affect the chosen level of education. It also includes the distribution effect denoted by the ratio of the average income in the next period and the net expected income in the next period – by the calculation of the net the expected income in the next period, the tax rate of the next period also has to be concerned. For both terms (the first and the second terms), the preference parameter of the second work period  $\gamma$  and expenses due to income tax and gains from government spending are taken into account as well.

The first concern of an individual  $i$ , who earns an amount of income at a low level, is his or her subsistence consumption. In other words, as long as the potential income of an individual  $i$  ( $z^{it} \equiv w_{ijt}h_{ijt}$ ) is below  $z^{tb}$ , then the individual  $i$  has to secure his or her subsistence consumption in the first place and pays attention to his or her career only as a secondary priority. The chosen level of education level is highly dependent on the subsistence consumption level  $c^s$ . The fraction of time spent on investment in further education is, therefore, conditioned on the saving rate, the income tax rate levied and in particular the ratio of subsistence consumption level  $c^s$ , to the potential income of the individual  $i$ ,  $w_{ijt}h_{ijt}$ , and the ratio of support through government spending to the potential income of the individual  $i$ ,  $w_{ijt}h_{ijt}$ .

### Optimization of the Tax Rate

Optimization of the tax rate is an issue that is of interest not only to individuals, but in the short-term case, also to political parties who focus on the decisions of individuals in order to make plans for political programs that suit the majority's preferences. In this model, individuals pay precise attention to political programs, in particular to the offered income tax rate, government spending on public goods and support of investment in education.

Under a given saving rate  $\bar{s}$  and an already chosen education level, the individuals choose their optimal tax rate, so as to maximize their own utility function. In doing so, they take the level of government spending on public goods and share of support of investment in education into account. Simultaneously, they have to assure their subsistence consumption. This can be written as

$$\begin{aligned}
 & \max_{t_{it}} U_{ijt} & (5.40) \\
 = & \max_{t_{it}} (w_{ijt} h_{ijt} (1 - e_i \tau - \bar{s} - t_{it}) + g_t)^{(1-\gamma)} \\
 & (w_{ijt+1} h_{ijt} (1 + e_i) (1 - t_{t+1}) + \bar{s} (1 + r) w_{ijt} h_{ijt} + g_{t+1})^\gamma \\
 & s.t. w_{ijt} h_{ijt} (1 - e_i \tau - \bar{s} - t_{it}) + g_t \geq c_{ijt}, e_i \geq 0, \\
 & g_t = (1 - \eta) \left( t_t - \frac{t_t^2}{2} \right) \bar{w}_t \bar{h}_t, g_{t+1} = (1 - \eta) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \bar{w}_{t+1} \bar{h}_{t+1}, \\
 & \tau = \mu - \eta \left( t_t - \frac{t_t^2}{2} \right), j = h, l
 \end{aligned}$$

it follows that

$$\begin{aligned}
& \max_{t_{it}} U_{ijt} & (5.41) \\
= & \max_{t_{it}} \left( w_{ijt} h_{ijt} \left( 1 - e_i \left( \mu - \eta \left( t_{it} - \frac{t_{it}^2}{2} \right) \right) - \bar{s} - t_{it} \right) + (1 - \eta) \left( t_{it} - \frac{t_{it}^2}{2} \right) \bar{w}_t \bar{h}_t \right)^{(1-\gamma)} \\
& \left( w_{ijt+1} h_{ijt} (1 + e_i) (1 - t_{t+1}) + \bar{s} (1 + r) w_{ijt} h_{ijt} + (1 - \eta) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \bar{w}_{t+1} \bar{h}_{t+1} \right)^\gamma \\
& s.t. w_{ijt} h_{ijt} \left( 1 - e_i \left( \mu - \eta \left( t_{it} - \frac{t_{it}^2}{2} \right) \right) - \bar{s} - t_{it} \right) + (1 - \eta) \left( t_{it} - \frac{t_{it}^2}{2} \right) \bar{w}_t \bar{h}_t \geq c_{ijt}, \\
& e_i \geq 0, j = h, l
\end{aligned}$$

Optimization with respect to  $t_{it}$  implies that

$$\frac{\partial U_{ijt}}{\partial t_{it}} = 0, j = h, l \quad (5.42)$$

This represents the interior solution (for the case of  $z_{ijt} > z^{tb}$ , with  $j = h, l$ ):

$$t_{it}^* = 1 - \frac{1}{(1 - \eta) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} + e_i \eta}, j = h, l \quad (5.43)$$

There is an interior solution for an individual  $i$  who possesses high skills, earns a higher wage and gains income that is high enough to secure his or her subsistence consumption level. On the other hand, there is the corner solution which exclusively exists for low-income earners, who earn a sufficiently low level of income ( $z_{ijt} \leq z^{tb}$ ) and are subject to the budget constraints  $w_{ijt} h_{ijt} (1 - e_i \tau - \bar{s} - t_{it}) + g_t \geq c^s$ . For simplicity, it is assumed that the low-income earners, who earn a sufficiently low income level ( $z_{ijt} \leq z^{tb}$ ), do not analyze their budget constraint thoroughly while making decision on their preferred tax rate. That means they do not internalize the “deadweight-loss of taxation” in their decision. Hence, the budget constraint, with  $\bar{s} = \max[0, \bar{s}]$ , regarded by these individuals is

$$w_{ijt} h_{ijt} (1 - e_i (\mu - \eta t_{it}) - \bar{s} - t_{it}) + (1 - \eta) t_{it} \bar{w}_t \bar{h}_t \geq c^s \quad (5.44)$$

The corner solution for an individual with  $z_{ijt} \leq z^{tb}$ , with  $j = h, l$  is

$$t_{it}^* = \frac{1 - \left( \bar{s} + e_i \mu + \frac{c^s}{w_{ijt} h_{ijt}} \right)}{1 - \left( e_i \eta + (1 - \eta) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} \right)} \quad (5.45)$$

It follows that

$$t_{it}^* = \begin{cases} 1 - \frac{1}{(1-\eta) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} + e_i \eta}, j = h, l & \text{if } z_{ijt} > z^{tb} \\ \frac{1 - \left( \bar{s} + e_i \mu + \frac{c^s}{w_{ijt} h_{ijt}} \right)}{1 - \left( e_i \eta + (1 - \eta) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} \right)}, j = h, l & \text{if } z_{ijt} \leq z^{tb} \end{cases} \quad (5.46)$$

To conclude, equations 5.43 and 5.46 show that the preferred tax-rate in the first period  $t_{it}^*$  of individuals who earn income higher than  $z^{tb}$  is positively dependent on the ratio of average income in the economy  $\bar{w}_t \bar{h}_t$  to individual's income  $w_{ijt} h_{ijt}$ . This characterizes an income distribution system, since, on the one hand, an individual whose income is below average prefers a higher tax rate, the lower his or her income. On the other hand, an individual with income higher than average prefers a lower tax rate. Besides,  $t_{it}^*$  depends positively on the level of government support for investment in education  $\eta$ , weighted by the level of investment in the education of the respective individual  $e_i$ . The term in the numerator on the right-hand-side term in the equations,  $(1 - \eta) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} + e_i \eta$ , shows two decisive factors for the determination of individual's preferred tax rate.

- 1) The first term  $(1 - \eta) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}}$ , indicates an income distribution system.
- 2) The second term  $e_i \eta$ , denotes the level of government support of investment in education  $\eta$ , weighted by the level of investment in education.

An individual  $i$  who earns an amount of income at a low level (the potential income of an individual  $i$  ( $z^{it} \equiv w_{ijt} h_{ijt}$ ) is below  $z^{tb}$ ), has to take care of his or her subsistence consumption in the first place, as well as his or her other expenses, (in the model) encom-

passing savings and investment in education. The tax rate is, therefore, highly dependent on the level of these expenses and their determinants. Equations 5.45 and 5.46 show that choosing the preferred level of the tax rate depends on the ratio between the individual's income after expenses and the received government support. In the equations, the term on the right hand side can be interpreted as follows.

1) The denominator  $1 - \left( \bar{s} + e_i\mu + \frac{c^s}{w_{ijt}h_{ijt}} \right)$  shows the individual's income after expenses, which depends negatively on the following expenses: savings at the rate  $\bar{s}$ , individual's own shared-expense on education without government support  $e_i\mu$ , and the subsistence consumption level  $c^s$ .

2) The numerator  $1 - \left( e_i\eta + (1 - \eta) \frac{\bar{w}_t\bar{h}_t}{w_{ijt}h_{ijt}} \right)$  shows the importance of the received government support, which is weighted by the individual's gains from income distribution and gains from the government share of investment in educational support. Finally, the ratio of these two terms brings about the individuals' decision on the chosen tax rate.

### **5.2.5 Simulations and Analyses of the Education Level Chosen by Individuals under Consideration of Tax rates and Advantages Brought About by Government Spending**

This section presents simulations and analyses of the optimized level of investment in education, including considerations of paying income tax and gains through government spending, as shown by the equation 5.39. The role of the government is emphasized in association with two relevant policies, namely bolstering economic convergence and development through support for education and income distribution. The simulations are divided into the case of the white-collar and the case of the blue-collar workers.

Indicators used in these simulations are the same as the ones used in previous simulations, where data from Thailand are applied. Additional indicators in this section are the levels of expected income tax rate, and government support for investment in education in percent  $\eta$ . The model uses the personal income tax of Thailand as a benchmark. This is imposed on an individual's net income at progressive graduated rates (notably, this progressive tax rate assists income distribution directly). The net income is calculated as follows: taxpayers are granted a standard deduction of 40% of their wage or salary earned from employment, but not exceeds a maximum deduction of 60,000 Baht. There are moreover granted a personal allowance of 30,000 Baht per individual, on which they pay no tax, including allowances for a spouse, children, contributions to provident funds, the social security fund and charitable contributions, which normally play a role in reality; these however are ignored in the model. The tax rates calculated for diverse occupations are presented in Table 5.6-5.7. Data for government support for investment in education in percent for 2000 was estimated using the ratio of government expenditure on education affairs and services (218.6 billion Baht) to total government expenditure (850.6 billion Baht). This comes to 25.70% ( $\eta = 0.2570$ ).

Due to the progressiveness of income tax rate, it is assumed that individuals with different income levels have to pay different rates of income tax. Each individual, however, receives the same and equal amount of advantages from the total government spending  $\left(\bar{t}_t - \frac{\bar{t}_t^2}{2}\right) \bar{w}_t \bar{h}_t$ , where  $\bar{t}_t$  is the average tax rate weighed by the share of the tax payers.  $\bar{t}_t$  is estimated as follows<sup>227</sup>;  $\bar{t}_t = \frac{0.1 \times 6.6 + 0.05 \times 24.3 + 0.05 \times 21.9 + 0.05 \times 20 + 0 \times 20}{6.6 + 24.3 + 21.9 + 20 + 20} = 0.0428$ . Markedly,

<sup>227</sup> It is assumed that the percentage share of workers in the agriculture sector (40%) consists of own account 20% and agricultural laborers 20%.

Occupation	Monthly salaries	Annual net income <sup>a</sup>	Income tax rate <sup>b</sup>
Professional and technical	31,366 Baht 784.15 US dollars	286,392 Baht 7159.80 US dollars	10%
Managerial and administrative	-	-	-
Proprietors	17,039 Baht 425.98 US dollars	114,468 Baht 2861.70 US dollars	10%
Employees in clerical, sales and service jobs	14,678 Baht 366.95 US dollars	86,136 Baht 2153.40 US dollars	5%

Source: National Statistical Office, Report of the Household Socio-Economic and National Statistical Office Survey Labour Force, Survey and e-Thailand

a: Annual net income to be taxed = (monthly salary  $\times$  12) – min[40%  $\times$  (monthly salary  $\times$  12), 60,000]

b: Average income tax rate = 4.28%

Table 5.6: Income tax rate of white-collar workers in Thailand, 2000 (in baht and US dollars)

Occupation	Monthly salaries	Annual net income <sup>a</sup>	Income tax rate <sup>b</sup>
Manufacturing workers	10,500 Baht 262.50 US dollars	75,600 Baht 1,890 US dollars	5%
Transportation and communication	-	-	-
Miscellaneous	6,869 Baht 171.70 US dollars	49,456.8 Baht 1,236.40 US dollars	0%
Agriculture	Self-employed 7,014 Baht 175.35 US dollars	Self-employed 50,500.8 Baht 1262.52 US dollars	Self-employed 5%
	Agricultural laborers 3,575 Baht 89.36 US dollars	Agricultural laborers 25,740 Baht 643.50 US dollars	Agricultural laborers 0%

Source: National Statistical Office, Report of the Household Socio-Economic and National Statistical Office Survey Labour Force, Survey and e-Thailand

a: Annual net income to be taxed = (monthly salary  $\times$  12) – min[40%  $\times$  (monthly salary  $\times$  12), 60,000]

b: Average income tax rate = 4.28%

Table 5.7: Estimated income tax rate of employed persons of the blue-collar workers in Thailand, 2000 (in Baht and US dollars)



the average income tax rate determined in this model (4.28%) deviates slightly from the real average income tax rate of Thailand of 5%. Further, it is assumed for simplicity that the expected personal income tax rate in the next period is equal to the rate in the first period.

Results of the simulations illustrate the effect of the distribution system by means of income tax. On the one hand, there is direct distribution of income, which is implemented through  $g$ , and on the other hand, there is indirect distribution conducted by educational support, which includes government support for education financed by income tax. The government support for education is assumed to help the individuals by reducing the cost of each unit of further education. This can be interpreted by the equation  $\tau = \mu - \eta \left( t_t - \frac{t_t^2}{2} \right)$ , where  $\eta$  is the share of government spending on educational support, estimated to be 25.70% for Thailand in the year 2000, and  $\mu$  is the real costs of education before the introduction of government support. Tax rate  $t$  stands for the tax rate which individuals have to pay individually and  $\bar{t}$  is the average tax rate which is used in the calculation of the government spending. Hence, the equation of optimal education level can be written as

$$e_i^* = \begin{cases} \frac{\gamma}{\mu - \eta \left( \bar{t}_t - \frac{\bar{t}_t^2}{2} \right)} \left( 1 - \bar{s} - t_t + (1 - \eta) \left( \bar{t}_t - \frac{\bar{t}_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} \right) - \\ \frac{(1 - \gamma)}{(1 - t_{t+1})} \left[ 1 - t_{t+1} + \bar{s} (1 + r) \frac{w_{ijt}}{w_{ijt+1}} + (1 - \eta) \left( \bar{t}_{t+1} - \frac{\bar{t}_{t+1}^2}{2} \right) \frac{\bar{w}_{t+1} \bar{h}_{t+1}}{w_{ijt+1} h_{ijt}} \right], & \text{if } z_{ijt} > z^{tb} \\ \frac{\gamma}{\mu - \eta \left( \bar{t}_t - \frac{\bar{t}_t^2}{2} \right)} \left( 1 - \bar{s} - t_t + (1 - \eta) \left( \bar{t}_t - \frac{\bar{t}_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} - \frac{c^s}{w_{ijt} h_{ijt}} \right) & \text{if } z_{ijt} \leq z^{tb} \\ , j = h, l \end{cases} \quad (5.47)$$

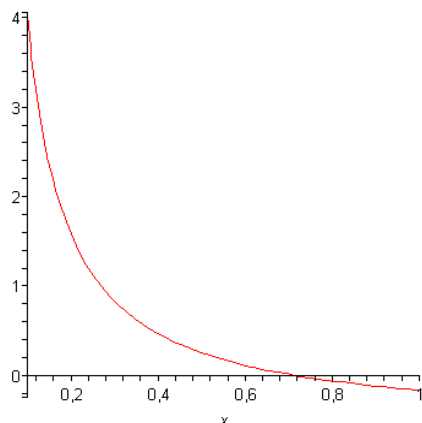


Figure 5.14: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the white-collar workers, occupation: professional and technical, in Thailand)  $x$  = level of the real costs of each unit of further education (before including support from the government) ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

The results are illustrated by Figures 5.14-5.16, Figures 5.17-5.20, Tables 5.8, 5.9 and Tables 5.10, 5.11. Regarding the calculations, the expected individual's tax rate and average tax rate in the period  $t + 1$  are taken to be at the same rate as the tax rate in the period  $t$ . Further, it is assumed that the individuals' expected real income growth rate in the short-run is 0%, thus the real average income in the period  $t + 1$  is estimated by taking the average income the present period.

The cases with and without introduction of income tax can be compared as follows. The character of the simulations regarding the individuals' decision on the level of education under inclusion of a tax rate in both sectors is, in the main, nearly equivalent to the case without the income tax rate in the previous section. This is confirmed by the comparison of the Figures 5.14-5.16 and Figures 5.17-5.20 with the Figure 5.10 and Figures

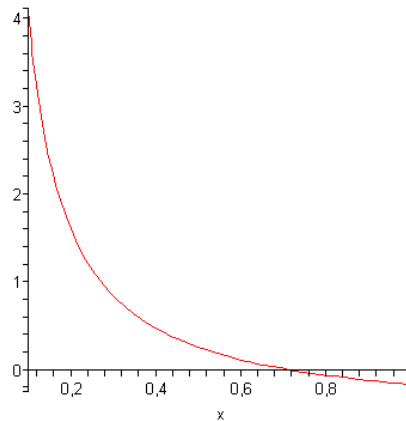


Figure 5.15: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment that is required for each unit of further education (costs of each unit of further education) (case of the white-collar workers, occupation: proprietors, in Thailand)  $x =$  level of the real costs of each unit of further education (before including support from the government) ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

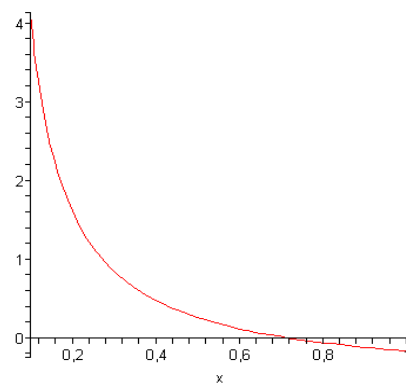


Figure 5.16: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the white-collar workers, occupation: employees in clerical, sales and service jobs)  $x =$  level of the real costs of each unit of further education (before including support from the government) ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

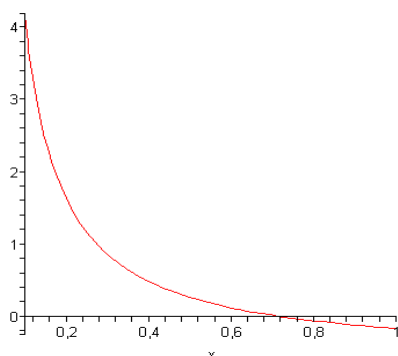


Figure 5.17: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the blue-collar workers, manufacturing workers, in Thailand)  $x$  = level of the real costs of each unit of further education (before including support from the government) ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

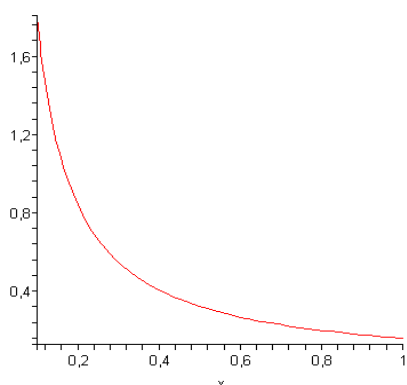


Figure 5.18: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the blue-collar workers, miscellaneous, in Thailand)  $x$  = level of the real costs of each unit of further education (before including support from the government) ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

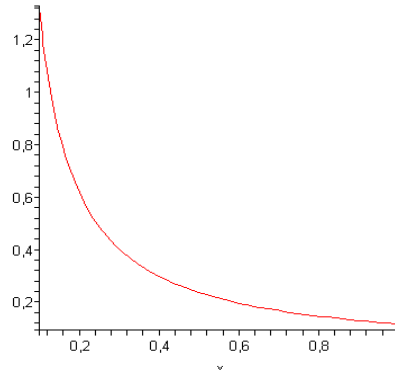


Figure 5.19: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment that is required for each unit of further education (cost of each unit of further education) (case of the blue-collar workers, self-employed agricultural workers, in Thailand)  $x$  = level of real cost of each unit of further education (before including support from the government) ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

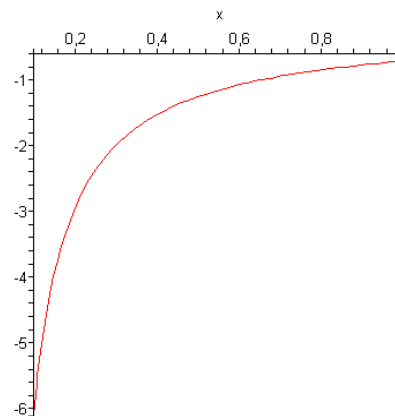


Figure 5.20: Simulation of the individual's optimal level of education under different levels of the fraction of the individual's unit time endowment that is required for each unit of further education (costs of each unit of further education) (case of the blue-collar workers, agricultural laborers, in Thailand)  $x$  = level of real costs of each unit of further education (before including support from the government) ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

5.11-5.13. So in general, the strategies that should be pursued are reduction of the costs of education, particularly for the blue-collar workers, precisely the low skilled and the low income workers. In addition, the reduction of the costs of subsistence consumption must not be neglected. Both strategies can bring about an increase in the quality of human capital and an increase in income. Combination of both strategies will be able not only to increase the number of individuals who invest in education, hence increasing the quality of human capital in the blue-collar group, but also counteract divergence.

While the analyses of the two cases, with and without income tax rate, are almost equal under a rough estimation, the calculated comparisons of both cases analyzed in Tables 5.8, 5.9 and 5.10, 5.11 display precise differences and interesting results. The results of the model illustrate that the government is limited in combining both aforementioned strategies. On the one hand, easing divergence is likely, but on the other hand, bolstering convergence is difficult to pursue. The Tables show data of the chosen level of further education and the utility of the individuals in the two different cases. In association with the data of Thailand in 2000, the case with income tax has a total utility per worker of 270.35. This is slightly less than the case without taxation, for which the figure is 277.61. In addition, taxation in Thailand also has a slightly negative effect on the result of the total level of investment in further education per worker. The total level of investment in further education per worker in the case with income tax is 0.23 (0.2290) which is less than the case without taxation which amounts to 0.24 (0.2420). The reduction of total utility and level of investment in education per worker in the case where income tax is introduced are partly explained by the inherent “deadweight-loss of taxation” and distortion due to the govern-

ment interference. On the other hand, as a positive trade-off, government actions (taxation and support of education) have brought about distribution and have bolstered investment in the education of the low income group. Both initiatives primarily lessen economic divergence and assist convergence by increasing the human capital quality and income of the low wage earners (it should be noted that the convergence in wage rates between sectors will not be achieved in the short-run, since this can be brought about only by convergence of technology parameters). In Thailand, significant winners are workers who are levied income tax at a low progressive rate or are exempt from paying tax. These include many occupations from the blue-collar group, namely the miscellaneous workers, the agricultural laborers and, to a lesser extent, the self-employed agricultural workers. In contrast, all white-collar workers face a significant loss of their utilities, particularly those who pay income tax at a high rate. A group of the blue-collar workers, the manufacturers, also undergo utility-loss, although only to a moderate extent. This matter of fact reveals that government interference has an income-distributing and convergence effect, in particular due to progressiveness of income tax.

According to the results, it can be concluded that without introduction of distribution support (in this case, taxation, direct government spending and support in reduction of the costs of education), the economic diversity gradually increases. The introduction of distribution system eases the divergence movement; yet, economic convergence is very difficult to pursue. Moreover, in the case of Thailand there is the trade-off between exerting distribution and higher gain in total level of education and utility. In other words, introducing taxation leads to distribution-effect and eases divergence, but this leads to the reduction

Occupation	Income tax rate	Chosen level of education $e_i^*$ ; Absolute gained human capital $h_{it}e_i^*$ ; New Effective unit of labor $h_{it+1}$	Utility (under introduction of income tax)
Professional and technical	10%	0.26 (0.2567); 0.44 (0.4415); 2.16 (2.1615)	728.9960
Managerial and administrative	-	-	-
Proprietors	10%	0.26 (0.2610); 0.24 (0.2427); 1.17 (1.1727)	400.6743
Employees in clerical, sales and service jobs	5%	0.31 (0.3179); 0.25 (0.2543); 1.05 (1.0543)	367.5219

Level of further education per white-collar worker with introduction of income tax or with governmental interference = 0.2951

Utility per white-collar worker with introduction of income tax or with governmental interference = 444.7300

Level of further education per worker with introduction of income tax or with governmental interference = 0.2290

National utility with introduction of income tax or with governmental interference per worker = 270.3547

Table 5.8: Chosen level of education and utility of white-collar workers in Thailand, 2000 (with introduction of income tax)

Occupation	Chosen level of education $e_i^*$ ; Absolute gained human capital $h_{it}e_i^*$ ; New Effective unit of labor $h_{it+1}$	Utility (without introduction of income tax)
Professional and technical	0.34 (0.3405); 0.59 (0.5857); 2.31 (2.3057)	808.2400
Managerial and administrative	-	-
Proprietors	0.34 (0.3405); 0.32 (0.3167); 1.25 (1.2467)	439.1483
Employees in clerical, sales and service jobs	0.34 (0.3405); 0.27 (0.2724); 1.07 (1.0724)	378.0248

Level of further education per white-collar worker without introduction of income tax or without governmental interference = 0.3454

Utility per white-collar worker without introduction of income tax or without governmental interference = 469.9154

Level of further education per worker without introduction of income tax or without governmental interference = 0.2420

National utility without introduction of income tax or without governmental interference per worker = 277.6106

Table 5.9: Chosen level of education and utility of white-collar workers in Thailand, 2000 (without introduction of income tax)



Occupation	Income tax rate	Chosen level of education $e_i^*$ ; Absolute gained human capital $h_{it}e_i^*$ ; New Effective unit of labor $h_{it+1}$	Utility (under introduction of income tax)
Manufacturing workers	5%	0.32 (0.3227); 0.45 (0.4486); 1.84 (1.8386)	264.1971
Transportation and communication	-	-	-
Miscellaneous	0%	0.32 (0.3239); 0.30 (0.2948); 1.21 (1.2048)	187.1234
Agriculture	Self-employed 5% Agricultural laborers 0%	Self-employed 0.24 (0.2381); 0.22 (0.2191); 1.14 (1.1391) Agricultural laborers 0; 0; 0.47	Self-employed 178.5911 Agricultural laborers 98.3569

Level of further education per blue-collar worker with introduction of income tax or with governmental interference = 0.1911

Utility per blue-collar worker with introduction of income tax or with governmental interference = 183.3079

Level of further education per worker with introduction of income tax or with governmental interference = 0.2290

National utility with introduction of income tax or with governmental interference per worker = 270.3547

Table 5.10: Chosen level of education and utility of blue-collar workers in Thailand, 2000 (with introduction of income tax)

Occupation	Chosen level of education $e_i^*$ ; Absolute gained human capital $h_{it}e_i^*$ ; New Effective unit of labor $h_{it+1}$	Utility (without introduction of income tax)
Manufacturing workers	0.34 (0.3405); 0.47 (0.4733); 1.86 (1.8633)	269.7977
Transportation and communication	-	-
Miscellaneous	0.21 (0.2065); 0.19 (0.1879); 1.10 (1.0979)	175.8663
Agriculture	Self-employed 0.22 (0.2239); 0.21 (0.2060); 1.13 (1.1260) Agricultural laborers 0; 0; 0.47	Self-employed 177.9841 Agricultural laborers 88.8612

Level of further education per blue-collar worker without introduction of income tax or without governmental interference = 0.1929

Utility per blue-collar worker without introduction of income tax or without governmental interference = 181.6135

Level of further education per worker without introduction of income tax or without governmental interference = 0.2420

National utility without introduction of income tax or without governmental interference per worker = 277.6106

Table 5.11: Chosen level of education and utility of blue-collar workers in Thailand, 2000 (without introduction of income tax)

of total investment in education and utility comparing to the case without taxation. In the case with government interference, considering the results displayed, there are two relevant points that should be considered in putting together development strategies.

