

**THE EAST ASIAN ECONOMIC GROWTH MIRACLE:  
LESSONS FOR SUB-SAHARA AFRICA**

**STEPHANIE VAN DER WESTHUIZEN Hons. B. Com.**

**Dissertation submitted in partial fulfillment of the  
requirements for the degree Magister Commercii in  
Economics at the Potchefstroom University for Christian  
Higher Education**

**Promoter: Prof. W.A. Naudè**

**November 2003**

**Potchefstroom**

## ***ACKNOWLEDGEMENTS***

I wish to express my sincere gratitude, thanks and love to the following people:

- My family and friends for their support, encouragement and advice with which they have guided me through this dissertation.

I also want to express my gratitude and thanks to the following people/institutions who contributed towards this dissertation:

- My promoter, Prof. Wim Naudè, for his excellent guidance, ideas and motivational speeches and without whom this study would not be possible.
- The Research Unit “Decision-making and Management for Economic Development”, for its financial assistance.
- The School of Economics, Risk Management and International Trade at the Potchefstroom University for presenting me with the opportunity to further my studies and supported me by providing the necessary infrastructure.
- Susan Smit, who did the language editing in a record breaking time.
- The Lord, without whom I never would have had the endurance to complete this dissertation.

# ***TABLE OF CONTENTS***

<b>TABLE OF CONTENTS.....</b>	<b>i</b>
<b>LIST OF TABLES.....</b>	<b>viii</b>
<b>LIST OF FIGURES.....</b>	<b>ix</b>
<b>SUMMARY.....</b>	<b>xi</b>
<b>OPSOMMING.....</b>	<b>xiii</b>

## **CHAPTER 1: INTRODUCTION**

<b>1.1 RESEARCH QUESTION AND HYPOTHESIS.....</b>	<b>1</b>
<b>1.2 PROBLEM STATEMENT.....</b>	<b>1</b>
<b>1.3 OBJECTIVES.....</b>	<b>3</b>
<b>1.4 BACKGROUND.....</b>	<b>3</b>
<b>1.4.1 ECONOMIC GROWTH IN SSA.....</b>	<b>3</b>
<b>1.4.2 ECONOMIC GROWTH IN EAST ASIA.....</b>	<b>5</b>
<b>1.5 METHODOLOGY.....</b>	<b>10</b>
<b>1.5.1 LITERATURE SURVEY.....</b>	<b>10</b>
<b>1.5.2 REGRESSION ANALYSIS.....</b>	<b>12</b>
<b>1.5.2.1 ESTIMATORS.....</b>	<b>13</b>
<b>1.5.2.2 THE DATA SET AND SOURCES FOR THE             DATA SET.....</b>	<b>16</b>
<b>1.6 LAYOUT OF THE STUDY.....</b>	<b>18</b>
<b>1.7 SUMMARY.....</b>	<b>19</b>

## **TABLE OF CONTENTS (CONTINUED)**

### **CHAPTER 2: ECONOMIC GROWTH IN SUB-SAHARA AFRICA**

<b>2.1 INTRODUCTION.....</b>	<b>21</b>
<b>2.2 ECONOMIC PERFORMANCE HISTORY.....</b>	<b>22</b>
<b>2.2.1 GDP GROWTH.....</b>	<b>22</b>
<b>2.2.2 EXPORT PERFORMANCE.....</b>	<b>24</b>
<b>2.2.3 OPENNESS.....</b>	<b>26</b>
<b>2.2.4 FOREIGN AID.....</b>	<b>28</b>
<b>2.2.5 DEBT BURDEN AND FINANCE.....</b>	<b>31</b>
<b>2.3 EXPLANATIONS OF SSA’s ECONOMIC PERFORMANCE.....</b>	<b>35</b>
<b>2.3.1 OVERVIEW.....</b>	<b>35</b>
<b>2.3.2 INSTITUTIONAL WEAKNESSES.....</b>	<b>40</b>
<b>2.3.3 INAPPROPRIATE TRADE POLICY.....</b>	<b>43</b>
<b>2.3.4 DEFICIENT PUBLIC SERVICES.....</b>	<b>44</b>
<b>2.3.5 INAPPROPRIATE ECONOMIC POLICIES.....</b>	<b>47</b>
<b>2.3.6 GEOGRAPHY.....</b>	<b>51</b>
<b>2.3.6.1 POPULATION / DEMOGRAPHICS.....</b>	<b>51</b>
<b>2.3.6.2 CLIMATE.....</b>	<b>53</b>
<b>2.3.6.3 POPULATION DENSITY.....</b>	<b>53</b>
<b>2.3.6.4 SMALL SIZE.....</b>	<b>54</b>
<b>2.4 SUMMARY.....</b>	<b>55</b>

**TABLE OF CONTENTS (CONTINUED)**

**CHAPTER 3: ECONOMIC GROWTH IN EAST ASIA**

**3.1 INTRODUCTION..... 61**

**3.2 COUNTRY EXPERIENCES..... 62**

**3.2.1 TAIWAN..... 62**

**3.2.2 INDONESIA..... 65**

**3.2.3 SOUTH KOREA..... 66**

**3.2.4 THAILAND..... 70**

**3.2.5 MALAYSIA..... 72**

**3.2.6 HONG KONG..... 75**

**3.2.7 SINGAPORE..... 76**

**3.3 EXPLAINING THE DETERMINANTS OF EAST ASIA’S**

**GROWTH..... 79**

**3.3.1 GROWTH ACCOUNTING..... 79**

**3.3.2 THE EXTENSIVE GROWTH HYPOTHESIS..... 81**

**3.3.3 ACCUMULATION OF PRODUCTION FACTORS..... 83**

**3.3.4 TOTAL FACTOR PRODUCTIVITY GROWTH..... 86**

**3.3.5 INITIAL ENDOWMENTS..... 86**

**3.3.6 THE ROLE OF PUBLIC POLICY AND OF SELEC-**

**TIVE INTERVENTIONS..... 91**

**3.3.6.1 POLICIES..... 91**

**3.3.6.2 GOVERNMENT INTERVENTIONS..... 94**

**3.3.7 INSTITUTIONS..... 99**

**3.3.8 INVESTMENTS AND EXPORTS..... 103**

## **TABLE OF CONTENTS (CONTINUED)**

3.3.8.1 DIVERSIFICATION.....	107
3.3.8.2 DIRECTION OF CAUSALITY.....	109
3.3.8.3 PERIOD AVERAGES VERSUS INITIAL CON- DITIONS.....	110
<b>3.4 EXPLANATORY THEORIES FOR THE EAST ASIAN GROWTH ‘MIRACLE’.....</b>	<b>110</b>
3.4.1 EXPLANATIONS BASED ON THE NEOCLASSICAL THEORY.....	110
3.4.2 EXPLANATIONS BASED ON THE STRUCTURA- LISM THEORY.....	112
3.4.3 EXPLANATIONS BASED ON THE CULTURA- LIST THEORY.....	113
3.4.4 EXPLANATIONS BASED ON THE REVISIONIST THEORY.....	114
3.4.5 NOTHING MEANINGFUL CAN BE SAID ABOUT SELECTIVE INTERVENTIONS.....	115
3.4.6 EXPLANATIONS BASED ON THE FLYING GEESE EFFECT.....	116
<b>3.5 SUMMARY.....</b>	<b>118</b>

## **CHAPTER 4: THEORY OF ECONOMIC GROWTH**

<b>4.1 INTRODUCTION.....</b>	<b>125</b>
<b>4.2 THE NEOCLASSICAL MODEL OF EXOGENOUS GROWTH.....</b>	<b>126</b>

## TABLE OF CONTENTS (CONTINUED)

4.2.1 HARROD-DOMAR MODEL.....	126
4.2.2 SOLOW MODEL.....	127
4.2.2.1 EMPIRICAL STUDY OF THE SOLOW MODEL.....	129
4.2.2.2 THE SUPPLY AND DEMAND FOR GOODS.....	130
4.2.2.3 GROWTH IN THE CAPITAL STOCK AND THE STEADY STATE.....	131
4.2.2.4 SAVINGS AND GROWTH.....	132
4.2.2.5 THE GOLDEN RULE.....	135
4.2.3 STRUCTURAL ADJUSTMENT WITHOUT AD- JUSTMENT.....	136
4.2.4 THE POLITICAL ECONOMY OF STRUCTURAL ADJUSTMENT.....	138
4.2.5 CRITISISM OF THE NEOCLASSICAL MODEL.....	139
4.3 THE NEW THEORIES OF GROWTH.....	139
4.3.1 AUGMENTED SOLOW MODEL.....	139
4.3.1.1 ACCUMULATION OF ALL TYPES OF CAPITAL.....	140
4.3.1.2 THE STEADY STATE WITH POPULATION GROWTH.....	141
4.3.2 SPILLOVERS AND POVERTY TRAPS.....	143
4.4 ENDOGENOUS GROWTH THEORY.....	145
4.4.1 THE BASIC MODEL.....	145
4.4.2 A TWO – SECTOR MODEL.....	145
4.4.3 TECHNOLOGICAL PROGRESS ENDOGENOUS TO ECONOMIC INCENTIVES.....	146
4.4.4 CRITICISM OF THE ENDOGENOUS MODEL.....	149

## **TABLE OF CONTENTS (CONTINUED)**

<b>4.5 ECONOMIC GROWTH AND CONVERGENCE.....</b>	<b>149</b>
<b>4.5.1 INTRODUCTION.....</b>	<b>149</b>
<b>4.5.2 THE CONVERGENCE DEBATE.....</b>	<b>150</b>
<b>4.6 SUMMARY.....</b>	<b>152</b>

## **CHAPTER 5: DETERMINANTS OF ECONOMIC GROWTH IN SUB-SAHARA AFRICA**

<b>5.1 INTRODUCTION.....</b>	<b>155</b>
<b>5.2 METHODOLOGY.....</b>	<b>155</b>
<b>5.2.1 ESTIMATORS.....</b>	<b>155</b>
<b>5.3 MODEL.....</b>	<b>159</b>
<b>5.3.1 CROSS – SECTIONAL DATA.....</b>	<b>159</b>
<b>5.3.2 THE MODEL.....</b>	<b>161</b>
<b>5.3.2.1 POTENTIAL DETERMINANTS.....</b>	<b>161</b>
<b>5.4 REGRESSION RESULTS.....</b>	<b>175</b>
<b>5.4.1 THE AFRICA DUMMY.....</b>	<b>175</b>
<b>5.4.2 DETERMINANTS OF EAST ASIAN ECONOMIC GROWTH.....</b>	<b>176</b>
<b>5.4.3 DETERMINANTS OF SUB-SAHARA AFRICAN GROWTH.....</b>	<b>177</b>
<b>5.4.4 OLS CROSS – SECTION, RANDOM AND FIXED EFFECTS PANEL DATA REGRESSIONS FOR GDP PER CAPITA GROWTH.....</b>	<b>178</b>

## **TABLE OF CONTENTS (CONTINUED)**

<b>5.4.5 OLS CROSS – SECTION, RANDOM AND FIXED EFFECTS PANEL DATA REGRESSIONS FOR EXPORTS AS PERCENTAGE OF GDP.....</b>	<b>179</b>
<b>5.4.6 OLS CROSS – SECTION, RANDOM AND FIXED EFFECTS PANEL DATA REGRESSIONS FOR GDP PER CAPITA (LEVEL).....</b>	<b>181</b>
<b>5.5 COMPARATIVE ANALYSIS.....</b>	<b>182</b>
<b>5.5.1 EASTERLY AND LEVINE’S EXPLANATIONS.....</b>	<b>182</b>
<b>5.6 SUMMARY.....</b>	<b>185</b>

## **CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS**

<b>6.1 SUMMARY.....</b>	<b>189</b>
<b>6.2 RECOMMENDATIONS.....</b>	<b>209</b>
<b>6.3 LESSONS.....</b>	<b>213</b>
<b>6.4 AVENUES FOR FURTHER RESEARCH.....</b>	<b>214</b>
<b>BIBLIOGRAPHY.....</b>	<b>215</b>

## LIST OF TABLES

<b>TABLE 1.1 The Determinants.....</b>	<b>17</b>
<b>TABLE 2.1 Distribution of Total Flows to SSA (1970-94).....</b>	<b>29</b>
<b>TABLE 2.2 Foreign Resource Flows to SSA (1980-95).....</b>	<b>30</b>
<b>TABLE 2.3 SSA compared with other Developing regions.....</b>	<b>38</b>
<b>TABLE 2.4 Social-Political Indicators: Differences between SSA and Other LDCs.....</b>	<b>40</b>
<b>TABLE 3.1 Development Checklist for East Asian Countries.....</b>	<b>87</b>
<b>TABLE 3.2 Currency Convertibility and Exchange Rate Flexibility ..</b>	<b>106</b>
<b>TABLE 3.3 GDP Growth Rate, 1980-1995 .....</b>	<b>106</b>
<b>TABLE 5.1 A Data set on Economic Growth Rates and Country Characteristics.....</b>	<b>160</b>
<b>TABLE 5.2 The Determinants.....</b>	<b>174</b>
<b>TABLE 5.3 The Africa Dummy in Four Growth Regressions.....</b>	<b>175</b>
<b>TABLE 5.4 Regression Analysis Results for GDP per capita Growth.....</b>	<b>179</b>
<b>TABLE 5.5 Regression Analysis Results for Exports as a percentage of GDP.....</b>	<b>181</b>
<b>TABLE 5.6 Regression Analysis Results for GDP per capita.....</b>	<b>182</b>
<b>TABLE 5.7 Decompositions of Growth Differentials between SSA and East Asia.....</b>	<b>183</b>

## LIST OF FIGURES

<b>FIGURE 1.1 GDP per capita in East Asia and Sub-Sahara Africa, 1970-1995.....</b>	<b>2</b>
<b>FIGURE 1.2 GNP per capita in East Asia, 1970-1995.....</b>	<b>6</b>
<b>FIGURE 1.3 Values of Exports in East Asia and Sub-Sahara Africa, 1970-1995... ..</b>	<b>7</b>
<b>FIGURE 1.4 Average Annual Growth of Exports in East Asia and Sub-Sahara Africa.....</b>	<b>8</b>
<b>FIGURE 1.5 Average Annual Export Growth Rates.....</b>	<b>8</b>
<b>FIGURE 1.6 Exports (goods and services) in East Asia and Sub-Sahara Africa as a percentage of GNP.....</b>	<b>9</b>
<b>FIGURE 2.1 Real per capita GDP for selected countries (1985-1993)...</b>	<b>23</b>
<b>FIGURE 2.2 Structure of External Finance, annual averages during 1990-1995.....</b>	<b>33</b>
<b>FIGURE 2.3 Private Flows by Region (billion dollars).....</b>	<b>34</b>
<b>FIGURE 2.4 Average Annual Population Growth for countries in SSA for the periods; 1970-1980, 1980-1992, 1992-2000.....</b>	<b>51</b>
<b>FIGURE 2.5 Average Annual Population Growth for countries in East Asia for the periods; 1970-1980, 1980-1992, 1992-2000.....</b>	<b>52</b>
<b>FIGURE 3.1 Average GDP per capita growth rate over the period 1970-1990.....</b>	<b>81</b>
<b>FIGURE 3.2 East Asia's Adult Literacy Rate Percentage.....</b>	<b>84</b>
<b>FIGURE 3.3 FDI Inflows to East Asian countries 1980-2001.....</b>	<b>90</b>
<b>FIGURE 3.4 Share of GDP per country.....</b>	<b>106</b>
<b>FIGURE 4.1 Gross Domestic Saving (% of GDP) for East Asia and Sub-Sahara Africa.....</b>	<b>133</b>

<b>FIGURE 4.2 Current Account Balance (US\$ millions) for SSA</b>	
<b>Countries.....</b>	<b>133</b>
<b>FIGURE 4.3 Current Account Balance (US\$ millions) for East Asian</b>	
<b>Countries.....</b>	<b>134</b>
<b>FIGURE 4.4 FDI Inflows to East Asia and SSA for period 1980-2001..</b>	<b>135</b>
<b>FIGURE 5.1 Initial GDP for selected SSA countries.....</b>	<b>162</b>
<b>FIGURE 5.2 Initial GDP for selected East Asian countries.....</b>	<b>162</b>
<b>FIGURE 5.3 Average Annual Growth Rate for selected countries.....</b>	<b>163</b>
<b>FIGURE 5.4 Government Consumption as share of GDP for selected</b>	
<b>SSA countries, 1970-1990.....</b>	<b>164</b>
<b>FIGURE 5.5 Government Consumption as share of GDP for selected</b>	
<b>East Asian countries, 1970-1990.....</b>	<b>164</b>
<b>FIGURE 5.6 Constant Price Shares of GDP for selected countries,</b>	
<b>1988.....</b>	<b>165</b>
<b>FIGURE 5.7 Annual Rate of Inflation for selected countries.....</b>	<b>166</b>
<b>FIGURE 5.8 Population Growth Rate (%) for selected countries,</b>	
<b>1960-1990.....</b>	<b>168</b>
<b>FIGURE 5.9 Degree of Openness as measured by Sachs and Warner</b>	
<b>For selected countries, 1970-1990.....</b>	<b>169</b>
<b>FIGURE 5.10 Adult Literacy Rate (%) for selected countries,1980...</b>	<b>170</b>
<b>FIGURE 5.11 “ETHNIC”: Index of ethnolinguistic fractionalization,</b>	
<b>1960.....</b>	<b>171</b>
<b>FIGURE 5.12 FDI Inflows into selected SSA countries, 1980-2001.....</b>	<b>172</b>
<b>FIGURE 5.13 FDI Inflows into selected East Asian countries, 1980-</b>	
<b>2001.....</b>	<b>172</b>

## ***SUMMARY***

### **THE EAST ASIAN ECONOMIC GROWTH MIRACLE: LESSON FOR SUB-SAHARA AFRICA**

The economic performance of eight East Asian countries – Japan, South Korea, Taiwan, Hong Kong, Singapore, Thailand, Malaysia and Indonesia – have been described as the “East Asian Miracle” because of their economies’ significant growth since the 1960s. In these eight countries real per capita Gross Domestic Product (GDP) rose twice as fast as in any other region between 1965 and 1990. In contrast, much of Sub-Sahara African (SSA) remains in poverty with slow growth in many SSA economies over the same period of time.

In this light, it is the purpose of this study to identify the determinants of economic growth in East Asia over the period 1960 to 1990, and to determine whether these determinants are also relevant to explain economic growth in SSA. The hypothesis is that the determinants of economic growth in East Asia are similar to the determinants of economic growth in SSA.

The experiences of East Asia – Malaysia, Thailand and Indonesia - can probably be most meaningfully compared to SSA economies. In the 1960s, the average levels of GDP in East Asia (Indonesia, Malaysia and Thailand) and SSA were similar. Also, economic structures and the social contexts of countries in East Asia in the 1960s were not apparently so different from those of some SSA countries. East Asia could be characterized as being relatively rich in natural resources but weaker in human resources. This is similar to the situation in many countries in SSA both in the 1960s and today. East Asia also had problems of ethnic conflict and periods of political instability. At the time (circa early 1960s), many expected rapid growth in SSA and stagnation in Asia.

The study showed that SSA’s exports have a small and declining share in the world trade and that its exports are largely confined to primary products and the importation of non-primary

products. The study then showed that the causes for SSA's failure to grow were either because of proximate causes, i.e. exogenous factors such as bad weather, deteriorating terms of trade, fluctuating international interest rates and reduced inflows of foreign aid, or because of ultimate causes i.e. endogenous factors such as, inappropriate domestic policies, including incentive structures, and the mismanagement of public resources.

The study found the determinants of East Asia's economic growth to be an outward oriented strategy, which build strong linkages with world markets and technology through an export promotion policy. East Asian countries also pursued conservative macroeconomic policies, which created a stable, predictable environment for investment and trade. Inflation was kept low, exchange rates competitive and debt affordable. Human capital was vigorously invested to develop an educated and technically competent labour force. And finally, competitive markets were maintained for factors to facilitate the structural transformation from primary production to manufacturing and eventually to knowledge-intensive industries.

After running a regression analysis, which combined SSA and East Asian growth determinants, it is the findings of this study that policies, institutions and geographical factors determine SSA's growth performance. In particular factors such as initial GDP, exports as a percentage of GDP, government effectiveness, political stability, landlockness and tropics, external debt, population growth rate and literacy rate. If SSA could some way improve their policies and focus on becoming more open to international trade and thus promoting their exports, it may improve their economic growth rate.

Although many of the same determinants, which caused East Asia's economic growth were found to be significant in the SSA experience, it was also found that the African dummy were extremely significant. This means that not all the determinants, which caused East Asia's economic growth, could be identified, and thus creates an avenue for further research.