1) Although the introduction of income tax initiates income distribution and supports education for most workers, there is still a lack of support for investment in education for workers who despite income distribution cannot secure their subsistence consumption and are not be able to invest in education, in this case: the agricultural laborers. Hence, securing the subsistence consumption for all people in the economy is one of the most relevant basic necessities and policies to achieve it should be simultaneously implemented.

2) It is questionable whether this policy – income tax structure and/or the rate of share of government support – is the first best solution or not. If it is not, why is it that this rate or better solutions are not implemented?

The second point is an issue that should be further considered in depth. The Table 5.12 and 5.13 show the results of possible changes to the government share of educational support (both higher than the normal case, at 40%, and lower, at 10%; the normal case is 25.70%) based on the income tax structure of Thailand. When the share of government support for education is increased (in this case to the rate of 40%), a distribution effect can be observed, whereby there is better distribution and higher gains on the total level of investment in further education compared to the normal case (25.70%). Compared to the normal case, in which the level of total individuals' education amounts to 0.2290, the increase of the share of government support for education to a higher level (40%) brings about higher total individuals' education at rate of 0.2298, contrary to the case of lower

Occupation	Chosen level of education under $\eta = 10\%$	Chosen level of education under $\eta = 25\%$ (normal case)	Chosen level of education under $\eta = 40\%$	Chosen level of education without government interference
Professional and technical	0.2467	0.2567	0.2659	0.3454
Managerial and administrative	-	-	-	-
Proprietors	0.2518	0.2610	0.2695	0.3454
Employees in clerical, sales and service jobs	0.3085	0.3179	0.3267	0.3454
Total per white-collar worker	0.2951	0.2951	0.3137	0.3454
Manufacturing workers	0.3141	0.3227	0.3306	0.3454
Transportation and communication				
Miscellaneous	0.3431	0.3239	0.3059	0.2067
Agriculture, self-employed	0.2582	0.2381	0.2194	0.2240
Agricultural laborers	0	0	0	0
Total per blue-collar worker	0.1946	0.1911	0.1879	0.1929
Total per worker	0.2281	0.2290	0.2298	0.2420

Table 5.12: Comparison of the chosen level of education of white- and blue-collar workers in Thailand, 2000 (under different rate of share of government support for education and no government interference, short-term)

government support for education (10%), in which the education rate amounts to 0.2281.

Nonetheless, none of the three cases is conducive to a higher level of education than the case without government interference.

Examining the results in the Table 5.12 precisely, in Thailand government support for education leads to a moderate distribution effect and hardly to convergence. Compared to the case without government interference, the very low income earners, including the self-employed agricultural workers and the miscellaneous workers, invest more in education. The agricultural laborers still do not have enough means to invest in education. These are workers whose income is below  $z^{tb}$ . The increase in government support for education leads to the decline of the level of investment in education for these individuals.

The increase in government support for education only benefits those individuals who earn income above  $z^{tb}$  in distributive and development aspects. Additionally, due to the progressive income tax rate, those who pay low income tax benefit more, the lower the income tax rate they have to pay. These are the employees in clerical, sales and service jobs and the manufacturing workers, whose levels of investment in education are 0.3179 and 0.3227 respectively in the normal case and 0.3267 and 0.3307 respectively under high government support for education. This leads to an effective distribution effect, however only for the group of individuals earning above  $z^{tb}$ . In contrast, the individuals earning below  $z^{tb}$  obtain no advantages, and this leads to the reduction of their level of investment in education. This is due to the fact that the individuals earning below  $z^{tb}$  take only the remaining income in the present period, or period  $t$ , into account when determining their optimal level of education, while the individuals earning above  $z^{tb}$  consider two periods (period  $t$ , the present and period  $t + 1$ , the future). Furthermore, these poorer workers prefer direct distribution via  $g$  over indirect distribution via a reduction of education costs. This is a trade-off that the government should concern. Reduction of the costs of education may increase the incentives of the individuals to invest in education and raise the level of education. But if the costs of the reduction of the costs of education are financed by income tax which bears the deadweight-loss and cut a part of the direct support from the government, the incentives of the individuals earning less than  $z^{tb}$  will decrease, and so does their chosen level of education. Contrarily to the behavior of individuals from the group of income earners above  $z^{tb}$ , despite the deadweight-loss, this action leads to distribution among this group. This result suggests that a proper strategy to develop the economy is to support the poor individuals to

overcome the income level of  $z^{tb}$ , since at this point the distribution effect of the education support from the government action is very effective and convergence will be easier bolstered. In addition, the result shows that reducing the costs of education at the expense of levied income tax leads to the disadvantages of the group of individuals earning less than  $z^{tb}$ . This leads to the fact that in order to increase the incentives of investment in and the level of education by reduction of the costs of education, this should be done by increasing quality for example via cooperation and joint-venture with advanced economy and/or economic integration superior to taxation. Since this action will fully benefit all individuals who are able to invest in education, no matter to which group they belong and distortion in the decision on the chosen level of education of the individuals earning less than  $z^{tb}$  will be removed.

Changes in utility are depicted in the Table 5.13. Due to the deadweight-loss, none of these three cases brings about higher utility to any individual whose income is higher than  $z^{tb}$ , compared to the case without government interference. It is those individuals whose income is below  $z^{tb}$  who gain advantages from government interference, in particular those whose pay income tax at a very low rate. This explains the distribution effect by means of taxation. But notably, the higher the government support for education, the lower the total utility. This decline of the utility is explained by the fact that the individuals regard the share of government support for education as indirect support. The individuals, in particular those earning less than  $z^{tb}$ , predominately prefer direct support from the government, since this directly increases their income, denoted by  $g$  in the model. The equation 5.39 explains

Occupation	Utility under $\eta = 10\%$	Utility under $\eta = 25\%$ (normal case)	Utility under $\eta = 40\%$	Utility without government interference
Professional and technical	730.2309	728.9960	727.8948	808.2400
Managerial and administrative	-	-	-	-
Proprietors	402.3034	400.6743	399.2005	439.1483
Employees in clerical, sales and service jobs	369.1251	367.5219	366.0712	378.0248
Total per white-collar worker	446.2545	444.7300	443.3540	469.9154
Manufacturing workers	266.9490	264.1971	263.6089	269.7977
Transportation and communication				
Miscellaneous	189.0719	187.1234	185.3022	175.8663
Agriculture, self-employed	180.6372	178.5911	176.6766	177.9841
Agricultural laborers	100.3981	98.3569	96.4936	88.8612
Total per blue-collar worker	185.2486	183.3079	181.5261	181.6135
Total per worker	272.1586	270.3547	268.7080	277.6106

Table 5.13: Comparison of the utility of white- and blue-collar workers in Thailand, 2000 (under different rate of share of government support for education and no government interference, short-term)

this and indicates that the main factor that determines the level of further education of an individual is the level of his or her income.

There are two relevant issues implied by the model that have a trade-off characteristic. This explains the difficulty of achieving significant economic convergence by means of government action.

1) First, due to the distribution effect of taxation, the individuals earning less than average benefit from the progressive taxation structure. The lower the individual's tax rate, the higher the benefits for him or her. Since the level of investment in education depends positively on individuals' income, this leads to an increase in the level of investment in education by the low income earners. The model indicates that direct supports from the

government are more effective than indirect supports for the group of individuals earning less than  $z^{tb}$ . Direct support could be in the form of an increase in income or a reduction of the costs of subsistence consumption. These are main strategies that can particularly affect the low income earners, since individuals' income level is the decisive factor in choosing the education level and the investment in further education by the low income earners only depends on their remaining income after all other expenses and only the present period is concerned. This first issue explains the increase of the level of investment in education and utility of the individuals with very low income (below  $z^{tb}$ ) under government interference.

2) Second, an increase of government support for education only benefits those individuals who earn income above  $z^{tb}$ , while individuals who earn income below  $z^{tb}$  are disadvantaged. Additionally, due to the progressive income tax rate, those individuals (who earn income above  $z^{tb}$ ) who pay low income tax benefit more, the lower their income tax rate they have to pay. Due to the increase of government support for education, the levels of investment in education by the individuals earning above  $z^{tb}$ , encompassing professional and technical workers, proprietors, employees in clerical, sales and service jobs and manufacturing workers rise from 0.2567, 0.2610, 0.3179 and 0.3227 respectively in the case when the share of government support for education is 25.7% (normal case) to 0.2659, 0.2695, 0.3267 and 0.3306 respectively in the case when the share of government support for education is 40%.

The results of the model show that, in order to bolster human capital and economic welfare and implement distribution, both the policies that provide direct support to increase income of the low income earners and those that reduce the costs of education should be

applied. Yet, as outlined above, in the case of Thailand in 2000 the higher the government support in education, the lower the total utility. There is still a trade-off between “increasing of the level of education and distribution” and “aiming at higher utilities”. Particularly economies with a high level of disparity may suffer from this problem. Hence, a strategy that should be pursued can be concluded as follows. As a first step, the government should aim for a situation in which not only the individuals’ subsistence consumption is secured, but their budget constraints are not binding which means that individuals’ income must be at least  $z^{tb}$ , at first place. Thus, individuals will earn higher income and they can invest more in education. In addition the budget constraints of all individuals will not be binding and the educational support provided by the government will benefit all individuals. This, in turn, increases investment in education and income. Consequently, economic convergence and development will be easier to achieve, since direct as well as indirect supports will have their full impact on all individuals (since the budget constraints of all individual are not binding). Nonetheless, this does not mean that while there are some individuals earning below  $z^{tb}$ , support for education should be neglected. Such support always eases divergence, potentially leads to convergence and assists investment in education in the group of individuals earning above  $z^{tb}$ . This will become more and more effective and more and more individuals from the low income group can take advantage of the support, as soon as their budget constraints cease to be binding.

Due to the relevance of individual’s income level, taxation is one of the powerful instruments that influence the distribution system of the economy. An effective taxation strategy will bring about distribution, leading to the improvement and convergence of hu-



Occupation	$e_i^*$ under average income tax rate = 6.48%	$e_i^*$ under average income tax rate = 3.15%	$e_i^*$ under average income tax rate = 1.01%	$e_i^*$ under case without government interference	$e_i^*$ Thailand's case under average income tax rate = 4.28%
Professional and technical	0.2123 (15%)	0.2506 (10%)	0.2931 (5%)	0.3405	0.2567 (10%)
Managerial and administrative	-	-	-	-	-
Proprietors	0.2752 (10%)	0.3086 (5%)	0.3210 (2.5%)	0.3405	0.2610 (10%)
Employees in clerical, sales and service jobs	0.3339 (10%)	0.3098 (5%)	0.3214 (2.5%)	0.3405	0.3179 (5%)
Total per white-collar worker	0.3079	0.2972	0.3153	0.3405	0.3049
Manufacturing workers	0.3412 (5%)	0.3407 (2.5%)	0.3493 (0%)	0.3405	0.3227 (5%)
Transportation and communication	-	-	-	-	-
Miscellaneous	0.3325 (2.5%)	0.2929 (0%)	0.2342 (0%)	0.2065	0.3239 (0%)
Agriculture, self-employed	0.2968 (5%)	0.2588 (2.5%)	0.2514 (0%)	0.2240	0.2381 (5%)
Agricultural laborers	0 (2.5%)	0 (0%)	0 (0%)	0	0 (0%)
Total per blue-collar worker	0.2166	0.2042	0.2048	0.1929	0.1911
Total per worker	0.2470 (6.48%)	0.2531 (3.15%)	0.2416 (1.01%)	0.2420	0.2290 (4.28%)

Table 5.14: Comparison of the chosen level of education of white- and blue-collar workers in Thailand, 2000 (under different income tax rate and no government interference, short-term)

Occupation	Utility under average income tax rate = 6.48%	Utility under average income tax rate = 3.15%	Utility under average income tax rate = 1.01%	Utility without government interference	Utility under Thailand's case average income tax rate = 4.28%
Professional and technical	690.2785 (15%)	681.3403 (10%)	765.2441 (5%)	808.2400	728.9959 (10%)
Managerial and administrative	-	-	-	-	-
Proprietors	406.0839 (10%)	422.4254 (5%)	429.3101 (2.5%)	439.1483	400.6743 (10%)
Employees in clerical, sales and service jobs	351.4129 (10%)	364.6707 (5%)	369.8942 (2.5%)	378.0248	367.5219 (5%)
Total per white-collar worker	423.7920	432.3089	454.3379	469.9154	444.7300
Manufacturing workers	270.5545 (5%)	270.2915 (2.5%)	257.2217 (0%)	269.7977	264.5611 (5%)
Transportation and communication	-	-	-	-	-
Miscellaneous	187.3062 (2.5%)	184.2345 (0%)	178.6030 (0%)	175.8663	187.1235 (0%)
Agriculture, self-employed	184.0647 (5%)	180.9804 (2.5%)	178.6351 (0%)	177.9841	178.5911 (5%)
Agricultural laborers	100.9390 (2.5%)	95.8438 (0%)	91.0041 (0%)	88.6812	98.3567 (0%)
Total per blue-collar worker	187.8064	184.9998	182.3878	181.6135	183.3079
Total per worker	266.3835 (6.48%)	267.3473 (3.15%)	272.9402 (1.01%)	277.6106	270.3547 (4.28%)

Table 5.15: Comparison of the utility of white- and blue-collar workers in Thailand, 2000 (under different income tax rate and no government interference, short-term)

man capital and, in turn, the augmentation and convergence of income and living-standards. Tables 5.14 and 5.15 lead us to realize that this income tax rate levied in Thailand in 2000 does not induce an optimal solution, since the results show that the overall utility of the economy can be improved (compared with the case of Thailand in which average rate of progressive income tax rate is 4.28%) under alternative programs with a progressive income tax rate at an average rate of 1.01%. In particular, the overall level of education a worker chooses can be improved (compared with the case of Thailand in 2000 and even with the case without government interference) under alternative programs with income tax rates of 6.48% and 3.15%. Moreover, under alternative programs with income tax rates of 6.48%, 3.15% distribution of utility, particularly among the group of low-income-earners is augmented and under all three alternative programs with income tax rates of 6.48%, 3.15% and 1.01% divergence of income and human capital quality are lessened considerably. This implies that the economy is able to achieve both income and utility distribution and a total increase in the quality of human capital by implementing a proper distribution program (in this model, by means of income taxation).

One may ask why the data of Thailand do not reveal the political program that brings about convergence and higher total utility. One explanation can be the fact that the model merely concentrates on education and income distribution, while several relevant political programs or political aims are neglected. Another relevant explanation is the fact that there are distortions of government decisions regarding implementing political programs. The coming section will analyze a possible reason for the distortion of the first best solution

for the economy in terms of income distribution and explain the outcome with help of the Median Voter Theorem.

### **Theoretical Outcome of Political Decision Process under the Median Voter Theorem**

This section presents a theoretical analysis of a political decision on economic development. This would typically include decisions on political programs, particularly involving the level of taxation and government support.

In a short-term development, political economy is very relevant, particularly considering the fact that the political parties are interested in being voted in for the next period of office. Hence, it is possible that the government is not purely social welfare oriented, but instead is looking for strategies that lead to it becoming the party the population votes for the most and thus winning the election again. In analogy, the opposition will find strategies that lead to election victory as well. As a consequence, the chosen political programs may not be the first best solution and this can be one of the relevant explanations for the distortion of utility within the economy that was illustrated in the previous section.

For simplicity, the political programs offered by each party are reduced to one-dimension: the chosen rate of income tax. Also for simplicity, it is assumed that, for the maximization of the individuals' optimal income tax rate, the income tax structure of the first period is not progressive as used in the Thai economy, but instead, the income tax rate of the first period used in this model is equal for every individual. This allows the comparison of tax rates chosen by individuals with different occupations and income levels. The income tax rate structure in the second period remains progressive. Under these assump-

tions, it is possible to find and analyze the outcome of the decision on political program in this economy using the Median Voter Model. However, as a consequence of the linear tax structure assumed for the first period, the result may deviate from the real income tax rate in Thailand.

This section analyzes the short-term economic development in terms of political economy using the Median Voter Theorem. Notably, the Median Voter Theorem can only be applied effectively to an economy with democracy and a strong two-party system. Hence some countries in East-Southeast Asian, in particular China and the countries within the Indochina region cannot be considered by this model. The Median Voter Theorem focuses on an abstract model of voting behavior and bears explicit and implicit assumptions<sup>228</sup>. The explicit assumptions are as follows. First, there must be two political parties or candidates, between which all voters have to choose and cannot abstain. Second, the political programs or positions of the parties can be summarized on a one dimensional scale. Third, the voters will choose the parties closest to their preferences on the one dimensional scale, and if both parties offer exactly the same policy, the voters will choose randomly between the two parties. The implicit assumptions are as follows. First, the voters recognize the political programs offered by both parties exactly and believe these announcements, as the parties or parties or candidates declare their positions. Conversely, both parties have information on the exact position of all voters as well. Second, all parties or candidates aim at being elected and take the political position that maximizes their possibility of getting the most votes and winning the election. These conditions ensure that any election will be de-

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<sup>228</sup> See <http://www.rysa.com/polisci/MVT.htm>

cided by the median voter, and both parties will consequently offer the political program that suits median voter's preference.

In this model, there are four possible cases that can occur in an economy. The first case denotes the situation in which the median voter is a white-collar worker who earns income higher than  $z^{tb}$ . The second case denotes the situation in which the median voter is a white-collar worker who earns income below  $z^{tb}$ . In the third case, the median voter is a blue-collar worker who earns income higher than  $z^{tb}$ . And the fourth case denotes the situation in which the median voter is a blue-collar worker who earns income below  $z^{tb}$ .

### Two-Stage Decision

The model is characterized by a two-stage decision.

#### First stage

In the first stage, the individuals determine and choose their personal level of savings, investment in education and other expenses. In order to define these numbers, the individuals use the expected tax rates for both periods as basis factors. Since it is assumed that saving rate is exogenously defined, the level of further education is defined by the equation 5.47.

$$e_i^* = \begin{cases} \frac{\gamma}{\mu - \eta \left( \bar{t}_t - \frac{i_t^2}{2} \right)} \left( 1 - \bar{s} - t_t + (1 - \eta) \left( \bar{t}_t - \frac{i_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} \right) - \\ \frac{(1 - \gamma)}{(1 - t_{t+1})} \left[ 1 - t_{t+1} + \bar{s} (1 + r) \frac{w_{ijt}}{w_{ijt+1}} + (1 - \eta) \left( \bar{t}_{t+1} - \frac{i_{t+1}^2}{2} \right) \frac{\bar{w}_{t+1} \bar{h}_{t+1}}{w_{ijt+1} h_{ijt}} \right], & \text{if } z_{ijt} > z^{tb} \\ \frac{\gamma}{\mu - \eta \left( \bar{t}_t - \frac{i_t^2}{2} \right)} \left( 1 - \bar{s} - t_t + (1 - \eta) \left( \bar{t}_t - \frac{i_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} - \frac{c^s}{w_{ijt} h_{ijt}} \right) & \text{if } z_{ijt} \leq z^{tb} \\ , j = h, l \end{cases}$$

### Second stage

The second stage presents the situation in which the individuals have to define their preferred political programs (in this model, political programs refer to income tax). In this stage, the individuals have already defined their personal rate of expenses, including the saving rate and education level. Under these parameters, each individual will define his or her personal preferred tax rate to maximize his or her utility. It should be noted that the individuals optimize only the tax rate of the present period and take the tax rate of the coming period as given, so the latter can be defined by an expected number. This solution is presented by the equation 5.46.

$$t_{it}^* = \begin{cases} 1 - \frac{1}{(1-\eta)\frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} + e_i \eta}, j = h, l & \text{if } z_{ijt} > z^{tb} \\ \frac{1 - \left( \bar{s} + e_i \mu + \frac{c^s}{w_{ijt} h_{ijt}} \right)}{1 - \left( e_i \eta + (1-\eta) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} \right)}, j = h, l & \text{if } z_{ijt} \leq z^{tb} \end{cases}$$

When it comes to the optimal personal tax rate for the individuals earning below  $z^{tb}$ , this section analyzes two cases. The first case is the normal situation, in which the budget constraints of the earning below  $z^{tb}$  are binding. So, the equation of the optimal tax rate for the individuals earning below  $z^{tb}$  is

$$t_{it}^* = \frac{1 - \left( \bar{s} + e_i \mu + \frac{c^s}{w_{ijt} h_{ijt}} \right)}{1 - \left( e_i \eta + (1-\eta) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} \right)}, j = h, l \quad \text{if } z_{ijt} \leq z^{tb}$$

The second case examines the situation in which the individuals earning below  $z^{tb}$  do not pay attention to their budget constraints which means that the budget constraints are not binding. The chosen tax rate corresponds to the same equation as the one of the individuals earning above  $z^{tb}$ , which is  $t_{it}^* = 1 - \frac{1}{(1-\eta)\frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} + e_i \eta}$ , with  $j = h, l$ . After the individuals have chosen their personal preferred tax-rate, each individual will give his or her vote to

the political party whose offered political program (in this case, the rate of the income tax) is nearest to his or her preference. The results are as follows:

**White-collar workers' group**

The optimal income tax rate for an individual working in the professional and technical occupation group is 0% (-182.61%).

The optimal income tax rate for an individual working in the occupation group of proprietors is 0% (-67.53%).

The optimal income tax rate for an individual working in the occupation group of employees in clerical, sales and service jobs is 0% (-43.43%).

**Blue-collar workers' group in the normal case, in which their budget constraints are binding** (*only the budget constraints of manufacturing workers are not binding, since they earn income above  $z^{tb}$* )

The optimal income tax rate for an individual working in the occupation group of manufacturing workers is 0% (-5.78%).

The optimal income tax rate for an individual working in the miscellaneous occupation group is 14.65%.

The optimal income tax rate for an individual working in the occupation group of self-employed agricultural workers is 1.89%.

The optimal income tax rate for an individual working in the occupation group of agricultural laborers is 41.45%.

**Blue-collar workers' group in the second case, in which they do not concern their budget constraints** (*meaning that their budget constraints are not binding*)



The optimal income tax rate for an individual working in the occupation group of manufacturing workers is 0% (-5.78%).

The optimal income tax rate for an individual working in the miscellaneous occupation group is 28.60%.

The optimal income tax rate for an individual working in the occupation group of self-employed agricultural workers is 26.70%

The optimal income tax rate for an individual working in the occupation group of agricultural laborers is 60.79%.