## ***OPSOMMING***

### **DIE OOS-ASIATIESE - GROEI WONDERWERK:**

#### **LESSE VIR SUB-SAHARA AFRIKA**

Die ekonomiese prestasie van agt Oos-Asiatiese lande – Japan, Suid-Korea, Taiwan, Hong Kong, Singapoer, Thailand, Maleisië en Indonesië – kan beskryf word as die “Oos-Asiatiese Wonderwerk” weens die merkwaardige ekonomiese groei wat hierdie lande sedert die 1960s getoon het. In hierdie agt lande het reële per kapita Bruto Binnelandse Produk (BBP) tussen 1965 en 1990 twee keer soveel gestyg as in enige ander gebied. In teenstelling hiermee, het armoede in Sub-Sahara Africa (SSA) nie afgeneem nie en was ekonomiese groei gedurende dieselfde periode swak.

In hierdie lig gesien, is die doel van hierdie studie om die determinante van ekonomiese groei in Oos-Asië vir die periode 1960 tot 1990 te identifiseer en om te bepaal of hierdie determinante ook relevant is om ekonomiese groei in SSA te verduidelik. Die hipotese is dat die determinante van ekonomiese groei in Oos-Asië ooreenstem met determinante van ekonomiese groei in SSA.

Die ervarings van Oos-Asië – Maleisië, Thailand en Indonesië – kan waarskynlik betekenisvol vergelyk word met dié van SSA ekonomiese. Gedurende die 1960s, het die gemiddelde vlakke van BBP in Oos-Asië (Indonesië, Maleisië en Thailand) ooreengestem met die van SSA. Verder het ekonomiese strukture en sosiale kontekste van lande in Oos Asië in die 1960s nie veel verskil van dié wat in sommige SSA lande waargeneem kon word nie. Oos-Asië kon beskryf word as ‘n gebied wat geredelik ryk was aan natuurlike hulpbronne, maar armer aan menslike hulpbronne. Dit stem ooreen met die situasie van baie lande in SSA, beide gedurende die 1960s en vandag. Oos Asië se posisie is ook geïmplementeër deur etniese konflik en periodes van politieke onstabieleit. Gedurende die tyd (die vroeë 1960s) is vinnige groei in SSA en stagnasie in Asië deur baie verwag.

Die studie dui daarop dat uitvoere vanaf SSA ‘n klein en kwynende aandeel in wêreldhandel het en dat uitvoere meerendeels beperk word tot primêre produkte en die invoer van nie-primêre produkte. Die studie het toe aangedui dat die oorsake van SSA se onvermoë om te groei óf was

as gevolg van onmiddellike oorsake, dus eksogene faktore soos slegte weer, kwynende handelsterme, flukturerende internasionale rentekoerse en verminderde invloed van buitelandse hulp; óf as gevolg van uiteindelijke oorsake, dus endogene faktore soos onvanpaste binnelandse beleid, insluitende aansporingstrukture en die wanbestuur van openbare hulpbronne.

Die studie het bevind dat die determinante van ekonomiese groei in Oos-Asië 'n uitwaarts-georiënteerde strategie was waardeur sterk skakelings met wêreldmarkte en tegnologie opgebou is deur 'n uitvoerbevorderende beleid. Oos-Asiatiese lande het ook konserwatiewe makro-ekonomiese beleid nagejaag, waardeur 'n stabiele, voorspelbare omgewing vir belegging en handel tot stand gebring is. Inflasie is laag gehou, die wisselkoers kompetierend en skuld bekostigbaar. Menslike kapitaal is met oorleg belê om sodoende 'n opgevoede en tegniese-vaardige werksmag te ontwikkel. Ten laaste is kompeterende markte in stand gehou sodat faktore die strukturele transformasie van primêre produksie tot vervaardiging en uiteindelik kennis-intensiewe industrië, kon fasiliteer.

Nadat 'n regressie-analise gedoen is wat SSA en Oos-Asiatiese groei determinante gekombineer het, is dit die bevinding van hierdie studie dat beleid, institusies en geografiese faktore SSA se groei prestasie bepaal. Faktore soos aanvanklike BBP, uitvoer as persentasie van BBP, regeringseffektiwiteit, politieke stabiliteit, die feit dat 'n streek slegs deur land omring word of in die trope gelê is, eksterne skuld, bevolkingsgroei koerse en geletterdheidskoerse, is veral van belang. Indien SSA 'n manier kon vind om beleid te verbeter en daarop te fokus om meer oop te wees vir internasionale handel om sodoende uitvoer te bevorder, kan dit die ekonomiese groei koerse verbeter.

Alhoewel baie van dieselfde determinante wat Oos-Asiatiese groei veroorsaak het bevind is om betekenisvol tot die SSA-situasie te wees, is daar ook bevind dat die fopveranderlike vir Afrika besonder betekenisvol was. Dit beteken dat nie al die determinante wat Oos-Asiatiese ekonomiese groei veroorsaak het, identifiseer kon word nie, wat dus 'n geleentheid skep vir verdere navorsing.

# **CHAPTER 1: INTRODUCTION**

## **1.1 Research Question and Hypothesis**

The economic performance of eight East Asian countries – Japan, South Korea, Taiwan, Hong Kong, Singapore, Thailand, Malaysia and Indonesia – have been described as the “East Asian Miracle” because of their economies’ significant growth since the 1960s. In these eight countries real per capita Gross Domestic Product (GDP) rose twice as fast as in any other region between 1965 and 1990 (Bloom, 1998). In contrast, much of Sub-Sahara African (SSA) remains in poverty with slow growth in many SSA economies over the same period of time (Bloom, 1998).

In this light, it is the purpose of this study to identify the determinants of economic growth in East Asia over the period 1960 to 1990, and to determine whether these determinants are also relevant to explain economic growth in SSA. The hypothesis is that the determinants of economic growth in East Asia are similar to the determinants of economic growth in SSA.

## **1.2 Problem Statement**

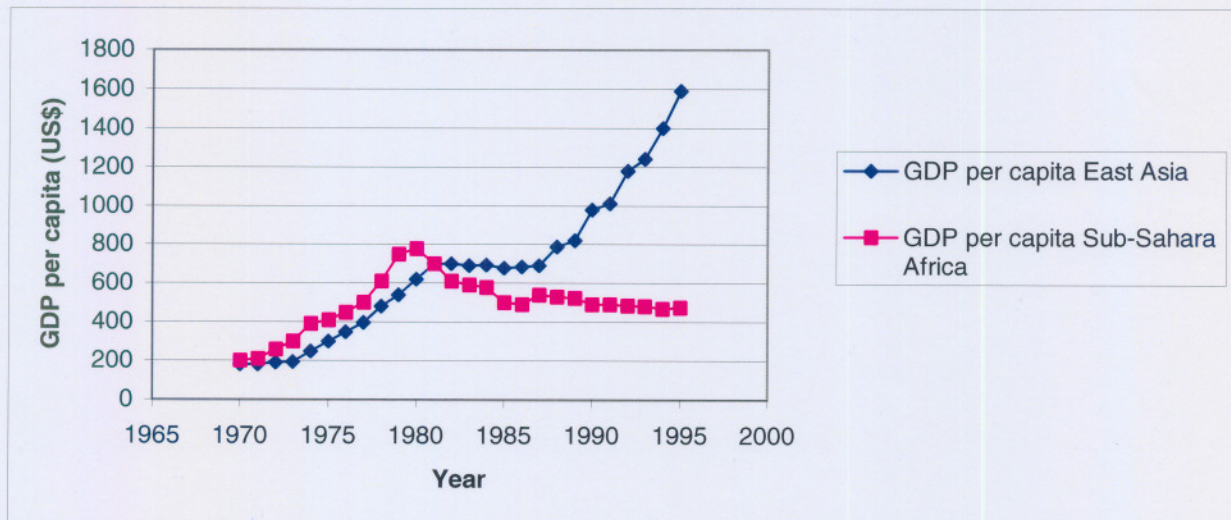
To a large extent, SSA has been bypassed by globalization. About 240 million Africans live on less than \$1 a day, have no access to safe water, and are functionally illiterate. The total GDP of SSA is a little more than that of Belgium – but, while Belgium has a population of 10 million people, SSA has a population of over 600 million people. It is evident that SSA’s market is small in absolute terms (Bloom, 1998).

Within the context of globalisation, there has been a tendency to contrast SSA’s growth “tragedy” over the last three decades with the economic “miracle” of East Asia. There may be lessons from the East Asian experiences that policy-makers in SSA could adapt to their own situations. Lessons can be learned both from the era of rapid growth in East Asia as well as from the ongoing economic crisis during 1997-1998 (Aryeetey, Court, Nissanke, Weder, 1998).

In particular, Indonesia, Malaysia and Thailand could perhaps be argued to offer the most relevant lessons for SSA. These countries and SSA had similar levels of income in the 1960s and 1970s. This can be seen in Figure 1.1, which highlights the changes in GDP per capita in East

Asia and SSA since 1970. The two regions also had relatively similar social and political conditions at that time. The graph illustrates the sustained growth in East Asia for twenty-five years as well as the decline in SSA's economic performance since the early 1980s (Aryeetey, Court, Nissanke, Weder, 1998).

**Figure 1.1 GDP per capita in East Asia and Sub-Sahara Africa, 1970-1995**



Source: Calculated from World Development Indicators (World Bank, 1997).

Figure 1.1 depicts the changes in GDP per capita in East Asia and SSA since 1970. It illustrates the divergence in the level of GDP since the early 1980s. However, there is also a range of performances with in East Asia and SSA (see Figure 1.2, page 8).

East Asia's share of manufacturing export to GDP in the 1990s was more than five times that of SSA. While explanations abound in the literature as to why SSA has failed, recent empirical work suggests that the reason for SSA's dismal export performance may lie in a low skill-to-land ratio, which causes its comparative advantage to lie in primary exports (Aryeetey, Court, Nissanke, Weder, 1998). In chapter three the recent literature on the causes of SSA's slow growth will be surveyed.

SSA's experience with industrialization has been disappointing. Some have argued that if SSA economies are to grow they should follow the East Asian example and move from the traditional emphasis on agricultural production towards labour-intensive manufacturing (Appleton, 1999).

## **1.3 Objectives**

In light of the hypothesis, research question and problem statement, the objectives of this study is as follows:

- To identify the determinants of economic growth in East Asia between 1965 and 1990. (The latter period is chosen because it was the period in which the East Asian countries real per capita GDP grew the fastest).
- To test the significance of these determinants in explaining SSA economic growth between 1965 and 1990.
- To identify the possible lessons for SSA from the East Asian experience.

## **1.4 Background**

### ***1.4.1 Economic Growth in Sub-Sahara Africa***

Despite differences over time and across countries, the growth record in SSA has generally been dismal overall over the past two and a half decades. Gross domestic product (GDP) growth was relatively high for SSA until the mid-1970s, registering an average annual rate of 5.4% during 1960-74. However, over the next two-and-a-half decades growth averaged only 2.0% per year. Similarly, on a per capita basis the average was 2.6% during the earlier period, but fell to -0.9% per year over the latter period (Appleton, 1999).

Overall, SSA's share in world trade - the bulk of which is still confined to exportation of primary goods and importation of non-primary intermediary, capital and consumption goods, - has declined over the last three decades. It varied from 4.1 to 4.9 percent during 1960 – 65, fluctuated around 4.4 percent during the 1970s and declined to around 2.3 percent in the 1990s.

Secondly, the region faces marginalisation in investment, as measured by Foreign Direct Investment (FDI) flows. SSA received FDI flow worth US\$1.8 billion in 1994 (the size of the flows to New Zealand), while North Africa received US\$ 1.3 billion, implying that meager flows of FDI in the continent continue to be concentrated in a small number of countries endowed with resources, especially oil. FDI inflows to SSA reached US\$ 4.6 billion in the mid-1990s, most of it being concentrated in a few countries (e.g. Egypt, Morocco, Nigeria). Total FDI flows have more

than tripled during 1991-95, reaching US\$ 90 billion in 1995 (African Development Bank [ADB], 1997). However, over time the share of SSA in total FDI flows to developing countries has been declining from 16% in the 1970s to 10% in the 1980s and further down to 5% in the 1990s (ADB, 1997).

Third, the region faces marginalisation in rapid global technological advances due to the absence of requisite financial as well as human infrastructure to support such advances in the region. For instance, the global information revolution, and in particular the communications sector, has bypassed SSA, given that SSA has only 2% of the world's telephone lines, most of which are in a few large cities (Wangwe, 1997).

At the regional level, significant changes in the socio-economic and political conditions have and are still taking place in SSA. Structural Adjustment Programs (SAPs), which have involved substantial reforms in national exchange, commercial and credit policies as well as various institutional arrangements, have been undertaken under the auspices of the IMF and World Bank in virtually all the region's economies. SAPs, which are mainly attributed to the economic crisis in the continent which became apparent in the early 1980s, have the following main goals: getting prices right, shifting from public to private ownership, from administrative controls to market orientation, from import - substitution to export orientation industries, and from import intensive industrialization to resource base manufacturing. Regarding political change there has been an uneven trend towards multiparty systems and more accountable governments since 1990 (Aryeetey and Nissanke, 1998).

Since the 1980s, improvement in economic performance in some SSA countries has coincided with opening up of countries to foreign investments and efforts to increase participation in world trade. Political and economic reforms have created hope for SSA to enter a new millennium much more integrated to the world in the areas of trade, finance, investments and communications (Aryeetey and Nissanke, 1998).

Over the last three decades, SSA and East Asia have developed contrasting balance of payments profiles. While many countries in both regions have, from time to time, experienced significant deficits in their current account balances, the rapid growth of manufacturing exports and the accompanying significant changes of export trade structure are unique to the East Asia. For many SSA countries the profile shows that the largely negative current account balance for most of the

last three decades did not witness significant growth in both exports and imports, even if imports often grew faster. Many economies of SSA are still heavily dependent on export earnings for a very limited number of primary commodities - unprocessed agricultural and mineral products-, vulnerable to externally determined price and volume movements. The export sector often remains an enclave, generating very limited consumption-production linkages in the economies, and failing to provide either a stable or growing source of revenues (Aryeetey and Nissanke, 1998).

With an average current account balance of -3.8% of GDP for the period 1990-96 for SSA, the need for external flows remains significant. While South East Asia has been able to attract large amounts of private capital flows to finance resource gaps, SSA has failed to do the same, creating significant gaps that have had to be filled with official aid (Aryeetey and Nissanke, 1998).

While SSA's exports have hardly grown, declining terms of trade and various external shocks continue to make countries vulnerable. In addition to the undesirable vulnerability to commodity price shocks from a narrow export base, the primary commodity export sector has generally failed to generate an impetus for growth and dynamic transformation for the economies of SSA. The SSA countries have continued to depend largely on OECD countries for the imports of both consumer items and capital goods. Lately, they have turned to South East Asian countries for the importation of a number of consumer items. Most SSA countries are oil-importers, in addition to basic machinery and equipment (Aryeetey and Nissanke, 1998)

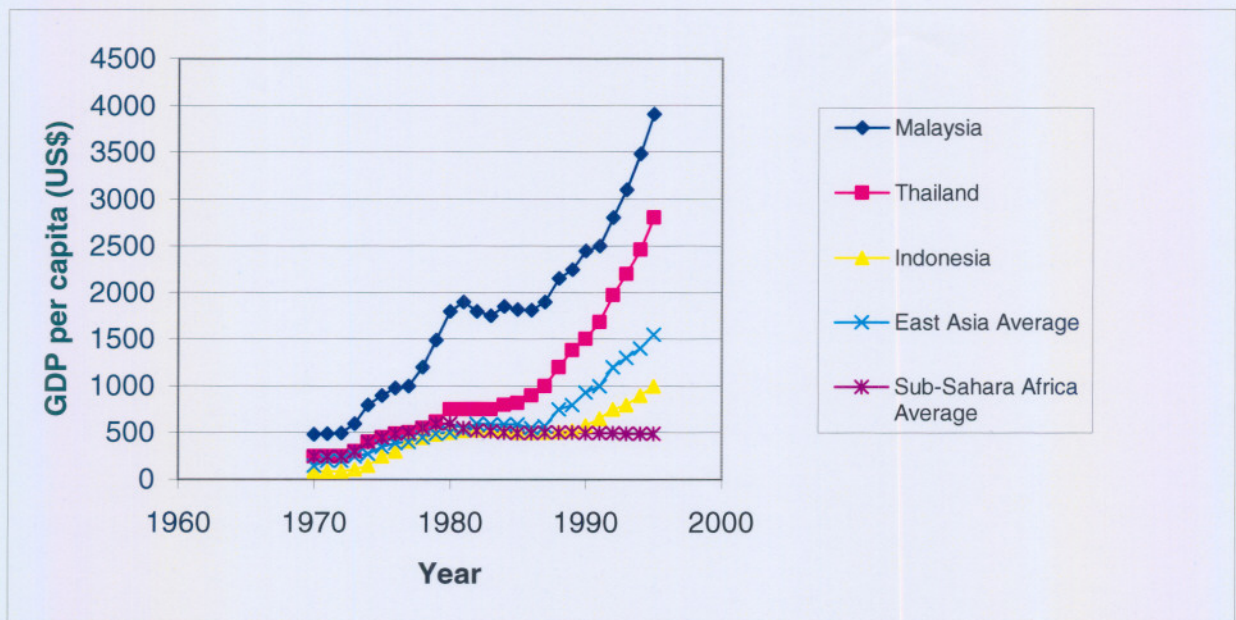
#### ***1.4.2 Economic Growth in East Asia***

Given the rapid rates of development in East Asia over the last three decades there has been a considerable amount of effort devoted to distilling the lessons from East Asia and their transferability to other developing countries. Much of the existing literature on economic performance in East Asia and SSA has concentrated on studies that focus on a particular region. Two much noted reports of this kind by the World Bank are *The East Asian Miracle Study* (World Bank, 1993) and the *Adjustment in Africa Study* (World Bank, 1996).

The experiences of East Asia – Malaysia, Thailand and Indonesia - can probably be most meaningfully compared to SSA economies. In the 1960s, the average levels of GDP in East Asia (Indonesia, Malaysia and Thailand) and SSA were similar. Also, economic structures and the

social contexts of countries in East Asia in the 1960s were not apparently so different from those of some SSA countries. East Asia could be characterized as being relatively rich in natural resources but weaker in human resources. This is similar to the situation in many countries in SSA, both in the 1960s and today. East Asia also had problems of ethnic conflict and periods of political instability. At the time (circa early 1960s), many expected rapid growth in SSA and stagnation in Asia (see discussion in Harriss, 1997) (Court and Yanagihora, 1998).

**Figure 1.2 GNP per capita in East Asia, 1970-1995**

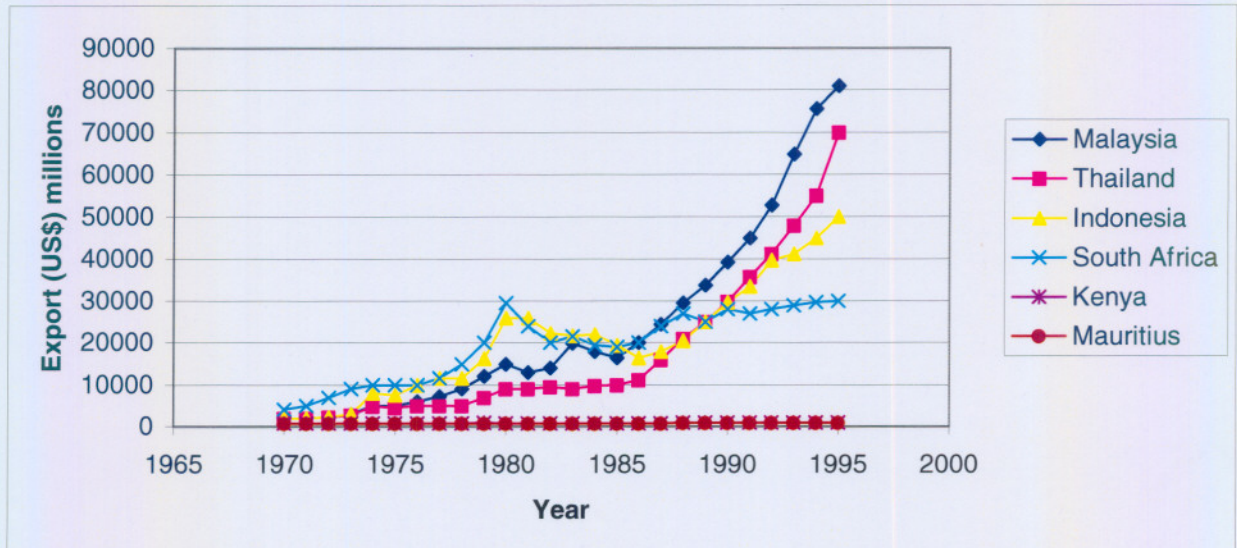


Source: Calculated from World Development Indicators, 1997.

Figure 1.2 shows that Malaysia in particular had a head start on other countries in East Asia whereas Indonesia started from a position below the SSA average (Court and Yanagihora, 1998).

Court and Yanagihora (1998) identify the greater outward orientation in East Asia as one of the main causes of the difference in growth performance with SSA. Taking export performance as an example, the difference between East Asia and SSA is highlighted in Figures 1.3-1.6. Figure 1.3 shows that the value of East Asian countries' exports have grown rapidly in comparison to those of selected SSA countries.

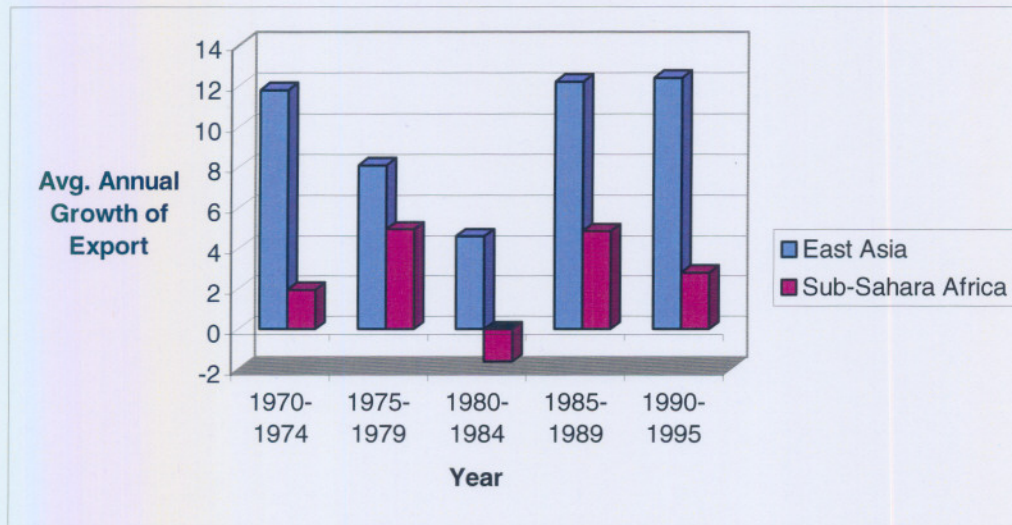
**Figure 1.3 Values of Exports in East Asia and Sub-Sahara Africa, 1970-1995**



Source: Calculated from World Development Indicators, 1997.

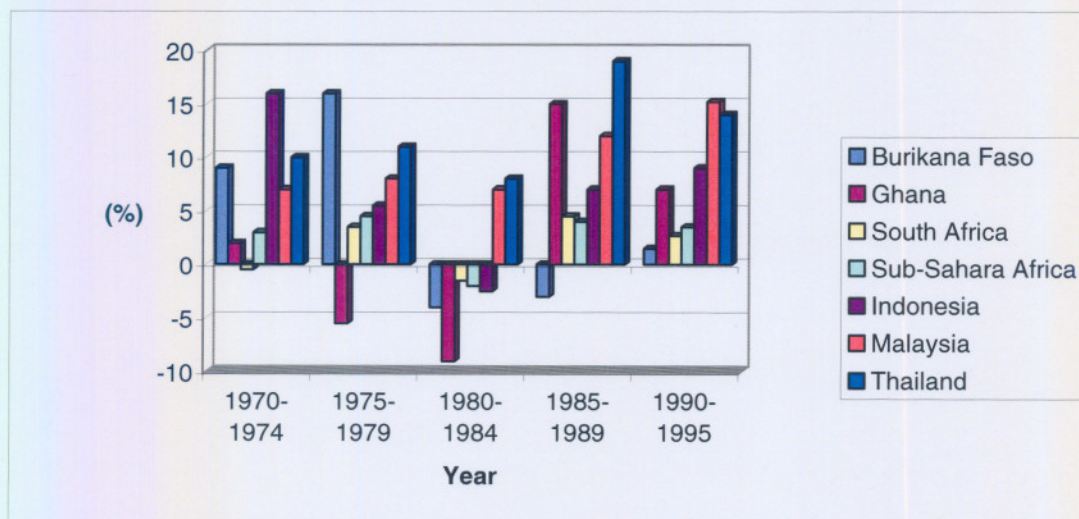
Figures 1.4 and 1.5 show that export growth rates were higher in East Asia for every 5-year period since 1970 and the divergence in performance in a few sample countries. It is important to outline the extent of the relative marginalisation of SSA. In the mid-1950s, SSA accounted for 3.1 percent of global exports. By 1995, this share had fallen to 1.4 percent. SSA is the only region of the world where export volumes have grown more slowly than total output. SSA has also failed to maintain market share in the commodities in which it had a comparative advantage. In addition, many countries in SSA attract virtually no inward investment - the region as a whole accounts for less than 10 percent of world investment flows in the 1980s (Collier, 1997).

**Figure 1.4 Average Annual Growth of Exports in East Asia and Sub-Sahara Africa**



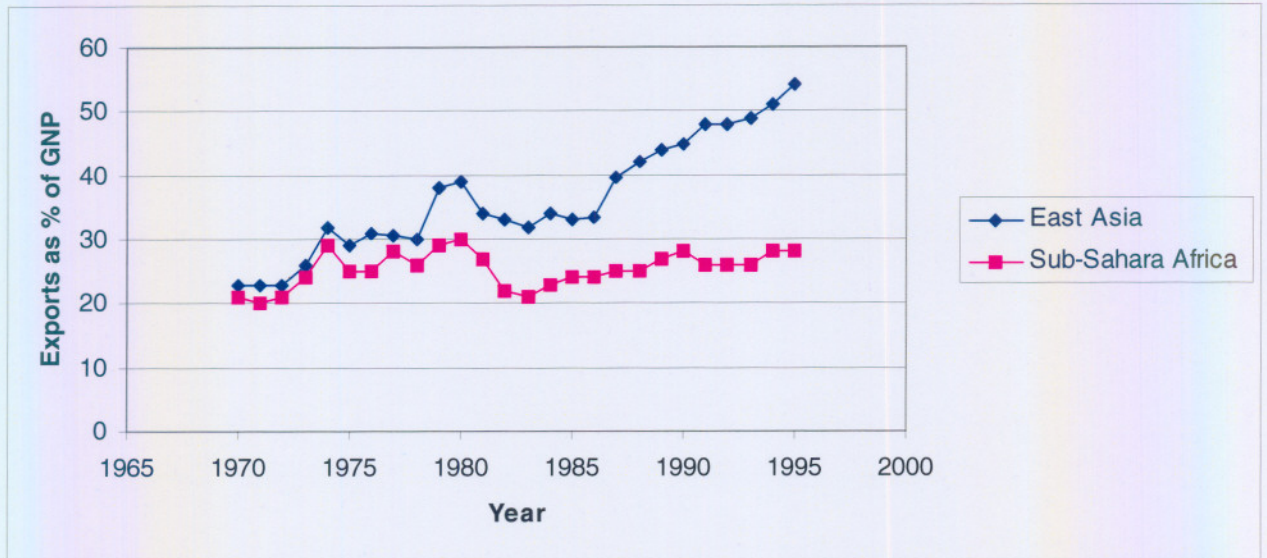
Source: Calculated from World Development Indicators, 1997.

**Figure 1.5 Average Annual Export Growth Rates**



Source: Calculated from World Development Indicators, 1997.

**Figure 1.6 Exports (goods and services) in East Asia and Sub-Sahara Africa as a percentage of GNP**



Source: Calculated from World Development Indicators, 1997.

Countries in East Asia have also upgraded their linkages with the world economy; in other words, there has been a qualitative improvement. This has included a diversification in primary exports and an upgrading into the export of primary-processed and manufactured products. In addition, particularly since 1987, East Asia also attracted large amounts of direct and portfolio investment (Court and Yanagihora, 1998).

The analysis of GDP performance indicates that it was not until the early 1980s that the disparity in GDP performance between the two regions started to become pronounced. This has tended to lead researchers to look primarily at the period from the 1980s when searching for lessons from East Asia (Harrold et al., 1996). The brief analysis of export performance indicates the need to take a longer-term view. Countries in East Asia had growing levels of exports from much earlier and, although the results were not immediately evident in growth performance, they seemed to lead to impressive performance in the longer term (Court and Yanagihora, 1998).

It is possible to distinguish between the differential situations and performance of countries within SSA. There are some SSA successes. Botswana for example, has had growth rates that are amongst the fastest in the world over the last 30 years. Mauritius has also been successful in linking with the global economy. In contrast, countries such as Ethiopia, Sudan and Sierra Leone continue to suffer the effects of civil war with the resulting implications of poor growth. Also,

some countries such as, Kenya, Nigeria, Democratic Republic of Congo and Zimbabwe, for example, remain in a fragile condition (Court and Yanagihora, 1998).

Since 1996, the economic performance of SSA has shown signs of improvement. In 1997, economic growth for SSA was estimated at around 4.6% compared to 4.5% in 1996 and 3.3% in 1995. In 1997, 21 countries (out of a total of 48) had a GDP growth rate of 5% or more and at least 38 countries had positive GDP per capita growth rates (World Bank Africa Brief, 1998). Particularly noteworthy is that exports grew by 7.5% in 1995 and 7.9% in 1996. Some are asking whether SSA is turning the corner? While some attribute this to policy reforms, others highlight the good weather and improvements in world prices. It must be remembered that this growth should be seen in the context of a population growth rate that remains near 3%. There has not been an improvement in savings or investment and nearly 40% of the population of 600 million people live on less than \$1 per day. The World Bank estimates that there will need to be sustained (and broad-based) economic growth of around 7-8% if poverty is to be reduced significantly (Court and Yanagihora, 1998).

## **1.5 Methodology**

In this study a survey of the literature, as well as an empirical investigation will be used to test the hypothesis that the determinants that contributed to high economic growth in South East Asia are similar in SSA countries.

### ***1.5.1 Literature survey***

The literature survey, contained in chapters 2 – 4 of this study, will be done to identify the potential determinants of East Asian economic growth. Moreover, it will be shown in the chapters 2 – 4 that the following are potential broad determinants of East Asian economic growth:

### 1. Capacity and Human Capital:

The priori expectation is that variables such as adult literacy rates, population growth rates, the ethnic indices, civil wars and the coups d'état are significant determinants of economic growth. Adult literacy rate would be positive, since the more educated a government, the more correct processes would be followed to ensure economic growth. Population growth rate would be negative, since economies with lower population growth rates tend to have higher economic growth rates. Ethnic indices, civil wars and coups d'état would all be negative since an economy with eradicated ethnics which cannot get along, will most definitely influence business confidence in the particular country and may halter economic growth.

### 2. Macroeconomic Policies

Here the priori expectation is that variables such as total external debt, inflation and investment are significant determinants of economic growth. Total external debt will be negative, since the more money an economy spends on servicing debt, the less money it would have to spend on incentives to promote exports. Inflation will be negative since a high inflation hinders economic growth. Investment share of real GDP will be positive, because the more money is pumped into an economy, the more financial resources it will have to build its comparative advantage through enhancing its skills, technology etc.

### 3. Financial Policies

It is expected that the levels and growth of official development assistance and foreign direct investment to a country are important determinants of economic growth. The reform of financial markets, permitting market forces to determine credit allocations and interest rates, along with currency convertibility, can create a facilitating environment for foreign investors.

### 4. Trade Policies

A country's import and export growth rate, as well as the degree of openness, can have an important impact on economic growth. The more a country exports, the more money will be brought into the country, not even to mention the creditworthiness it will build for potential export markets, thus increasing the business confidence which all leads to a higher economic growth rate. Openness provides the same function as exports, the more open an economy, the more likely it is to enhance its comparative advantage in the export markets, thus increasing economic growth.

## 5. Geography and Institutions

Determinants such as landlockness, tropics and urban population are expected to influence economic growth negatively. SSA has a very high concentration of land in the tropics, a population heavily concentrated in the interior, and more than a quarter of the population are in landlocked countries. All these contribute to high transport and transaction costs, which adversely impact on exports. Political stability, government effectiveness and regulatory burden on companies are also factors, which could influence economic growth. They all have to do with the effective role government has to play in securing economic growth, and if it is found that government is ineffective, it must surely play a role in SSA's lack of growth.

### *1.5.2 Regression Analyses*

The empirical part of this study will consist of regression analyses using cross-section and panel data from East Asian and SSA, and spanning the period 1965 – 1990 (See Chapter 5). The regression analyses will be based on the standard growth regressions following Barro (1997). The standard growth model will be discussed in Chapter 4.

The study will use World Development Reports, Human Development Reports, World Development Indicators, Penn World Tables Version 6.1, Gallup, Sachs and Warner (1995), Kaufmann, Kraay and Zoido-Lobaton (1999), Sachs and Warner (1995) and Easterly and Levine (1997) data sets to compel the necessary data for the regression analyses. The model will comprise of eight East Asian countries and 32 SSA countries. The reason why only eight East Asian countries will be used is because overall data is severely lacking for the rest of the countries. Most of the data containing East Asian countries are either incomplete or incorrect. This has brought on some problems, which will be discussed in chapter 5. The econometric program, which will be used, is the STATA version 8.

In this study, the methodology is driven by a desire to address traditional econometric problems in cross-country regressions such as unobserved country effects, outliers, endogeneity, dynamics and model uncertainty. As such various estimators and specifications are used, namely Ordinary Least Squares (OLS), Least Absolute Deviations (LAD), Generalized Least Squares (GLS)

(Random-effects) and Generalized Method of Moments (GMM). This section describes the methodology.

### 1.5.2.1 Estimators

In the literature on African cross-country growth regressions, two main types of approaches are followed. In the first the sample of countries is restricted to African countries. Examples include Fosu (1992) and Ghura (1995). In the second, a worldwide sample is used and the differences in Africa picked up by a dummy variable for African countries. Examples include Barro (1991) and Easterly and Levine (1997). Here, the first approach will be followed in an attempt to estimate the truly African determinants of growth and to minimize the heterogeneity between countries that are culturally, historically and geographically distinct.

The single point, period-averaged, cross-section regression analysis consists of estimating:

$$\ln y_{i(t2)} - \ln y_{i(t1)} = -(1 - e^{\beta\tau}) \ln y_{i(t1)} + \alpha_i X_i + \varepsilon_i \quad \dots\dots\dots (1.1)$$

where  $\ln y$  = per capita GDP of country  $i$

$X_i$  = a vector of determinants of economic growth rates

$\varepsilon_i$  = an error term with the usually assumed properties, including  $E(X_i \varepsilon_i) = 0$

Ordinary Least Squares (OLS) is often used. One of most notable weaknesses of using OLS for cross-country regression analysis is the omitted variable bias due to unobserved heterogeneity. A further problem of OLS regressions is that they are vulnerable to the existence of outliers on the dependent variable. In the case of SSA, Block (2001) remarks that Botswana and Mauritius are important examples of outlying cases in terms of GDP per capita growth. In order to address the problem of outliers, this paper will also estimate equation (1) using a least absolute deviation (LAD) estimator. The LAD-estimator is obtained from a regression that minimizes the absolute deviation around the median of the distribution of the dependent variable. It is thus not sensitive to outlier observations on the dependent variable, and may even be more efficient OLS when the error terms are non-normal (Block, 2001).

Problems of unobserved heterogeneity can best be overcome by the use of panel data estimators. In the case of panel data, more complex estimation strategies have to be followed such as using

Generalized Least Squares (GLS) panel data estimators. With panel data, the issue is whether to use a random effects or fixed effects estimation approach. To illustrate the choice and its implications, consider the following:

Equation (1) can be written in the following manner to illustrate the different estimation options when a panel of data is available (showing that panel data models have complex error structures).

$$y_{it} = x_{it}\beta + c_i + u_{it} \quad \dots\dots\dots (1.2)$$

For  $i = 1, \dots, N$  and  $t = 2, \dots, T$  and where  $y_{it}$  = economic growth rate of country  $i$  in period  $t$ ;

$x_{it}$  = a  $1 \times K$  vector of explanatory variables that can vary over  $t$  and  $i$ ;  $c_i$  = unobserved country characteristics, e.g. due to initial technical efficiency, that are constant over the time period, and influence  $y_{it}$ ; and  $u_{it}$  = an idiosyncratic error term with variance  $\sigma_u^2$  with the usual properties.

From equation (2) the so-called “between” estimator<sup>1</sup> is OLS applied to the following equation:

$$\overline{y}_i = \alpha + \overline{x}_i\beta + c_i + u_i \quad \dots\dots\dots (1.3)$$

Where  $\overline{y}_i = T^{-1} \sum_{t=1}^T y_{it}$  and so on. It should be noted that the “between” estimator is not consistent because  $E(\overline{x}_i c_i) \neq 0$ .

The fixed effects (or “within”) estimator<sup>2</sup> is obtained by using OLS to estimate:

$$(y_{it} - \overline{y}_i) = (x_{it} - \overline{x}_i)\beta + (u_{it} - u_i) \quad \dots\dots\dots (1.4)$$

The random effects estimator is a weighted average of the estimates produced by the between estimator (3) and the within estimator (4):

$$(y_{it} - \theta \overline{y}_i) = (1 - \theta)\alpha + (x_{it} - \theta \overline{x}_i)\beta + \{(1 - \theta)c_i + (u_{it} - \theta u_i)\} \quad \dots\dots\dots (1.5)$$

<sup>1</sup> The between estimator only uses the variation between the cross section observations.

<sup>2</sup> The within estimator uses the time variation within each cross section of observations.

Where 
$$\hat{\theta} = 1 - \sqrt{\frac{\hat{\sigma}_u^2}{T_i \hat{\sigma}_c^2 + \hat{\sigma}_u^2}}$$

Despite the strengths of fixed and random effects estimators based on panel data, there remains two further shortcomings that need to be dealt with. These are the potential endogeneity of the  $X_{it}$ , as well as the loss of dynamic information. Since economic growth is per definition a dynamic process, and GDP tend to be highly persistent, this might be a serious omission.

The incorporation of dynamics into the model allows equation (1) and (2) to be rewritten as an AR (1) model as follows:

$$y_{it} - y_{it-1} = y_t + \alpha y_{it-1} + x_{it} \beta + c_i + u_{it} \quad \dots\dots\dots (1.6)$$

Where  $\Delta y_{it}$  = the log difference in per capita GDP over a period;  $y_{it}$  = the log of per capita GDP at the start of that period;  $x_{it}$  = a vector of explanatory variables,  $y_t$  = period-specific intercept terms to capture productivity changes common to all countries;  $c_i$  = the unobserved country-specific and time invariant effects (unobserved fixed effects); and  $u_{it}$  = the time variant idiosyncratic error term.

Equivalently, equation (6) can be written as:

$$y_{it} = y_t + (\alpha + 1)y_{it-1} + x_{it} \beta + c_i + u_{it} \quad \dots\dots\dots (1.7)$$

By writing (7) in first-differences eliminates the time-variant components,  $c_i$ . This solves the problem of omitted variables bias:

$$\Delta y_{it} = y_t + (\alpha + 1)\Delta y_{it-1} + \Delta x_{it} \beta + \Delta u_{it} \quad \dots\dots\dots (1.8)$$

However, it creates another problem, namely endogeneity since it is clear that  $y_{it-1}$  is endogenous to the error term through  $u_{it-1}$ . It will therefore be inappropriate to estimate (8) by OLS. Nickell (1981) shows that this bias will often result in wrongly finding a high rate of convergence. To overcome this problem of endogeneity, an instrumental variable needs to be used for  $y_{it-1}$ . Two

approaches, namely Anderson and Hsiao's (1982) instrumental variable (IV) and Arellano and Bond's (1991) two GMM-estimators (first step and second step respectively) have been used in this regard. Anderson and Hsiao (1982) proposed using  $\Delta y_{it-2}$  or  $y_{it-2}$  as instruments. Arellano and Bond (1991) show that using the lagged level,  $y_{it-2}$ , as instrument is superior and that in fact the list of instruments can be extended<sup>3</sup> to include further  $y_{it-3}, y_{it-4}, \dots, y_{it-k}$ . Moreover, the Anderson-Hsiao IV approach can be seen as a special case of two GMM-estimators proposed by Arellano and Bond (1991) to combine the list of instruments efficiently. These two GMM estimators are preferable as they gain efficiency by using additional moment restrictions<sup>4</sup>.

In section 5.3 of this study, all the methods/approaches discussed in this section (OLS, random effects and fixed effects) will be used (with STATA 8.0) and compared to estimate the determinants of per capita GDP growth in Sub-Saharan Africa. The following section sets out the variables used in the  $1 \times K \times x_{it}$  vector of explanatory variables.

#### ***1.5.2.2 The dataset and the sources for the dataset***

The potential determinants, the chapter it is discussed in, the data the study will use and the source of the applicable data, is summed up in table 1.1. The study will use, as mentioned above, OLS, GLS, LAD and GMM estimation methods. This was decided upon, since it is found that the original OLS method is biased towards some determinants.

---

<sup>3</sup> It is assumed that there is no second-order autocorrelation in the differenced idiosyncratic error term.

<sup>4</sup> The IV approach leads to consistent but not necessarily efficient estimates of the parameters because it does not make use of all the available moment conditions.