### **Simulations and Analyzes**

The Figures 5.21-5.23 and 5.24-5.27 illustrate the results of the simulations of utility under different tax rates for the white-collar and the blue-collar workers respectively. Notably, for the simplicity of the simulations, Figures 5.25-5.27 assume that the budget constraints of the blue-collar workers earning below  $z^{tb}$  are not binding. The single-peakness of the function confirms the implementation of the Median Voter Theorem. It should be noted that, even though the simulations show the results of the utility levels under a negative tax rate, the real tax rate is set at the range of 0 to 1 and the range of negative tax rate is irrelevant. Figures 5.21-5.23 show that all occupations from the white-collar group prefer no taxation, since they all earn income higher than average and have no incentives to share with the low-income earners. Contrarily, the blue-collar workers welcome the distribution by means of taxation, however in different degrees, shown by the Figures 5.24-5.27. Only the manufacturing workers among them prefer no taxation. The lowest income earn-

ers, the agricultural laborers, prefer the highest tax rate for the economy, which amounts to 60.79%, since they have the incentive that they would benefit from high distribution. Less extensive are the tax rates preferred by the miscellaneous and by the self-employed agricultural workers, which amount to 28.60% and 26.70% respectively. Considering the normal case in which the budget constraints of the blue-collar workers earning below  $z^{tb}$  are binding, the preferred tax rate is much lower for individuals from every occupation (within group of blue-collar workers earning below  $z^{tb}$ ) compared to the case when budget constraints are not binding. The preferred tax rates of the agricultural laborers, the miscellaneous and the self-employed agricultural workers are 41.45%, 14.65% and 1.89% respectively. The reason is that, under binding budget constraints, the individuals take their income after expenses into account in the calculation of their own preferred income tax rate. The expenses they have to consider include savings, costs of education and the costs of subsistence consumption. Moreover, the chosen level of education also plays a relevant role. This is obvious in the case of the preferred tax rate of the self-employed agricultural workers, whose education level is low compared to the miscellaneous workers, whose gross income is slightly lower. But due to fact that self employed agricultural workers pay income tax at a rate of 5% in Thailand – contrarily to the agricultural laborers and the miscellaneous workers who are exempt from taxation – the real income (after taxation) of the self-employed agricultural workers is lower than the real income (after taxation) of the miscellaneous workers. This leads to the self-employed agricultural workers choosing a much lower level of education compared to the case, where budget constraints are not binding. This is why the preferred tax rate of the self-employed agricultural workers is much lower.

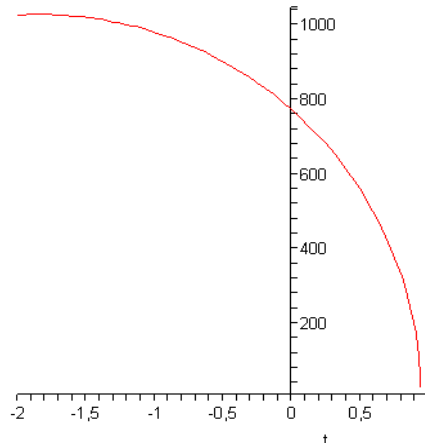


Figure 5.21: Simulation of the individual's utility under different levels of income tax rate (case of the white-collar workers, occupation: professional and technical, in Thailand)  $x =$  income tax rate ( $x = -2, \dots, 1$ )

To conclude, the individuals take the constraint of their pay-ability into account, when they make the decision on their preferred tax-rate.

Data for the Thai economy in the year 2000 are used for calculation. Notably, the results do not correspond to the Thai economy precisely. This can be explained as follows. On the one hand, the model does not use a progressive tax structure in the first period, but an identical tax rate for every individual. As already mentioned, this allows the comparison of tax rates chosen by individuals with different occupations and income levels. The tax rate structure of the period  $t + 1$ , on the other hand, remains progressive and is taken as given for each individual in the tax rate optimization for the period  $t$ . This means that the tax rate of the period  $t + 1$  does not affect the decision of the individuals in the period  $t$ . Furthermore, the division into occupational groups is quite rough.

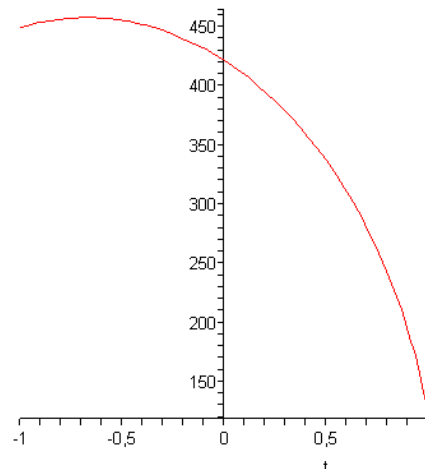


Figure 5.22: Simulation of the individual's utility under different levels of income tax rate (case of the white-collar workers, occupation: proprietors, in Thailand)  $x = \text{income tax rate}$  ( $x = -1, \dots, 1$ )

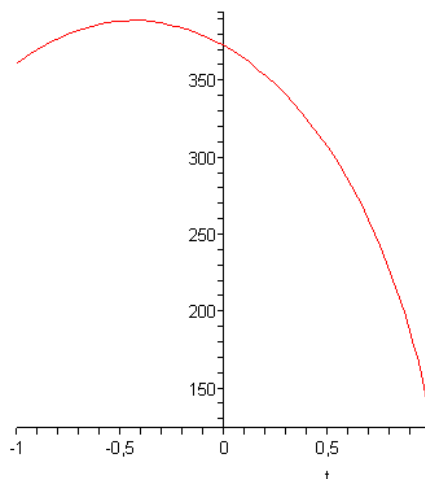


Figure 5.23: Simulation of the individual's utility under different levels of income tax rate (case of the white-collar workers, occupation: Employees in clerical, sales and service jobs)  $x = \text{income-tax-rate}$  ( $x = -1, \dots, 1$ )

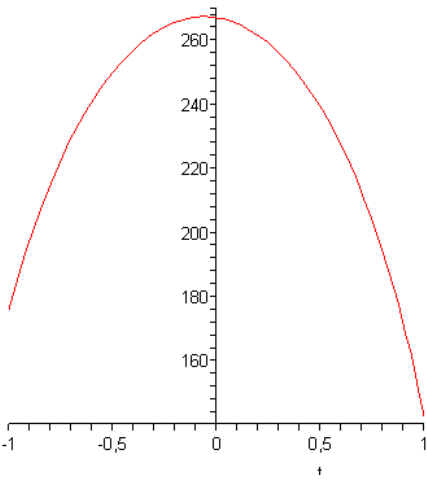


Figure 5.24: Simulation of the individual’s utility under different levels of income tax rate (case of the blue-collar workers, manufacturing workers, in Thailand)  $x = \text{income tax rate}$  ( $x = -1, \dots, 1$ )

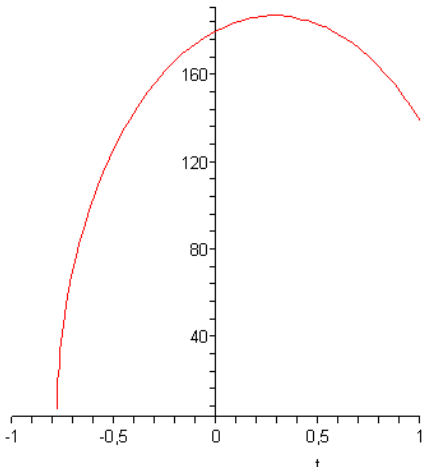


Figure 5.25: Simulation of the individual’s utility under different levels of income tax rate (case of the blue-collar workers, miscellaneous, in Thailand)  $x = \text{income tax rate}$  ( $x = -1, \dots, 1$ )

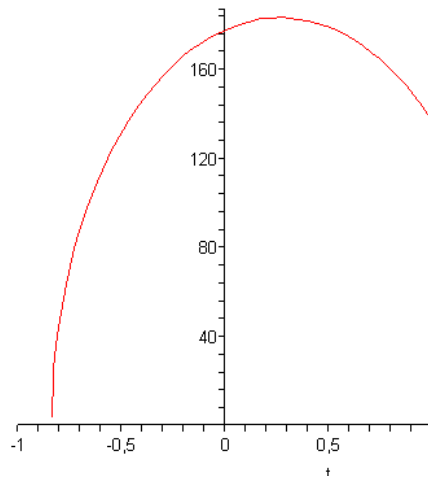


Figure 5.26: Simulation of the individual's utility under different levels of income tax rate (case of the blue-collar workers, agriculture: self-employed, in Thailand)  $x = \text{income tax rate } (x = -1, \dots, 1)$

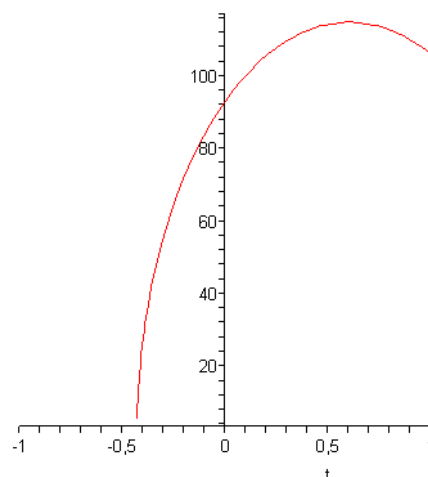


Figure 5.27: Simulation of the individual's utility under different levels of income tax rate (case of the blue-collar workers, agricultural laborers, in Thailand)  $x = \text{income tax rate } (x = -1, \dots, 1)$

Using the data of percentage share of the workers to total workers [white-collar workers 34% (of which professional and technical 6.6%, proprietors 3.1%, employees in clerical jobs 3.9%, employees in sales 14.9%, employees in services 5.5%) and blue-collar workers 65.9% (manufacturing workers 21.9%, transportation and communication 4%, self-employed agricultural workers together with agricultural laborers 40%)], it is revealed that the median voter belongs to the group of the manufacturing workers – the only workers from the blue-collar group in Thailand whose income is above  $z^{tb}$ . According to the Median Voter Theorem, the political parties will set the political programs that are preferred by the most individuals, which correspond to the preference of the median voter.

The comparison of the results in this section, which were calculated according to the Median Voter Theorem, with the calculated result derived in the previous section and with the real average income tax rate of Thailand seems disappointing at first sight. Compared to the result of estimated average income tax rate from the previous sections which amounts to 4.28% and, particularly, in comparison to the real average income tax rate of Thailand in the year 2000, which amounts to 5%, the Median Voter Theorem used for this model concludes a considerably lower outcome value of only 0% for the optimized income tax rate of a manufacturing worker. Nevertheless, analyzing the result precisely, the model actually shows a very good outcome. From the results of model, it is shown that an individual from the group of manufacturing workers is the median voter. In reality, individuals in an occupation group possess different levels of education and quality of human capital which also leads to different levels of income. The model, however, only deals with a rough estimation. So, if an assumption is made that the median voter is a manufacturing

worker who possesses a slightly lower quality of human capital than the average for manufacturing workers applied in the model 1.39, say at the rate of 1.25 (1.2470), the result of the model becomes very satisfying. This individual sets his or her education level at 0.33 (0.3246) and his or her income amounts to 234.77 US dollars, which is above  $z^{tb}$ , meaning that the budget constraint is not binding. Finally, this individual's preferred income tax rate is 4.28%, which corresponds to the result of the estimated average income tax rate from the previous sections. In addition, if an assumption is made that the median voter is a manufacturing worker who possesses slightly lower human capital quality than is average for the group of manufacturing workers, blue-collar workers earning below  $z^{tb}$  at the rate of 1.24 (1.2370), this individual sets his or her education level at 0.33 (0.3248) and his or her income amounts to 232.89 US dollars. This is above  $z^{tb}$ , meaning that the budget constraint is not binding. This individual prefers an income tax rate of 5% which corresponds to the real average income tax rate of Thailand, 2000. In the end, this last point confirms the deviation of the government's action from the first-best solution, explained by the preference of the majority and the government's desire to be voted in again, instead of aiming at total social welfare.

The main conclusion of this section is to reveal one of the relevant explanations why the political programs diverge from the first best solution. The results show the consequence of the distortion of the government's decision brought about by its predominant interest in winning votes. It can be observed that there are several opportunities for political programs that are more efficient and could lead to higher utility in the economy, if the government were more social welfare oriented, instead of being interested in being elected.



In addition, this model also shows that if there is no inequality in the economy, government interference is not needed, since this merely brings about distortion due to the deadweight-loss. However, if there are disparities in the economy, it is worth taking the deadweight loss on board, in order to achieve distribution, convergence and sustainable development.

### **5.3 Modeling of a Long-Term Strategy**

This part presents a model of long-term economic development, in which education, skill-improvement of labor forces and technological progress play a relevant role in achieving economic convergence and sustainable development. In addition, various opportunities for the government to support these aims are highlighted. In the same way as the model of the short-term development, the model studies a small, open economy that functions in a perfectly competitive world, where international capital movements are unrestricted, contrarily to labor movements which are only free within the country.

This long-term model adopts the unified growth model of Oded Galor and David N. Weil (1999), which examines the endogenous transition between a Malthusian regime, a Post-Malthusian regime and a Modern Growth regime, based on historical evolution of population, technology and output. This growth model is modified and adapted in order to analyze the long-term development of the economy under inequality between labor groups and to find strategies that will strengthen economic fundamentals and assist the economic integration within the region.

### 5.3.1 Basic Preferences

The model concentrates on two generations of individuals. In each period  $t$ , there is a generation which consists of  $L_t$  individuals who join labor forces. Members of generation  $t$  live for two periods. The period  $t - 1$  refers to childhood, in which individuals as children consume a fraction of their parents' time. The time required for childrearing increases with the quantity of children and the level of human capital each child will acquire. The period  $t$  refers to parenthood, in which individuals are endowed with one unit of time which they allocate between working and childrearing. The individuals choose the optimal combination between work, through which they receive their income depending on the wage rate and human capital, and investment in their children, both in terms of number and quality time spent with each. Further, it is assumed that the individuals possess no assets from previous savings.

The utility of the individuals of generation  $t$  are defined in terms of, first, present consumption and second, utility in the future period encompassing the potential aggregate income of their children in the future accompanied by their own savings from the work period, augmented by the appropriate interest rate – this savings can be viewed as an “old-age-pension”. The present consumption defined in the individual's utility needs to be above subsistence level  $c^s > 0$  which is assumed to be identical for every individual. So the utility function is denoted by

$$U_{it} = (c_{it})^{(1-\gamma)} (w_{it+1}n_t h_{it+1} + s_i (1+r) w_{it} h_{it})^\gamma \quad (5.48)$$

where  $c_{it}$  is the consumption,  $n_t$  is the number of children of an individual from period  $t$ ,  $h_{it+1}$  is the level of human capital of each child,  $w_{it+1}$  is the wage rate per efficiency unit of labor at time  $t + 1$ ,  $s_i$  is the saving rate and  $r$  is the interest rate. The utility function is strictly monotone increasing and strictly quasi-concave; it satisfies the conventional boundary conditions that assure that, for sufficiently high income, an interior solution exists for the utility maximization problem. Nonetheless, for a sufficiently low level of income, the subsistence consumption constraint is binding; there is then a corner solution with respect to the consumption level.

In the first generation's work period (parenthood), the consumption potential of the individuals depends on their chosen amount of savings and expenses for their investment in childrearing. Each person is endowed with one unit of time which is allocated between labor force participation, savings and investment in childrearing. Hence, the utility function of an individual  $i$  can also be written as

$$U_{it} = (w_{it}h_{it}(1 - n_t(\tau^q + \tau^e e_i) - s_i))^{(1-\gamma)} (w_{it+1}n_t h_{it+1} + s_i(1+r)w_{it}h_{it})^\gamma \quad (5.49)$$

$\tau^q + \tau^e e_i$  is the fraction of the individual's unit time endowment required for raising a child with  $e_i \geq 0$  unit of education.  $\tau^q$  is the fraction of the individual's unit time endowment required to raise a child, regardless of school and higher education.  $\tau^e$  is fraction of the individual's unit time endowment required for each unit of school and higher education for each child, therefore,  $\tau^e e_i$  is the time cost for an individual  $i$  to invest in school and higher education of a child.  $w_{it}$  is the wage rate per efficiency unit of labor for individual  $i$  at the first work period and the level of efficiency unit of individual  $i$  in the first work period is  $h_{it}$ .  $w_{it+1}$  is the expected wage rate per efficiency unit of labor in the second

(new) generation work period. Actually the expected real wage rate in period  $t + 1$  must be determined by the equation  $\frac{\partial Y_{t+1}}{\partial H_{jt+1}} = (1 - \alpha) \left( \frac{K_{jt+1}}{A_{jt+1}H_{jt+1}} \right)^\alpha A_{jt+1} = w_{jt+1}, j = h, l$ . For simplicity in the simulations of the model, the expected real wage rate in period  $t + 1$  can be evaluated by applying real wage growth to the wage rate of the first period.  $h_{it+1}$  is the efficiency unit of human capital of a second (new) generation adult.

The estimation will work on the basis that children of a high income earner give rise to high childrearing costs. This is plausible, since, on the one hand, children of high income earners have a high standard of living and on the other hand, their parents try to give them a high standard of education; for instance the parent finance their children's studies in a famous school or/and university, which often means higher costs. The higher the income, the higher the expenditure on childrearing. Besides the investment in education supported by the parents, the level of human capital the children attain depends partly on the level of human capital of their parents as well. As previously mentioned, this can be interpreted as the influence of the direct education from the parents. The higher the parents' human capital, the higher the human capital passed on the children. The children of higher income earners gain higher human capital than the children of the lower income earners under the same rate of  $e_i$ . This can be explained by the fact that higher income earners have, in general, higher human capital which will be passed on their children.

For a sufficiently high income, an interior solution exists for the utility maximization problem. Nonetheless, for a sufficient low level of income, the subsistence consumption constraint is binding; there is a corner solution with respect to the consumption level. If an individual  $i$  devotes his or her entire time endowment to labor force participation, the

amount of income that he or she would earn in the first work period would be  $w_{it}h_{it}$ . The potential income in the first period is divided between expenditure on childrearing  $n_t(\tau^q + \tau^e e_i)$ , savings at the saving-rate  $s_i$ , and consumption  $c_{it}$ , thus an individual  $i$  will meet the following budget constraint

$$w_{it}h_{it}(n_t(\tau^q + \tau^e e_i) + s_i) + c_{it} \leq w_{it}h_{it} \quad (5.50)$$

The level of human capital of members of generation  $t$ ,  $h_{it+1}$ , is dependent on the level of the human capital of the parents  $h_{it}$ , and is an increasing function of the level of education  $e_i$ , and a decreasing function of the rate of progress in the state of technology from period  $t$  to period  $t + 1$ ,  $T_{t+1}$  with

$$T_{t+1} \equiv \frac{A_{t+1} - A_t}{A_t} \quad (5.51)$$

The higher quality of the children's human capital, the smaller is the adverse effect of technological progress. Therefore,

$$h_{it+1} = h(e_i, T_{it+1}) \quad (5.52)$$

$$h(e_i, T_{it+1}) > 0, h_e(e_i, T_{it+1}) > 0, h_{ee}(e_i, T_{it+1}) < 0, h_T(e_i, T_{it+1}) < 0,$$

$$h_{TT}(e_i, T_{it+1}) > 0, h_{eT}(e_i, T_{it+1}) > 0, \forall (e_i, T_{it+1}) \geq 0$$

In the model, the function of the children's level of human capital is defined by

$$h_{it+1} = h(e_i, T_{it+1}) = h_{it}(\beta + e_i^a + T_{it+1}^b + e_i^c T_{it+1}^d) \quad (5.53)$$

This function is conditioned by,  $\forall (e_i, T_{it+1}) \geq 0$ <sup>229</sup>,

$$h(e_i, T_{it+1}) > 0$$

$$\iff h_{it} (\beta + e_i^a + T_{it+1}^b + e_i^c T_{it+1}^d) > 0$$

$$h_e(e_i, T_{it+1}) > 0$$

$$\iff h_e(e_i, T_{it+1}) = h_{it} \left( a e_i^{(a-1)} + c e_i^{(c-1)} T_{it+1}^d \right)$$

$$= h_{it} e_i^{(a-1)} \left( a + c e_i^{\frac{(c-1)}{(a-1)}} T_{it+1}^d \right) > 0$$

$$h_{ee}(e_i, T_{it+1}) < 0$$

$$\iff h_{ee}(e_i, T_{it+1}) = h_{it} \left( a(a-1) e_i^{(a-2)} + c(c-1) e_i^{(c-2)} T_{it+1}^d \right)$$

$$= h_{it} e_i^{(a-2)} \left( a(a-1) + c(c-1) e_i^{\frac{(c-2)}{(a-2)}} T_{it+1}^d \right) < 0$$

$$h_T(e_i, T_{it+1}) < 0$$

$$\iff h_T(e_i, T_{it+1}) = h_{it} \left( b T_{it+1}^{(b-1)} + d T_{it+1}^{(d-1)} e_i^c \right)$$

$$= h_{it} T_{it+1}^{(b-1)} \left( b + d T_{it+1}^{\frac{(d-1)}{(b-1)}} e_i^c \right) < 0$$

$$h_{TT}(e_i, T_{it+1}) > 0$$

$$\iff h_{TT}(e_i, T_{it+1}) = h_{it} \left( b(b-1) T_{it+1}^{(b-2)} + d(d-1) T_{it+1}^{(d-2)} e_i^c \right)$$

$$= h_{it} T_{it+1}^{(b-2)} \left( b(b-1) + d(d-1) T_{it+1}^{\frac{(d-2)}{(b-2)}} e_i^c \right) > 0$$

$$h_{eT}(e_i, T_{it+1}) > 0$$

$$\iff h_{eT}(e_i, T_{it+1}) = h_{it} c d e_i^{(c-1)} T_{it+1}^{(d-1)} > 0 \implies cd > 0$$

The children's level of human capital is an increasing strictly concave function of education and a decreasing strictly convex function of the rate of technological progress.

<sup>229</sup>  $a, b, c$  and  $d$  must be chosen, so that these following conditions are fulfilled.

Education reduces the adverse effect of technological progress.  $\beta$  is the parameter of the external effect of parents' human capital on the children's human capital.  $a$  is the parameter for education and  $b$  is the parameter of adverse effect of technological progress regarding human capital level. Respectively,  $c$  and  $d$  are also parameters of education and technological progress, and in the equation 5.53 parameters  $c$  and  $d$ , in addition, reflect the interrelation of education and technology. Although the number of efficiency unit of labor per worker is diminished during the transition from one technology state to another, the effective number of the efficiency unit of labor per worker (the product of the workers' level of human capital and the state of technology in the economy) – inherent in the wage rate per efficiency unit of labor (marginal product of labor) –, is assumed to be higher as a result of positive technological progress. For simplicity, it is assumed that  $c = 1$  and  $d = 1$ . Therefore, the function of the children's level of human capital in this model can be written as

$$h_{it+1} = h(e_i, T_{it+1}) = h_{it} (\beta + e_i^a + T_{it+1}^b + e_i T_{it+1}) \quad (5.54)$$

This function is conditioned by,  $\forall (e_i, T_{it+1}) \geq 0^{230}$ ,

$$h(e_i, T_{it+1}) > 0 \iff h_{it} (\beta + e_i^a + T_{it+1}^b + e_i T_{it+1}) > 0$$

$$h_e(e_i, T_{it+1}) > 0 \iff h_e(e_i, T_{it+1}) = h_{it} (a e_i^{(a-1)} + T_{it+1}) > 0$$

$$h_{ee}(e_i, T_{it+1}) < 0 \iff h_{ee}(e_i, T_{it+1}) = h_{it} (a(a-1) e_i^{(a-2)}) < 0$$

$$h_T(e_i, T_{it+1}) < 0 \iff h_T(e_i, T_{it+1}) = h_{it} (b T_{it+1}^{(b-1)} + e_i) < 0$$

<sup>230</sup>  $a$  and  $b$  must be chosen, so that these following conditions are fulfilled.

$$h_{TT}(e_i, T_{it+1}) > 0 \iff h_{TT}(e_i, T_{it+1}) = h_{it} \left( b(b-1) T_{it+1}^{(b-2)} \right) > 0$$

$$h_{eT}(e_i, T_{it+1}) > 0 \iff h_{eT}(e_i, T_{it+1}) = 1 > 0$$

### 5.3.2 Optimization

#### Optimization with Respect to Education Level “ $e$ ” under Exogenous Saving Rate

An individual  $i$  who earns an amount of income at a certain (high) level, meaning that the subsistence consumption constraint is not binding, will set his or her own saving-rate at the rate which is assumed to be exogenously given. In contrast, for individuals whose income is low, the subsistence consumption constraint is binding. Their first concern will therefore be expenditure on subsistence consumption  $c^s$ . The remaining income will be left for savings which will not exceed the saving-rate  $\bar{s}$ . If any of their income still remains after calculating expenses on subsistence consumption and savings, then the individuals will invest in education. This is summarized under the equation

$$\bar{s} = \begin{cases} \bar{s} & \text{if } z_{it} > z^b \\ \max[0, \bar{s}] & \text{if } z_{it} \leq z^b \end{cases} \quad (5.55)$$

where  $z_{it}$  is the level of potential income of an individual  $i$  at the period  $t$   $w_{it}h_{it}$ , and  $z^b$  the level of potential income at which the subsistence constraint is just binding, with

$$z^b = \frac{c^s}{1 - n_t(\tau^q + \tau^e e_i) - \bar{s}} \quad (5.56)$$

Under the aforementioned assumptions of an exogenous saving rate – equation 5.55 and 5.56 –, an individual  $i$  chooses the level of investment in education and therefore, sets his or her own consumption and future assets to maximize the utility function. Simulta-



neously, the individual  $i$  has to assure the level of subsistence consumption. This can be written as

$$\begin{aligned}
& \max_{e_i} U_{it} & (5.57) \\
= & \max_{e_i} \frac{(w_{it}h_{it}(1 - n_t(\tau^q + \tau^e e_i) - \bar{s}))^{(1-\gamma)}}{(w_{it+1}n_t h(e_i, T_{it+1}) + \bar{s}(1+r)w_{it}h_{it})^\gamma} \\
& s.t. w_{it}h_{it}(n_t(\tau^q + \tau^e e_i) + \bar{s}) + c_{it} \leq w_{it}h_{it} \\
\iff & \max_{e_i} \frac{(w_{it}h_{it}(1 - n_t(\tau^q + \tau^e e_i) - \bar{s}))^{(1-\gamma)}}{(w_{it+1}n_t h_{it}(\beta + e_i^a + T_{it+1}^b + e_i T_{it+1}) + \bar{s}(1+r)w_{it}h_{it})^\gamma} \\
& s.t. w_{it}h_{it}(n_t(\tau^q + \tau^e e_i) + \bar{s}) + c_{it} \leq w_{it}h_{it}
\end{aligned}$$

Optimization with respect to  $e_i$  implies

$$\frac{\partial U_{it}}{\partial e_i} = 0 \quad (5.58)$$

This gives the following interior solution

$$\frac{(1-\gamma)\tau^e}{(1 - n_t(\tau^q + \tau^e e_i^*) - \bar{s})} = \frac{\gamma(ae_i^{*(a-1)} + T_{it+1})}{n_t(\beta + e_i^{*a} + T_{it+1}^b + e_i^* T_{it+1}) + \bar{s}(1+r)\frac{w_{it}}{w_{it+1}}} \quad (5.59)$$

For a sufficiently low level of income, as previously mentioned, the subsistence consumption constraint is binding and there is a corner solution with respect to the consumption level. Subject to the budget constraint, with  $\bar{s} = \max[0, \bar{s}]$ ,

$$w_{it}h_{it}(1 - n_t(\tau^q + \tau^e e_i) - \bar{s}) \geq c^s \quad (5.60)$$

the corner solution is

$$e_i^* = \frac{1}{n_t \tau^e} \left( 1 - n_t \tau^q - \bar{s} - \frac{c^s}{w_{it}h_{it}} \right) \quad (5.61)$$

It follows that

$$\frac{(1-\gamma)\tau^e}{(1-n_t(\tau^q+\tau^e e_i^*)-\bar{s})} = \frac{\gamma(ae_i^{*(a-1)}+T_{it+1})}{n_t(\beta+e_i^{*a}+T_{it+1}^b+e_i^*T_{it+1})+\bar{s}(1+r)\frac{w_{it}}{w_{it+1}}} \quad \text{if } z_{it} > z^b \quad (5.62)$$

$$e_i^* = \frac{1}{n_t\tau^e} \left( 1 - n_t\tau^q - \bar{s} - \frac{c^s}{w_{it}h_{it}} \right) \quad \text{if } z_{it} \leq z^b$$

The Figures 5.28-5.35 illustrate the relation between various parameters and the chosen optimal level of investment in children's education for the case where there is an interior solution, i.e. for individuals who earn income higher than  $z^b$ . These are analyzed as follows. On the one hand, the level of investment in children's education is positively affected by the rate of technology progress  $T$ , the parameter of adverse effect of technological progress regarding human capital level  $b$  (since  $b$  is negative) and slightly by the real wage growth. Also the education parameter  $a$  positively affects the level of investment in children's education, but only at the low to middle range, contrarily at the high range of the level of the education parameter, the level of investment in children's education is negatively affected. On the other hand, optimal level of investment in children's education is negatively affected by, to a great extent, the number of children  $n_t$ , the costs of childrearing in terms of both quantitative and qualitative measures regarding parental- and school and higher education  $\tau^q$  and  $\tau^e$ , the saving rate  $\bar{s}$ , and to a lesser extent, the parameter of the external effect of parents' human capital on the children's human capital  $\beta$  and, only slightly, the interest-rate  $r$ .