**Table 1.1: The Determinants**

Potential Determinants	Chapter discussed	Data	Variable name	Source of data
<b>Initial Endowments</b>				
Natural Resources	Chapters 2,3,4	Initial GDP 1980	initialgdp	World Development Report, 1992
Human Capital	Chapters 3,4	Adult Literacy Rate 1985	adulitlit	Human Development Report, 1994
Human Capital	Chapters 3,4	Population Growth Rate 1960-1990	popgr	Human Development Report, 1994
ODA	Chapters 2,4	ODA per capita 1989	odapc	Human Development Report, 1995
Foreign Direct Investment	Chapters 2	FDI per capita 1980	fdi	World Development Report, 1992
<b>Policies</b>				
Inflation	Chapters 2, 4	Annual Rate of Inflation 1980-1989	infla	World Development Report, 1994
Total External Debt	Chapter 2	Millions Of US\$ Debt 1980	exdebt	World Development Report, 1992
Export Growth Rate	Chapters 2,3,4	Average Annual Growth Rate 1980-1992	exportgr	World Development Report, 1994
Investment	Chapters 2,3,4	Constant Price Shares of GDP 1989	invest	World Development Report, 1995
Openness	Chapters 2,3,4	Current Prices 1980-1992	ope	Human Development Report, 1996
Regulatory Burden	Chapters 2,3	Average	regburden	Kaufmann, Kraay and Zoido-Lobaton, 1999
Political Stability	Chapters 2,3	Dummy Variable	politstab	Kaufmann, Kraay and Zoido-Lobaton, 1999
Accountability	Chapters 2,3	Dummy Variable	account	Kaufmann, Kraay and Zoido-Lobaton, 1999
Government Effectiveness	Chapters 2, 3	Dummy Variable	goveffect	Kaufmann, Kraay and Zoido-Lobaton, 1999
<b>Institutions</b>				
Coups d'Etat	Chapters 2,3	Dummy Variable	coups	Easterly and Levine Data Set, 1997
Civil War	Chapters 2,3	Dummy Variable	civwar	Easterly and Levine Data Set, 1997
Ethnic	Chapters 2, 3	Indexed from 1960 Dummy Variable	ethnic	Easterly and Levine Data Set, 1997
Landlockness	Chapter 2	Dummy Variable	landlock	Gallup, Sachs and Mellinger, 1999
Tropics	Chapter 2	Dummy Variable	tropics	Gallup, Sachs and Mellinger, 1999

## **1.6 Layout of the study**

Chapter 2 describes SSA's economic growth experience and contrasts it with that of East Asia. In this chapter the focus is also on case studies of countries in SSA that apparently managed to imitate the East Asian success, such as Mauritius. The question is asked, what factors were responsible for Mauritius's success and where those due to the East Asian influence?

In chapter 3 the East Asian Miracle will be discussed. The purpose of this chapter will be to provide an overview of the East Asian growth experience and to identify its salient facts.

To provide an explanation of the East Asian Miracle as described in chapter three and SSA's growth failure in chapter 2, chapter 4 deals with the theory of trade and economic growth. This chapter provides the theoretical understanding of the East Asian Miracle.

Chapter 5 sets out the regression analyses and its results. Based on the determinants of economic growth identified in chapters 3 and 4, this chapter first reports on the findings from existing growth regressions from Africa and East Asia. Thereafter a model is formulated to explain economic growth in East Asia. The significant growth determinants are then used in a regression of African economic growth to establish the power of these determinants to predict or explain African growth.

Chapter 6 contains a summary and concludes this study.

## 1.7 Summary

To a large extent, SSA has been bypassed by globalization. About 240 million Africans live on less than \$1 a day, have no access to safe water, and are functionally illiterate. The total GDP of SSA is a little more than that of Belgium – but, while Belgium has a population of 10 million people, SSA has a population of over 600 million people. It is evident that SSA's market is small in absolute terms.

Within the context of globalisation, one can contrast SSA's growth "tragedy" over the last three decades with the economic "miracle" of East Asia. The economic performance of eight East Asian countries – Japan, South Korea, Taiwan, Hong Kong, Singapore, Thailand, Malaysia and Indonesia – have been described as a "Miracle" because of their economies' dramatic growth. Although before the early 1980s SSA grew and was expected to keep on growing faster than East Asia, these eight countries real per capita GDP rose twice as fast as in any other regional grouping between 1965 and 1990. In contrast, much of SSA remains in poverty with slow growth characterizing many SSA economies over the same period of time.

Given that globalization of economic and business activity is one of the most important trends in the world economy and seeing that Sub-Sahara Africa plays a minor role on the world economic stage while East Asian economies have grown rapidly, the question asked is: what lessons if any can Sub-Sahara Africa learn from East Asia in increasing exports of manufacturing products within the current globalizing world economy?

In this light, it is the purpose of this study to identify the determinants of economic growth in East Asia over the period 1960 to 1990, and to determine whether these determinants are also relevant to explain economic growth in SSA. The hypothesis is that the determinants of economic growth in East Asia are similar to the determinants of economic growth in SSA. The objectives of this study is as follows:

- To identify the determinants of economic growth in East Asia between 1960 and 1990.
- To test the significance of these determinants in explaining SSA economic growth between 1960 and 1990.
- To identify the possible lessons for SSA from the East Asian experience.

The next chapter will look at the first objective from the SSA point of view. In this chapter the various reasons for the failure of SSA to grow just as fast as East Asia will be identified and the various theories discussed.

## **CHAPTER 2: ECONOMIC GROWTH IN SUB-SAHARA AFRICA**

### **2.1 Introduction**

As was noted in chapter 1, the average levels of GDP in East Asia (Indonesia, Malaysia and Thailand) and SSA were similar during the 1960s. Also, economic structures and the social context of countries in East Asia in the 1960s were not significantly different from those of SSA countries. For instance, East Asia could be characterized as being relatively rich in natural resources but weaker in human resources. This is similar to the situation in many countries in SSA in the 1960s. East Asia also had problems of ethnic conflict and periods of political instability. At the time (circa early 1960s), many expected rapid growth in SSA and stagnation in Asia (Roemer, 1996). As this did not happen, the question has to be asked: what went wrong?

SSA economic performance has been markedly worse than that of other regions. During the 1980s, per capita GDP declined by 1.3 percent per annum, a full 5 percentage points below the average for all low-income developing countries. During 1990-1994 the decline accelerated to 1.8 percent per annum and the gap widened to 6.2 percentage points (Collier and Gunning, 1999).

On average, real per capita GDP did not grow in SSA over the 1965-1990 period, while, in East Asia and the Pacific, per capita GDP growth was over 5 percent and Latin America grew at almost 2 percent per year. Much of SSA has even suffered negative per capita growth since 1960. SSA's growth tragedy is reflected in low human development. The typical SSA mother has only a 30 percent chance of having all her children survive to age five. Average life expectancy for a person born in 1980 in SSA was 48 years compared with 65 in Latin America, and daily calorie intake is only 70 percent of Latin America and East Asia's (Collier and Gunning, 1999).

In this chapter the study will look at the SSA crisis, the possible causes, and the after effects. This chapter is structured as follows: in the first section the study will look at the past economic performance of SSA. In section 2 the study will look at the foreign aid and SSA's debt burden, and the financial environment will be discussed. In section three the economic policies and in section four external shocks, as part of the explanation for SSA's economic performance, will be discussed. The chapter concludes with a summary.

## **2.2 Economic Performance History**

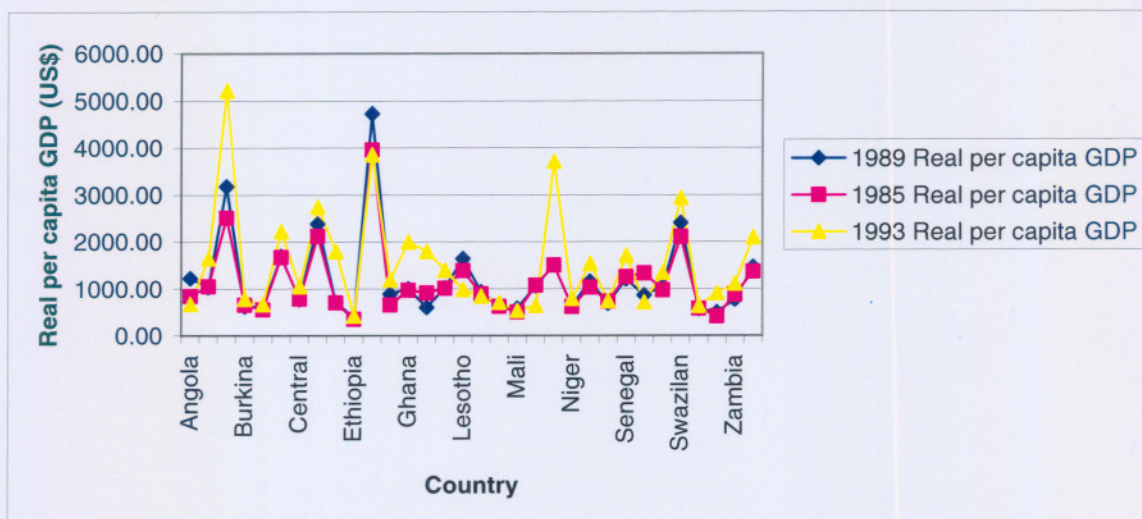
In this section, the economic performance of SSA will be described, with a focus on GDP growth, export performance, openness, foreign aid, debt burden and investment.

### **2.2.1 GDP growth**

In the 1960s, SSA's future looked bright. On the basis of Maddison's (1995) estimates of per capita GDP for a sample of countries, during the first half of the century SSA had grown more rapidly than Asia; by 1950 the SSA sample had overtaken the Asian sample. In the 1950s there were uncertainties of political transition, but after 1960 SSA was increasingly free of colonialism, with the potential for governments that would be more responsive to domestic needs. During the period 1960-1973, growth in SSA was more rapid than in the first half of the century. Indeed, for this period, SSA growth and its composition were indistinguishable from the geographically very different circumstances of East Asia. Political self-determination in SSA and economic growth seemed to be proceeding hand-in-hand (Collins and Bosworth, 1996).

However, during the 1970s both the political and economic situation in SSA deteriorated. The leadership of many SSA nations hardened into autocracy and dictatorship. SSA's economies first faltered and then started to decline. While SSA experienced a growth collapse, nations of East Asia modestly improved their economic performance. A good example of this divergence is the comparison of Nigeria and Indonesia. Until around 1970, the economic performance of Nigeria was broadly superior to that of Indonesia, but over the next quarter-century outcomes diverged markedly, despite the common experience for both countries of an oil boom in a predominantly agricultural economy (Collier and Gunning, 1999). Since 1980, aggregate per capita GDP in SSA has declined at almost 1 percent per annum. The decline has been widespread: 32 countries are poorer now than in 1980. By 1999, SSA was the lowest-income region in the world.

**Figure 2.1: Real per capita GDP for selected countries (1985-1993)**



As can be seen in figure 2.1, SSA's GDP per capita has not increased substantially over the years. Indeed, the SSA economic performance has been markedly worse than that of other regions. During the 1980s, per capita GDP declined by 1.3 percent per annum, a full 5 percentage points below the average for all low-income developing countries. During 1990-1994, the decline accelerated to 1.8 percent per annum and the gap widened to 6.2 percentage points (Collier and Gunning, 1999).

SSA labour markets emphasize dysfunctional government intervention through wage regulation. Product markets have been characterized by extensive government interventions through taxation, price setting, and public trading monopolies. A hostile environment, particularly high risks, and inadequate social capital, particularly dysfunctional government, have lowered the returns on investment. The low returns on investment have caused capital flight on a massive scale (Collier and Gunning, 1999).

### ***2.2.2 Export Performance***

Two main features characterize the current position of SSA in world trade: first, it has a small and declining share in world trade and second, its presence in world trade is largely confined to primary exports and the importation of non-primary products (Wangwe, 1998).

SSA's share in world trade is not only small, it has been declining. It varied from 4.1 to 4.9 percent of world trade during 1960- 65, fluctuated around 4.4 per cent during the 1970s and declined consistently to 2.3 per cent in 1987 (UNCTAD, 1993a). The share of SSA in world exports declined from 4.7 per cent in 1975 to 2.0 percent in 1990. The share of SSA's least developed countries declined more drastically, from 0.6 per cent to 0.2 per cent over the same period (UNIDO, 1993). During 1980- 87, while world exports were growing at 2.5 per cent per year, SSA's exports were declining at an annual rate of 7.4 per cent. The share of non-oil primary exports declined even more dramatically, from 7 per cent to 4 per cent, over the same period (Sharma, 1993). Manufactured exports, though small, have exhibited a similar trend (Wangwe, 1998).

The share of manufactured exports from SSA in world trade declined from 0.38 per cent in 1965 to 0.23 percent in 1986 (Riddell, 1990). In relation to other developing countries, the share of SSA's manufactured exports declined from 5.2 per cent in 1975 to 2.6 percent in 1985 and further to 2.5 per cent in 1990 (UNIDO, 1993). A preliminary study of the impact of the Single European Market has indicated that SSA countries lost their share mainly to other developing countries during 1987-91, in spite of preferential market access accorded to SSA through the Lomé Convention (UNCTAD, 1993b). These trends suggest that SSA has lagged in competitiveness relative to the rest of the world economy indicating that productivity growth and technological learning and innovations in the export sector in SSA have been low relative to other regions. This problem of lack of competitiveness, in traditional and nontraditional exports, needs to be faced if SSA is to improve its position in world trade (Wangwe, 1998).

Primary exports remain the most important link to the global economy for many countries in SSA. Arising from the emphasis on manufacturing, the importance of the primary sector exports has been underplayed. The de-emphasis is on the primary exports in efforts to diversify the economies and partly stem the effects of the decline in primary commodity export prices when

looking for lessons from East Asia for other developing countries. Chibber and Leechor (1995) found that one of the key factors to the integration of Southeast Asia was the expansion of primary exports. This led to a surplus that was important not only in its own right but also as a basis for the subsequent upgrading and shift to manufacturing (Chibber and Leechor, 1995).

Wood and Berge (1997) have shown that East Asia's 'miraculous' development success (in terms of equity as well as growth) has been intimately associated with the export of manufactures. By contrast, countries whose exports still consist largely of primary products - most notably in SSA - have done far less well. This broad correlation between export composition and development performance raises some controversial questions, both regarding the causes of economic progress and about the best policies for achieving it. The question that arises from this analysis is whether SSA countries can emulate the development experience of the East Asian countries (Wood and Berge, 1997).

Wood and Berge (1994, 1997) raise doubts about the scope for other developing countries to follow East Asia down the road of export-oriented industrialization. The problem is that many of these countries, particularly those in SSA and to some extent Latin America, do not have a comparative advantage in manufacturing, because they have inadequate resource endowments. More specifically, they have too low a ratio of human resources to natural resources, or, in other words, of skill to land, which causes their comparative advantage to lie instead in primary exports (Wood and Berge, 1997).

Contributions to this debate on "resource-based industrialization," which includes case studies of particular products and countries, are Roemer (1977), Singer (1978), Wall (1987), Yeats (1991) and Londero and Teitel (1996).

Wood and Berge (1997) point to a minor distinction between primary processing and narrow manufacturing - regarding the importance of transport costs, and the volatility of primary commodity prices, for example. In general, however, most authors conclude that the similarities between these two sorts of manufacturing outweigh the differences (Wood and Berge, 1997).

Primary processing, like narrow manufacturing, provides opportunities to acquire new technologies and learn new skills, and can be an important new source of export revenue. Growth

of primary processing is constrained, like growth of narrow manufacturing, by protectionist policies in developed countries, and by shortages of skills and infrastructure in developing countries. Whether significant gains can be reaped from further processing of local raw materials thus varies, depending on the product and on the circumstance of the developing country concerned (Lyakurwa, 1998).

### ***2.2.3 Openness***

Openness is an important policy tool for improving exports and thus economic growth, which when viewed as a failure and combined with the many policy-induced barriers to trade will in turn influence investment behavior negatively. This could in turn result in investment being less productive and increase the risk and uncertainty attached to investment, which will lead to reduced investment and capital flight (Collier and Gunning, 1999).

As Easterly (2000), argues, there are some disadvantages of openness. Open economies are more likely to be vulnerable to terms of trade shocks and capital inflow interruptions, which may attenuate the beneficial effects of openness. These risks can be substantial as dramatized by the recent Latin American financial and currency crises, and even more recently by similar but relatively severe crises in East Asia. Arguably, countries pursuing the right policies to begin with could minimize such risks. Nevertheless, the ‘contagion’ effect can be substantial, and the ‘speculative attacks’ may lead to overshooting of the long-run equilibrium exchange rates. Such short-run equilibria can be destabilizing and highly deleterious to both economic and political institutions. It is thus inconceivable that these ‘short-run’ disturbances would have medium- or even long-term adverse impacts on affected economies (Fosu, 2000a, p. 69).

The rate of technological absorption by SSA countries is likely to be low under openness, unless there are sufficient structural changes in these economies. For example, Hakura and Jaumotte (2001) found that technological absorption is much higher in cases where there is production of a similar product being traded (intra-industry) than where trading is interindustry. In addition, deindustrialization is likely to accompany liberalization efforts that open up the economy without a concomitant programme for overcoming structural impediments, such as low levels of education and training, as well as a poor physical and institutional infrastructure (e.g., Lall, 1995) (Fosu, 2002).

The fast growing East Asian economies are much more open today than at their initial stages of development, when their interventionist policies could hardly be considered openness enhancing. Indeed, some have argued that it was not so much openness but capital accumulation that led to the rapid development of the East Asian countries (e.g., Rodrik, 1997). However, as these economies grew the need to open up became imperative, as new markets were required to overcome bottlenecks in the economy (Fosu, 2002).

The SSA evidence on the role of openness is of two types. One group of studies incorporates SSA countries as a sub sample, but assigns an 'African' dichotomous variable to reflect possible African idiosyncratic factors (Barro, 1991; Delong and Summers, 1992; Levine and Renelt, 1992). However, several of the studies using this more general sample have focused on the implications of the analysis for SSA countries (Easterly and Levine, 1997; Sachs and Warner, 1997; Temple, 1998; Collier and Gunning, 1999). These studies have provided varying levels of emphasis on the role of openness with respect to SSA countries (Fosu, 2002).

The other group of studies employs samples consisting exclusively of SSA economies. Those with significant emphasis on openness include Wheeler (1984), Fosu (1990a, b, 1992), Gyimah-Brempong (1991), Ghura and Grennes (1993), Lussier (1993), Assane and Pourgerami (1994), Ghura (1995), Ojo and Oshikoya (1995), Savvides (1995) and Rodrik (1998). Although the results in the above studies on the importance of openness for SAA differ somewhat, the overall conclusion is that openness could play a positive role in enhancing growth in SSA economies. For example, Sachs and Warner (1997) found a lack of openness as the main explanation for the poor economic growth record of SSA (Fosu, 2002).

The most comprehensive measure of openness is that used by Sachs and Warner (1995). According to that study an economy is considered 'open' to trade if it satisfies all of the following five conditions: (1) average tariff rates below 40%, (2) average quota and licensing coverage of imports of less than 40%, (3) a black market exchange rate premium of less than 20%, (4) no extreme controls (taxes, quotas and state monopolies) on exports and (5) not considered a socialist country. Sachs and Warner (1997) then defined the degree of openness as the proportion of years during the relevant period [1965-90 was the sample period for Sachs and Warner] that an economy was open to international trade according to the above criteria. On the basis of a sample of 77-9 developing and relative developed countries, of which 23 were SSA, Sachs and Warner (1997) found that the 1965-90 average growth rate of GDP per capita was

positively associated with openness. They also uncovered the fact that, when their measure of openness was included in their model, the SSA dummy variable became insignificant, suggesting that the most important distinction between SSA and other economies is a lack of openness (Fosu, 2002).

The authors further observed that the openness variable generated the greatest impact among their baseline model variables, which accounted for approximately 90% of the variation in cross-country growth between 1965 and 1990 (Fosu, 2002).

From the Sachs and Warner (1997) results Fosu (2002) computed that the impact of 'institutional quality', for example, is 67% that of openness and the relative effect of population growth, reflecting dependency of the economically inactive, is 44% (Fosu, 2000b, table 1). Similarly, the impacts of geographical variables such as tropical climate and landlockedness relative to the effect of openness are 44 and 33% respectively (Fosu, 2000b, table 1). Indeed, Sachs and Warner (1997) estimated that, had SSA adopted the level of East Asian-type openness, its growth would have been 2.4 percentage points more. This is three times the 0.8% mean annual per capita GDP growth for SSA over the 1965-90 sample period (Fosu, 2002).

Hence, in order for SAA economies to benefit from the virtues of openness, it is imperative that these capacity constraint issues are addressed accordingly.

#### ***2.2.4 Foreign Aid***

The lack of foreign aid to SSA countries deserves a look since it is known as an exogenous factor for the lack of growth. Foreign aid, that is, the international transfer of funds (loans and /or grants) from one government to another or from multilateral agencies with the aim of facilitating and accelerating recipient countries' development, appears to be losing its popularity to flows of private capital in filling the resource gaps in developing countries. Financial flows are increasingly being dominated by private capital flows to developing countries. For instance, in 1996, private capital flows exceeded US\$240 billion, which equaled six times its level at the beginning of the decade, and had in the preceding five years overtaken and dwarfed the levels of Overseas Development Assistance (ODA) (Stiglitz, 1997).

SSA has largely been by-passed by these expending private capital flows a situation, which has not helped to offset the impact of the global decline in the volume of ODA, flows (ADB, 1997) (Wangwe, 1998)

**Table 2.1: Distribution of Total Flows to SSA (1970-94)**

Year	US\$ Billion
1970	1,260.7
1980	10,823.1
1987	12,877.5
1990	16,059.9
1991	15,410.8
1992	14,323.9
1993	14,651.3
1994	16,027.3

Source: Africa Development Report, 1997. Figures have been rounded to 1 decimal point.

**Table 2.2: Foreign Resource Flows to SAA (1980-95)**

Year	Net Total Financial Flows from All Sources US\$ Billion	Net ODA from All Sources US\$ Billion	Net ODA from DAC Countries US\$ Billion
1980	19.3	10.1	6.0
1985	14.8	11.4	7.6
1990	24.6	24.5	15.0
1995	24.0	20.9	12.3
1980-85 (Annual Average)	17.1	10.2	6.4
1985-90 (Annual Average)	19.8	17.1	11.2
1990-95 (Annual Average)	24.2	22.2	13.9

Source: Africa Development Report, 1997. Figures have been rounded to 1 decimal point.

Prospects of future aid flows to SSA remain uncertain due to budgetary pressures in many donor countries, competing claims on donor resources and changes in the ranking of strategic and economic interests especially following the end of the cold war. The European Commission (EC), the traditional aid giver to SSA, has changed the distribution composition of ODA in favor of other regions. Although volumes of aid from EC to SSA have not shown any clear trend, the region has lost its share from 70 percent at the beginning of the 1970s to 60 percent in the 1980s and further down to 44 percent in 1994-95 (Cox and Konig, 1997). The shift of EC aid flows has favored Central and Eastern Europe and the New Independent States. All these accounted for about 25 percent of all EC aid disbursements for 1994-95 (Wangwe, 1998).

As SSA has largely been bypassed by private capital flows, foreign aid has been one of SSA's most significant external links. Aid reached 11 percent of GDP by 1994, compared with only 1 percent in other developing countries. Though foreign aid has been critical in filling the resource gap, aid effectiveness remains low and SSA's aid dependence has increased rather than decreased over time.

Aid programmes are more likely to be successful when the recipient government has the capacity to identify and articulate its own priorities and programmes and the ability to implement, monitor, and evaluate the resulting programmes in the context of its own planning and budgeting. The low effectiveness of aid in SSA is partly caused by lack of ownership of the development agenda and deficiencies in resource allocation and budget management in recipient governments.

Furthermore, high levels of aid have engendered apathy on the part of recipients, which in turn encouraged donor agencies to take over project planning and execution tasks. Aid has been donor-driven rather than being a product of discussions, mutual agreement and genuine commitment. This jeopardizes the long-term project benefits resulting from ownership. To reverse the current degree of aid control by donors and the passivity of recipient countries, the latter should return to medium-term planning in which broad criteria for projects/programme spending of aid can be defined. These plans, which could accommodate donors' views, should form the basis of future aid allocation.

### ***2.2.5 Debt Burden and Finance***

Total external debt for SSA increased from US\$84 billion in 1980 to US\$226 billion in 1995, with a debt service ratio of 14.5 per cent, a debt/GNP ratio of 81 per cent and a debt/exports ratio of 241 per cent. Sixteen SSA countries were categorized as unsustainable and possibly distressed. While these countries are eligible for debt relief under the HIPC (Heavily Indebted Poor Countries) initiative, the real challenge is to find more substantial and wide-ranging approaches to debt relief (Wangwe, 1998).

The implications of the debt burden for development in SSA are far-reaching. Many countries have to allocate considerable amounts of budgetary expenditure to external debt servicing. For example, the Tanzanian government has to allocate 30-35 percent of its budget for debt servicing, which is equivalent to 9 times that allocated to basic education. The debt burden is obviously

enormous in relation to SSA's debt servicing capacity and has become a major inhibiting factor for the recovery of growth and exports (Wangwe, 1998).

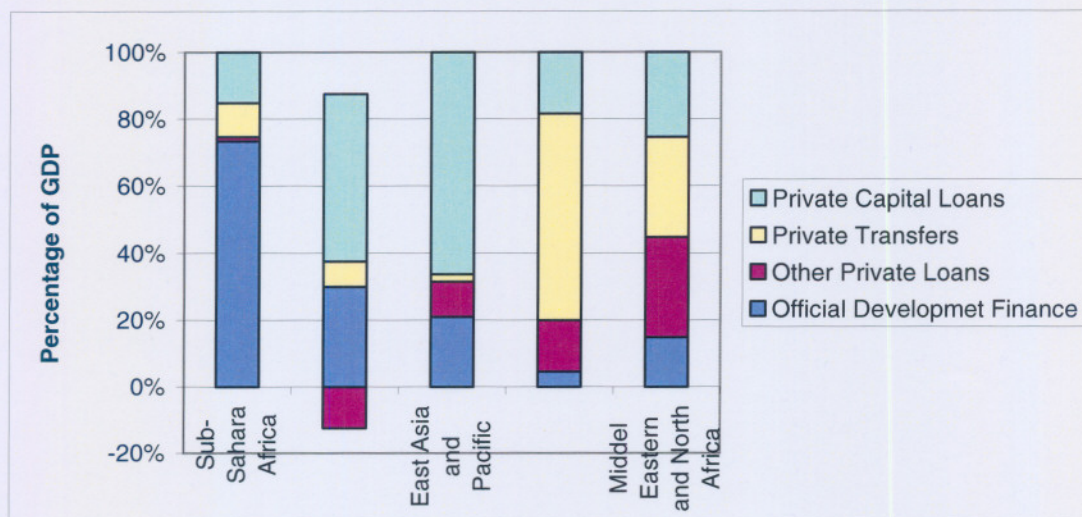
Easing the burden of unsustainable debt would free government resources for more productive developmental activities, reduce transactions costs (which are a massive burden on policy-makers) and help restore macroeconomic stability and investor confidence. A dollar of reduced debt is therefore likely to be more valuable than an additional dollar of conventional aid. There is an overwhelming case that significant further reductions in the external debt of debt-distressed-low income countries would improve growth prospects in SSA, and particularly if the resources made available are truly additional (Wangwe, 1998).

Repeated debt rescheduling has not solved the problems and there is an urgent need to devise new and more effective ways of reducing the SSA debt burden dramatically. The adoption and implementation of Trinidad Terms, which proposed a reduction of two-thirds in the stock of official bilateral debt, should be the immediate objective of creditor governments. The HIPC initiative should be expanded, its eligibility conditions made more flexible and the completion point of the HIPC criteria advanced (Wangwe, 1998).

One effective mechanism for integrating SSA countries into the global economy would be for OECD countries to guarantee open markets for SSA exports and commit themselves to help reintegrate SSA into the world economy. This is particularly important for key sectors such as agriculture and textiles. This is where SSA's comparative advantage lies; yet these are the most protected markets (Bhattacharya, Montiel, Sharma, 1998).

Official finance accounts for a higher proportion of external financial flows to SSA than to any other developing region (Figure 2.2).

**Figure 2.2 Structure of External Finance, annual averages during 1990-1995**



Source: World Bank, Debtor Reporting System.

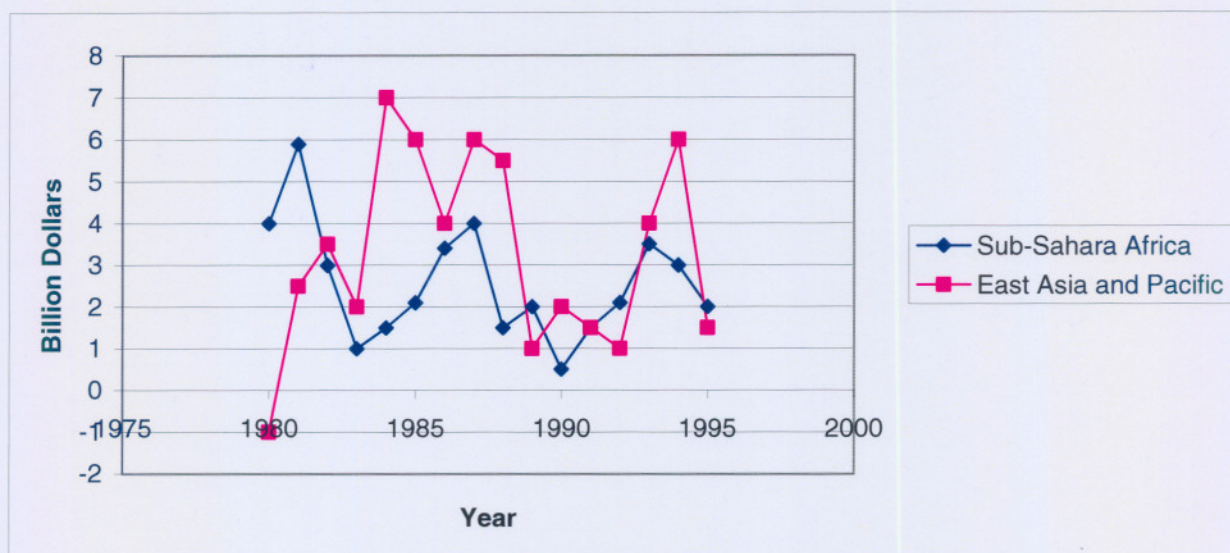
Despite the sharp increase in official finance to Europe and Central Asia in the 1990s, SSA continues to account for the largest--and, indeed, a growing--share of official development finance; during 1990-95, the latter region received 26 percent of total official development finance provided to all developing countries. Almost 95 percent of this was made available on either highly concessional or grant terms (Bhattacharya, Montiel, Sharma, 1998).

In contrast, the share of long-term private capital--defined as the sum of private loans (bank loans plus bond finance), portfolio equity flows, and foreign direct investment--flowing to SSA is lower, as a percentage of GNP, than that of all other developing regions except South Asia. Private transfers and other private flows (including returning flight capital) play a relatively important role in SSA, as they do in such other regions as South Asia and the Middle East and North Africa. Nonetheless, adding in these flows does not change the picture; in fact, total private flows (including unrequited transfers) to SSA are lower, as a percentage of GNP, than for all other developing regions (Bhattacharya, Montiel, Sharma, 1998).

Along with Latin America, SSA saw the sharpest decline in private flows in the aftermath of the debt crisis (Figure 2.3). Private flows to SSA began to recover in the second half of the 1980s, but, in contrast to the experience of most other developing regions, they declined again in the early 1990s before recovering modestly during 1993-95. For most years during 1982-95, annual

long-term private capital flows have been less than half the peak of \$5.5 billion reached in 1982 (Bhattacharya, Montiel, Sharma, 1998).

**Figure 2.3 Private Flows by Region (billion dollars)**



Source: World Bank, Debtor Reporting System.

Why has SSA been left out? A survey of commercial banks, investment banks, and mutual fund managers reveals that investors perceive the risks to be higher there than in other regions and face greater impediments to identifying and exploiting profitable opportunities in SSA than elsewhere. Despite these handicaps, some countries in the region are attracting private capital flows. Their efforts to adopt outward-looking policies and establish stable macroeconomic environments are beginning to pay off (Bhattacharya, Montiel, Sharma, 1998).

Private flows to the middle-income countries (excluding Angola and South Africa) displayed a very erratic but long-term declining trend, which appears to have been arrested during 1994-95. Private flows to the low-income countries recovered in the second half of the 1980s and increased further during 1993-95 (Bhattacharya, Montiel, Sharma, 1998).

## **2.3 Explanations of SSA's Economic Performance**

As was shown in section 2.2 above, in the 1970s, and especially in the 1980s, many countries in SSA experienced economic crises of varying severity. Their economies have been characterized by weak growth in the productive sectors' with the initial spurt of industrial growth faltering, by poor export performance, reflected in the falling share of SSA exports in world trade and the unchanged export structure, and by increasing debt, a deteriorating economic and social infrastructure and increasing environmental degradation. This crisis has important implications for the prospects of transforming SSA economies, as envisaged by SSA governments (e.g. in the Lagos Plan of Action of 1980 and the NEPAD of 2002). The crisis has implications in two policy areas of particular relevance to this study: the previous import-substitution approach to industrialization as a means of economic transformation, and the position of SSA in world trade (Baldwin, 1993).

### **2.3.1 Overview**

SSA suffers from the following thus causing many investors not to invest in SSA:

- **Civil strife.** On the one hand, during the past 15 years, a relatively large number of countries in the region have been affected by civil strife, which, in the most extreme cases (Liberia, Rwanda, Somalia, Sudan, and Zaire), brought FDI inflows to a standstill. On the other hand, several countries that have seen an end to civil conflicts (such as Angola, Mozambique, Namibia, South Africa, and Uganda) have benefited from significant increases in FDI inflows during the 1990s.
- **Macroeconomic instability.** Large structural fiscal deficits, erratic monetary and exchange rate policies, and weaknesses in financial systems in many SSA countries have contributed to high and variable inflation and interest rates and a high degree of volatility in real exchange rates. These factors have all worsened the general investment climate. Countries that have made progress in reducing macroeconomic instability have, however, enjoyed some success in attracting FDI inflows.
- **Slow economic growth and small domestic markets.** Although FDI in the primary sectors (notably, agriculture and mining) in SSA have, on average, earned high rates of return, the poor growth performance of SSA and the limited size of its domestic markets have deterred broader-based FDI. Annual GNP growth in SSA (excluding South Africa)

averaged 2.3 percent during 1983-89 and 1.4 percent during 1990-95, compared with 3.8 percent and 5.1 percent for all other developing countries (excluding the former Soviet Union), during these periods.

The 1997 report to the UN Secretary General indicates that economic growth in Sub-Saharan Africa slowed to 3 percent from 4.4 percent in 1996. Declines in agricultural production and exports as well as in oil prices contributed to slow growth. Given the significance of agriculture, low output adversely affected incomes, consumption and the growth of the processing sectors.

- **Inward orientation and burdensome regulations.** Compared with other developing regions, which have seen dramatic shifts to more outward-oriented and market-based investment regimes since the mid-1980s, SSA has remained relatively inward-oriented, with foreign investment often subject to excessive and discriminatory regulation.
- **Slow progress on privatization.** In contrast to many Latin American and Eastern European countries, which have used aggressive privatization programs to boost FDI, progress in privatizing state-owned enterprises has been slow in SSA. During 1988-94, the proceeds from privatization amounted to \$2.4 billion in SSA, compared with \$63.4 billion in Latin America and \$16.3 billion in Europe and Central Asia (World Bank, 1996).
- **Poor infrastructure.** SSA's physical, financial, human, and institutional infrastructure are all generally less developed than in other regions and, in many cases, have actually deteriorated since the early 1980s. This has reflected SSA countries' low and declining investments in all areas of infrastructure, heavy state intervention coupled with poor implementation capacity, and limited success thus far in expanding private provision of basic infrastructure.
- **High wage and production costs.** As a result of the macroeconomic and microeconomic factors listed above and, in some cases, countries' labour market policies, wage costs in the region tend to be high relative to productivity levels. Overall costs of production are also generally higher than elsewhere--for example, almost double those prevailing in low-income Asian countries. Growth in SSA could further be affected adversely if expected

export growth is held back by the currency crisis and economic slowdown in East Asia which has become the fastest-growing trading partner for some SSA countries (for example, South Africa) in recent years (Bhattacharya, Montiel, Sharma, 1998).

SSA countries are faced with numerous supply constraints problems particularly those related to processing and manufacturing for export. Top on the list are infrastructure problems.

Some of the infrastructure related supply constraints include: frequent power cuts and water shortages which greatly affect industrial production, poor road network and in particular lack of all weather roads and feeder roads necessary for the transportation of agricultural produce from villages to major centers, insufficient rolling stock, and lack of refrigerated trucks and cold storage facilities for perishables. Some of the services necessary to support production, such as the provision of adequate finance or marketing services, may be lacking or often inaccessible (Lyakurwa, 1998).

It has been argued (Yeats, Amjadi, and Ng 1997) that many SSA countries adopted anti-competitive cargo reservation policies to foster the development of material fleet and to conserve foreign exchange but without any success. They cite, for example, that in 1990/91 SSA's net freight and insurance payments were about \$3.9 billion, or roughly 15 percent of the value of the region's exports, compared with 11 percent in 1970 and for a third of the countries, more than 25 percent of the value of exports exceeding 70 percent for Somalia and Uganda (Yeats, Amjadi, Eincke and Ng 1997).

Yeats *et al.* (1997) have also shown that SSA is at a transport cost disadvantage relative to its competitors. For example, half the minimal vessel freight rates for middle income West Africa are about 2 percentage points higher than those paid by other exporters of the same goods. The cost of doing business in SSA relative to other parts of the world is further complicated by the very low of access to information systems. While everybody is moving towards the information superhighway, most SSA countries still control the airwaves which makes it extremely expensive to get direct satellite connection since the controlling agencies extract monopoly rents, which they are not readily willing to let go.

SSA's transport and telecommunication policies and international freight costs have a major negative impact on the promotion and diversification of exports (Yeats, Amjadi, Eincke and Ng 1997).

Debates on the causes of the crisis have centered on proximate and ultimate causes.

- Proximate causes include exogenous factors such as bad weather, geography, deteriorating terms of trade, fluctuating international interest rates and reduced inflows of foreign aid.
- Ultimate causes include endogenous factors such as inappropriate domestic policies, including incentive structures, institutions and the mismanagement of public resources (Collier and Gunning, 1999).

The debate on the causes of slow SSA growth has offered many different explanations. These can be usefully grouped into a two-by-two matrix, distinguishing on the one hand between policy and exogenous "destiny" and, on the other, between domestic and external factors. Table 2.3 compares SSA to other developing regions, using this grouping (Collier and Gunning, 1999).

**Table 2.3 SSA compared with other Developing Regions**

<b>Factors</b>	<b>Sub-Sahara Africa</b>	<b>Other LDCs</b>
<b>Domestic-Density</b>		
Life expectancy in 1970	45.2	57.3
Income in 1960 (1985 \$PPP-adjusted)	835.5	1855.2
Ethnic Fractionalisation	67.6	32.7
<b>Domestic-Policy</b>		
Political Rights, 1973-90	6	4
Bureaucracy	1.38	1.72
<b>External-Destiny / Geography</b>		
Population <100 km from the sea or river (%)	21	52
Terms of trade Volatility	16.4	12.8
<b>Institutions</b>		
Parallel Market Exchange Rate Premium	40	26
Average Tariffs 1996-98 (%)	21	13
Quantitative Restrictions, 1988-90 (%)	46	21
<b>Endogenous</b>		
Growth of GDP per capita, 1965-90	0.5	1.7
Investment rate in 1997 (%)	18	25
Population Growth Rate, 1980-97 (%)	2.8	1.8
Capital flight / private wealth, 1990 (%)	39	14

Source: World Development Indicators, 1998.

Table 2.3 shows the differences between SSA and other Less Developed Countries (LDCs) when comparing domestic-density, domestic-policy, external-density, institutions and endogenous factors. It can be seen that SSA fares much worse than the other LDCs.

It has largely been argued by some that the main causes of SSA's slow growth were external. Especially during the 1980s, the World Bank, the International Monetary Fund and bilateral donors came to identify exchange rate and trade policies as the primary causes of slow growth in SSA. Table 2.3 offers some evidence that official exchange rates in SSA have been more overvalued relative to (often illegal) market rates than is common for other less developed economies of Asia and Latin America. Tariffs and quantitative trade restrictions have also been higher in SSA than elsewhere. The rival thesis, often favored by SSA governments, was that the crisis was due to deteriorating and volatile terms of trade, and as table 2.3 shows, terms of trade have indeed been more volatile for SSA than for other less developed economies. Sachs (1997) has emphasized adverse geography: SSA's population is atypically landlocked. As shown in table 2.3, a high proportion of the population is remote from the coast or navigable waters (Collier and Gunning, 1999).

Sachs and his co-authors have attributed slow growth to "the curse of the tropics". SSA's adverse climate causes poor health, and so reduces life expectancy below that in other regions, which puts it at a disadvantage in development. The adverse climate also leads to leached soils and unreliable rainfall, which constrains SSA agriculture. SSA nations also appear to have more ethnic diversity than other poor nations of the world, which may make it harder to develop an interconnected economy. In contrast to the geography argument, Collier and Gunning (1999) have emphasized institutional factors such as poor public service delivery. SSA governments have typically been less democratic and more bureaucratic than their Asian and Latin American counterparts.

Weak economic growth helps explain a lower savings rate and a higher proportion of flight capital for SSA compared to the less developed nations of Asia and Latin America. Richer countries tend to see their population growth rates drop off, so the poverty of SSA has helped to keep its birth rates high, even as compared to the world's other less developed economies. Similarly, poverty may have increased the incidence of Sub-Sahara Africa's numerous civil wars, as well as being a consequence of them (Collier and Gunning, 1999).