These results suggest that, in order to encourage the level of human capital of the next generation and therefore the income level, support should be offered to help cover the costs of childrearing, in particular the costs of education. The number of children and the saving rate are also decisive factors that negatively affected the rate of investment in education,

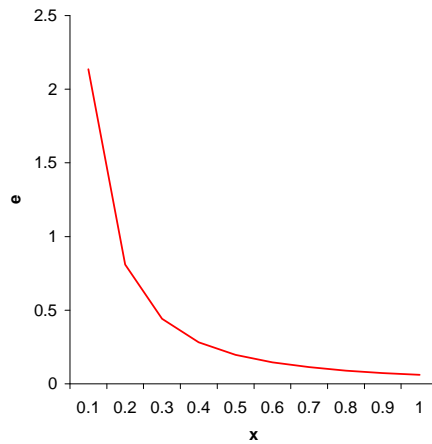


Figure 5.28: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (costs of each unit of further education) (case of the individuals whose budget constraint is not binding)  $x =$  level of the costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

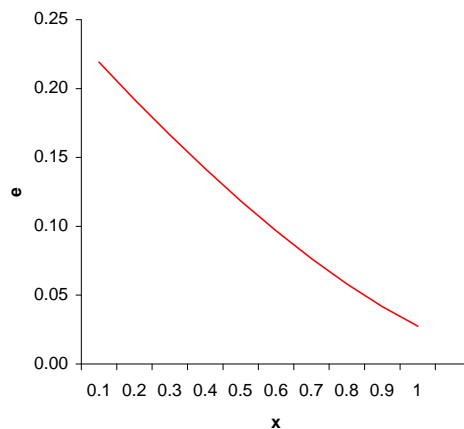


Figure 5.29: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of childrearing without schooling costs (costs of each unit of childrearing without schooling costs) (case of the individuals whose budget constraint is not binding)  $x =$  level of the costs of each unit of childrearing without schooling costs ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

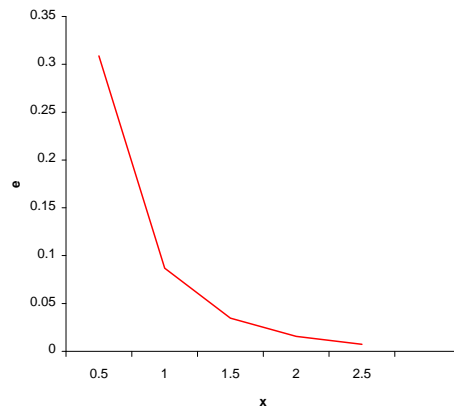


Figure 5.30: Simulation of the optimal level of an individual's children's education under different levels of population-growth-rate (case of the individuals whose budget constraint is not binding)  $x$  = level of the population-growth-rate ( $x = 0.5, 1, 1.5, 2, 2.5$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

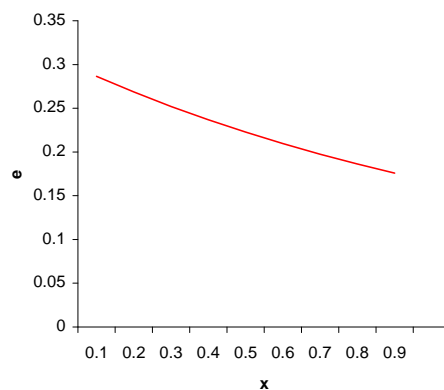


Figure 5.31: Simulation of the optimal level of an individual's children's education under different levels of parameter on parents' ability (case of the individuals whose budget constraint is not binding)  $x$  = level of parameter on parents' ability ( $x = 0.1, \dots, 0.9$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

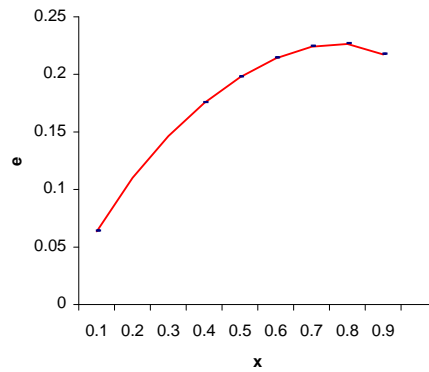


Figure 5.32: Simulation of the optimal level of an individual's children's education under different levels of education parameter (case of the individuals whose budget constraint is not binding)  $x = \text{level of the education parameter } (x = 0.1, \dots, 0.9)$ ,  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

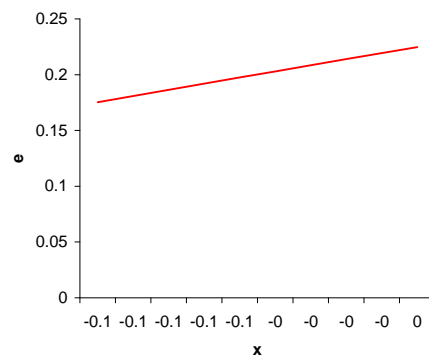


Figure 5.33: Simulation of the optimal level of an individual's children's education under different levels of technology parameter (case of the individuals whose budget constraint is not binding)  $x = \text{level of the parameter of the adverse effect of technology to human capital } (x = 0.1, \dots, 1)$ ,  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

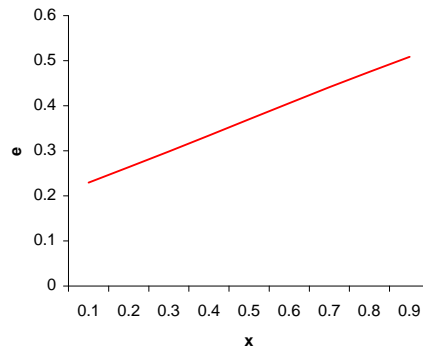


Figure 5.34: Simulation of the optimal level of an individual's children's education under different levels of technological progress (case of the individuals whose budget constraint is not binding)  $x$  = level of the technology progress ( $x = 0.1, \dots, 0.9$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

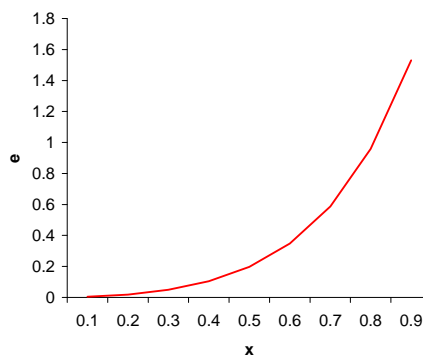


Figure 5.35: Simulation of the optimal level of an individual's children's education under different levels of preference parameter (case of the individuals whose budget constraint is not binding)  $x$  = level of the preference parameter ( $x = 0.1, \dots, 0.9$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

but both are viewed as exogenously given in the model. Other crucial factors are the rate of technological progress and its parameters, which increase the incentive for individuals to support their children's education<sup>231</sup>.

Individuals who earn an amount of income at a low level will first devote their attention to their subsistence consumption level. In other words, as long as the potential income of an individual  $i$  ( $z^{it} \equiv w_{it}h_{it}$ ), is lower than  $z^b$ , then this individual will secure his or her subsistence consumption before concerning him or herself with utility in the future period. It follows that the chosen education level for the children is highly dependent on the subsistence consumption level  $c^s$ . The fraction of time spent on investment in children's education is conditioned on the saving rate, the costs of childrearing and the ratio of the subsistence consumption level  $c^s$ , to the potential income of individual  $i$   $w_{it}h_{it}$ . These results are revealed in Figures 5.36-5.40. The level of individual's income plays a major role in the decision on the optimal education level of the children for those individuals whose budget constraint is binding. If the wage rate per efficiency unit of labor rises, individuals can cover subsistence consumption with smaller labor force participation. As a result, the fraction of time spent on investment in further education will rise and individuals will invest more in the education of their children. The optimal education level is, in the main, positively dependent on individuals' income  $w_{it}h_{it}$ , and negatively on the price of educa-

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<sup>231</sup> Today, the technology issue is very relevant, since in the era of globalization and high technologies, new and high technologies are constantly being invented and/or taken over from technologically advanced countries. In particular, the developing countries are coping with rapid economic development including the utilization of new technologies in economic and social sectors. This leads to the situation in which human capital has to be intensively improved and new technologies have to be brought into the economy. The developing countries that ignore the rapid technology improvement can easily lose their path in the world economic competition.

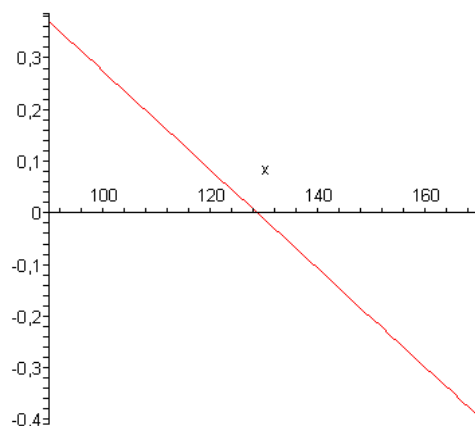


Figure 5.36: Simulation of the optimal level of an individual's children's education under different levels of subsistence consumption (dollars per month) (case of the individuals whose budget constraint is binding)  $x$  = level of subsistence consumption in dollars per month ( $x = 90, \dots, 170$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

tion  $\tau^e$ , costs of childrearing without school education  $\tau^q$ , and the subsistence consumption level  $c^s$ .

### 5.3.3 Theoretical Analysis of Long-Term Development under Inequality between Labor Groups

This section analyzes long-term development under inequality among the two labor groups. First, the model shows the consequence of inequality in skills and wage rates between the labor groups. Simulations and analyzes are illustrated in order to find out strategies coping with inequality-problems. These refer to reduction of income disparity, supporting domestic and regional economies and enhancement of economic cooperation. Finally, in the second part, the model shows government's abilities implement the aforementioned development strategies and to bolster the economic convergence and economic integration.



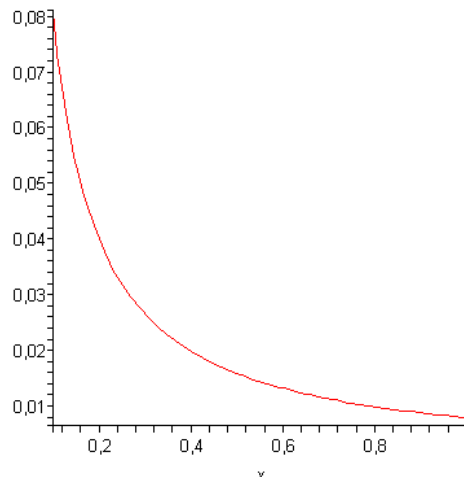


Figure 5.37: Simulation of the optimal level of an individual's children's education under different levels of costs of unit of further education (case of the individuals whose budget constraint is binding)  $x =$  level of costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

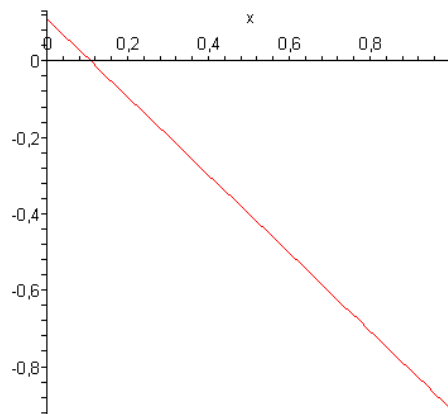


Figure 5.38: Simulation of the optimal level of an individual's children's education under different levels of costs of each unit of childrearing without schooling (case of the individuals whose budget constraint is binding)  $x =$  level of costs of each unit of childrearing without schooling ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

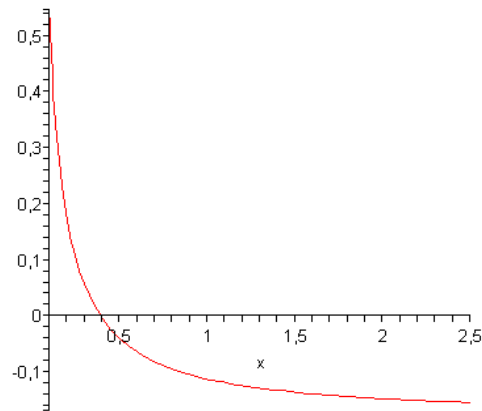


Figure 5.39: Simulation of the optimal level of an individual's children's education under different levels of population-growth-rate (case of the individuals whose budget constraint is binding)  $x$  = level of population-growth-rate ( $x = 0.1, \dots, 2.5$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

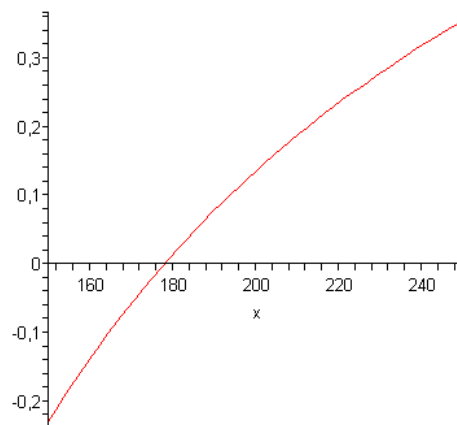


Figure 5.40: Simulation of the optimal level of an individual's children's education under different levels of wage rate (case of the individuals whose budget constraint is binding)  $x$  = level of wage rate ( $x = 150, \dots, 250$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

### Preferences, Budget Constraints and Optimization

Individuals are divided into two groups, one high-skilled, the white-collar workers and one low-skilled, the blue-collar workers. The discrepancy between different groups lies in income disparity, which is reflected by disparity in wage rates and the quality of human capital. In the model, the level of economic disparity is characterized by differences in human capital, wage rates and income based on the difference between the levels of education and technologies used by both groups.

The utility function and budget constraint of an individual  $i$  with high-skills are

$$\begin{aligned}
 U_{iht} &= \frac{(w_{iht}h_{iht}(1 - n_t(\tau^q + \tau^e e_i) - s_i))^{(1-\gamma)}}{(w_{iht+1}n_t h_{iht+1} + s_i(1+r)w_{iht}h_{iht})^\gamma} & (5.63) \\
 &s.t. w_{iht}h_{iht}(1 - n_t(\tau^q + \tau^e e_i) - s_i) \geq c_{iht}
 \end{aligned}$$

The utility function and budget constraint of an individual  $i$  with low-skills are

$$\begin{aligned}
 U_{ilt} &= \frac{(w_{ilt}h_{ilt}(1 - n_t(\tau^q + \tau^e e_i) - s_i))^{(1-\gamma)}}{(w_{ilt+1}n_t h_{ilt+1} + s_i(1+r)w_{ilt}h_{ilt})^\gamma} & (5.64) \\
 &s.t. w_{ilt}h_{ilt}(1 - n_t(\tau^q + \tau^e e_i) - s_i) \geq c_{ilt}
 \end{aligned}$$

Under a given saving rate  $\bar{s}$ , individuals choose the level of investment in their children's education; as a result, they choose their own consumption level and their future assets that maximize their own utility function. Simultaneously, they have to assure subsis-

tence consumption as well. This can be written as

$$\begin{aligned}
& \max_{e_i} U_{ijt} & (5.65) \\
= & \max_{e_i} (w_{ijt}h_{ijt} (1 - n_t (\tau^q + \tau^e e_i) - \bar{s}))^{(1-\gamma)} \\
& (w_{ijt+1}n_t h(e_i, T_{ijt+1}) + \bar{s} (1+r) w_{ijt}h_{ijt})^\gamma \\
& s.t. w_{ijt}h_{ijt} (n_t (\tau^q + \tau^e e_i) + \bar{s}) + c_{ijt} \leq w_{ijt}h_{ijt} \\
& e_i \geq 0, j = h, l \\
\iff & \max_{e_i} (w_{ijt}h_{ijt} (1 - n_t (\tau^q + \tau^e e_i) - \bar{s}))^{(1-\gamma)} \\
& (w_{ijt+1}n_t h_{ijt} (\beta + e_i^a + T_{ijt+1}^b + e_i T_{ijt+1}) + \bar{s} (1+r) w_{ijt}h_{ijt})^\gamma \\
& s.t. w_{ijt}h_{ijt} (n_t (\tau^q + \tau^e e_i) + \bar{s}) + c_{ijt} \leq w_{ijt}h_{ijt} \\
& e_i \geq 0, j = h, l
\end{aligned}$$

Optimization with respect to  $e_i$  implies

$$\frac{\partial U_{ijt}}{\partial e_i} = 0, j = h, l \quad (5.66)$$

This gives the interior solution (for the case of  $z_{it} > z^b$ , with  $j = h, l$ ),

$$\frac{(1-\gamma)\tau^e}{(1-n_t(\tau^q + \tau^e e_i^*) - \bar{s})} = \frac{\gamma (ae_i^{*(a-1)} + T_{ijt+1})}{n_t(\beta + e_i^{*a} + T_{ijt+1}^b + e_i^* T_{ijt+1}) + \bar{s}(1+r) \frac{w_{ijt}}{w_{ijt+1}}}, j = h, l \quad (5.67)$$

For a sufficiently low level of income, the subsistence consumption constraint is binding and there is a corner solution with respect to the consumption level. The interior solution comes into play for any individual who earns enough income higher than  $z^b$ . The corner solution, therefore, exists for an individual who earns a sufficiently low income level, meaning that  $z_{it} \leq z^b$ . Subject to budget constraint, with  $\bar{s} = \max[0, \bar{s}]$ ,

$$w_{ijt}h_{ijt} (1 - n_t (\tau^q + \tau^e e_i) - \bar{s}) \geq c^s, j = h, l \quad (5.68)$$

the corner solution is

$$e_i^* = \frac{1}{n_t \tau^e} \left( 1 - n_t \tau^q - \bar{s} - \frac{c^s}{w_{ijt} h_{ijt}} \right), j = h, l \quad (5.69)$$

Considering both cases, it follows that

$$\begin{aligned} \frac{(1-\gamma)\tau^e}{(1-n_t(\tau^q+\tau^e e_i^*)-\bar{s})} &= \frac{\gamma(ae_i^{*(a-1)}+T_{ijt+1})}{n_t(\alpha+e_i^{*a}+T_{ijt+1}^b+e_i^*T_{ijt+1})+\bar{s}(1+r)\frac{w_{ijt}}{w_{ijt+1}}}, j = h, l \quad \text{if } z_{it} > z^b \\ e_i^* &= \frac{1}{n_t \tau^e} \left( 1 - n_t \tau^q - \bar{s} - \frac{c^s}{w_{ijt} h_{ijt}} \right), j = h, l \quad \text{if } z_{it} \leq z^b \end{aligned} \quad (5.70)$$

### Theoretical Analysis of Long-Term Development

The model presents long-term strategies aimed at developing the foundations of the economy, including development and convergence of income, wage rates and human capital. Three main issues in equilibrium are:

a) Decision on investment in education

$$\begin{aligned} \frac{(1-\gamma)\tau^e}{(1-n_t(\tau^q+\tau^e e_i^*)-\bar{s})} &= \frac{\gamma(ae_i^{*(a-1)}+T_{ijt+1})}{n_t(\beta+e_i^{*a}+T_{ijt+1}^b+e_i^*T_{ijt+1})+\bar{s}(1+r)\frac{w_{ijt}}{w_{ijt+1}}}, j = h, l \quad \text{if } z_{it} > z^b \\ e_i^* &= \frac{1}{n_t \tau^e} \left( 1 - n_t \tau^q - \bar{s} - \frac{c^s}{w_{ijt} h_{ijt}} \right), j = h, l \quad \text{if } z_{it} \leq z^b \end{aligned}$$

b) Optimal wage rates for both sectors;

marginal product of white-collar labors in the *sector h* (period  $t$ )

$$\frac{\partial Y_t}{\partial H_{ht}} = (1 - \alpha) \left( \frac{K_{ht}}{A_{ht} H_{ht}} \right)^\alpha A_{ht} = w_{ht}$$

marginal product of blue-collar labors in the *sector l* (period  $t$ )

$$\frac{\partial Y_t}{\partial H_{lt}} = (1 - \alpha) \left( \frac{K_{lt}}{A_{lt} H_{lt}} \right)^\alpha A_{lt} = w_{lt}$$

marginal product of white-collar labors in the *sector h* (period  $t + 1$ )

$$\frac{\partial Y_{t+1}}{\partial H_{ht+1}} = (1 - \alpha) \left( \frac{K_{ht+1}}{A_{ht+1} H_{ht+1}} \right)^\alpha A_{ht+1} = w_{ht+1}$$

marginal product of blue-collar labors in the *sector l* (period  $t + 1$ )

$$\frac{\partial Y_{t+1}}{\partial H_{t+1}} = (1 - \alpha) \left( \frac{K_{t+1}}{A_{t+1}H_{t+1}} \right)^\alpha A_{t+1} = w_{t+1}$$

c) Technological progress leading to development of human capital and change in wage rates in the second period

$$h_{ijt+1} = h(e_i, T_{ijt+1}) = h_{ijt} (\beta + e_i^a + T_{ijt+1}^b + e_i^c T_{ijt+1}^d)$$

$$T_{jt+1} \equiv \frac{A_{jt+1} - A_{jt}}{A_{jt}}, j = h, l$$

The equations from a) and b) show the relationship between the labor sector and the production sector in equilibrium. They refer to the determination of optimal education level and wage rate of the two sectors. The equations from c) denote the determinants of human capital of the new generation and the development of technological progress. In the long-term, the technological progress can be assisted by for instance, R&D and/or by taking over foreign technology due to economic cooperation and integration. Advancement in technology affects the level of human capital of the new generation and in addition, bolsters the wage rate in the respective sector. As asserted in the first section “Production Relations”, the relation between the wage rate and technological development is reasoned as follows: Due to the assumption that capital is perfectly mobile between sectors, in a competitive equilibrium, the marginal product of capital must be identical in each sector. This implies that  $\frac{\partial Y_t}{\partial K_{ht}} = \frac{\partial Y_t}{\partial K_{lt}}$ . Applying the Cobb-Douglas production function, this can be written as  $\alpha \left( \frac{K_{ht}}{A_{ht}H_{ht}} \right)^{(\alpha-1)} = \alpha \left( \frac{K_{lt}}{A_{lt}H_{lt}} \right)^{(\alpha-1)}$ . The capital market equilibrium condition implies that the capital stock per “total efficiency unit of labor” must be identical in each

sector; therefore  $\frac{K_{ht}}{A_{ht}H_{ht}} = \frac{K_{lt}}{A_{lt}H_{lt}}$ . From the equations in b), it is revealed that the wage rate is positively dependent on the technology parameter in the respective period.

Assuming individuals believe that they have no influence or ability to support technological progress and that they take the wage rate for granted, the predominant factor that affects the individuals' decision is the level of their income and expenditures. The income depends on the wage rate and human capital, while the expenditures depend mainly on the level of consumption, which is, in turn, dependent on savings and investment in childrearing. Since these factors are assumed as given, the individuals simply decide on the level of human capital of their children, in order to enhance income and maximize their utility.