As will be shown in chapter 5, Table 5.1, SSA's slow growth is partly explicable in terms of particular variables that are globally important for the growth process, but are low in SSA. This shifts the question to why they are low. Partly, slow growth is explicable in terms of a distinctive effect of variables in SSA, which shifts the question to explaining this different response. If the growth regression evidence on SSA were to be organized, there will be six sets of variables responsible for SSA's slow growth.

### **2.3.2. Institutional Weaknesses**

One of the key reasons for institutional weakness in SSA may be weak social capital. Social capital<sup>5</sup> can be generated both by the community and by the government. Civic social capital is the economic benefits that accrue from social interaction. These economic benefits can arise from the building of trust, which lowers transaction costs, from the knowledge externalities of social networks, and from an enhanced capacity for collective action. Public social capital consists of the institutions of government that facilitate private activity, such as the courts. It is argued that SSA governments have behaved in ways damaging to the long-term interests of the majority of their populations because they served narrow constituencies. They have been damaging partly through "sins of commission" such as agricultural taxation, and partly through "sins of omission", such as failure to provide adequate infrastructure (Collier and Gunning, 1999).

On various measures SSA is relatively lacking in both types of social capital (Table 2.4). These measures have been found to be significant in growth regressions, but there is no evidence that their effect in SSA differs from that elsewhere.

**Table 2.4: Social-Political Indicators: Differences between SSA and Other LDCs**

	Sub-Sahara Africa	Other LDCs
Corruption	4.97	6.03
Bureaucracy	1.38	1.72
Enforceability	1.95	2.09
Civil War	1.27	0.72
Fractionalisation	67.6	32.7
Social development	1.1	-0.43
Inequality	31	31

Source: International Country Risk Guide 1982

<sup>5</sup> The central premise of social capital is that social networks have value. Social capital refers to the collective value of all "social networks" [who people know] and the inclinations that arise from these networks to do things for each other ["norms of reciprocity"].

The study will now consider why SSA is short of social capital. Possible barriers to social interaction are ethno-linguistic fractionalization and inequality. SSA has a high level of fractionalization.<sup>6</sup> An index of ethno-linguistic fractionalization has been constructed, based on a measure created by Soviet anthropologists and named after them as the Adelman-Morris Index. On this measure the average SSA country is more than twice as fractionalized as other developing regions. This is likely to be the result of the historical low population density of SSA. Inequality measures are not very reliable for SSA. The regressions use the income share of the third and fourth quintiles, which is sometimes referred to as the income share of the middle class. On this measure SSA is identical to other developing countries. Hence, regardless of the effect of inequality on growth, it cannot account for any part of the differences in growth performance.

The growth regression in table 5.6 in chapter 5, section 5.5.1, shows that fractionalization has a significant negative effect. According to Easterly and Levine (1997), it directly accounts for 35 percent of SSA's growth shortfall, and, because it is also correlated with poor policies, overall it accounts for 45 percent of the growth shortfall. However, the negative growth effect of ethnic diversity only applies in societies lacking political rights. In countries with dictatorships, ethnic diversity reduces the growth rate by 3 percent per annum. Conversely, in countries with full democratic rights diversity has no detrimental effect (Easterly and Levine, 1997)

Ethnic diversity has indeed been costly in SSA, but this is because of the low level of political rights. The governments that came to power in independent SSA had two distinctive inheritances. They were drawn from a tiny elite of educated young men and so were separated from the mass of the population. This lack of representativeness rapidly became institutionalized. By 1975 most SSA states lacked a legislature, and most chief executives were unelected: over 60 percent of the population lived under such regimes. Secondly, ethnic minorities owned the modern part of the economy. The combination of the divorce of the government from the population and the lack of SSA ownership of the "commanding heights" induced a policy of taxing export agriculture to finance the expansion of industry. Interventions also tended to be grandiose: in Tanzania the majority of the rural population was relocated in a single year, 1974 (Ferree, Sigh and Bates, 1996).

---

<sup>6</sup> The underlying measure is of the probability of two randomly drawn citizens being from different ethno-linguistic groups.

As the government expanded its own employment, it and its industrial allies came to have an interest in cheap urban food. Subsidizing industry and urban food was financed by explicit and implicit taxation of exports: minerals where these were available, otherwise, agricultural exports. This was supported by controls on the banking system that both lowered interest rates and directed credit to the favored sectors, thus beginning financial repression. This bias against export agriculture in favor of import-substituting industry was common both to socialist regimes (Ghana, Tanzania, Zambia, Uganda, Ethiopia, Mozambique and Angola), and to more market-oriented ones (Nigeria, Zaire and Zimbabwe). The exceptions were where the political elite itself had a strong interest in export agriculture (Côte d'Ivoire, Kenya and Malawi). These anti-export policies were widely adopted between the mid-1960s and the mid-1970s. In some countries the commodity booms of 1975-79 temporarily disguised their effects, but by the early 1980s most SSA economies were declining (Collier and Gunning, March 1999).

Although there was some improvements in accountability between 1975 and 1980, this was largely reversed by 1985. After the opening of Eastern Europe, there was a wave of political liberalization in SSA, but even by 1991 only 13 percent of the population was living in states in which legislators had been chosen in contested multiparty elections, and only 10 percent in states in which the chief executive had been chosen (Collier and Gunning, 1999).

Being insulated from the mass of the rural population and having only limited legitimacy, governments were acutely exposed to pressures from their own narrow base of supporters. As is common with control regimes, although the intensity of controls raised the costs borne by the majority of the population, they also raised the benefits to the minority. Much of the industrial sector was entirely reliant upon the controls. For example, in Ghana during the control regime, a quarter of manufacturing output was estimated to be produced at negative value added at world prices (Rimmer, 1990).

One corollary of poor public social capital was a high incidence of corruption. In many cases, because the state was weak as well as autocratic, corruption was uncoordinated and hence competitive. Such corruption is much more costly to society than the centralized and therefore monopolistic corruption of East Asia: bribes exceed the revenue-maximizing level and can even eliminate transactions (Shleifer and Vishny, 1993).

Another corollary of poor public social capital has been that governments have adopted damaging economic control regimes with high trade barriers, while attaching low priority to the delivery of public services.

### ***2.3.3. Inappropriate Trade Policy***

SSA is better located than East Asia for most developed economy markets. However, most Africans live much further from the coast or navigable rivers than in other regions and so face intrinsically higher transport costs for exports. Further, much of the population lives in countries that are landlocked, so that problems of distance are compounded by political barriers. Even a relatively open border like the one between Canada and the United States appears to be a substantial impediment to trade, in the sense that trade across Canadian provinces or across U.S. states is far greater than trade of equal distance between Canada and the United States. Landlocked countries face national borders on all sides, which may constitute an irreducible barrier to trade even if they have good relations with their neighbors. Typically, growth regressions find that being landlocked reduces a nation's annual growth rate by around half of 1 percent (McCallum, 1995).

SSA's exports are concentrated in a narrow range of commodities, with volatile prices that have declined since the 1960s. The deterioration in terms of trade for such commodities has undoubtedly contributed to SSA's growth slowdown. However, there is controversy over whether its atypical exposure to terms of trade volatility has been damaging. Deaton and Miller (1996) finds little evidence of detrimental effects in the short run.

However, case study evidence suggests that shocks have often had longer-run deleterious effects. Investment has been concentrated into short periods, during which construction booms have raised the unit cost of capital, and government budgets have been destabilized, with spending rising during booms but being difficult to reduce subsequently (Schuknecht, 1999; Collier and Gunning, 1999b).

The main manifestation of SSA control regimes was the restriction of international trade, whether directly through quotas, tariffs and export taxes, or indirectly through foreign exchange controls and marketing boards. By the 1980s, SSA had become less open than other regions. On one measure, not only was SSA the area with the highest trade restrictions, but also the gap between

it and the next most restrictive area, the Middle East, was wider than that between the Middle East and the most liberalized region, the Far East (Dollar, 1992).

On a second, binary measure, almost all SSA economies were closed, whereas 37 percent of other developing countries were open. The effects on growth can be substantial: Sachs and Warner (1997) make the largest claim, finding that restrictive trade policy, poor access to the sea, and Dutch disease between them accounted for a 1.2 percent per annum growth shortfall. A more typical estimate would be the 0.4 percent found by Easterly and Levine (1997).

Not only have trade restrictions been more severe in SSA, but this has also been in the context of very smaller economies. There is therefore a reasonable presumption that, on average, a given level of restriction would be more damaging. Thus, openness explains why SSA has grown more slowly than other regions both because openness is important for growth, while SSA has been much less open than other regions, and because a given level of trade restrictions has been more damaging in SSA than elsewhere (Collier and Gunning, March 1999).

#### ***2.3.4. Deficient Public Services***

For much of the post-colonial period, most SSA governments have been undemocratic. The median SSA government during the 1970s and 1980s was close to autocracy, and far less democratic than the median non-SSA developing country. A typical pattern was that the educated, urban-resident population captured governments, with few agricultural or commercial interests. They expanded the public sector while imposing wide-ranging controls on private activity. These choices have been economically costly (Collier and Gunning, 1999).

Public employment was expanded, often as an end in itself. For example, in Ghana by the late 1970s, the public sector accounted for three-quarters of formal wage employment, and even in a more market-oriented economy like Kenya, the figure was 50 percent as of 1990. Indeed, economic decline may have increased pressure for public sector employment. The large number of public sector employees was reconciled with limited tax revenue by reducing wage rates and non-wage expenditures. The ratio of wage to non-wage expenditures in SSA governments is double that in Asia, and this has lowered the quality of public services; for example, in education, teaching materials are often lacking. The large, ill-paid public sector became the arena in which ethnic groups struggled for resources. For example, in the Ghanaian public sector, the locally

dominant ethnic group received a wage premium of 25 percent over other groups after controlling worker characteristics, and cognitive skills were completely unrewarded. The combination of low wage levels and payment structures, which rewarded social connections rather than skill, made it difficult for managers to motivate staff, and the difficulties of service delivery were compounded by the low ratio of non-wage expenditures (Collier and Garg, 1999).

Since public sector employment was the main priority, managers were not under severe pressure for actual delivery of services from their political masters. Because of the lack of democracy, neither were they accountable to the broader public. As a result, SSA experienced a paradox of poor public services despite relatively high public expenditure (Pradhan, 1996).

Poor service delivery handicapped firms through unreliable transport and power, inadequate telecommunications networks, and unreliable courts. For example, manufacturing firms in Zimbabwe need to hold high levels of inventories, despite high interest rates, due to unreliable delivery of inputs tied to poor transportation infrastructure (Fafchamps, et al., 1998).

A survey of Ugandan firms found that shortage of electricity was identified as the single most important constraint upon firm growth; indeed, the provision of electricity by firms for their own use was almost as large as the public supply of electricity (Reinikka and Svensson, 1998).

A study in Nigeria found that own generators accounted for three-quarters of the capital equipment of small manufacturers (Lee and Anas, 1991).

The poor state of SSA telecommunications was estimated to reduce SSA growth rates by 1 percentage point, according to Easterly and Levine (1997). SSA commercial courts are more corrupt than those in other regions (Widner, 1999). As a result, firms face greater problems of contract enforcement. Some firms can overcome these by relying upon their social networks to screen potential clients, but it is common to restrict business to long-standing clients (Bigsten et al., 1999). Ethnic minorities, such as Asians in East Africa and Lebanese in West Africa, tend to have more specialized social networks and so are better able than SSA firms to screen new clients. The problem of contract enforcement thus makes markets less competitive and reduces the potential gains from trade, while tending to perpetuate the dominant position of minorities in business (Biggs et al., 1996).

Poor public service delivery also handicapped households through inefficient education, health and extensive services. A survey of primary education expenditures in Uganda found that, of the non-wage money released by the Ministry of Finance, on average, less than 30 percent actually reached the schools. The expansion of the public sector has reduced private initiative. Since major areas of economic activity were reserved for the public sector – often including transport, marketing and banking – and SSA elites looked to the public sector rather than the private sector for advancement, SSA was slow to develop indigenous entrepreneurs (Ablo and Reinikka, 1998).

Public services have also worsened due to the lack of civic social capital. Because SSA governments have permitted only a low level of civil liberties, ordinary people are denied the channel of popular protest, and this worsens project performance (Isham, Kaufmann and Pritchett, 1995).

A minority of the population feels sufficiently confident to protest when its interests are threatened, whereas the majority has been excluded and is quiescent. Since protest is effective, this bifurcation of the population has entrenched the control regime with its highly selective beneficiaries, while permitting more generalized service delivery to be inefficient. A dramatic instance of these selective priorities is that expenditure per student in tertiary education is 44 times that of a primary school pupil, compared with a range elsewhere in the world of 3-14 times (Pradhan, 1996).

The public sector has been used to create employment rather than to deliver services, and this reduces productivity. To finance extra employees, non-wage expenditures are squeezed and wages are reduced, being compensated by declining effort. Because SSA had the most rapid educational expansion in the world, pressure for job creation was unusually severe. There is also evidence that wages in the public sector reward kin group connections rather than skills. Hence, there are several channels causing public service delivery to be deficient (Gelb, Knight and Sabot, 1989).

The share of public expenditure in GDP is generally higher than in other developing regions, and expenditure on the most evidently nonfunctional items, namely defense and interest payments, is lower. Whereas other developing regions allocate 16-17 percent of GDP to potentially productive public expenditure, SSA governments allocate 21 percent. Despite this, the actual delivery of public services has been poor (Collier and Gunning, March 1999).

The public service that has received most attention in growth regressions has been education. Paradoxically, education is the one public service in which SSA performance has not been markedly worse than other regions. Although SSA has a lower stock of education than other regions, it has had a faster rate of growth of the stock. If the growth of output is determined by the growth of inputs, then SSA should have grown rapidly. Conversely, if the level of human capital directly affects the rate of growth, then the lack of education might be an important explanation of slow SSA growth. At present these issues are unresolved, partly because until very recently, educational growth rates have been very poorly proxied by enrolment rates. However, one unambiguous effect of the low level of education has been high fertility rates. SSA population growth has exceeded labour force growth by 0.4 percent per annum, and this reduces per capita growth approximately pro rata, as established in the Sachs and Warner regression (Collier and Gunning, March 1999).

There are fewer infrastructures than elsewhere. For example, the density of the rural road network is only 55 kilometres per square kilometre, compared to over 800 in India, and there are only one-tenth the telephones per capita of Asia. The quality of infrastructure is also lower. The telephone system has triple the level of faults of Asia's, and the proportion of diesel trains in use is 40 percent lower. Prices of infrastructure use are much higher. Freight rates by rail are on average around double those in Asia. Port charges are higher, for example, a container costs \$200 in Abidjan as opposed to \$120 in Antwerp. Air transportation is four times more costly than in East Asia. Much of international transport is cartelised; reflecting the regulations of SSA governments intended to promote national shipping companies and airlines. As a result of these high costs, by 1991 freight and insurance payments on trade accounted for 15 percent of export earnings, whereas the average for developing countries is only 6 percent. Further, the trend has been rising for SSA whereas it has been falling elsewhere: the comparable figures for 1970 were 11 percent and 8 percent (Collier and Gunning, March 1999).

### ***2.3.5 Inappropriate Economic Policies***

SSA governments built various economic control regimes. A few nations, such as Ethiopia, Angola and Tanzania, had wide-ranging price controls under which private agents had an incentive to reduce production – at least officially marketed production. These governments often attempted to counterbalance these incentives with coercive production targets, but the net effect

was usually dramatic declines in economic activity. More commonly, firms were subject to considerable regulation. For example, for many years manufacturing firms wishing to set up in Kenya had to acquire letters of no objection from existing producers, which resulted in a predictably low level of competition. In Uganda, when the government removed the requirement that coffee could only be transported by rail, the market for road haulage expanded sufficiently to induce new entry, which in turn broke an existing cartel, nearly halving haulage rates. Similarly, in Tanzania during the long period when agricultural marketing was heavily regulated, marketing margins for grain were double what they were both before regulation and after deregulation. In this period, food prices became much more volatile: between 1964 and 1980 the coefficient of variation (that is the ratio of the standard deviation to the mean) of maize prices at regional centers doubled, falling again sharply when markets were liberalized (Bevan et al., 1993).

Government interventions undermined the functioning of product markets in many countries. Private trading, which was often associated with ethnic minorities such as the Indians in East Africa and the Lebanese in West Africa, was sometimes banned. A particular intervention, practiced even in relatively market-friendly economies such as Kenya, was to ban private inter-district trade in food. Where government marketing monopolies were focused on ensuring the food supply to urban areas, this provision discouraged farmers from specializing in non-food export crops, since they could not rely on being able to buy food locally (Collier and Gunning, 1999).

Since the political base of governments was urban, agriculture was heavily taxed and the public agronomic research needed to promote a SSA green revolution, based on locally specific packages of micronutrients, was neglected. The main source of agricultural growth has been the gradual adoption of cash crops by smallholders, a process slowed down by governments pricing policies (Bevan et al., 1993).

While governments favored manufacturing, the basis for industrial growth in this area was also undermined, since trade and exchange rate policies induced industrial firms to produce under uncompetitive conditions and only for small and captive domestic markets (Collier and Gunning, 1999).

The same urban bias initially led governments to favor the urban wage labour force. In the immediate post-colonial period, minimum wages rose and unions acquired influence, so that

wages increased substantially. However, post-independence inflation has usually eroded minimum wages, so that in most of SSA, wage rigidities in the labour market are not currently a significant impediment to the growth process. The exceptions are South Africa, where the labour market may just be going through such a real wage adjustment now, and the low inflation environments of Ethiopia and the countries in the “franc zone”, the 13 former colonies of France in west and central Africa which had currencies pegged to the French franc. While high wage levels are not normally a hindrance to SSA economies, the job matching process appears to be inefficient, so that job mobility offers unusual high returns. This is an instance of the high costs of market information; for example, newspapers are expensive and have low circulation (Mengistae, 1998).

Financial markets were heavily regulated, with bank lending directed to the government, public enterprises or “strategic” sectors, very limited financial intermediation and virtually no competition between financial institutions. A common proxy for the extent of financial intermediation, known as “financial depth”, is the broad money supply, M2, relative to GDP. But although SSA has even less financial depth than other developing areas, currently available evidence suggests that this may have had only a modest impact on its growth. For example, Easterly and Levine (1997) estimate that lack of financial depth reduced the annual growth rate by only 0.3 percentage points. Similarly, microeconomic survey evidence on manufacturing firms indicates that the lack of external finance is not currently the binding constraint on industrial investment (Bigsten et al., 1999).

In recent decades, SSA governments adopted exchange rate and trade policies, which were atypically anti-export and accumulated large foreign debts. On a range of indicators, SSA has had much higher trade barriers and more misaligned exchange rates than other regions (Dollar, 1992; Sachs and Warner, 1997).

Exchange rates were commonly highly overvalued, reflecting the interest of the political elite in cheap imports. Tariffs and export taxes were higher in SSA than in other regions of the world, partly because of the lack of other sources of tax revenue to finance the expansion of the public sector. Exports were sharply reduced as a result of export crop taxation. For example, Dercon (1997) shows that Tanzanian cotton exports would have been 50 percent higher in the absence of taxation. Quantitative restrictions on imports were also used much more extensively, despite yielding no revenue. They often arose because of the difficulties of fine-tuning import demand in

a situation where government was attempting to keep exchange rates fixed with few reserves. They probably persisted because they generated large opportunities for corruption, since someone could often be bribed to circumvent the quantitative limits (Collier and Gunning, 1999).

The international growth literature has reached a consensus that exchange rate overvaluation and tight trade restrictions are damaging, but controversy continues over the effects of more moderate trade restrictions. However, there are reasons why SSA's poor export performance may have been particularly damaging. Since 1980, SSA export revenue per capita has sharply declined, which in turn has induced severe import compression of both capital goods and intermediate inputs. Moreover, because SSA economies are so much smaller than other economies, external barriers of a given height have been significantly more damaging (Rodrik, 1999).

By the 1990s, several SSA economies had accumulated unsustainable international debts, largely from public agencies. Clearly, this is one way in which poor decisions of the past become embedded in the present. There is a good theoretical argument that high indebtedness discourages private investment due to the fear of the future tax liability. There is some supporting evidence of this claim, although since poor policies lower GDP, using high debt/GDP as an explanatory variable may simply be a proxy for poor policies more broadly (Elbadawi et al., 1997).

SSA has much less financial depth than other developing areas: M2/GDP is 37 percent lower. This is usually interpreted as being due to the curtailment of the banking system through financial repression. However, while M2/M0 is indeed lower in SSA than elsewhere, the difference is only 16 percent, so that the main cause is the low level of M0/GDP. The low holdings of currency are probably attributable to the large share of the subsistence economy, in turn related to the high implicit taxation of agriculture (King and Levine, 1993).

Although the lack of financial depth in SSA has reduced growth, the effect has been modest: a loss of only 0.3 percentage points. There is also some evidence that it has reduced investment. Thus, the lack of financial depth is probably more a by-product of a lack of openness than of financial policies and has had only limited effects on growth. This contrasts with the considerable emphasis placed on financial liberalization in reform programmes (Easterly and Levine, 1997).

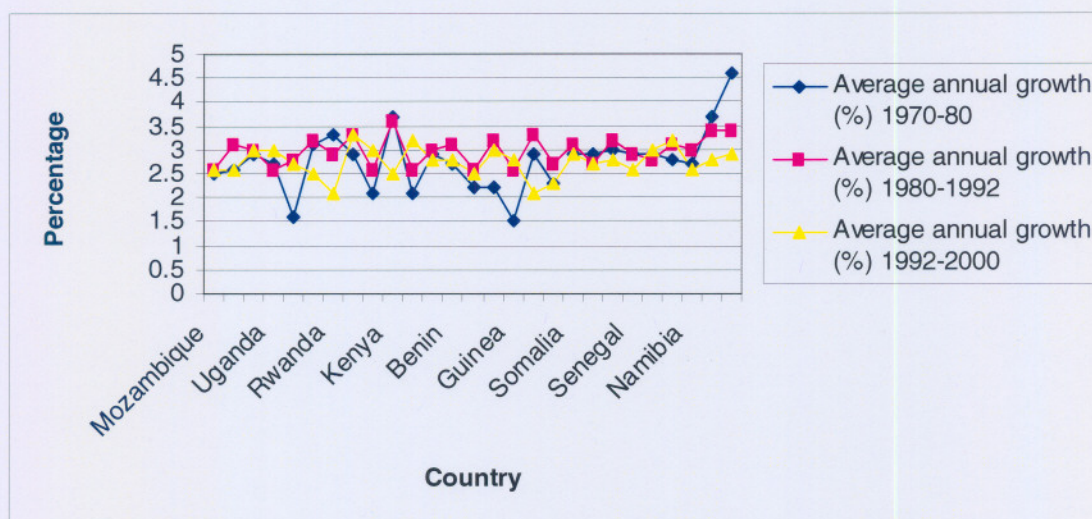
### 2.3.6. Geography

SSA has several geographic and demographic characteristics, which may predispose it to slow growth.

#### 2.3.6.1 Population / Demographics

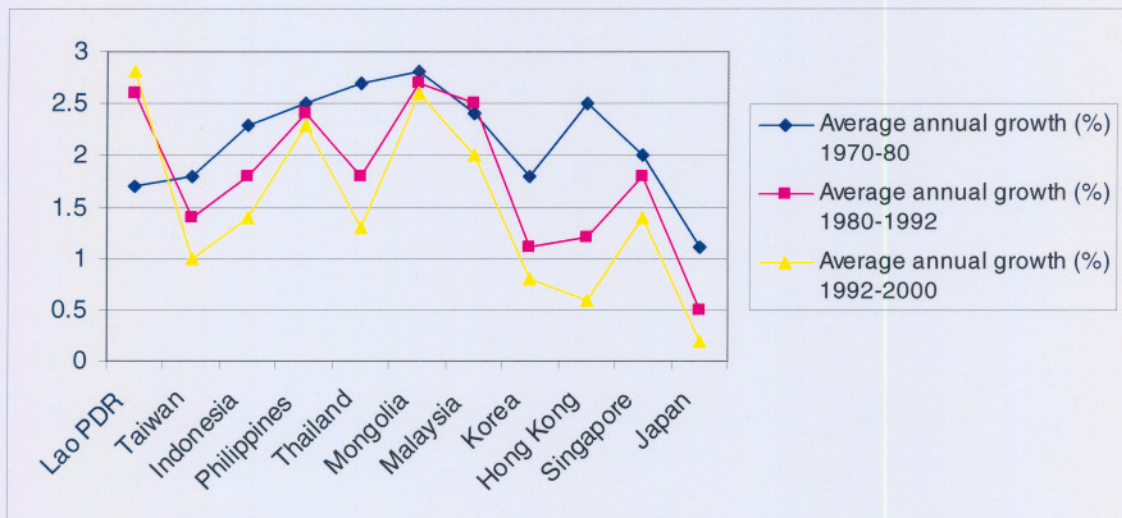
First, much of the continent is tropical and this may handicap the economy, partly due to diseases such as malaria and partly due to hostile conditions for livestock and agriculture. Life expectancy has historically been low, with the population in high-fertility, high infant-mortality equilibrium. With the advent of basic public health measures, population growth became very high. In particular, SSA has not been through the demographic transition whereby fertility rates decline which occurred in Asia and Latin America over the past 40 years. On one estimate, SSA's low life expectancy and high population growth account for almost all of SSA's slow growth.

**Figure 2.4: Average Annual Population Growth for countries in SSA for the periods; 1970-80, 1980-1992, 1992-2000**



Source: World Development Report 1994

**Figure 2.5: Average Annual Population Growth for countries in East Asia for the periods; 1970-80, 1980-1992, 1992-2000**



Source: World Development Report 1994

As can be seen from figures 2.4 and 2.5, SSA countries have a much higher population growth rate than any of the East Asian countries over the specified periods. This can then certainly be considered as a determinant, which has caused SSA's slow growth.

The argument is not clear-cut however. Low life expectancy and high fertility rate are consequences of low income as well as causes, so the estimates are likely to be biased upwards. The household-level evidence suggests that the effects of poor health on income are small, although these in turn will be biased downwards by the omission of large-scale changes in economic activity, which cannot be detected at the household-level (Bloom and Sachs, 1998).

Whether or not SSA's past demographic characteristics have contributed to its slow growth, some SSA countries seem certain to go through a distinctive and disastrous demographic transition during the next two decades. As a result of AIDS, adult mortality rates will raise dramatically. During the 1980s in parts of SSA it spread rapidly across the population before the risks became apparent, up to 20-25 percent of adults were HIV-positive in some countries (World Bank, 1997). This human tragedy will have substantial economic effects during the next decade, especially since infection rates appear to be higher among the more educated, but it does not account for historically slow growth (Bloom and Sachs, 1998).

### ***2.3.6.2 Climate***

A second key characteristic of SSA, which may predispose it to slow growth, is that soil quality is poor and much of the continent is semi-arid, with rainfall subject to long cycles and unpredictable failure. Soils derive disproportionately from a very old type of rock, which is low in micronutrients and varies considerably between localities. The application of additional macronutrients, which is the fertilizer package associated with the Green Revolution, is generally ineffective with low levels of micronutrients. SSA probably has scope for its own agricultural revolution, but it will depend upon locality-specific packages of micronutrients (Voortman et al., 1999).

Since the 1960s, the semi-arid areas of SSA have been in a phase of declining rainfall (Grove, 1991). While there are no estimates of the output consequences of this decline, it may be significant, since agriculture is typically about one-quarter of GDP in this region. Given the lack of irrigation, the unpredictability of rainfall implies high risks in agriculture. With incomplete insurance and a high rate of time preference, households have to use assets for purposes of consumption smoothing rather than investment. Households can thus become trapped in low-income, high-liquidity equilibria (Dercon, 1997).

### ***2.3.6.3 Population Density***

A third relevant characteristic of SSA's economies, which can be seen as a result of these semi-arid conditions, is that the continent has very low population density. One by-product is high costs of transport, which in turn have added to risk: poor market integration has hampered the use of trade for risk sharing. Another consequence of low population density is that SSA has relatively high natural resource endowments per capita (Wood and Mayer, 1998).

High levels of exported natural resources may lead to an appreciation of the exchange rate, which in turn makes manufacturing less competitive. Yet manufacturing may offer larger growth externalities, such as learning, than natural resource extraction. Natural resources may also increase "loot-seeking" activities. It was found that a dependence on natural resources strongly increases the risk of civil war, which has been a widespread phenomenon in SSA (Collier and Hoeffler, 1998).

Since the 1980s, the terms of trade have also tended to deteriorate, although there is surprising variation in the estimates, ranging between 6 percent and 36 percent. This deterioration in the

terms of trade has been estimated to account for a reduction in the SSA growth rate relative to that of other developing countries of 0.7 percentage points (Elbadawi and Ndulu, 1996).

This natural volatility is compounded by policy volatility. Although the two sources of shocks are conceptually distinct, in practice in SSA they are correlated, since governments have used trade policy to equilibrate the balance of payments. Variation in the real exchange rate is a useful proxy for these effects since it reflects the sum of policy and terms of trade shocks. SSA real exchange rates have been atypically volatile, and there is some evidence that this has reduced growth (Elbadawi and Ndulu, 1996).

#### ***2.3.6.4 Small Size***

A fourth characteristic of SSA that may hinder its growth prospects is that because of its colonial heritage, SSA has much smaller countries in terms of population than other regions. SSA has a population about half that of India, divided into 48 states. These many states, combined with low levels of income, make SSA's national economies radically smaller than those of other regions. Very small states might be economically disadvantaged for several reasons. If government has some fixed costs, either in its administrative role or as a provider of services, then it may be hard for a small state to perform at minimum cost. Moreover, the society may forfeit much more extensive scale economies if it combines small scale with isolation. Some domestic markets will be too small even for the minimum efficient scale of production of a single producer; all domestic markets taken alone will be less competitive than in larger economies. Small economies are also perceived by investors as significantly more risky (Collier and Dollar, 1999a).

Finally, they may have a slower rate of technological innovation. Kremer (1993) argues the incidence of discoveries may be broadly proportional to the population, so that if discoveries cannot spread between societies, low-population societies will have less innovation. However, in aggregate these effects cannot be large, because growth regressions generally find that state size does not affect a nation's rate of economic growth.

## 2.4 Summary

In this chapter the objective was to determine the factors, which caused SSA's slow economic growth, and to discuss the various theories for this phenomenon. This chapter showed that in the 1960s, SSA's future looked bright. On the basis of Maddison's (1995) estimates of per capita GDP for a sample of countries, during the first half of the century SSA had grown more rapidly than Asia; by 1950 the SSA sample had overtaken the Asian sample. In the 1950s there were uncertainties of political transition, but after 1960 SSA was increasingly free of colonialism, with the potential for governments that would be more responsive to domestic needs. During the period 1960-1973, growth in SSA was more rapid than in the first half of the century. Indeed, for this period, SSA growth and its composition were indistinguishable from the geographically very different circumstances of South East Asia. Political self-determination in SSA and economic growth seemed to be proceeding hand-in-hand.

However, during the 1970s both the political and economic situation in SSA deteriorated. The leadership of many SSA nations hardened into autocracy and dictatorship. SSA's economies first faltered and then started to decline. While SSA experienced a growth collapse, nations of South East Asia modestly improved their economic performance. An example of this divergence is the comparison of Nigeria and Indonesia. Until around 1970, the economic performance of Nigeria was broadly superior to that of Indonesia, but over the next quarter-century outcomes diverged markedly, despite the common experience for both countries of an oil boom in a predominantly agricultural economy. Since 1980, aggregate per capita GDP in SSA has declined at almost 1 percent per annum. The decline has been widespread: 32 countries are poorer now than in 1980. By 1999, SSA was the lowest-income region in the world.

There is, however, two main features that characterize the current position of SSA in world trade: first, it has a small and declining share in world trade and second, its presence in world trade is largely confined to primary exports and the importation of non-primary products.

When the study analyzed SSA whose exports still consist largely of primary products, it was noticed that SSA have done far less well than East Asia in its 'miraculous' development success (in terms of equity as well as growth) which is intimately associated with the export of manufactures. This broad correlation between export composition and development performance

raises some controversial questions in the development literature, both about the causes of economic progress and about the best policies for achieving it. The question that arises from this analysis is whether SSA countries can emulate the development experience of the East Asian countries.

Doubts have been raised about the scope for other developing countries to follow East Asia down the road of export-oriented industrialization. The problem is that many of these countries, particularly those in SSA and to some extent Latin America, do not have a comparative advantage in manufacturing, because they have inadequate resource endowments. More specifically, they have too low a ratio of human resources to natural resources, or, in other words, of skill to land, which causes their comparative advantage to lie instead in primary exports.

The fast growing East Asian economies are much more open today than at their initial stages of development, when their interventionist policies could hardly be considered openness enhancing. Indeed, some have argued that it was not so much openness but capital accumulation that led to the rapid development of the East Asian countries. However, as these economies grew, the need to open up became imperative, as new markets were required to overcome bottlenecks in the economy. The most comprehensive measure of openness is that used by Sachs and Warner (1995). According to that study an economy is considered 'open' to trade if it satisfies all of the following five conditions: (1) average tariff rates below 40%, (2) average quota and licensing coverage of imports of less than 40%, (3) a black market exchange rate premium of less than 20%, (4) no extreme controls (taxes, quotas and state monopolies) on exports and (5) not considered a socialist country. Sachs and Warner (1997) found that the 1965-90 average growth rate of GDP per capita was positively associated with openness. They also uncovered the fact that, when their measure of openness was included in their model, the SSA dummy variable became insignificant, suggesting that the most important distinction between SSA and other economies is a lack of openness.

The lack of foreign aid to SSA countries deserves a look since it is known as an exogenous factor for the lack of growth. The main critical deficiencies, which explain the low level of effectiveness of aid to SSA, are lack of ownership of the development agenda, poor aid coordination, deficiencies in resource allocation and budget management and proliferation of aid projects.

When the study looked at total external debt for SSA, it was noticed that it increased from US\$84 billion in 1980 to US\$226 billion in 1995, with a debt service ratio of 14.5 per cent, a debt/GNP ratio of 81 per cent and a debt/exports ratio of 241 per cent. Sixteen SSA countries were categorized as unsustainable and possibly distressed. While these countries are eligible for debt relief under the HIPC (Heavily Indebted Poor Countries) initiative, the real challenge is to find more substantial and wide-ranging approaches to debt relief.

The implications of the debt burden for development in SSA are far-reaching. Many countries have to allocate considerable amounts of budgetary expenditure to external debt servicing. The debt burden is obviously enormous in relation to SSA's debt servicing capacity and has become a major inhibiting factor for the recovery of growth and exports.

Easing the burden of unsustainable debt would free government resources for more productive developmental activities, reduce transactions costs (which are a massive burden on policy-makers) and help restore macroeconomic stability and investor confidence. A dollar of reduced debt is therefore likely to be more valuable than an additional dollar of conventional aid. There is an overwhelming case that significant further reductions in the external debt of debt-distressed-low income countries would improve growth prospects in SSA, and particularly if the resources made available are truly additional.

Repeated debt rescheduling has not solved the problems and there is an urgent need to devise new and more effective ways of reducing the SSA debt burden dramatically. The adoption and implementation of Trinidad Terms, which proposed a reduction of two-thirds in the stock of official bilateral debt, should be the immediate objective of creditor governments. The HIPC initiative should be expanded, its eligibility conditions made more flexible and the completion point of the HIPC criteria advanced.

Where the object of openness are concerned, it was seen that SSA isn't considered to be open and that one effective mechanism for integrating SSA countries into the global economy would be for OECD countries to guarantee open markets for SSA exports and commit themselves to help reintegrate SSA into the world economy. This is particularly important for key sectors such as agriculture and textiles. This is where SSA's comparative advantage lies; yet these are the most protected markets.

After the study determined that SSA was considered to be inadequately 'open', it also found that SSA suffers from the following thus causing many investors not to invest in SSA: civil strife, macroeconomic instability, slow economic growth and small domestic markets, inward orientation and burdensome regulations, slow progress on privatization, poor infrastructure, high wage and production costs.

Then the study showed that various debates on the causes of the crisis have centered on proximate and ultimate causes.

- Proximate causes include exogenous factors such as bad weather, geography, deteriorating terms of trade, fluctuating international interest rates and reduced inflows of foreign aid.
- Ultimate causes include endogenous factors such as inappropriate domestic policies, including incentive structures, institutions and the mismanagement of public resources (Collier and Gunning, 1999).

The debate on the causes of slow SSA growth has offered many different explanations. These can be usefully grouped into a two-by-two matrix, distinguishing on the one hand between policy and exogenous "destiny" and, on the other, between domestic and external factors.

The study showed that it has largely been argued by some that the main causes of SSA's slow growth were external, with the debate focusing upon whether external problems were policy-induced or exogenous. Especially during the 1980s, the World Bank, the International Monetary Fund and bilateral donors came to identify exchange rate and trade policies as the primary causes of slow growth in SSA.

Recently, attention has shifted to possible domestic causes of slow growth within SSA nations, but the debate as to the relative importance of policy-induced and exogenous problems has continued. The study also mentioned that Sachs and his co-authors have attributed slow growth to "the curse of the tropics". SSA's adverse climate causes poor health, and so reduces life expectancy below that in other regions, which puts it at a disadvantage in development. The adverse climate also leads to leached soils and unreliable rainfall, which constrains SSA agriculture. SSA nations also appear to have more ethnic diversity than other poor nations of the world, which may make it harder to develop an interconnected economy. In contrast to the

domestic destiny argument, it has been emphasized that domestic policy factors such as poor public service delivery has a significant impact. SSA governments have typically been less democratic and more bureaucratic than their East Asian and Latin American counterparts.

Weak economic growth helps explain a lower savings rate and a higher proportion of flight capital for SSA compared to the less developed nations of East Asia and Latin America. Richer countries tend to see their population growth rates drop off, so the poverty of SSA has helped to keep its birth rates high, even as compared to the world's other less developed economies. Similarly, poverty may have increased the incidence of SSA's numerous civil wars, as well as being a consequence of them.

Some economists believe that while the binding constraint upon SSA's growth may have been externally oriented policies in the past, those policies have now been softened. In the late 1990s, the chief problem was these policies, which were ostensibly domestically oriented and notably poor in the delivery of public services. These problems are much more difficult to correct than exchange rate and trade policies, and so the policy reform effort needs to be intensified. However, even widespread policy reforms in this area might not be sufficient to induce a recovery in private investment, since recent economic reforms are never fully credible. Investment rating services list SSA as the riskiest region in the world. Indeed, there is some evidence that SSA suffers from being perceived by investors as a "bad neighborhood". Analysis of the global risk ratings shows that while they are largely explicable in terms of economic fundamentals, SSA as a whole is rated as significantly more risky than is warranted by these fundamentals. Similarly, private investment appears to be significantly lower in SSA than is explicable in terms of economic fundamentals. SSA thus seems to be treated as a meaningful category by investors.

The perception of high risk for investing in SSA may partly be corrected by the passage of time, but reforming SSA governments can also take certain steps to commit themselves to defend economic reforms. Internationally, governments may increasingly make use of rules within the World Trade Organization, and shift their economic relations with the European Union from unreciprocated trade preferences to a wider range of reciprocated commitments. Domestically, there is a trend to freedom of the press, and the creation of independent centers of authority in central banks and revenue authorities, all of which should generally help to reinforce a climate of openness and democracy, which is likely to be supportive of economic reform.

In conclusion this chapter showed that SSA's real per capita GDP did not grow over the 1960-1990 period, but that East Asia's per capita grew at over 5 percent and that of Latin America at almost 2 percent per year. It also showed that SSA's exports have a small and declining share in the world trade and that its exports are largely confined to primary products and the importation of non-primary products. The study then showed that the causes for SSA's failure to grow were either because of proximate causes, i.e. exogenous factors such as bad weather, deteriorating terms of trade, fluctuating international interest rates and reduced inflows of foreign aid, or because of ultimate causes i.e. endogenous factors such as, inappropriate domestic policies, including incentive structures, and the mismanagement of public resources.

In the next chapter, the objective of identifying the determinants of economic growth in East Asia between 1960 and 1990 will be achieved.

## **CHAPTER 3: ECONOMIC GROWTH IN EAST ASIA**

### **3.1 Introduction**

In chapter 1, figure 1.1, it was seen that SSA's GDP per capita was higher than East Asia's until 1982 when SSA's GDP declined below East Asia's and just kept on declining, while East Asia's GDP kept on growing.

In chapter 2, the study determined the factors, which could have influenced SSA's lack of economic growth. It was shown that the causes for SSA's failure to grow were either because of proximate causes, i.e. exogenous factors such as bad weather, deteriorating terms of trade, fluctuating international interest rates and reduced inflows of foreign aid, or because of ultimate causes i.e. endogenous factors such as, inappropriate domestic policies, including incentive structures, and the mismanagement of public resources.

In this chapter, the objective of identifying the determinants, which caused East Asia's growth experience, will be discussed. Country case studies will be used to try and identify the most commonly used determinants, which has helped these countries achieve economic growth rates well above those of SSA.

Explaining East Asia's success is important, for at least two reasons. First, such an explanation might show the way to replicate this success in other regions of the world. Second, even if East Asia's success is not replicable elsewhere, there is an urgent intellectual need to solve the puzzle of the phenomenal East-Asian growth rates (Sarel, 2002).

East Asian countries – Indonesia, Malaysia and Thailand – have grown rapidly since the late 1960s. These three countries have natural and human endowments, ethnic heterogeneity and forms of government that resemble those in SSA far better than did the counties of East Asia. Thus the experiences of Indonesia, Malaysia and Thailand may suggest development strategies that are more appropriate for SSA (Roemer, 1994)

The chapter is structured as follows: in section 3.2 the study will look at the different country experiences. In section 3.3, different theories for the "Miracle" will be discussed and then in

section 3.4, the study will discuss the determinants of growth and then lastly in section 3.5, the chapter ends with a summary.