According to the equations in a), b) and c), two ways to support economic development and convergence are structuring wage rates and supporting the low income earners. Wage rates can be structured by assisting technological progress and convergence of the technologies used in different sectors. This not only brings about higher wage rates and output, but also leads to convergence of wage rates in the two sectors and leads to a decline in income inequality. On the other hand, raising income and reducing the costs of subsistence consumption level  $c^s$ , are also relevant, since these assist all individuals and particularly those who earn less than  $z^b$ . As previously mentioned in the discussion of the short-term case, reducing the costs of subsistence consumption benefits all individuals, particularly those who are not able to invest in education. A reduction of the costs of subsistence consumption will enable very low income earners to enter human capital development for the first time. Soon after, their children will be able to benefit from education support. Reduction of costs of subsistence consumption directly increases income level and improves

the standard of living, since the individuals have more income remaining to spend on other issues. The lower the costs of subsistence consumption, the higher the chosen level of investment in education. Consequently, improvement in education will augment the quality of labor and income which, reflecting back, reinforces the chosen level of education.

### Simulations and Analyzes

This section presents simulations and analyses of the individual  $i$ 's optimized level of investment in children's education  $e_i^*$  under long-term development. As in the short-term case, the Thai economy is used as example in the simulations. Most parameters used here are the same as the parameters used in the short-term case. The constant saving rate is set at 10% and the subsistence consumption level  $c^s$  is evaluated at 5,459.76 Baht or 136.50 US dollars. The wage rate of each group is set by calculating the average monthly salaries of the workers in the respective group. The wage rate of a white-collar worker amounts to 18,242.43 Baht or 456.06 US dollars and the wage rate of a blue-collar worker is 7,530.70 Baht or 188.27 US dollars. The different income among workers in different occupations is defined through different levels of effective unit of labor of an individual  $i$ ,  $h_{it}$ . The calculation of  $h_{it}$  for each occupation is defined by the ratio of the monthly salary of an individual  $i$  to the wage rate of the respective group. Actually the expected real wage rate in period  $t + 1$  must be determined by the equation  $\frac{\partial Y_{t+1}}{\partial H_{j,t+1}} = (1 - \alpha) \left( \frac{K_{j,t+1}}{A_{j,t+1} H_{j,t+1}} \right)^\alpha A_{j,t+1} = w_{j,t+1}$ ,  $j = h, l$ . However, for simplicity the expected real wage rate in period  $t + 1$  applied in this simulation is estimated using real wage growth. The wage rate for period  $t$  is set as a benchmark, which means that  $w_{it+1} = w_{it}(1 +$



expected real wage growth rate). The wage rate for period  $t$  is estimated in US dollars per month and a distinction is made between wage rates of white- and blue-collar workers. In the long-term case, the real wage growth rate of Thailand is estimated for a 15-year-interval, using data from 2000 to 2004<sup>232</sup> and the data from 2004 is used to extrapolate expected data for the period 2005-2014. The real wage growth rate provided by estimating the data from the Labor force survey from the National Statistical Office<sup>233</sup> amounts to 6.42%. The 15-year-real-interest-rate (deposit rate) from 2000-2014 (the data from 2004 is also used for 2005-2014) is estimated at 16.20%. The population growth  $n$ , is estimated at 0.65. The rate of technology progress  $T$  is 2%. The parameter of the level of education  $a$  is 0.5, the parameter of adverse effect of technological progress regarding human capital level  $b$  is -0.05, the parameter of the external effect of parents' human capital on the children's human capital  $\beta$  is 0.7 and it is assumed for simplicity that  $c = 1$  and  $d = 1$ . Therefore the conditions  $h(e_i, T_{it+1}) > 0$ ,  $h_e(e_i, T_{it+1}) > 0$ ,  $h_{ee}(e_i, T_{it+1}) < 0$ ,  $h_T(e_i, T_{it+1}) < 0$ ,  $h_{TT}(e_i, T_{it+1}) > 0$  and  $h_{eT}(e_i, T_{it+1}) > 0$ ,  $\forall (e_i, T_{it+1}) \geq 0$  are fulfilled. The fraction of the individual's unit time endowment required for raising a child without school and higher education  $\tau^q$  is 18%<sup>234</sup>. For simplicity, the model sets the individual's weighed preference

<sup>232</sup> E-Thailand Monthly Economic Review by Economic Information Section, Fiscal Policy Office, see Bank of Thailand, Economic Data (deposit rates: 4.375% (estimated from 4%-4.75%)) for 2000, 4% for 2001, 3.25% for 2002, 1.75% for 2003 and 1.75% for 2004, these rates are from January each year), [www.bot.or.th](http://www.bot.or.th)

<sup>233</sup> Real wage (average wage of employed person) growth in Thailand in 2000 was -1.4%, in 2001 it was -0.6%, in 2002 -1.5%, in 2003 0.4%(estimate) and in 2004 0.6%(quarter 1), from Labor force survey, National Statistical Office.

<sup>234</sup> Estimated expenses vary considerably by household income level. Depending on age of the child, the expenses range from 6,280-7,380 US-dollar for families in the lowest income group (2000 before-tax income less than 38,000), from 8,740-9,860 US-dollar for families in the middle income group (2000 before-tax income between 38,000 and 64,000), and from 13,000-14,260 for families in the highest income group (2000 before-tax income more than 64,000). See <http://www.usda.gov/cnpp/Crc/Crc2000.pdf>. In the model, 18% is calculated by the ratio of the estimated expenses of the families in the middle income group to the average income level.

in the first work period at the same rate as the weighed preference in the second work period  $\gamma$ , at 0.5 ( $\gamma = 0.5$ ). This means that individuals have no preference for earning in one period over the other.

Since  $z^b = \frac{c^s}{1 - n_t(\tau^q + \tau^e e_i) - \bar{s}}$ , and assuming that  $\tau^q = 0.8$  and  $\tau^e = 0.5$ , it follows that  $z^b = 189.20$  US dollars. This indicates that all white-collar workers and the manufacturing workers from the blue-collar group earn income above  $z^b$  and the rest of the blue-collar workers earn less than  $z^b$ . This leads to the conclusion that the budget constraints of all white-collar workers and the manufacturing workers are not binding, in contrast with the budget constraints of the rest of the blue-collar workers.

The simulations are depicted in Figures 5.41, Figures 5.42, Figures 5.43-5.45 and the Figures 5.46-5.48. The simulations show that all white-collar workers and the manufacturing workers from the blue-collar group invest at the same rate in their children's education  $e_i^*$ , (however it must be noted that the absolute gained human capital of the children are different despite the same rate of  $e_i^*$ , due to the different rate of parents' human capital), whereas the rest of the blue-collar workers are not eager or even not able, on their own account, to offer their children the opportunity to attend school and higher education. This will lead to significant divergence between the individuals earning above and below  $z^b$ . As in the short-term case, a long-term strategy that may be able to support the economic development is income distribution. This should give a good opportunity for the group of low income earners to advance the human capital of their children which will increase their utility and lead to the reduction of economic divergence in the generation of their children. This can be achieved by reducing the costs of subsistence consumption and education. It

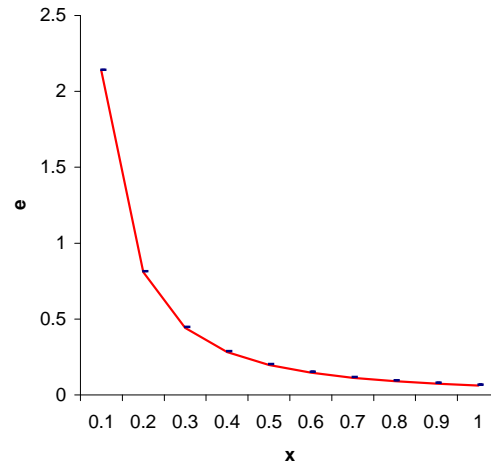


Figure 5.41: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (long-term) (costs of each unit of further education) (case of the individuals whose budget constraint is not binding: these are all the white-collar workers and the manufacturing workers)  $x$  = level of the costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

can be concluded that the strategies that should be implemented both in the long-run as well as in the short-run comprise reducing the costs of subsistence consumption as well as reducing the costs of education and implementing distribution.

In the long-term development, there is another significant measure or aspect related to economic development that will support the convergence movement and economic progress. This is the augmentation of the wage rates of the two labor-groups, which can be encouraged by technological development. Progress in technology bolsters the production sector and in addition increases the wage rate. Both effects bring about economic development. However, since there are two labor and production sectors, relatively higher technological development in the lower wage group will enhance economic convergence,

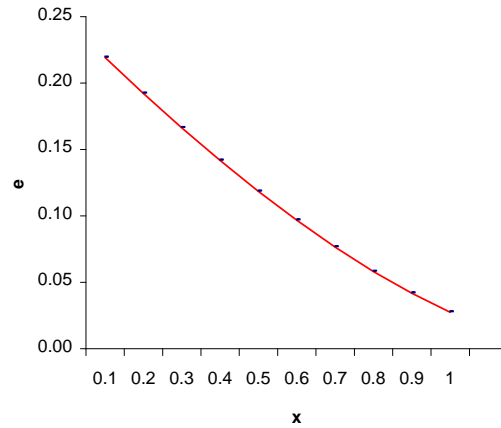


Figure 5.42: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of childrearing without schooling-costs (long-term) (costs of each unit of childrearing without schooling-costs) (case of the individuals whose budget constraint is not binding: these are all the white-collar workers and the manufacturing workers)  $x =$  level of the costs of each unit of childrearing without schooling-costs ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

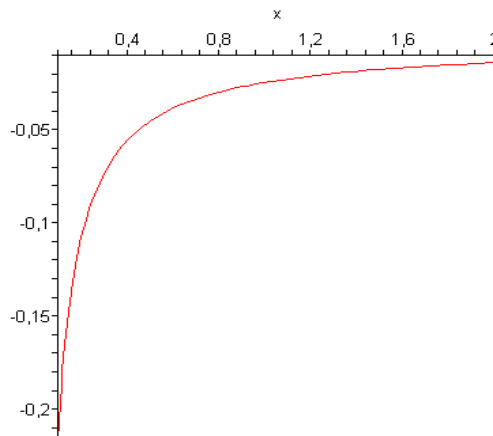


Figure 5.43: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (long-term)(costs of each unit of further education)(case of miscellaneous)  $x =$  level of costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

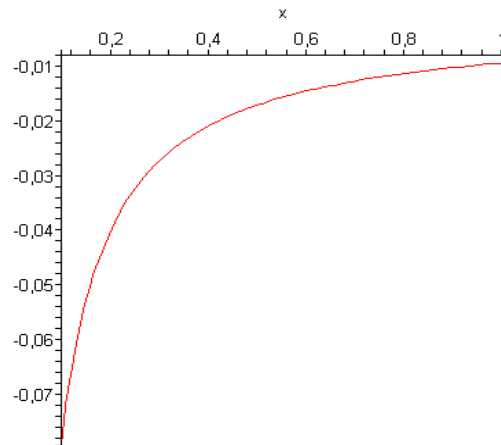


Figure 5.44: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (long-term) (costs of each unit of further education) (case of self-employed agricultural worker)  $x =$  level of costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

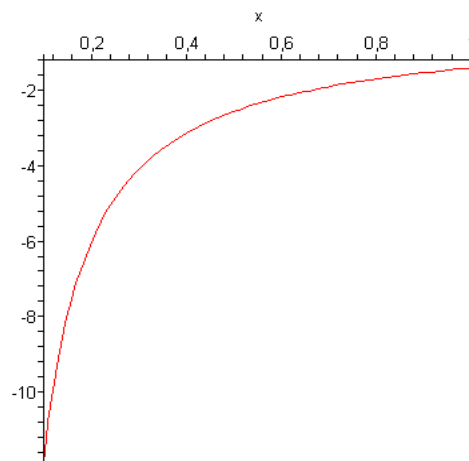


Figure 5.45: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of further education (long-term) (costs of each unit of further education) (case of agricultural laborers)  $x =$  level of costs of each unit of further education ( $x = 0.1, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

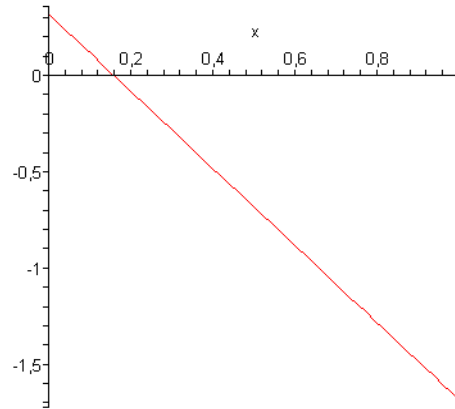


Figure 5.46: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of childrearing without schooling (costs of each unit of childrearing without schooling) (case of miscellaneous)  $x =$  level of costs of each unit of childrearing without schooling ( $x = 0, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

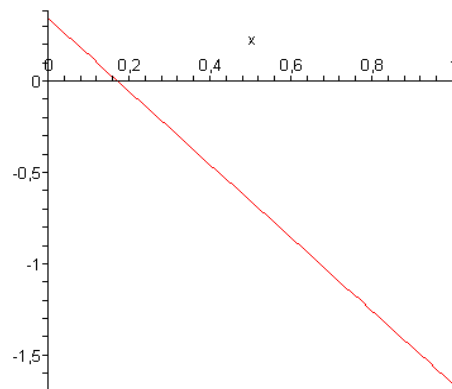


Figure 5.47: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of childrearing without schooling (costs of each unit of childrearing without schooling) (case of agricultural workers on their own account)  $x =$  level of costs of each unit of childrearing without schooling ( $x = 0, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

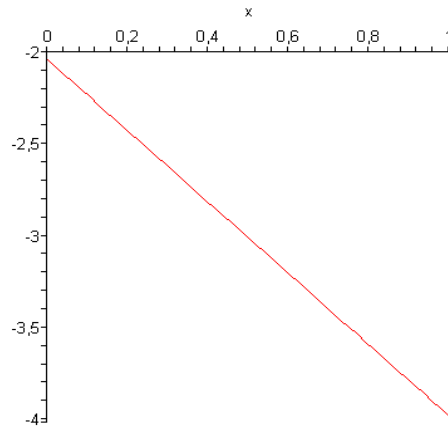


Figure 5.48: Simulation of the optimal level of an individual's children's education under different levels of the fraction of the individual's unit time endowment required for each unit of childrearing without schooling (long-term) (costs of each unit of childrearing without schooling)  $x =$  level of costs of each unit of childrearing without schooling ( $x = 0, \dots, 1$ ),  $e \geq 0$  (if the simulation shows that  $e \leq 0$ , the individual chooses no level of education meaning that  $e = 0$ .)

and on the contrary relatively higher technological development in the high wage group will increase economic divergence. Hence, in the long-term development, an additional strategy that should be implemented, besides reducing the costs of subsistence consumption and reducing the costs of education and implementing distribution can be summed up as follows:

- 1) The technology of both groups should be improved, in order to encourage overall economic development
- 2) If there is economic inequality, considerable support should be given to the low wage sector, which has lower technology. This support should be relatively greater than that offered to the higher wage sector. The technology in the low wage sector should

be advanced relatively more, in order to keep up with the higher technology sector. This will assist economic convergence.

3) The strategies 1) and 2) should be implemented simultaneously. Moreover, the progression of technology can only be fully achieved if the new technology can be implemented by the existing human capital. This fact leads to the realization that the human capital has to be simultaneously developed. This can be achieved by reducing the costs of subsistence consumption and reducing the costs of education and implementing distribution – as shown in the analyzes of the short-term strategy. These are relevant strategies for the short- as well as the long-term development.

The main factors that are conducive to technological development are research and development (R&D) and economic integration. Economic integration in particular is a very significant strategy. Whereas R&D needs a high investment in finance and a certain time, to gain technology through economic integration require less time, has more impact and is more efficient. This includes, for instance, taking over higher foreign technologies. Moreover, economic integration also lays a foundation for more effective R&D, for example by joint ventures or international R&D and production.

### **5.3.4 Theoretical Analysis of Long-Term Development under Inequality between Labor Groups and Introduction of Income tax and Government Spending**

The previous section shows strategies that should be implemented in order to strengthen the economic structure. This section focuses on the role of government which is one of relevant institutions that contribute to development of the economy, in particular regarding conver-



gence and distribution. Supporting education and implementing strategies that lower the costs of subsistence consumption will secure the foundation of the economy. In addition, supporting convergence of technological progress will bring about economic development and convergence in wage rates and income within the two sectors.

This section shows the role of the government in developing the economy, including convergence and augmentation of wage rates, human capital quality, income and technological progress. First, the individual's choice of an optimal education level under existence of the government sector is analyzed. In this case, the individuals take the trade-off between paying income tax and gains from government spending into account while maximizing their utilities. Second, possible strategies initiated by the government to strengthen the economic structure will be analyzed. These consist of bolstering technological progress and convergence of technologies, as well as the enhancement of the level of human capital and its convergence, which is supported by education. Both issues will lead to increases in income and the standard of living and can be regarded as distribution and development policies.

### **Preferences and Budget Constraints**

The configuration of the utility function and the budget constraints are the same as for the preferences and budget constraints of individuals in the previous sections. Additional factors are now the rate of taxation and advantages from government spending. It is assumed that each individual has to pay income tax at rate  $t$  ( $0 \leq t \leq 1$ ), on which the government spending is dependent. Part of this government spending is invested in ed-

educational support which is denoted in percentage of  $\eta$ , and in research and development (R&D), which leads to improvement of technology, denoted in percentage of  $\epsilon$ . The rest of the government spending will be used to provide other public goods  $g$ . For simplicity, it is assumed that the individuals do not internalize the effect of government support in education and technology progress. The individuals take technological progress, the wage rates and also the costs of education  $\tau^e$ , as exogenously given. The government's budget collected through taxation bears the "deadweight-loss of taxation", by which a part of the taxed amount is lost and cannot be transferred to the people. This can be expressed using the following equation:

$$\text{total government spending} = \left(t_t - \frac{t_t^2}{2}\right) \bar{w}_{it} \bar{h}_{it} \text{ and } g_t = (1 - \eta - \epsilon_h - \epsilon_l) \left(t_t - \frac{t_t^2}{2}\right) \bar{w}_{it} \bar{h}_{it},$$

where  $\bar{w}_{it} \bar{h}_{it}$  is the average income per worker in the period  $t$ .

The cost of education with government support  $\tau^e$  is defined by

$$\tau^e = \mu - \eta \left(t_t - \frac{t_t^2}{2}\right)$$

The technology in the second period is dependent on the government support for technology in the respective labor-group. This is defined by

$$A_{jt+1} = f(\epsilon_j)$$

$$f_\epsilon(\epsilon_j) > 0, f_{\epsilon\epsilon}(\epsilon_j) < 0, j = h, l$$

and therefore, the technological progress is written as

$$T_{jt+1} \equiv \frac{A_{jt+1}(\epsilon_j) - A_{jt}}{A_{jt}}, j = h, l$$

The utility and budget constraint of an individual  $i$  with high skills are

$$\begin{aligned}
 U_{iht} &= \frac{(w_{iht}h_{iht}(1 - n_t(\tau^q + \tau^e e_i) - s_i - t_t) + g_t)^{(1-\gamma)}}{(w_{iht+1}n_t h_{iht+1}(1 - t_{t+1}) + s_i(1 + r)w_{iht}h_{iht} + g_{t+1})^\gamma} & (5.71) \\
 &s.t. w_{iht}h_{iht}(1 - n_t(\tau^q + \tau^e e_i) - s_i - t_t) + g_t \geq c_{iht}
 \end{aligned}$$

The utility and budget constraint of an individual  $i$  with low skills are

$$\begin{aligned}
 U_{ilt} &= \frac{(w_{ilt}h_{ilt}(1 - n_t(\tau^q + \tau^e e_i) - s_i - t_t) + g_t)^{(1-\gamma)}}{(w_{ilt+1}n_t h_{ilt+1}(1 - t_{t+1}) + s_i(1 + r)w_{ilt}h_{ilt} + g_{t+1})^\gamma} & (5.72) \\
 &s.t. w_{ilt}h_{ilt}(1 - n_t(\tau^q + \tau^e e_i) - s_i - t_t) + g_t \geq c_{ilt}
 \end{aligned}$$

### Optimization

When it comes to deciding on the optimal education level, the individuals consider the tax rate as given and take the costs of education and their own net income into account. Each individual only takes his or her net income as a benchmark. Net income in this case shall be defined as income after tax and savings. In addition, the individuals take the wage rate, the costs of education and technological progress for granted when they maximize their utility.

Under given saving rate  $\bar{s}$  and tax rate, an individual  $i$  chooses the level of his or her investment in children's education and chooses his or her own consumption and future assets that maximize the utility function. Simultaneously, individual  $i$  has to assure his or

her subsistence consumption as well. This can be formulated as

$$\begin{aligned}
& \max_{e_i} U_{ijt} & (5.73) \\
= & \max_{e_i} (w_{ijt} h_{ijt} (1 - n_t (\tau^q + \tau^e e_i) - \bar{s} - t_t) + g_t)^{(1-\gamma)} \\
& (w_{ijt+1} n_t h(e_i, T_{ijt+1}(\epsilon_j)) (1 - t_{t+1}) + \bar{s} (1+r) w_{ijt} h_{ijt} + g_{t+1})^\gamma \\
& s.t. w_{ijt} h_{ijt} (1 - n_t (\tau^q + \tau^e e_i) - \bar{s} - t_t) + g_t \geq c_{ijt} \\
& e_i \geq 0, g_t = (1 - \eta - \epsilon_h - \epsilon_l) \left( t_t - \frac{t_t^2}{2} \right) \bar{w}_t \bar{h}_t, \\
& g_{t+1} = (1 - \eta - \epsilon_h - \epsilon_l) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \bar{w}_{t+1} \bar{h}_{t+1}, \\
& \tau^e = \mu - \eta \left( t_t - \frac{t_t^2}{2} \right), T_{jt+1} \equiv \frac{A_{jt+1}(\epsilon_j) - A_{jt}}{A_{jt}}, j = h, l
\end{aligned}$$

Optimization with respect to  $e_i$  implies

$$\frac{\partial U_{ijt}}{\partial e_i} = 0, j = h, l \quad (5.74)$$

This represents the interior solution (for the case of ,  $j = h, l$ ), with

$$\begin{aligned}
\frac{(1-\gamma)\tau^e}{(1-n_t(\tau^q+\tau^e e_i^*)-\bar{s}-t_t)+\frac{g_t}{w_{ijt}h_{ijt}}} &= \frac{\gamma(ae_i^{*(a-1)}+T_{ijt+1})(1-t_{t+1})}{n_t(1-t_{t+1})(\beta+e_i^{*a}+T_{ijt+1}^b+e_i^*T_{ijt+1})+\bar{s}(1+r)\frac{w_{ijt}}{w_{ijt+1}}+\frac{g_{t+1}}{w_{ijt+1}h_{ijt}}} \\
e_i \geq 0, g_t &= (1 - \eta - \epsilon_h - \epsilon_l) \left( t_t - \frac{t_t^2}{2} \right) \bar{w}_t \bar{h}_t, \\
g_{t+1} &= (1 - \eta - \epsilon_h - \epsilon_l) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \bar{w}_{t+1} \bar{h}_{t+1}, \\
\tau^e &= \mu - \eta \left( t_t - \frac{t_t^2}{2} \right), T_{jt+1} \equiv \frac{A_{jt+1}(\epsilon_j) - A_{jt}}{A_{jt}}, j = h, l
\end{aligned} \quad (5.75)$$

where  $z_{it}$  the level of potential income of an individual  $i$  at the period  $t$  is and  $z^{tb}$  the level of potential income at which the subsistence constraint is just binding, with  $z^{tb} = \frac{c^s - g_t}{1 - n_t(\tau^q + \tau^e e_i) - \bar{s} - t_t}$ . It follows that  $z^{tb} = 198.42$  US dollars for the Thai economy. This indicates that all white-collar workers and the manufacturing workers from the blue-collar group earn income above  $z^{tb}$  and the rest of the blue-collar workers earn less than  $z^{tb}$ . This

leads to the conclusion that, contrary to the budget constraints of the rest of the blue-collar workers, the budget constraints of all white-collar workers and the manufacturing workers are not binding. So there is interior solution for these individuals.

For a sufficiently low level of income, the subsistence consumption constraint is binding and there is a corner solution with respect to the consumption level. The corner solution exists exclusively for individuals who earn a sufficiently low income level smaller than  $z^{tb}$ . So subject to the budget constraint, with  $\bar{s} = \max[0, \bar{s}]$ ,

$$w_{ijt}h_{ijt}(1 - n_t(\tau^q + \tau^e e_i) - \bar{s} - t_t) + g_t \geq c^s \quad (5.76)$$

the corner solution for individuals with  $z_{it} \leq z^b$ , is

$$e_i^* = \frac{1}{n_t \tau^e} \left( 1 - n_t \tau^q - \bar{s} - t_t + (1 - \eta - \epsilon_h - \epsilon_l) \left( t_t - \frac{t_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} - \frac{c^s}{w_{ijt} h_{ijt}} \right), \quad (5.77)$$

$$j = h, l$$

It follows that

$$\frac{(1-\gamma)\tau^e}{(1-n_t(\tau^q + \tau^e e_i^*) - \bar{s} - t_t) + \frac{g_t}{w_{ijt} h_{ijt}}} = \frac{\gamma(ae_i^{*(a-1)} + T_{ijt+1})(1-t_{t+1})}{n_t(1-t_{t+1})(\beta + e_i^{*a} + T_{ijt+1}^b + e_i^* T_{ijt+1}) + \bar{s}(1+r) \frac{w_{ijt}}{w_{ijt+1}} + \frac{g_{t+1}}{w_{ijt+1} h_{ijt}}}$$

$$e_i \geq 0, g_t = (1 - \eta - \epsilon_h - \epsilon_l) \left( t_t - \frac{t_t^2}{2} \right) \bar{w}_t \bar{h}_t, \quad \text{if } z_{it} > z^b$$

$$g_{t+1} = (1 - \eta - \epsilon_h - \epsilon_l) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \bar{w}_{t+1} \bar{h}_{t+1},$$

$$\tau^e = \mu - \eta \left( t_t - \frac{t_t^2}{2} \right), T_{jt+1} \equiv \frac{A_{jt+1}(\epsilon_j) - A_{jt}}{A_{jt}}, j = h, l$$

$$e_i^* = \frac{1}{n_t \tau^e} \left( 1 - n_t \tau^q - \bar{s} - t_t + (1 - \eta - \epsilon_h - \epsilon_l) \left( t_t - \frac{t_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt} h_{ijt}} - \frac{c^s}{w_{ijt} h_{ijt}} \right), \quad \text{if } z_{it} \leq z^b$$

$$j = h, l \quad (5.78)$$

It should be recognized that, actually, in the model, the expected real wage rate in period  $t + 1$  must be determined by the equation  $\frac{\partial Y_{t+1}}{\partial H_{t+1}} = (1 - \alpha) \left( \frac{K_{t+1}}{A_{t+1} H_{t+1}} \right)^\alpha A_{t+1} = w_{jt+1}, j = h, l$ . However, for simplicity the expected real wage rate in period  $t + 1$  applied in this simulation is estimated using real wage growth. The wage rate for period  $t$  is set as a benchmark, which means that  $w_{it+1} = w_{it}(1 + \text{expected real wage growth rate})$ . Since

the effect of the investment in technological progress on the wage rate conducted by R&D is very moderate, the model ignore this effect for simplicity. This is allowed, since these simulations are based on empirical data, but for model equilibrium the real wage growth must be defined by the function derived from the marginal product of labor.

### **Simulations and Analyzes**

The Tables 5.16-5.17 show the results of simulations for comparison between the case of long-term development with government interference and the case without government interference. The term “government interference” refers to taxation, support of education costs, investment in technological development and general government spending. The relevant factors that additionally influence economic development are now the income tax rate and the share of government spending on education support and on research and development. Implementing taxation and public spending brings about distribution and bolsters education in the low-income sector. This already supports economic convergence to some extent. In addition, in the long-term, convergence of the economy can be assisted by investing in research and development. This bolsters the technology level and in turn, raises wage rates and income. Intensive investment in research and development to upgrade the technology of the low-income sector, which initially has a low technology level, will increase the wage rate and individuals’ income in this sector. This, in turn, assists economic convergence. At the same time, it should not be forgotten that the progression of technology must be compatible with the existing human capital in the sector. In the case without government interference, the rate of technology progress  $T$  is 2%. In this case with gov-

ernment interference and investment in technology  $\epsilon_h$  and  $\epsilon_l$ , it is assumed for simplicity that in the normal case with government interference  $\epsilon_h=0.1$  and  $\epsilon_l=0.1$ , and change of  $T$  due to government interference and investment in technology is defined as follows: Technology progress with government interference and investment in technology = Technology progress without government interference  $T$  + investment in technology  $\times$  deadweight-loss of taxation  $\epsilon_j \left( t_t - \frac{t_t^2}{2} \right) \times, j = h, l$ .

Tables 5.16-5.17 provide a precise result analysis of the relationship between and development of children's education level, individuals' utility, taxation, government spending, and government support for education and investment in research and technology. The results can be summed up as follows.

1) Table 5.16 illustrates that progressive taxation and government spending not only increase the overall level of investment in education, gains from distribution effect can also be observed. First, the distribution-policy gives opportunities to invest in education for the children of low income earners, who without government support were not able to invest in education, in this case the miscellaneous. And second, distribution-policy leads to a distribution effect in the level of investment in education for the individuals' children, although the model implies that this happens only in the group of individuals earning above  $z^{tb}$ .

2) For the group of individuals whose income is above  $z^{tb}$  (budget constraints are not binding), convergence can be bolstered by a relatively higher advancement of technology in the low-income sector than in the high-income sector with  $\epsilon_h=0.05$  and  $\epsilon_l=0.15$ . This leads to increases in the wage rate, investment in children's education and utility in

the respective sector compared to the normal case of Thailand with  $\epsilon_h=0.1$  and  $\epsilon_l=0.1$ . By a similar mechanism, a relative higher advancement of technology in the high-income sector than in the low-income sector will lead to the opposite effect, of divergence. Although convergence can be achieved among the individuals earning above  $z^{tb}$ , the increase in the share of government support for research and development leads to reduced total pre worker utility, despite the distribution of utility is augmented. This is a relevant trade-off that the government should bear in mind. In other words, reduction of the costs of education may raise the level of education of the children, but if the costs of the reduction of the costs of education are financed by income tax which bears the deadweight-loss, the utility of the economy will decrease. Yet, despite the deadweight-loss, this action leads to distribution of level of education and utility among the economy. This result suggests that a proper strategy to develop the economy is to support the poor individuals to overcome the income level of  $z^{tb}$ , since at this point the distribution effect of the education support from the government action is very effective and convergence will be easily bolstered.

3) Even though, Table 5.16 shows that government interference based on Thai data only brings about a distribution-effect in education and that the total per-person level of investment in education increases. Due to the model, the convergence of the two sectors' wage rates and education levels can be slowly achieved by national efforts. It is more effective and more rapid to achieve this aim by international cooperation and integration, particularly by means of convergence of technologies between countries and economic sectors. This strategy is effective in both short- and long-term development and will lead to more efficient and more rapid economic convergence. In other words, the improvement



of technology (leading to the augmentation of wage rates, the standard of living and income) by means of research and development is moderate compared to the convergence and improvement of technologies brought about by economic integration. This is a reason to engage in economic cooperation and integration. And this confirms the mutual positive relationship and support between economic convergence and economic integration.

4) Table 5.17 shows that, despite, progressive taxation and government spending bring about a significant increase of the incentives of investment in and the level of education. There is a trade-off due to the not-optimal tax structure of Thailand and the deadweight-loss of taxation which leads to decline in the total per worker individuals' utility. The total utility amounts to 274.97 compared to 291.24 without government interference. Nevertheless, government interaction induces an apparent distribution effect. The lower the tax rate one has to pay, the lower the utility declines. The losers are those who are faced with a high tax-rate, including professional, technical workers and proprietors, whose utility falls from 878.24 and 769.98 to 477.09 and 421.76 respectively and, to a lesser extent, employees in clerical, sales and service jobs from 410.98 to 388.64. The other losers, who suffer a slight loss, are manufacturing workers and self-employed agricultural workers whose utility falls from 294.00 and 185.95 to 280.19 and 177.52 respectively. The winners are and miscellaneous workers, and agricultural laborers whose utility rises from 182.08 and 94.78 to 191.81 and 99.01 respectively. Moreover the Table illustrates that the relatively higher increase in the share of government support for research and development leads to relatively higher increase of the utility in the respective group.

To conclude, the importance of taxation and government spending lies in their distributive nature. Importantly, despite the decline in the total per worker individuals' utility with an appropriate tax rate and use of government spending, economic convergence and sustainable growth can be achieved. These advantages are pronounced if there is a great deal of disparity in the economy. The higher the inequality, the higher the potential advantages of a distribution system in terms of achieving economic convergence and growth. The most relevant policy is to secure individuals' income at a level at which they can look forward to their future, in terms of their own standard of living and that of their children. In the model this is expressed as the decision on education. As soon as the budget constraints of the individuals are no longer binding, the policy of supporting the reduction of the costs of education can be implemented with its full distribution potential. In addition, it can be observed that, if there is no government interference, many individuals from the blue-collar group, including miscellaneous workers, self-employed agricultural workers and agricultural laborers, have no incentives or are not able to provide education for their children. After government interference, some of them are able to invest in their children's education, but some are still incapable. This may be one reason why in the reality the government has to introduce a policy of compulsory minimum education, in order to reduce the trend of divergence.

Occupation	$e_i^*$ ; $h_t$ ; $h_{t+1}$ ; comparable $h_{t+1}$ under progressive tax, $\epsilon_h=0.1$ and $\epsilon_l=0.1$	$e_i^*$ ; $h_t$ ; $h_{t+1}$ ; comparable $h_{t+1}$ under progressive tax, $\epsilon_h=0.05$ and $\epsilon_l=0.15$	$e_i^*$ ; $h_t$ ; $h_{t+1}$ ; comparable $h_{t+1}$ under progressive tax, $\epsilon_h=0.15$ and $\epsilon_l=0.05$	$e_i^*$ ; $h_t$ ; $h_{t+1}$ ; comparable $h_{t+1}$ under case without government interference
Professional and technical	0.2181; 1.72; 1.9388; 1.9388 (10%)	0.2175; 1.72; 1.9388; 1.9388 (10%)	0.2187; 1.72; 1.9388; 1.9388 (10%)	0.1975; 1.72; 1.9321; 1.9321
Managerial and administrative	-	-	-	-
Proprietors	0.2205; 0.93; 1.0488; 1.0488 (10%)	0.2199; 0.93; 1.0487; 1.0487 (10%)	0.2211; 0.93; 1.0488; 1.0488 (10%)	0.1975; 0.93; 1.0446; 1.0446
Employees in clerical, sales and service jobs	0.2509; 0.80; 0.9071; 0.9071 (5%)	0.2503; 0.80; 0.9075; 0.9075 (5%)	0.2516; 0.80; 0.9072; 0.9072 (5%)	0.1975; 0.80; 0.8986; 0.8986
Total per white-collar worker	0.2439	0.2433	0.2446	0.1975
Manufacturing workers	0.2535; 1.39 (0.57); 1.5769; 0.6510 (5%)	0.2542; 1.39 (0.57); 1.5770; 0.6510 (5%)	0.2528; 1.39 (0.57); 1.5767; 0.6509 (5%)	0.1975; 1.39 (0.57); 1.5614; 0.6446
Transportation and communication	-	-	-	-
Miscellaneous	0.0453; 0.91 (0.38); 1.0694; 0.4415 (0%)	0.0453; 0.91 (0.38); 1.0698; 0.4416 (0%)	0.0453; 0.91 (0.38); 1.0691; 0.4413 (0%)	0
Agriculture, self-employed	0 (5%)	0 (5%)	0 (5%)	0
Agricultural laborers	0 (0%)	0 (0%)	0 (0%)	0
Total per blue-collar worker	0.0897	0.0899	0.0894	0.0699
Total per worker	0.14104 (4.28%)	0.14098 (4.28%)	0.14120 (4.28%)	0.11236

Table 5.16: Comparison of the chosen level of education of white- and blue-collar workers in Thailand, 2000 (under different situations, long-term)

Occupation	Utility under progressive tax, $\epsilon_h=0.1$ and $\epsilon_l=0.1$	Utility under progressive tax, $\epsilon_h=0.05$ and $\epsilon_l=0.15$	Utility under progressive tax, $\epsilon_h=0.15$ and $\epsilon_l=0.05$	Utility under case without government interference
Professional and technical	769.9769 (10%)	769.8018 (10%)	770.1518 (10%)	878.2410
Managerial and administrative	-	-	-	-
Proprietors	421.7550 (10%)	421.6652 (10%)	421.8453 (10%)	477.0938
Employees in clerical, sales and service jobs	388.6394 (5%)	388.2903 (5%)	388.9888 (5%)	410.9807
Total per white-collar worker	448.2444	469.7782	470.4023	484.6038
Manufacturing workers	280.1881 (5%)	280.4392 (5%)	279.9372 (5%)	293.9977
Transportation and communication	-	-	-	-
Miscellaneous	191.8132 (0%)	191.9630 (0%)	191.6634 (0%)	182.0755
Agriculture, self-employed	177.5163 (5%)	177.6461 (5%)	177.3870 (5%)	185.9461
Agricultural laborers	99.0061 (0%)	99.0770 (0%)	98.9353 (0%)	94.7758
Total per blue-collar worker	188.4744	188.6281	188.3208	194.7170
Total per worker	274.9711 (4.28%)	282.2438 (4.28%)	282.2467 (4.28%)	291.2418

Table 5.17: Comparison of the utility of white- and blue-collar workers in Thailand, 2000 (under different situations, long-term)

## 5.4 Application of the Model on an International and Regional Basis

Until now, the model has been implemented to analyze national development, more precisely to simulate the national development of Thailand. Notably, this model can be applied to the convergence and development progress of regional groupings as well; it can be used to analyze and calculate convergence and economic development within a country, among countries or within a regional grouping and also between regional groupings under economic integration. This, in turn, suggests the prospect of integration progress among economies. The configuration of the model remains largely the same and changes in the interpretation of the assumptions and parameters can be made as follows.

- Now instead of one country, interaction between a country and another country or a regional grouping is considered.
- Instead of disparity within a country, there is economic disparity between two economies.
- The group of white-collar workers is interpreted to the group of workers working in the higher developed countries. In analogy, the group of blue-collar workers is now the group of workers who work in the less developed countries.

There are groups of labor forces in *country a* and *country b* or *regional grouping a* or *b* (for simplicity the thesis uses the terms *economy a* and *economy b*). At time  $t$ , workers from *economy a* work with technology  $A_{ht}$ , while workers from *economy b* work with technology  $A_{lt}$ . It is assumed that there is disparity between the income and wage rate of groups of workers from different economies; workers from *economy a* are educated

to a higher level, possess a higher quality of human capital and utilize higher technology. The high level of economic disparity, notably, leads to a larger difference in the levels of education and income among the two groups.

The aggregate output of the united economy (when the two countries or a regional grouping and a country are integrated), in time period  $t$ , given by the Cobb-Douglas production kernel is

$$Y_t = K_{ht}^\alpha (A_{ht}H_{ht})^{(1-\alpha)} + K_{lt}^\alpha (A_{lt}H_{lt})^{(1-\alpha)}, 0 \leq \alpha \leq 1$$

While the structure of the model remains the same, the interpretation of the model is modified in order to analyze the prospect of economic integration between countries or within a regional grouping. In equilibrium, the following conditions must be fulfilled.

Capital is perfectly mobile between economies. This implies that

$$\frac{\partial Y_t}{\partial K_{ht}} = \frac{\partial Y_t}{\partial K_{lt}} \iff \alpha \left( \frac{K_{lt}}{A_{lt}H_{lt}} \right)^{(\alpha-1)} = \alpha \left( \frac{K_{ht}}{A_{ht}H_{ht}} \right)^{(\alpha-1)}$$

The capital market equilibrium condition implies that under economic integration the capital stock per “total efficiency unit of labor” must be identical in each economy; therefore

$$\frac{K_{lt}}{A_{lt}H_{lt}} = \frac{K_{ht}}{A_{ht}H_{ht}}$$

As already mentioned, it is assumed that the economy is small and open to the world capital market. It follows that

$$\alpha \left( \frac{K_{lt}}{A_{lt}H_{lt}} \right)^{(\alpha-1)} = \alpha \left( \frac{K_{ht}}{A_{ht}H_{ht}} \right)^{(\alpha-1)} = r$$

In *economy a*, the marginal product and wage rate of the workers is

$$\frac{\partial Y_t}{\partial H_{ht}} = (1 - \alpha) \left( \frac{K_{ht}}{A_{ht} H_{ht}} \right)^\alpha A_{ht} = w_{ht}$$

and the marginal product and wage rate of the workers in *economy b* is

$$\frac{\partial Y_t}{\partial H_{lt}} = (1 - \alpha) \left( \frac{K_{lt}}{A_{lt} H_{lt}} \right)^\alpha A_{lt} = w_{lt}$$

### 5.4.1 Prospect of Short-Term Development of Economic Integration

The configuration of the utility function, the budget constraint and the maximization result remain the same.

The utility function and budget constraint of an individual *i* in *economy a* are

$$U_{iht} = (w_{iht} h_{iht} (1 - e_i \tau - s_i))^{(1-\gamma)} (w_{iht+1} h_{iht+1} + s_i (1 + r) w_{iht} h_{iht})^\gamma$$

$$w_{iht} h_{iht} (e_i \tau + s_i) + c_{iht} \leq w_{iht} h_{iht}$$

The utility function and budget constraint of an individual *i* in *economy b* are

$$U_{ilt} = (w_{ilt} h_{ilt} (1 - e_i \tau - s_i))^{(1-\gamma)} (w_{ilt+1} h_{ilt+1} + s_i (1 + r) w_{ilt} h_{ilt})^\gamma$$

$$w_{ilt} h_{ilt} (e_i \tau + s_i) + c_{ilt} \leq w_{ilt} h_{ilt}$$

Under a given saving rate  $\bar{s}$ , individuals choose their level of investment in education. As a result, they choose their own consumption level and their future assets; maximizing their own utility function. Simultaneously, they have to assure subsistence consumption as

well. This can be written as

$$\begin{aligned} & \max_{e_i} U_{ijt} \\ = & \max_{e_i} (w_{ijt}h_{ijt} (1 - e_i\tau - \bar{s}))^{(1-\gamma)} (w_{ijt+1}h_{ijt+1} + \bar{s}(1+r)w_{ijt}h_{ijt})^\gamma \\ & s.t. w_{ijt}h_{ijt} (e_i\tau + \bar{s}) + c_{ijt} \leq w_{ijt}h_{ijt}, e_i \geq 0, j = h, l \end{aligned}$$

For a sufficiently low level of income, the subsistence consumption constraint is binding and there is a corner solution with respect to the consumption level. In contrast to the interior solution which comes to play for any individual who earns enough salary or in other words  $z_{ijt} > z^b$ , the corner solution exists for an individual who earns a sufficiently low income level, meaning that  $z_{ijt} \leq z^b$ . Subject to the budget constraint, with  $\bar{s} = \max[0, \bar{s}]$ ,

$$w_{ijt}h_{ijt} (1 - e_i\tau - \bar{s}) \geq c^s, j = h, l$$

Optimization with respect to  $e_i$  implies

$$e_i^* = \begin{cases} \frac{\gamma}{\tau} (1 - \bar{s}) - (1 - \gamma) \left[ 1 + \bar{s}(1+r) \frac{w_{ijt}}{w_{ijt+1}} \right], j = h, l & \text{if } z_{ijt} > z^b \\ \frac{1}{\tau} \left( 1 - \bar{s} - \frac{c^s}{w_{ijt}h_{ijt}} \right), j = h, l & \text{if } z_{ijt} \leq z^b \end{cases}$$

### Simulations and Analyzes

This section presents simulations of the individual  $i$ 's optimized level of investment in education  $e_i^*$ . The simulations distinguish two cases; namely, the case of workers working in a higher developed economy and the case of workers working in a less developed economy. As already mentioned, there is no job-switching between economies in the short-run. This confirms the assumption of immobility of labor between economies in the short-run.



However, within an economy there can be job-switching meaning that labor mobility exists on this level.

In the simulations, the prospect of ASEAN integration is considered. By analyzing the convergence between the original ASEAN-5 members and the Indochinese countries, the basis of ASEAN integration is captured. In addition, by means of modeling the progress of convergence of quality of human capital, technology and income, the outlook of ASEAN integration will be suggested. The economic indicators of the ASEAN members are set as follows.

a) The constant saving rates of the ASEAN-5 countries are set at 16% for Indonesia, 30% for Malaysia, 21% for the Philippines, 38% for Singapore and 10% for Thailand. For the Indochinese countries saving rates are set as follows: 10% for Cambodia, 9% for Laos and 21% for Vietnam. The data of Brunei and Myanmar are not complete; therefore the simulations will not consider both countries, for the sake of simplicity. Notably, now in the simulations of the ASEAN the saving rates from different countries are different contrarily to the saving rate used in the simulations of Thai economy which is identical for every individual. This leads to different outcome.

b) The subsistence consumption level  $c^s$  is evaluated by estimating 70% of the average consumption rate of the group of low-income earner countries, in this case the Indochinese countries, which amounts to 98.41 US dollars.

c) The wage rate of each group is set by calculating the average monthly salaries of the workers in the respective group. This means that the wage rate of a worker working in the higher developed countries, the ASEAN-5, amounts to 767.15 US dollars and the

wage rate of a worker working in the less developed countries, the Indochinese countries, is 136.30 US dollars. The different income among workers from different countries with different development status is defined through different levels of the effective unit of labor of an individual  $i$ ,  $h_{ijt}$ , which reflects the quality of the individual's work. The calculation of  $h_{ijt}$  for each occupation is defined by the ratio of monthly salaries of an individual  $i$  to the wage rate of the respective group.

d) Actually the expected real wage rate in period  $t + 1$  must be determined by the equation  $\frac{\partial Y_{t+1}}{\partial H_{jt+1}} = (1 - \alpha) \left( \frac{K_{jt+1}}{A_{jt+1}H_{jt+1}} \right)^\alpha A_{jt+1} = w_{jt+1}, j = h, l$ . For simplicity in this simulation, the expected real wage rate in period  $t + 1$  is estimated using real wage growth. The wage rate at period  $t$  set as a benchmark, which means that  $w_{jt+1} = w_{jt}(1 + \text{expected real wage growth rate})$ . For simplicity, since Thailand's development status is close to the average for of all the ASEAN economies, the real wage growth rate of Thailand is estimated using data from 2000 to 2004<sup>235</sup> and amounts to -2.49%.

e) The expected 5-year real interest rate (in this case deposit rates are used) from 2000-2004 was calculated and estimated at 16.03%

f) For simplicity, the model sets the individual's weighed preference in the first work period  $(1 - \gamma)$ , and the weighed preference in the second work period  $\gamma$ , to the same rate, i.e. both are at 0.5 ( $\gamma = 0.5$ ). This means that individuals are indifferent in that they have no preference for earning in one period rather than the other.

<sup>235</sup> E-Thailand Monthly Economic Review by Economic Information Section, Fiscal Policy Office, see Bank of Thailand, Economic Data (deposit rates: 4.375% (estimated from 4%-4.75%)) for 2000, 4% for 2001, 3.25% for 2002, 1.75% for 2003 and 1.75% for 2004, these rates are from January each year), [www.bot.or.th](http://www.bot.or.th)

g) The fraction of the individual's unit time endowment required for each unit of further education  $\tau$ , is set at 0.4 in the model.

In the model, simulations of the chosen optimal education level are analyzed under varying parameters to find out feasible strategies that can bring about economic development and convergence. Assuming  $\tau = 0.4$ , since  $z^b = \frac{e^s}{1 - e_i^* \tau - \delta}$ , it follows that  $z^b = 149.13$  for Indonesia, 157.94 for Malaysia, 152.16 for the Philippines, 163.45 for Singapore, 148.54 for Thailand, 145.65 US dollars for Cambodia, 145.08 US dollars for Laos and 152.16 US dollars for Vietnam. Since the average income of Indonesia comes to 251.58 US dollars, Malaysia 791.42 US dollars, the Philippines 330.58 US dollars, Singapore 1946.33 US dollars, Thailand 551.83 US dollars, Cambodia 110.50 US dollars, Laos 131.33 US dollars and Vietnam 167.17 US dollars, this means that all the workers from the ASEAN-5 and Vietnam earn income more than  $z^b$  and their budget constraints are not binding. In the contrary, the workers from the rest Indochina countries earn less than  $z^b$  and their budget constraints are binding.

The results of the simulations can be analyzed as follows. First of all, it should be recognized that the structure of the model is identical to the previous sections, and so are the shapes of the graphs induced from the models and simulations. Assuming  $\tau = 0.4$ , the chosen level of education of workers in Indonesia is 0.46 (0.4548), Malaysia 0.20 (0.1965), the Philippines 0.36 (0.3626), Singapore 0.05 (0.0489) and Thailand 0.47 (0.4733). The workers in the Indochina countries choose their level of education as follows: 0.03 (0.0277) for Cambodia, 0.40 (0.3999) for Laos and 0.36 (0.3626) for Vietnam. Since  $h_{it+1} = h_{it}(1 + e_i^*)$ , after investment in education, the chosen level of education will be

augmented by the human capital workers possess in the period  $t$ . This, in turn, increases the human capital in the period  $t + 1$  – the higher the human capital in the period  $t$ , the higher the positive effect. This can be interpreted by the higher ability of the higher educated individuals to absorb knowledge. In the period  $t + 1$ , the following values for human capital are estimated: in Indonesia the absolute gained level of investment in education  $h_{it}e_i^*$  and effective unit of labor in period  $t + 1$ ,  $h_{it+1}$  are 0.15 (0.1501) and 0.48 (0.4801), Malaysia 0.20 (0.2024) and 1.23 (1.2324), Philippines 0.16 (0.1559) and 0.59 (0.5859), Singapore 1.16 (1.1552) and 2.66 (2.6640), and Thailand 0.32 (0.3171) and 0.99 (0.9871) – this can be compared only among the group of high developed countries. And the absolute gained level of investment in education  $h_{it}e_i^*$  and human capital in the period  $t + 1$ ,  $h_{it+1}$  the workers in the Indochinese countries are as follows; 0.02 (0.0224) and 0.83 (0.8324) for Cambodia, 0.38 (0.3839) and 1.34 (1.3439) for Laos and 0.45 (0.4460) and 1.68 (1.6760) for Vietnam – this can be compared only among the group of low developed countries. In order to make a comparison of the qualities of human capital between both groups, following calculation has to be made; to compare the level of the effective unit of labor of the blue-collar  $h_{ilt}$  to the one of the white-collar  $h_{iht}$ , the effective unit of labor of the blue-collar  $h_{ilt}$  has to multiply with the ratio between wage rate of the blue- and white-collar:  $\left(\frac{w_{ilt}}{w_{iht}}\right) h_{ilt}$ . According to the group of income-earners earning above  $z^b$  the results of  $h_{it+1}$  and  $h_{it}e_i^*$  remain, while the results of comparable  $h_{it}$  and  $h_{it+1}$  of the group of income-earners below  $z^b$ , are as follows: 0.14 (0.1439) and 0.15 (0.1480) for Cambodia, 0.17 (0.1706) and 0.24 (0.2388) for Laos and 0.22 (0.2185) and 0.30 (0.2978) for Vietnam, see Table 5.18.

Country	Average income; Saving rate	Chosen level of education $e_i^*$ ; Absolute gained level of investment in education $h_{it}e_i^*$ ; Effective unit of labor period $t + 1$ , $h_{it+1}$	Comparison of individual $i$ 's effective units of labor no comparison $h_{it}$ ; comparable $h_{it}$ ; comparable $h_{it+1}$
Indonesia	251.58; 16%	0.4548; 0.1501; 0.4801	0.33; 0.33; 0.4801
Malaysia	791.42; 30%	0.1965; 0.2024; 1.2324	1.03 1.03; 1.2324
Philippines	330.58; 21%	0.3626; 0.1559; 0.5859	0.43; 0.43; 0.5859
Singapore	1946.33; 38%	0.0489; 1.1552; 2.6640	2.53; 2.53; 2.664
Thailand	515.83; 15%	0.4733; 0.3171; 0.9871	0.67; 0.67; 0.9871
Brunei Darussalam	-	-	-
Cambodia	110.50; 10%	0.0277; 0.0224; 0.8324	0.81; 0.1439 <sup>a</sup> ; 0.1480 <sup>a</sup>
Laos	131.33; 9%	0.3999; 0.3839; 1.3439	0.96; 0.1706 <sup>a</sup> ; 0.2388 <sup>a</sup>
Myanmar	-	-	-
Vietnam	167.17; 21%	0.3626; 0.4460; 1.6760	1.23; 0.2185 <sup>a</sup> ; 0.2978 <sup>a</sup>

a: In the model, in order to make a comparison of the qualities of human capital between both groups, following calculation has to be made; to compare the level of the effective unit of labor of the blue-collar  $h_{ilt}$  to the one of the white-collar  $h_{iht}$ ,

the effective unit of labor of the blue-collar  $h_{ilt}$  has to multiply with the ratio between wage rate of the blue- and white-collar:  $\left(\frac{w_{ilt}}{w_{iht}}\right) h_{ilt}$ .

Table 5.18: Comparison of the individual's effective units of labor working in the workers' group from ASEAN-CLMV countries and in the workers' group from ASEAN-5 countries calculated in the model in ASEAN, 2000

The Table 5.19 illustrates a rough simulation of the positive effect of economic integration on economic convergence and development. The short-term case of ASEAN is captured as an example. The model in this thesis analyze the possible effect of economic integration on economic convergence and development via technological progress in the less developed economy brought about by integration with higher developed economy. Actually in the model, theoretically, the functions from the “Production Relations”:

$$\frac{\partial Y_t}{\partial H_{jt}} = (1 - \alpha) \left( \frac{K_{ht}}{A_{jt}H_{jt}} \right)^\alpha A_{jt} = w_{jt}, j = h, l$$

must be fulfilled. However, since production function has not been explicitly defined in the simulations of this thesis, for simplicity, merely possible cases of the increase in wage rate in the low developed sector are examined and consequently, the changes in the level of investment in education and human capital will be compared to the cases introduced in the previous sections. Due to the equations in the “Production Relations” the effect of the technological progress on the wage rate is the product of  $A_{jt}^{(1-\alpha)}$ ,  $j = h, l$ , but for simplicity, situations in which economic integration has brought about technology progress in the low developed sector and in turn the increase in wage rate in the period  $t$  at the rate of 5%, 10%, and 20% are contemplated. This means that the wage rate of the low-earner-sector increases from 136.30 US dollars to 143.12, 149.93 and 163.56 for the case of 5%, 10%, and 20% respectively. Thus, the average income of Vietnam, Laos and Cambodia increases from 167.17, 131.33 and 110.50 to 175.53, 137.90 and 116.03 US dollars in the case of 5%, to 183.89, 144.46 and 121.55 US dollars in the case of 10% and to 200.60, 157.60 and 132.60 US dollars in the case of 20%. Since  $z^b$  for Vietnam, Laos and Cambodia are 152.16, 145.08 and 145.65 US dollars, this means that the budget constraints of workers in Vietnam remain not-binding and in Cambodia binding

for all three cases. In Laos, the increase of wage rate due to economic integration, precisely due to the augmentation of technology progress, of 5% and 10% does not change the binding condition of budget constraints, but the increase of wage rate of 20% to 157.60 does improve budget constraints of the workers in Laos to not-binding status. The results of the increased wage rate led by integration show that integration is a significant factor to bring about convergence in economic structure. The increased wage rate led by integration firstly increases the income and utility of the individuals working in the low developed sector. And secondly, it also raises the level of investment in education of the individuals whose budget constraints are binding, while the level of investment in education of those whose budget constraints are not binding remains. Moreover the convergence movement of wage rate also brings about convergence in the level of human capital among both sectors. This effect is illustrated in the augmentation of the level of comparable  $h_{it+1}$  of the low developed sector, which rises the more its wage rate increases, see Table 5.19. Therefore, the economic divergence among high developed and low developed sectors will be eased, and convergence will be supported. Moreover, it can be observed that if the increase of wage rate is high enough, more and more individuals from the low developed sector will have their budget constraints unbound and as shown in the previous simulations, divergence will be hampered and distribution will be easier to implement in order to achieve economic convergence and sustainable development. This reveals one of the relevant positive effects of economic integration on economic development.

Considering the results of the simulations in the case of ASEAN, the model shows that, in general, convergence of the chosen level of education can be observed. Particularly,

Country	Chosen level of education $e_i^*$ ; Absolute gained level of investment in education $h_{it}e_i^*$ ; Effective unit of labor period $t + 1$ , $h_{it+1}$ (normal case, increase of wage rate 5%, 10%, 20%)	Comparison of individual $i$ 's effective units of labor no comparison $h_{it}$ ; comparable $h_{it}$ ; comparable $h_{it+1}$
Indonesia	0.4548; 0.1501; 0.4801	0.33; 0.33; 0.4801
Malaysia	0.1965; 0.2024; 1.2324	1.03 1.03; 1.2324
Philippines	0.3626; 0.1559; 0.5859	0.43; 0.43; 0.5859
Singapore	0.0489; 1.1552; 2.6640	2.53; 2.53; 2.664
Thailand	0.4733; 0.3171; 0.9871	0.67; 0.67; 0.9871
Brunei Darussalam	-	-
Cambodia	0.0277, 0.1335 (5%), 0.2297 (10%), 0.3981 (20%); 0.0224, 0.1081 (5%), 0.1861 (10%), 0.3224 (20%); 0.8324, 0.9181 (5%), 0.9961 (10%), 1.1324 (20%)	0.81; 0.1439 <sup>a</sup> ; 0.1480, 0.1713 (5%), 0.1947 (10%), 0.2414 (20%) <sup>a</sup>
Laos	0.3999, 0.4892 (5%), 0.5704 (10%), 0.5840 (20%); 0.3839, 0.4696 (5%), 0.5477 (10%), 0.6839 (20%); 1.3439, 1.4296 (5%), 1.5076 (10%), 1.6439 (20%)	0.96; 0.1706 <sup>a</sup> ; 0.2388, 0.2667 (5%), 0.2946 (10%), 0.3505 (20%) <sup>a</sup>
Myanmar	-	-
Vietnam	0.3626; 0.4460; 1.6760	1.23; 0.2185 <sup>a</sup> ; 0.2978, 0.3127 (5%), 0.3275 (10%), 0.3573 (20%) <sup>a</sup>

Average income of Cambodia: 110.50, 116.03 (5%), 121.55 (10%), 132.60 (20%);

Average income of Laos: 131.33, 137.90 (5%), 144.46 (10%), 157.60 (20%);

Average income of Vietnam: 167.17, 175.53 (5%), 183.89 (10%), 200.60 (20%);

a: In the model, in order to make a comparison of the qualities of human capital between both groups, following calculation has to be made;

to compare the level of the effective unit of labor of the blue-collar  $h_{ilt}$  to the one of the white-collar  $h_{iht}$ ,

the effective unit of labor of the blue-collar  $h_{ilt}$  has to multiply with the ratio between wage rate of the blue- and white-collar:  $\left(\frac{w_{ilt}}{w_{iht}}\right) h_{ilt}$ .

Table 5.19: Comparison of the individual's effective units of labor working in the workers' group from ASEAN-CLMV countries and in the workers' group from ASEAN-5 countries under different wage rates of the low developed sector brought about by economic integration (via technology progress), 2000



the further developed of the Indochina countries, such as Vietnam and Laos, make significant progress. Nonetheless, the convergence might vary between the economies from the two poles, because of the significant differences of the level of ex-ante human capital. Very rich workers in highly developed countries, for instance Singapore, continue to increase their already high level of human capital despite their lower rate of investment in education. At the same time, the very poor or less developed countries, for instance Cambodia, can hardly catch up. This result has some important practical implications: firstly, it is advisable to support the least developed economies in the regional grouping, in order to maintain stable economic integration, if there are very low developed economies in the group. Moreover, this indicates the necessity of entrance criteria for a regional grouping, such as those applied in the form of the EU convergence criteria, since this will avoid the divergence problem in the long-run. As in the previous sections, due to the model, divergence will be hindered or convergence can be achieved by reducing the costs of education and subsistence consumption in the less developed sector. An efficient distribution policy will contribute greatly to an effective outcome. Yet, it should be noted that a region-wide policy is often difficult to implement, although this can be a first step towards regional political cooperation and integration. Nevertheless, the simulation shows that it is very difficult for the less developed countries to catch up with the more developed economies in the short-run, since highly developed economies do not wait for the other members of the same regional grouping, but forge ahead with their development, making use of the very high capacity they already possess from previous time periods.

### 5.4.2 Prospect of Long-Term Development of Economic Integration

This section analyzes long-term development under inequality among countries within economies on the road to integration or in a state of integration. Individuals are divided into two categories, one high-skilled, the workers from *economy a* and one low-skilled, the workers from *economy b*. The structure and result of the model remain the same.

The utility function and budget constraint of an individual  $i$  from *economy a* are

$$U_{iht} = (w_{iht}h_{iht} (1 - n_t (\tau^q + \tau^e e_i) - s_i))^{(1-\gamma)} (w_{iht+1}n_t h_{iht+1} + s_i (1 + r) w_{iht}h_{iht})^\gamma$$

$$s.t. w_{iht}h_{iht} (1 - n_t (\tau^q + \tau^e e_i) - s_i) \geq c_{iht}$$

The utility function and budget constraint of an individual  $i$  *economy b* are

$$U_{ilt} = (w_{ilt}h_{ilt} (1 - n_t (\tau^q + \tau^e e_i) - s_i))^{(1-\gamma)} (w_{ilt+1}n_t h_{ilt+1} + s_i (1 + r) w_{ilt}h_{ilt})^\gamma$$

$$s.t. w_{ilt}h_{ilt} (1 - n_t (\tau^q + \tau^e e_i) - s_i) \geq c_{ilt}$$

Under a given saving rate  $\bar{s}$ , individuals choose the level of investment in their children's education. As a result, they choose their own consumption level and their future assets to maximize their own utility function. Simultaneously, they have to assure subsistence consumption as well. This can be written as

$$\begin{aligned} & \max_{e_i} U_{ijt} \\ = & \max_{e_i} \frac{(w_{ijt}h_{ijt} (1 - n_t (\tau^q + \tau^e e_i) - \bar{s}))^{(1-\gamma)}}{(w_{ijt+1}n_t h_{ijt+1} + \bar{s} (1 + r) w_{ijt}h_{ijt})^\gamma} \\ & s.t. w_{ijt}h_{ijt} (n_t (\tau^q + \tau^e e_i) + \bar{s}) + c_{ijt} \leq w_{ijt}h_{ijt}, e_i \geq 0, j = h, l \\ \Leftrightarrow & \max_{e_i} \frac{(w_{ijt}h_{ijt} (1 - n_t (\tau^q + \tau^e e_i) - \bar{s}))^{(1-\gamma)}}{(w_{ijt+1}n_t h_{ijt} (\beta + e_i^a + T_{ijt+1}^b + e_i T_{ijt+1}) + \bar{s} (1 + r) w_{ijt}h_{ijt})^\gamma} \\ & s.t. w_{ijt}h_{ijt} (n_t (\tau^q + \tau^e e_i) + \bar{s}) + c_{ijt} \leq w_{ijt}h_{ijt}, e_i \geq 0, j = h, l \end{aligned}$$

For a sufficiently low level of income, the subsistence consumption constraint is binding and there is a corner solution with respect to the consumption level. The corner solution exists exclusively for individuals who earn a sufficiently low income level smaller than  $z^{tb}$ . So subject to the budget constraint, with  $\bar{s} = \max [0, \bar{s}]$ ,

$$w_{ijt}h_{ijt} (1 - n_t (\tau^q + \tau^e e_i) - \bar{s} - t_t) + g_t \geq c^s$$

Optimization with respect to  $e_i$  implies

$$\frac{(1-\gamma)\tau^e}{(1-n_t(\tau^q+\tau^e e_i^*)-\bar{s}-t_t)+\frac{g_t}{w_{ijt}h_{ijt}}} = \frac{\gamma(ae_i^{*(a-1)}+T_{ijt+1})(1-t_{t+1})}{n_t(1-t_{t+1})(\beta+e_i^{*a}+T_{ijt+1}^b+e_i^*T_{ijt+1})+\bar{s}(1+r)\frac{w_{ijt}}{w_{ijt+1}}+\frac{g_{t+1}}{w_{ijt+1}h_{ijt}}}$$

$$\begin{aligned} e_i &\geq 0, g_t = (1 - \eta - \epsilon_h - \epsilon_l) \left( t_t - \frac{t_t^2}{2} \right) \bar{w}_t \bar{h}_t, & \text{if } z_{it} > z^b \\ g_{t+1} &= (1 - \eta - \epsilon_h - \epsilon_l) \left( t_{t+1} - \frac{t_{t+1}^2}{2} \right) \bar{w}_{t+1} \bar{h}_{t+1}, \\ \tau^e &= \mu - \eta \left( t_t - \frac{t_t^2}{2} \right), T_{jt+1} \equiv \frac{A_{jt+1}(\epsilon_j) - A_{jt}}{A_{jt}}, j = h, l \\ e_i^* &= \frac{1}{n_t \tau^e} \left( 1 - n_t \tau^q - \bar{s} - t_t + (1 - \eta - \epsilon_h - \epsilon_l) \left( t_t - \frac{t_t^2}{2} \right) \frac{\bar{w}_t \bar{h}_t}{w_{ijt}h_{ijt}} - \frac{c^s}{w_{ijt}h_{ijt}} \right), & \text{if } z_{it} \leq z^b \\ & & j = h, l \end{aligned}$$

Moreover, the following conditions must be fulfilled. Optimal wage rates for both countries are defined by:

the marginal product of white-collar labors in *economy a* (period  $t$ )

$$\frac{\partial Y_t}{\partial H_{ht}} = (1 - \alpha) \left( \frac{K_{ht}}{A_{ht}H_{ht}} \right)^\alpha A_{ht} = w_{ht}$$

the marginal product of blue-collar labors in *economy b* (period  $t$ )

$$\frac{\partial Y_t}{\partial H_{lt}} = (1 - \alpha) \left( \frac{K_{lt}}{A_{lt}H_{lt}} \right)^\alpha A_{lt} = w_{lt}$$

the marginal product of white-collar labors in *economy a* (period  $t + 1$ )

$$\frac{\partial Y_{t+1}}{\partial H_{ht+1}} = (1 - \alpha) \left( \frac{K_{ht+1}}{A_{ht+1}H_{ht+1}} \right)^\alpha A_{ht+1} = w_{ht+1}$$

the marginal product of blue-collar labors in *economy b* (period  $t + 1$ )

$$\frac{\partial Y_{t+1}}{\partial H_{t+1}} = (1 - \alpha) \left( \frac{K_{t+1}}{A_{t+1}H_{t+1}} \right)^\alpha A_{t+1} = w_{t+1}$$

Technological progress, which leads to development of human capital and change in wage rates in the second period, and human capital in the second period, are defined by

$$T_{jt+1} \equiv \frac{A_{jt+1} - A_{jt}}{A_{jt}}, j = h, l$$

$$h_{ijt+1} = h(e_i, T_{ijt+1}) = h_{ijt} (\alpha + e_i^a + T_{ijt+1}^b + e_i^c T_{ijt+1}^d)$$

The constant saving rate  $\bar{s}$ , subsistence consumption level  $c^s$  and wage rate are set at the same rate as in the short-term case and it is assumed that  $c = 1$  and  $d = 1$ . The parameter of the level of education  $a$  is 0.5 the parameter of adverse effect of technological progress regarding human capital level  $b$  is -0.05 and the parameter of the external effect of parents' human capital on the children's human capital  $\beta$  is 0.7. Therefore the conditions  $h(e_i, T_{it+1}) > 0$ ,  $h_e(e_i, T_{it+1}) > 0$ ,  $h_{ee}(e_i, T_{it+1}) < 0$ ,  $h_T(e_i, T_{it+1}) < 0$ ,  $h_{TT}(e_i, T_{it+1}) > 0$  and  $h_{eT}(e_i, T_{it+1}) > 0$ ,  $\forall (e_i, T_{it+1}) \geq 0$  are fulfilled. In the long-term case, for simplicity some of following data are taken from of data of Thailand – since Thailand's development status is close to the average for of all the ASEAN economies. The real wage growth is estimated for a 15 year interval, using data from 2000 to 2004. The data from 2004 is used to extrapolate expected data for 2005-2014. The real wage growth rate is provided by estimating the data from the Labor force survey from the National Statistical Office<sup>236</sup> and amounts to 6.42%. The 15 year real interest rate (deposit rates) from

<sup>236</sup> Real wage growth (average wage of employed person) in Thailand in 2000 was -1.4%, in 2001 -0.6%, in 2002 -1.5%, in 2003 0.4%(estimate) and in 2004 is 0.6%(quarter 1), from Labor force survey, National Statistical Office.

2000-2014<sup>237</sup> (the data from 2004 is also used for 2005-2014) is estimated at 16.20%. The rate of technological progress is 2%. The fraction of the individual's unit time endowment required for raising a child without school and higher education is 18%<sup>238</sup>. The population growth  $n$  in Indonesia is 1.45, Malaysia 1.80, the Philippines 1.84, Singapore 1.56 and Thailand 0.87. In the Indochina countries, population growth  $n$  is as follows; 1.81 for Cambodia, 2.42 for Laos and 1.04 for Vietnam. For simplicity, the model sets the individual's weighed preference in the first work period at the same rate of the weighed preference in the second work period  $\gamma$ , at 0.5 ( $\gamma = 0.5$ ). This means that individual's preferences are indifferent, i.e. they have no preference for earning in one period rather than the other.

Since  $z^b = \frac{c^s}{1 - n_t(\tau^q + \tau^e e_i) - \bar{s}}$ , assuming that  $\tau = 0.4$ , it follows that  $z^b = 177.60$  for Indonesia, 267.85 for Malaysia, 220.77 for the Philippines, 296.65 for Singapore, 152.45 for Thailand, 178.02 US dollars for Cambodia, 212.67 US dollars for Laos and 172.50 US dollars for Vietnam. Since the average incomes Indonesia is 251.58 US dollars, Malaysia 791.42 US dollars, the Philippines 330.58 US dollars, Singapore 1946.33 US dollars, Thailand 551.83 US dollars, Cambodia 110.50 US dollars, Laos 131.33 US dollars and Vietnam 167.17 US dollars, this indicates that all workers from the Indochina countries earn income

<sup>237</sup> E-Thailand Monthly Economic Review by Economic Information Section, Fiscal Policy Office, see Bank of Thailand, Economic Data (deposit rates: 4.375% (estimated from 4%-4.75%)) for 2000, 4% for 2001, 3.25% for 2002, 1.75% for 2003 and 1.75% for 2004, these rates are from January each year), [www.bot.or.th](http://www.bot.or.th)

<sup>238</sup> Estimated expenses vary considerably with household income level. Depending on age of the child, the expenses range from 6,280-7,380 US-dollar for families in the lowest income group (2000 before-tax income less than 38,000), from 8,740-9,860 US-dollar for families in the middle income group (2000 before-tax income between 38,000 and 64,000), and from 13,000-14,260 for families in the highest income group (2000 before-tax income more than 64,000). See <http://www.usda.gov/cnpp/Crc/Crc2000.pdf>. In the model, 18% is calculated by the ratio of the estimated expenses of the families in the middle income group to the average income level.

less than  $z^b$ . The budget constraints of all ASEAN-5 workers are not binding, contrary to the budget constraints of the workers from Indochina countries.

The simulation shows an interesting result<sup>239</sup>. Assuming  $\tau = 0.4$ , the chosen level of investment in education for the children of workers in Indonesia is 0.05 (0.0456), Malaysia 0.01 (0.0133), the Philippines 0.02 (0.0194), Singapore 0.01 (0.0134) and Thailand 0.14 (0.1427). The workers in the Indochina countries choose their level of education as follows: 0 for Cambodia, 0 for Laos and 0.04 (0.0419) for Vietnam. And the effective unit of labor of the children in period  $t + 1$ ,  $h_{it+1}$  in Indonesia is 0.70 (0.7030), Malaysia 2.10 (2.0927), Philippines 0.88 (0.8840), Singapore 5.14 (5.1414), and Thailand 1.54 (1.5388) – this can be compared only among the group of high developed countries. The children's human capital in the period  $t + 1$ ,  $h_{it+1}$  of the workers in the Indochinese countries are as follows; 1.55 (1.5520) for Cambodia, and 1.84 (1.8394) for Laos and 2.61 (2.6094) for Vietnam – this can be compared only among the group of low developed countries. In order to make a comparison of the qualities of human capital between both groups, following calculation has to be made; to compare the level of the effective unit of labor of the blue-collar  $h_{ilt}$  to the one of the white-collar  $h_{iht}$ , the effective unit of labor of the blue-collar  $h_{ilt}$  has to multiply with the ratio between wage rate of the blue- and white-collar:  $\left(\frac{w_{ilt}}{w_{iht}}\right) h_{ilt}$ . According to the group of income-earners earning above  $z^b$  the results of  $h_{it+1}$  remain, while the results of comparable  $h_{it+1}$  of the group of income-earners below  $z^b$ , are as follows: 0.28 (0.2757) for Cambodia, 0.33 (0.3268) for Laos and 0.46 (0.4636) for Vietnam, see Table 5.20.

<sup>239</sup> It must be noted that the data used in this simulation are not very precise, therefore deviations might occur.

The results relating to the chosen level of education for the children of workers in ASEAN show that there is, on the one hand, convergence movement of the level of education within the ASEAN-5 countries. And the national policies might play a great role in the acceleration of convergence, encompassing saving rate, population growth and technological development for instance. In the case of ASEAN, Thailand reveals the best development of the group followed by Indonesia and the Philippines. Singapore and Malaysia were already positioned at a high development status but invest at a lower rate of education, yet highly developed countries, for instance Singapore, the children absorb the already high level of human capital of their parents despite the lower rate of investment in education. So it is very difficult for the other ASEAN member to catch up. Nonetheless, among the rest of the ASEAN members, encompassing particularly Indonesia, Malaysia, Philippines and Thailand there is potential of convergence movement. On the other hand, the Indochinese countries have difficulties in catching up with the ASEAN-5 countries. Due to their budget constraints, they are not eager to support their children's educational development. Workers from Cambodia and Laos invest nothing in education for the children, while the workers from Vietnam, even whose economic situation is further developed, invest merely at a low rate in education for their children. Therefore for these less developed countries, the government has to make serious concern about policy of compulsory minimum education, in order to develop their economies and reduce the trend of divergence.

To conclude, in the long-term development of ASEAN, the higher developed countries (where budget constraints are not binding) converge among each other. Difficulties lie in the development of the lower developed countries (where budget constraints are bind-

Country	Average income; Saving rate; Population growth	Chosen level of education $e_i^*$ ; Childrend's effective unit of labor $h_{it+1}$	Comparison of effective units of labor no comparison $h_{it}$ ; comparable $h_{it}$ ; comparable $h_{it+1}$
Indonesia	251.58; 16%; 1.45	0.0456; 0.7030	0.33; 0.33; 0.7030
Malaysia	791.42; 30%; 1.80	0.0133; 2.0927	1.03 1.03; 2.0927
Philippines	330.58; 21%; 1.84	0.0194; 0.8840	0.43; 0.43; 0.8840
Singapore	1946.33; 38%; 1.56	0.0134; 5.1414	2.53; 2.53; 5.1414
Thailand	515.83; 15%; 0.87	0.1427; 1.5388	0.67; 0.67; 1.5388
Brunei Darussalam	-	-	-
Cambodia	110.50; 10%; 1.81	0; 1.5520	0.81; 0.1439 <sup>a</sup> ; 0.2757 <sup>a</sup>
Laos	131.33; 9%; 2.42	0; 1.8394	0.96; 0.1706 <sup>a</sup> ; 0.3268 <sup>a</sup>
Myanmar	-	-	-
Vietnam	167.17; 21%; 1.04	0.0419; 2.6094	1.23; 0.2185 <sup>a</sup> ; 0.4636 <sup>a</sup>

In the model, in order to make a comparison of the qualities of human capital between both groups, following calculation has to be made;

to compare the level of the effective unit of labor of the blue-collar  $h_{ilt}$  to the one of the white-collar  $h_{iht}$ ,

the effective unit of labor of the blue-collar  $h_{ilt}$  has to multiply with the ratio between wage rate of the blue- and white-collar:  $\left(\frac{w_{ilt}}{w_{iht}}\right) h_{ilt}$ .

Table 5.20: Comparison of the individual's effective units of labor working in the workers' group from ASEAN-CLMV countries and in the workers' group from ASEAN-5 countries calculated in the model in ASEAN, long-term



ing), whose economic developments diverge. This observation, again, reflects the necessity of conditions for entry into an economic grouping, for instance the “convergence criteria”. However, if the low developed economies are already in the regional grouping, as in the case of ASEAN, these economies must be supported, in order to run a sustainable regional economic integration. The measurements are the same as asserted in the previous sections, encompassing in particular reducing the costs of subsistence consumption, reducing the costs of education and implementing distribution, increasing technological progress and wage rate in the low developed economies. For example, reducing of the costs of subsistence consumption to an extent which stops the budget constraints of the Indochina countries from being binding has the effect of increasing the investment level in children’s education significantly; in Cambodia from 0 to 0.0317, in Laos from 0 to 0.0134 and in Vietnam from 0.0419 to 0.0814.

The simulations in this thesis show that the model presented in the thesis can be applied to the economic development within a country with economic disparity among sectors, as well as between economies, encompassing a relation between a regional grouping and a country or between two countries. Eventually, simulation of the development of bilateral economic integration can also be applied, for instance using data from ASEAN and Japan, Singapore and Japan, or China and Thailand etc. The model will show the prospects of convergence and, in turn, the chance of success within an integrated regional grouping. In addition, the model analyzes the possible opportunities for efficient management of economic integration, in that it predicts the convergence aspect in the end.

## **5.5 Relation of Economic Integration and Convergence and Model's Results**

The previous chapter suggests a feasible proposition towards effective economic integration in the East-Southeast Asian region, particularly from the standpoint of the ASEAN. This involves finding a possible plan of action to counteract contemporary difficulties, partly as a result of the uncertainty of the new surge of regionalism, and to lay down a foundation for further economic integration. The East-Southeast Asian regionalism and economic relations on a bilateral and sub-regional basis have been developing significantly, but it seems that the collective movement towards global economic integration has been neglected. The new surges of bilateral arrangements have led to a situation of “competitive hub and spoke bilateralism”. This, in addition, has been exacerbated by the “domino effect” and by the problems concerning politically sensitive sectors resulting in an increasingly serious “spaghetti bowl effect”. Besides contemporary complexities emerging from the new surges of bilateral agreements, there have always been numerous hindrances and complications to integration, encompassing internal deficiencies and external environments.

Strategies for coping with the external shocks or external threats and insuring successful economic integration are a necessity for a good foundation. Such strategies work and are strengthened in economic, political and social spheres. Besides these, flexibility is also important, in order to cope with and adjust to inevitable shocks as they emerge. Fundamental key strategies, that might be able to further both the contemporary economic relations and their development towards global economic integration in the long run, are “opening and deepening regionalism” and “strengthening economic structure”. Both schemes

should be supported by the strength of the region's ability to adjust to external pressures, in other words by the strength of East-Southeast Asian flexibility.

This chapter concentrates on "strengthening economic structure" and presents a model of strategies that bring about strength in economic foundations as well as convergence. The model shows that strengthening the economic structure assists and in turn, is simultaneously supported by opening and deepening regionalism. The model concentrates on the handling of coping with economic disparity within and between countries. In particular, discrepancy in human capital, wage rates among blue- and white-collar workers and in technologies used in different production sectors are contemplated. Economic convergence and distribution are needed to solve recent economic problems on their root within the region and create a prospect of further economic integration. Internal economic structures will be strengthened and become an important underlying ground to solve the problems of the sensitive sectors. Sustainable development can then be easily achieved and the economy will be, to a certain extent, immune to external pressure. Negative effects from "hub and spoke bilateralism" will be lessened or hindered and bilateral regionalism will become a stepping stone towards economic integration. By means of economic cooperation within the region, these strategies will support regional economic convergence and strengthen economic fundamentals, which allow countries to achieve regional and global economic integration in the long run.

One of decisive supporting measures which can assist economic convergence and distribution are improvements in education and technology. The short- and long-term effects created by increasing the quality of human capital are captured and strategies for the

development of an economy with inequality between labor groups are suggested. These strategies are, firstly, augmentation of and convergence in the quality of human resources within and between sectors and, secondly, assisting technological progress and fusing technology levels in the two economic sectors which in turn will augment the level and parity of wage rates in different sectors.

Augmentation and convergence in the quality of human resources are strategies that should be implemented at all times and continuously – both in the short- and long-run. The means to achieve augmentation and convergence in the quality of human resources are provided through two relevant strategies that should be simultaneously implemented. The first of these is reducing the costs of education and implementing distribution, which brings about an increase in qualities of human capital and also an increase in income. The second is reducing the costs of subsistence consumption, which is a relevant strategy to prevent economic divergence. While, on the one hand, reducing the costs of education only benefits individuals who are able to invest in education, reducing the costs of subsistence consumption, on the other hand, supports all individuals. If this reduction is high enough, individuals who were previously unable to invest in education, will consequently be able to invest in education after the costs of subsistence consumption have been reduced. This implies that the quality of human capital and income will rise and the number of individuals who receive advantages from the educational support will increase. Economic divergence will be reduced, since, according to the model, under the same rate of parameters the high income earners, the white-collar workers, invest in education at a constant rate, regardless of different occupation and income. Conversely, the level of investment in education by

the low-income-earners depends on the level of subsistence consumption and their own income. Combining a reduction of subsistence consumption costs with higher investment in educational support for low income earners not only increases the number of individuals who invest in education and the quality of human capital in the blue-collar group, but also augments convergence.

Even though, convergence and improvement in human capital help to bring about convergence and improvement in income, disparity in wage rates among labor groups still exists and this can be solved by means of convergence of the technology levels in the two sectors. Augmentation of technology will, in addition, assist economic development by increasing income and total production. Considering the viewpoint that strengthening the economic structure assists and is simultaneously supported by the strategies of opening and deepening regionalism, the model shows that technological progress is one of the key means to link up these two strategies. The increase in technology brings about increases in production and the wage rate, and leads to improvement in individuals' income. However, if there are diversities in the economy, unbalanced technological improvement between sectors can lead to economic divergence. On the contrary, a proper development of technological progress in the two sectors, or in other words, technological progress in both sectors accompanied by the catching up of the technology level in the low-wage sector (using low technology) with the high-wage sector (using high technology), can bring about convergence in wage rates and income which are fundamentals of the economic structure. Notably, improvement in technology must be compatible with the existing human capital in the economy; therefore, strategies that bolster the quality of human capital must not be

neglected. We have seen that there are problems regarding sensitive sectors that hinder further economic integration. Economic convergence will ease these problems and a stable economic structure will facilitate the further development of economic integration.

This leads to the point that economic cooperation and integration are simultaneously relevant factors that bolster and assist economic development and convergence. Besides showing traditional advantages gained through economic integration, as analyzed in the first chapters, the model indicates that economic cooperation and integration trigger a relevant indirect positive effect on economic convergence and development. Again, improvement of technology is the main key for this progress. The results of the model favor the explanation that, besides reducing the costs of subsistence consumption and costs of education, economic cooperation and integration will lead to development of technology affecting the wage rate positively and, consequently, income. The model presents the mutual interrelated advantages between “economic cooperation and integration” and “convergence and distribution” which can be concluded as follows:

- As already mentioned, economic cooperation or/and integration, in addition, leads to a reduction in the costs of subsistence consumption and the costs of education. This is achieved for instance, by supporting free market competition, hindering and eliminating monopoly and oligopoly, as well as taking advantage of specialization, economies of scale and economies of scope. International trade is a relevant factor that supports this undertaking, and as soon as subsistence consumption is covered, individuals may have opportunities to invest in education, in savings and in gaining a higher standard of living.

- The progress and convergence in technology will bring about progress and convergence in wage rates and income. Regarding the model, changes in technology, on the one hand, can be assisted by research and development. This, however, needs a certain time to proceed and has only a moderate effect. On the other hand, technology progress is more easily and better achieved by joint ventures, taking over foreign technologies or research and development under the auspices of multinational firms. This can be achieved through economic cooperation and integration.

- Moreover, as asserted in the chapter 3, income convergence is one of the indicators that show the potential for economic integration. Higher levels of integration and openness are related to higher mobility of the factors of production, resulting in more income convergence (in the model however, it is assumed that there is no mobility of labors between two economies contrarily to capital mobility). The gains from economic integration are larger among the countries with more similar levels of income and economic development, since they have incentives to trade and invest more with each other. Furthermore, convergence supports the prospect of strong economic interaction and coordination in the long run, whereas divergence may bring about tensions and conflicts in the short run

All of these additional viewpoints are due to the model, which confirms the positive effect of the scheme to open and deepen regionalism on the aim of strengthening the economic structure.

Moreover, the government plays a significant role in implementing distribution and achieving convergence. Its main tools are taxation and public spending. In the short-run, taxation and direct government support (including distributing income from the rich to the

poor individuals) lead to income distribution, bringing about an increase of the education level in the low-income sector. Convergence through indirect support (reduction of the costs of education) has the effect of increasing and distributing the level of investment in education among the individuals earning above  $z^{tb}$  (whose budget constraints are not binding). However, there is a trade-off, since this leads to a reduction of the level of investment in education of the individuals earning below  $z^{tb}$  (whose budget constraints are binding). This is a significant trade-off that the government should concern. Reduction of the costs of education may increase the incentives of the individuals to invest in education and raise the level of education. But if the costs of the reduction of the costs of education are financed by income tax which bears the deadweight-loss and cut a part of the direct support from the government, the incentives of the individuals earning less than  $z^{tb}$  will decrease, and so does their chosen level of education. Contrarily to the behavior of individuals from the group of income earners above  $z^{tb}$ , despite the deadweight-loss, this action leads to distribution among this group. This result suggests that a proper strategy to develop the economy is first to support the poor individuals to overcome the income level of  $z^{tb}$ , since at this point the distribution effect of the education support from the government action is very effective and convergence will be easily bolstered. And second, in order to increase the incentives of investment in and the level of education by reduction of the costs of education, this should be done by increasing quality for example via cooperation and joint-venture with advanced economy and/or economic integration superior to taxation.

The results of the short-term development guided by government interference are as follows. Government interference in Thailand, which has an average progressive income



tax rate of 4.28%, has a distribution effect, but also leads to a reduction of the total per-person level of investment in education and utility. This tax structure is not optimal, since under another tax structure total per-person level of investment in education and utility can be significantly increased. By means of the Median Voter Theorem, the model implies that this sub-optimal tax rate and structure can be explained as a consequence of the distortion of government decisions due to their predominant interest in winning votes. In the long-run, taxation and direct government support (including distributing income from the rich to the poor) leads to income-distribution, bringing about an increase in children's education level in the low-income sector. Convergence through indirect support leads to an increase in the level of investment in children's education among the group of individuals earning above  $z^{tb}$  and to better distribution within the group. Convergence can be bolstered by a relatively higher augmentation of technology in the low-income sector than in the high-income sector. This leads to increases in the wage rate, in the level of investment in children's education and in utility in the respective sector. A relatively higher augmentation of technology in the low-income sector than in the high-income sector leads to an increase in the wage rate, in the level of investment in children's education and in utility and is conducive to divergence. This, however, affects only individuals earning above  $z^{tb}$ . There is then a trade-off, since in the long-run (case of Thailand), government interference leads to economic distribution and convergence. However the total per-person level of utility declines, yet this can be augmented by a better tax rate and tax structure.

To conclude, the existence of relevant mutual positive relations between economic cooperation and integration and economic convergence is borne out. Convergence sup-

ports economic integration by assuaging the problems of sensitive sectors and hub and spokes bilateralism. Obviously, economic convergence is not only assistance for economic integration, but also a general foundation for sustainable development. The fact that economic cooperation and integration simultaneously support economic convergence and development (in this model, by means of convergence and augmentation of technologies and reduction of subsistence consumption and costs of education) confirms the importance of the movement towards economic integration. According to the model, economic integration between countries always brings about advantages, as soon as there are technology differences in any sector or production, regardless of whether this integration is between two industrial countries, two developing countries or between industrial and developing countries.

## **5.6 Conclusion**

This chapter presents models of strategies to solve integration hardships and assist further economic integration, particularly among the economies with different economic structures and levels of development. The model focuses on strategies that aim to ease the problems of sensitive sectors and support further economic integration. The main challenge any solution must meet lies in coping with economic disparity within and between countries. Key supporting measures are human capital and technology enhancement. These serve as profound foundations for economic, political and social structures. Advancement and convergence in education and technology will assist economic convergence and distribution by raising income and living-standards, particularly in the low-wage, low-technology sector.

Consequently, development in economic structure and economic convergence will support and strengthen economic integration in the region. Due to positive spill-over effects, economic integration will, in turn, enhance education quality and technological development which, in turn, will support the strengthening of the economic structure and bolster economic development in the end.

The model considers short- and long-term development and concludes that augmentation and convergence in the quality of human resources among sectors and assisting technological progress and fusing technology levels in the two economic sectors are the main strategies that should be simultaneously implemented. In addition, regarding the short-term model, a theoretical analysis is carried out under inequality between labor groups from a political economy perspective. The role of the government is analyzed, in terms of achieving convergence and augmentation of human capital quality and income. In this case, the individuals want to get the best out of a trade-off between income tax and gains from government spending. By means of the Median Voter Theorem, it was possible to capture a theoretical outcome of the political decision-making process in association with decisions on political strategies, which indirectly affect the development path of economic growth and economic convergence. The main outcome of this issue is the revelation of one of the relevant explanations why political programs diverge from the first-best solution. The result shows the consequence of the distortion through the fact that the government's decision is predominately based on its interest in winning votes. It can be observed that there are several opportunities that are more efficient and that will bring higher utility to the economy, if the governments are social welfare oriented. The model also shows that if there is

no inequality in the economy, the government interference is not needed, since this merely brings about distortion due to the deadweight-loss. Nonetheless, if there are disparities in the economy, it is worth taking on the deadweight-loss in order to achieve convergence, better distribution and sustainable development.

The means to achieve augmentation and convergence in human qualities are found in two relevant strategies: firstly, reducing the costs of education and implementing distribution and, secondly, reducing the costs of subsistence consumption. Convergence and improvement in human capital partly bring about convergence and improvement in income. Yet, disparity in wage rates among labor groups still exists and this can be solved by means of convergence of the two sectors' technology levels. Improving technology will, in addition, assist economic development by increasing income and total production. The model shows that, besides reducing the costs of subsistence consumption via advantages from economic integration, technological progress is one of the key means that link up the strategy of strengthening the economic structure with that of opening and deepening regionalism. The higher level of technology brings about increases in production and the wage rate and leads to improvement in individuals' income. Ensuring that the technology in the low-wage sector, which uses low technology, catches up with that in the high-wage sector, which starts with higher technology, can bring about convergence in wage rates and income, which are fundamentals of the economic structure. Importantly, any improvement in technology must be compatible with the existing human capital in the economy. Therefore, the strategies that bolster human capital quality must not be neglected. Another relevant point is that economic cooperation and integration will bolster economic devel-

opment and can assist economic convergence through the development of technology. As well as by means of research and development, changes in technology can be assisted by economic cooperation and integration. There are ways to facilitate and accelerate these, for instance by joint-venture, taking over of foreign technologies or research and development conducted by multinational firms. As already asserted, development of the level of technology will affect the wage rate and income positively. Convergence of the different sectors' levels of technology will eventually bring about convergence in wage rates and income.

## Chapter 6

# Conclusion

This thesis puts forward a feasible proposal for working towards effective economic integration in the East-Southeast Asian region, particularly from the point of view of ASEAN. It involves finding a possible plan of action to counteract contemporary difficulties (which partly result from the uncertainty of the new surge of regionalism) and lay down a foundation for further economic integration. The East-Southeast Asian regionalism and economic relations on a bilateral and sub-regional basis have been developing significantly, but it seems that the collective movement towards global economic integration has been neglected. The new surges of bilateral arrangements have led to a situation of “competitive hub and spoke bilateralism”. This has been further exacerbated by the “domino effect” and by the problems of politically sensitive sectors resulting in an increasingly serious “spaghetti bowl effect”. Besides contemporary complexities emerging from the new surges of bilateral agreements, there have always been numerous hindrances and complications to integration, encompassing internal deficiencies and external environments.

One of strategies for coping with external shocks or external threats and insuring successful economic integration refers to achieving a good economic foundation. Such strategies also strengthen political and social spheres. Besides a good economic foundation, flexibility is also important, in order to cope with and adjust to inevitable shocks as they emerge. Fundamental key strategies put forward in this thesis, that might be able to further both the contemporary economic relations and their development towards global economic

integration in the long run, are “opening and deepening regionalism” and “strengthening economic structure”. Both schemes should be supported by the strength of the region’s ability to adjust to external pressures, in other words by the strength of East-Southeast Asian flexibility.

The thesis concentrates on “strengthening economic structure” and presents a model of strategies that bring about strength in economic foundations as well as convergence. The model of this thesis shows that “strengthening economic structure” assists and in turn, is simultaneously supported by “opening and deepening regionalism”. Economic convergence and distribution are needed to solve recent economic problems within the region and create a prospect of further economic integration. Internal economic structures will be strengthened and become an important underlying ground to solve the problems of the sensitive sectors. Sustainable development can then be achieved easily and the economy will be, to a certain extent, immune to external pressure. Negative effects from “hub and spoke bilateralism” will be lessened or hindered and bilateral regionalism will become a stepping stone towards economic integration. By means of economic cooperation within the region, these strategies will support regional economic convergence and strengthen economic fundamentals, which in turn, allow countries to achieve regional and global economic integration in the long run.

The model focuses on ways of coping with economic disparity within and between countries. In particular, the discrepancy between the wage rates of blue- and white-collar workers and between technologies used in different production sectors are contemplated. Decisive supporting measures which can assist economic convergence and distribution are

improvements in education and technology. Short- and long-term effects of an increase in the quality of human capital are captured and strategies are suggested for the development of an economy with inequality between labor groups. These strategies are, firstly, augmentation and convergence in the quality of human resources within and between sectors and, secondly, assisting technological progress and fusing the technology levels in the two economic sectors.

Augmentation and convergence in the quality of human resources are strategies that should be pursued at all times and continuously, both in the short- and long-run. The means to achieve augmentation and convergence in the quality of human resources are provided through two relevant strategies that should be simultaneously implemented. The first of these is reducing the costs of education and implementing distribution, which brings about an increase in qualities of human capital and also an increase in income. The second is reducing the costs of subsistence consumption, which is a relevant strategy to prevent economic divergence. While, on the one hand, reducing the costs of education only benefits individuals who are able to invest in education, reducing the costs of subsistence consumption, on the other hand, supports all individuals. If this reduction is high enough, individuals who were previously unable to invest in education, will consequently be able to invest in education after the costs of subsistence consumption have been reduced. This implies that the quality of human capital and income will rise and the number of individuals who receive advantages from the educational support will increase. Further economic divergence can be reduced, since, according to the model, under identical saving and interest rates the high income earners invest in education at the same rate, despite different occupation and



income – however, this depends also on the extent of the level and disparity of human capital in the first period  $h_{it}$ , which affect the absolute gained level of human capital  $h_{it}e_i^*$ . Conversely, the level of investment in education by low income earners depends on the level of subsistence consumption and their own income. Combining a reduction of subsistence consumption costs with higher investment in educational support for low income earners not only increases the number of individuals who invest in education and the quality of human capital in the blue-collar group, but also augments convergence and sustainable development.

Convergence and improvement in human capital help to bring about convergence and improvement in income, but they do not help to ease disparity in wage rates among labor groups which still exists. This disparity in wage rates can be alleviated by means of convergence of the technology levels in the two sectors. In addition, augmentation of technology will assist economic development by increasing income and total production. Considering the viewpoint that strengthening the economic structure assists and is simultaneously supported by the strategies of opening and deepening regionalism, the model shows that technological progress is one of the key means to link up these two strategies. The increase in technology brings about increases in production and the wage rate, and leads to improvement in individuals' income. However, if there are diversities in the economy, unbalanced technology improvement between sectors can lead to economic divergence. On the contrary, a proper development of technological progress for the two sectors, which would consist of technological progress in both sectors accompanied by the catching up of the technology level in the low-wage sector (using low technology) with the high-wage sector

(using high technology), can bring about convergence in wage rates and income which are fundamentals of the economic structure. Notably, improvement in technology must be compatible with the existing human capital in the economy; therefore, strategies that bolster the quality of human capital must not be neglected.

Since technological improvement and enhancement can be derived from economic integration, we can see that economic cooperation and integration are simultaneously relevant factors that bolster and assist economic development and convergence. Besides the traditional advantages of economic integration, the model indicates that economic cooperation and integration trigger a relevant indirect positive effect on economic convergence and development. As already mentioned, economic cooperation or/and integration, in addition, leads to a reduction of the costs of subsistence consumption and the costs of education: This is achieved, for instance, by supporting free market competition, hindering and eliminating monopoly and oligopoly, as well as taking advantage of specialization, economies of scale and economies of scope. International trade is a relevant factor that supports this undertaking, and as soon as subsistence consumption is covered, individuals may have opportunities to invest in education, in savings and in gaining a higher standard of living. Progress and convergence in technology will bring about progress and convergence in wage rates and income. Regarding the model, changes in technology, on the one hand, can be assisted by research and development. This, however, needs a certain time to proceed and has only a moderate effect. On the other hand, technology progress is more easily and better achieved by joint ventures, taking over foreign technologies or research and development under the auspices of multinational firms. This can be achieved through economic

cooperation and integration. Higher levels of integration and openness are related to higher mobility of the factors of production (in the model however, it is assumed that there is no mobility of labors between two economies contrarily to capital mobility), resulting in more income convergence. The gains from economic integration are larger among the countries with more similar levels of income and economic development, since they have incentives to trade and invest more with each other. Furthermore, convergence supports the prospect of strong economic interaction and coordination in the long run, whereas divergence may bring about tensions and conflicts in the short run. These additional viewpoints are due to the model, that confirms the positive effect of the scheme to open and deepen regionalism on the aim of strengthening the economic structure. Due to the model, economic integration between countries always brings about advantages, as soon as there are technology differences in any sector or production, regardless of whether this integration is between two industrial countries, two developing countries or between industrial and developing countries.

Support for the results can be found in the way the EU functions. The EU has set “convergence criteria” – stable prices, stable exchange rates, sound government finances, low interest rates and legislation – as requirements for prospective members. Even though the measurements of the EU convergence criteria are not the same measurements used in this thesis, the comparison illustrates that the convergence concept is very significant and plays a great role in the integration process. In this way, the consequences of divergence are hindered from the outset. Unfortunately, ASEAN does not implement convergence criteria in accepting new members. As a result of this, members’ economies are in a disparate state.

The distribution mechanism plays a major role for the creation of convergence in ASEAN. The thesis has proved that the distribution mechanism should be controlled by a third party. At the national level, that country's government should take on this role. It should, however, be noted that sometimes, based on "Median Voter Theorem", the government diverges from the first best solution for the economy. This is because the government's decision is distorted. The reason for this distortion is the government's predominant interest in winning votes. At the international level, the distribution mechanism may be harder to operate as each member is autonomous. The EU has shown us that a supranational or multi-national institution is not impossible. ASEAN, therefore, might take EU as a supporting model in creating a similar institution, although the institution should be better adapted to ASEAN's characteristics. It should be borne in mind that as on the national level, the decision of the supranational or multi-national body might be distorted as well.

To sum up, the existence of relevant mutual positive relations between economic cooperation and integration and economic convergence is borne out. Convergence supports economic integration by assuaging the problems of sensitive sectors and hub and spokes bilateralism. Obviously, economic convergence does not only assist economic integration, but also is a general foundation for sustainable development. The fact that economic cooperation and integration simultaneously support economic convergence and development (in this model, by means of convergence and augmentation of technologies and reduction of subsistence consumption and costs of education) confirms the importance of the movement towards economic integration.

The model shows the following results:

1) There are two relevant strategies that should be simultaneously implemented, firstly the augmentation and convergence in qualities of human resources within a sector and between sectors leading to increase and convergence of income and, secondly, technological progress and the fusing of technology levels in the two economic sectors, leading to increase and convergence in wage rates which also results in an increase and convergence in income.

2) Economic cooperation and integration and economic convergence are inter-related. Convergence supports economic integration by easing the problems of “sensitive sectors” and “hub and spokes bilateralism”. Economic cooperation and integration simultaneously support economic convergence and development; in this model, by means of convergence and augmentation of technologies and reduction of the costs of subsistence consumption and costs of education.

3) Convergence criteria are important. Differences in education and/ or income amongst members of an economy are obstacles to development in general and to the prospect of integration. Members whose standard of education and income does not reach a certain level (calculated under the model relying upon various factors) do not have any potential for development or convergence. In contrast, those whose standard of education and/ or income reach or exceed the level will develop and have potential to converge.

4) Those regional groupings, one of which is ASEAN, that do not apply convergence criteria require a distribution mechanism in order to achieve promising integration. This shows that a supranational or multi-national institution is significant. For the sake of

better understanding, this thesis uses Thailand's economy and its government as an example in the model to explain the distribution mechanism.

5) Furthermore, the "Median Voter Theorem" is applied to capture a theoretical outcome of the political decision-making process in association with decisions on political strategies that indirectly affect the development path of economic growth and economic convergence. The main conclusion of the issue is to reveal one of the relevant explanations as to why several political programs diverge from the first best solution. The result shows the consequence of distortion in government's decision. This distortion is predominately influenced by the government's interest in being elected. There are several political programs that are more efficient. If the governments are social welfare oriented, the economy can gain better distribution and development. The model illustrates that government interference entails a deadweight-loss and the simulation shows that if there is no inequality in the economy, government interference is not needed, since this merely brings about distortion due to the deadweight-loss. However, if there are disparities in the economy, it is worthwhile to bear the deadweight-loss, in order to achieve convergence and sustainable development.



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