## **3.2 Country Experiences**

In this section this study will take a look at the individual case studies of South Korea, Taiwan, Hong Kong, Singapore, Thailand, Malaysia and Indonesia. This is done to enable this study to identify the determinants used by all or most of the East Asian countries, which will then be tested to see if it was contributing factors to their economic growth success.

### **3.2.1 Taiwan**

Taiwan has a dynamic capitalist economy with gradually decreasing guidance of investment and foreign trade by government authorities. In keeping with this trend, some large government-owned banks and industrial firms have privatised. Real growth in GDP has averaged about 8 percent during the past three decades. Exports have provided the primary impetus for industrialization. The trade surplus is substantial, and foreign reserves are the world's third largest. Agriculture contributes 2% to GDP, down from 35% in 1952. Traditional labour-intensive industries are steadily being moved offshore and replaced with more capital- and technology-intensive industries. Taiwan has become a major investor in China, Thailand, Indonesia, the Philippines, Malaysia, and Vietnam; 50 000 Taiwanese businesses are established in China. Because of its conservative financial approach and its entrepreneurial strengths, Taiwan suffered little compared with many of its neighbours from the Asian financial crisis in 1998-99. The global economic downturn, however, combined with poor policy coordination by the new administration and increasing bad debts in the banking system, pushed Taiwan into recession in 2001, the first whole year of negative growth since 1947. Unemployment also reached a level not seen since the 1970s oil crisis (World Fact Book, 2000)

Taiwan's highly regulated financial system means that the exchange rate of the new Taiwan dollar (NT\$) is also highly regulated. Until April 1989, the Central Bank set the exchange rate for the NT\$. Since April 1989, the NT\$ exchange rate has been set by a panel of nine banks (five local, government owned and a rotating panel of four foreign banks).

Until about 1985, the exchange rate for the NT\$ had stood at \$NT40 per \$US. Since then, as a way to combat Taiwan's trade surplus, the US has also been pressuring Taiwan to revalue its

currency. This has made Taiwan's exports more expensive and less competitive (Coutsoukis, 2000).

Since 1985, the NT\$ exchange rate has appreciated by more than 32% against the US\$, from 39.849 \$NT/\$US in 1985 to 26.86 \$NT/\$US in 1990. Except for Hong Kong, all other NIEs have experienced depreciations in their exchange rates, consequently blunting Taiwan's competitive edge in comparison to its major competitors in the Asian region - particularly the PRC. The appreciation of the NT\$ has had little effect on Taiwan's export trade, and contrary to expectations, is still expanding (Coutsoukis, 2000).

Taiwan's economic power is illustrated by its foreign reserves, now standing at more than US\$ 77 billion - placing it as number one in the world. Nonetheless, this increase in money supply has also led to a rise in inflation. Real estate and housing prices have tripled and even quadrupled in some areas of Taipei during the last two years. Although real estate and prices of assets have been subject to rapid increases in inflation, the affects on goods and services has been minimal (Coutsoukis, 2000).

During 1990 inflation stood at 4.4 percent, and was expected to rise to 7.2 percent during 1991. Notwithstanding recent figures, inflation in Taiwan has generally been low since the 1950s. Apart from the oil shocks during the 1970s, the consumer price index has generally been around the 3-4 percent level.

Taiwan has experienced one of the highest growth rates of any economy in the world. From 1953-1990, the annual economic growth rate averaged 8.7%. During the 1970s, it averaged 9.7%. Gross National Product (GNP) per capita income increased from US\$ 3748 in 1986 to US\$ 7510 in 1989, with an average growth of 8.5% between 1981 and 1990 (Coutsoukis, 2000).

Since the 1950s, Taiwan's average growth rate of exports has out-stripped its growth of GDP. This has been the main impetus behind Taiwan's startling economic growth. Recently, this trend has slowed as the gap between the growth of GDP and the growth of exports has narrowed. Exports that formed the greatest percentage of Taiwan's GDP until a peak of 52.7% in 1987 fell to a predicted 35.9% in 1992. From this, it can be assumed that while the phenomenal economic growth Taiwan has experienced since the 1950s is slowing down, the Taiwanese economy will not sink into stagnation. In 1985 only Singapore and Hong Kong surpassed Taiwan's dependence on exports (Coutsoukis, 2000).

Taiwan's exports are almost completely dominated by manufactured industrial products. The emphasis of Taiwan's exports was mainly on manufactured articles, standing at 98.3% in 1988. Taiwan's concentration on manufactured exports is higher than in any of the other Asian countries listed. Most of the major industries in Taiwan in the 1990s are either export oriented, or suppliers to export industries. The major emphasis is on capital intensive, high-tech industries such as the sunrise industries (Coutsoukis, 2000).

Taiwan's top ten imports in 1988, electronic manufactures was the only non-primary commodity, standing at 17.5 percent. Of this 17.5 percent, a large proportion is used in Taiwan's own manufacturing industries and re-exported as finished products to third countries - for example, computers. Extremely poor in natural resources, Taiwan must process raw materials - either primary or secondary - by employing its efficient and relatively low-paid labour force. Taiwan's dependence on food and raw materials was second only to Hong Kong in 1988, and stood at 62.8% of Taiwan's total imports for that year (Coutsoukis, 2000).

While Taiwan's energy imports constituted a minor 9.1% of total imports - compared with other East Asian countries, it was almost totally dependent on these imports to sustain its economy. Only Singapore - a city-state- and Hong Kong - a British colony - surpassed Taiwan's 90.9% dependence on foreign energy imports.

Foreign investment in Taiwan first played an important role in the development of its export industries during the 1950s and 1960s. Later on during the 1980s, foreign investment in Taiwan helped develop its technology-related and service industries. By far, the largest investment has been in Taiwan's manufacturing industries - especially electrical machinery and apparatus, chemicals, machinery, equipment and instruments and basic metals.

During the 1960s and 1970s, Taiwan was an attractive destination for foreign investors because of its cheap labour, stable government, and very loose environmental controls. Foreign investors, therefore, flocked to Taiwan to establish low-cost, labour intensive, export-oriented industries. In contrast, the high price of labour in Taiwan today has induced foreign investors to turn their attention to high-tech, capital intensive industries such as electronics, computers, banking and finance. Moreover, rather than being purely export oriented as in the 1960s, many foreign enterprises in Taiwan are now locally established to produce for the burgeoning domestic market (Coutsoukis, 2000).

### **3.2.2 Indonesia**

Between 1965 and 1990, growth in income per capita in Indonesia averaged 4.5 percent per annum (World Bank, 1992: 218). Only seven developing countries — China, Lesotho, Paraguay, Botswana, Korea, Singapore, and Hong Kong — grew faster. High economic growth was accompanied by a rapid decline in the incidence of poverty and low-income inequality (Campos and Root 1996: 9-16). In addition to equitable and poverty reducing growth, Indonesia achieved food self-sufficiency (in rice by 1985), a rapid decline in the rate of population growth, and an equally impressive spread of basic education and literacy (Campos and Root, 1996: 60).

These developments were accompanied by substantial industrialization and structural change. Agriculture's share in GDP declined from 51 percent to 22 percent, while the share of manufactures in GDP rose from 8 percent to 20 percent (World Bank, 1990: 222). Because overall growth was so rapid and growth in manufactures even more rapid (manufacturing output grew by more than 12 percent per year between 1965 and 1990), the manufacturing sector in 1990 was almost 45 times larger than it was in 1965 (World Bank 1992: 222). Although much of manufacturing was fostered under policies of import substitution, Indonesia also experienced substantial success in exporting manufactures. By 1993, manufactured exports reached US\$21 billion and accounted for 53 percent of total exports (World Bank 1996: 216). Because of this, Indonesia has gone a long way towards diversifying its economy, including exports, away from oil and other primary products (Sundaram and Rock, 1998).

Indonesia's Sukarno, though no development leader, did knit many ethnic groups into a nation, largely ending ethnic strife as a deterrent to development. SSA has not been as successful in drawing on the talents and energies of all its ethnic groups, one of the choices of politics over development (Roemer, 1996).

In Indonesia, the Suharto government, which consolidated itself on the basis of a development mentalist ideology and programmes, has been active and successful in rural development and an agricultural extension programme in achieving rice self-sufficiency and lower fertility rates. It has also been highly praised by the Bretton Woods Institutions for its record in maintaining macroeconomic stability in the presence of large external shocks. It is well known that macroeconomic management was left to the "Berkeley Mafia", i.e. the group of the technocratic

elite, who were well insulated from political pressures. However, industrialization in Indonesia has always proceeded with strong state intervention and a large public sector (Roemer, 1996).

Indonesia is respected for its choice of public investment, at least for the period after the famous Pertamina crisis of 1975, if not before. This crisis weakened the nationalist lobby that most favored highly capital-intensive import-substituting investments. As a result of this and the devaluation of 1978, Indonesia maintained rural and agricultural investment, in contrast to Nigeria, with which it is often compared. Nevertheless, Indonesia did promote many large industrial investments, especially in “resource-based” industries. These, however, appear to have been better planned than elsewhere (Auty 1990). But note that when crisis threatened as oil prices fell after 1983, the Indonesian government acted quickly to shelve plans for further large-scale capital-intensive industrial projects (Roemer, 1996).

Finally, the combination of orthodox macro policies and interventionist micro policies serves an important political function. Macroeconomic stability facilitates overall economic growth and growth of the Sino-Indonesian business conglomerates that have come to dominate the landscape of the Indonesian economy. Because of *cukongism*, growth of the conglomerates provides the resources Suharto needs to maintain political support among key elites. It also provides ample opportunities for intra-elite rent seeking. As Liddle (1991: 407) states, Suharto and the military seem to have realized that “the golden eggs provided by (macro stability) can be distributed to patrimonial clients without starving the goose.” Or said another way, this particular configuration — separation of macro policy from micro policy-making, control of micro agencies by those favoring explicit and selective industrial policies, and use of selective policies for patrimonial ends — reflects President Suharto’s political calculus in which “the economists (are) the producers of wealth, the patrimonialists the distributors of it, and the nationalists the embodiment of (his) dream for more rapid progress toward an industrialized and more powerful Indonesia” (Liddle 1991: 419). Because of this, he favors them when resources permit (Sundaram and Rock, 1998).

### **3.2.3 South Korea**

As one of the Four Tigers of East Asia, South Korea has achieved an incredible record of growth and integration into the high-tech modern world economy. Three decades ago GDP per capita was comparable with levels in the poorer countries of SAA and East Asia. Today its GDP per

capita is roughly 20 times North Korea's and equal to the lesser economies of the European Union. This success through the late 1980s was achieved by a system of close government/business ties, including directed credit, import restrictions, sponsorship of specific industries, and a strong labour effort (World Fact Book, 2003).

The government promoted the import of raw materials and technology at the expense of consumer goods and encouraged savings and investment over consumption. The East Asian financial crisis of 1997-99 exposed longstanding weaknesses in South Korea's development model, including high debt/equity ratios, massive foreign borrowing, and an undisciplined financial sector. Growth plunged by 6.6% in 1998, then strongly recovered to 10.8% in 1999 and 9.2% in 2000. Growth fell back to 3.3% in 2001 because of the slowing global economy, falling exports, and the perception that much-needed corporate and financial reforms had stalled. Led by consumer spending and exports, growth in 2002 was an impressive 6.2%, despite anemic global growth (World Fact Book, 2003).

In South Korea, national income for the economy as a whole measured at 1990 constant factor cost grew at an average annual rate of 7.9 percent during the period from 1963 to 1995. The growth rate of national income, which was standardized for an international comparison by subtracting irregular factors affecting economic growth, was 7.6 percent, slightly lower than that of national income unadjusted for irregular factors (Kim, 2003).

Over the entire period, the largest contribution to the standardized growth rate was made by all components of labour input other than education. An increase in labour input except education contributed 2.7 percentage points, accounting for 35.0 percent of the standardized growth rate of national income in South Korea. The second largest contribution to growth was made by the "advances in knowledge and miscellaneous determinants", which explained about 1.5 percentage points, or 19.3 percent of the standardized growth rate. The third largest contribution to growth was made by economies of scale associated with rapid growth of the economy. This determinant contributed 1.4 percentage points, or 18.9 percent of the growth rate (Kim, 2003).

An increase in capital input contributed 1.3 percentage points, or 17.2 percent of the growth rate, thereby taking the fourth place in the ranking. Improved resource allocation was brought about by a reduction in the proportion of total labour supply that had been inefficiently engaged in both

the agricultural and the nonagricultural sectors as self-employed and unpaid family workers. This reallocation of labour contributed 0.5 percentage points, or 5.9 percent, and ranked as the fifth largest contribution. Increased education per worker is the remaining growth determinant that made a positive contribution to growth. It accounted for 0.3 percentage points, or 4.0 percent of the growth rate. On the other hand, the costs of pollution abatement contributed to reducing the growth rate by a small margin (Kim, 2003).

Comparing the contributions of major determinants to growth between the two sub-periods (1963-1979 and 1979-1995), it can be pointed out that all components of labour input other than education made the largest contribution in both sub-periods. This reflects the fact that South Korean growth over the past three decades was largely attributable to increases in employment and average working hours. The determinant called "advances in knowledge and miscellaneous determinants", which had made the third largest contribution to growth during the earlier sub-period, maintained the same ranking during the latter sub-period despite a significant increase in the contribution of this determinant from 1.2 to 1.7 percentage points between the two sub-periods. The percentage contribution of the determinant called "economies of scale" showed an increase between the two periods, mainly reflecting a rise in the standardized growth rate of national income for the latter period (Kim, 2003).

The percentage contribution to growth of an increase in capital input nearly doubled from 1.0 to 1.8 percentage points between the two periods. The relative contribution of capital input to growth also increased from 13.2 to 22.3 percent between the two periods. Thus capital input, which had made the fourth largest contribution during the earlier period, eventually took the second place in the latter period. In addition, the contribution of increased education per worker rose from 0.2 to 0.4 percentage points between the two periods. On the other hand, the percentage contribution of "improved resource allocation" declined by a small margin from 0.5 to 0.4 percentage points between the two periods (Kim, 2003).

Summing up the growth contributions of major determinants, it is found that increases in factor inputs, including capital and labour, contributed about 52.2 percent of the standardized growth rate over the entire period, while an increase in total output per unit of input contributed the remaining 47.8 percent. The relative contribution of factor input to growth, which was at about 56.8 percent during the earlier period declined to 49.7 percent during the latter period, reflecting a significant rise in total factor productivity during the latter period. Despite the gradual decline

between the two periods, the relative contribution of factor input to growth in South Korea even during the latter period was still higher than that in other countries (Kim, 2003).

South Korea and Taiwan have maintained some foreign exchange controls throughout their periods of rapid growth and have only recently begun to dismantle them. What they and the other East Asian countries shared was flexible management of their exchange rates. In contrast, the franc zone countries, which did maintain convertibility, maintained a fixed rate until 1994 and suffered stagnation or decline in average incomes. On the basis of these comparisons, it is flexibility rather than convertibility that matters. However, if attracting foreign investment is important to a country's development, as it was in East Asia, then an end to controls over both the current and capital account appears to be an important ingredient of development strategy (Roemer, 1996).

South Korea has the highest apparent productivity of investment among the countries being studied. Debate goes on – as to whether this is because South Korea's macroeconomic policies led to a framework of price incentives that guided investment (predominantly private investment, for South Korea has a very low ratio of public investment to total investment, less than 20 percent on average since 1970) in the most socially profitable directions (large labour-intensive exports) or whether South Korea's industrial policies were an important factor. It is common ground that credit was steered at subsidized interest rates toward sectors that the government favored, especially after 1973 when President Park initiated a drive for heavy industry (Roemer, 1996).

Auty (1991) estimates low financial returns for steel, petrochemicals, and shipbuilding. It is unlikely that these ventures had the high economic returns that have driven the South Korean economy at such a remarkable pace since the early 1960s. Note, however, that South Korea's heavy industry projects are probably the most efficient in the developing world (with the possible exception of those in Taiwan). In most developing countries, the capital cost of a plant of the same capacity is 30-100 percent greater than in the United States or Japan. South Korea has often achieved lower capital costs, despite the higher cost of imported equipment, because of exceptional speed and efficiency in site preparation, with low construction costs and short gestation periods. As in the case of Indonesia, the heavy industry program suffered rapid and substantial cutbacks when crisis threatened in the late 1970s (Sundaram and Rock, 1998).

South Korea also increased its foreign investment in East Asia as well as Vietnam and Northeast China, in response to the won appreciation of 1987 and the repeal of restrictive labour regulation in 1987 with the resulting marked wage hike. Within East Asia, investment by South Korean firms has been particularly concentrated in Indonesia's export-oriented manufacturing sector.

It is clear in all cases that the relocation process has been under explicit governments' encouragement in an effort to reshape and upgrade the industrial landscape of the home countries. For example, the relocation of Japanese firms has been congruent with their private business interests as well as the planned sequence of phasing out "sunset" industries and supporting "sunrise" industries and technologies. Japanese official aid and loans were actively utilized to facilitate and finance the process of regional cross-border migration of industrial sites under the official "economic cooperation" programme (Sundaram and Rock, 1998).

#### **3.2.4 Thailand**

Between 1955 and 1988, per capita economic growth in Thailand averaged 3.9 percent per annum (Christensen *et al.*, 1993: 2). Only four countries — Brazil, Malaysia, Taiwan, China, and South Korea — grew faster. High economic growth was accompanied by a rapid decline in the incidence of poverty, mild, but rising, income inequality, and substantial exports of both manufactures and primary commodities, including processed agricultural commodities. By 1985, the value of manufactured exports exceeded agricultural exports for the first time. Textile exports increased fourfold between 1983 and 1989; integrated circuits (ICs) exports doubled between 1985 and 1987, while exports of plastics and shoes more than doubled in 1988 alone. There was a similar boom in processed commodities. They had stagnated between 1981 and 1986, but grew rapidly after that, increasing by more than two and one-half times by 1993. This export boom (largely based on foreign investment) contributed to an acceleration of growth to 6.4 percent per capita per annum between 1989 and 1992. This long-term development performance made Thailand one of the development success stories since 1960 (Sundaram and Rock, 1998).

An important part of the neo-liberal interpretation of Thai industrial policy rests on an assertion of low price distortions. While the exchange rate, the interest rate and the price of capital were kept close to their scarcity values, this was not true for agricultural prices, particularly rice prices, and, by implication, the price of labour. These distortions were systematic, sustained over time, and large. What was the purpose of the government's rice price policy and how did it intervene in

rice markets? Except for occasional rent-seeking, government intervention in rice markets was aimed at stabilizing rice prices at a low level. This was achieved through a variety of taxes, including a variable export tax, on rice. This policy had two important consequences. It facilitated substantial crop diversification (Panayotou 1989: 96-7). As shown below, this also contributed to the emergence of a large export-oriented agro-processing industry once the government began offering promotional privileges to large export-oriented agro-processors. This policy also enabled the government to take advantage of a large land frontier to manipulate the peasants' access to land while taxing them heavily. As a result of the government's systematic use of a variable export tax on rice for over thirty years, it was possible to extract resources from agriculture without impoverishing the peasantry and to build an indigenously owned commercial banking system and an import-substitution industrial base in Bangkok behind protective barriers (Sundaram and Rock, 1998).

Conservative macroeconomic policies, consistent selective interventions in agricultural markets, including markets for agro-industrial exports, successful industry and firm specific interventions during first stage and second stage import substitution industrialization, and the systematic turning of the industrial policy machinery to promote non-traditional manufacturing exports during the 1980s suggest that industrial policy in Thailand has been more coherent than neo-liberals admit (Sundaram and Rock, 1998).

In Thailand, governments were successively run by military-led regimes before a civilian-led government was installed in the 1990s. Under such fragile political conditions, the Thai bureaucracy, in the presence of the constitutional monarchy served the continuity of the developmental mission. Through this state machinery, private business interests have been promoted through the operations of the Board of Investment and influential business associations. Jomo *et al.* (1997) note that while there has been little significant public antagonism to the economically powerful ethnic Chinese in Thailand, rival business interests are closely connected to politicians and generals, resulting in considerable clientelism in the political and economic decision making processes (Roemer, 1996).

### ***3.2.5 Malaysia***

Malaysia, having inherited a highly open trade-dependent economy with the relatively developed infrastructure from the British colonial administration, the government, dominated by the United Malays National Organization, followed essentially laissez faire economic policies in the 1960s. However, in the 1970s it switched to more interventionist policies, using increased oil revenues and resource rents to create a larger public sector with emphasis on state-led heavy industrialization. Resource rents were also deployed explicitly for interethnic redistributive purposes through the ethnically redistributive New Economic Policy. Therefore, the drive for state-led heavy industrialization was also seen as an effort to marginalize the ethnic Chinese business community (Sundaram and Rock, 1998).

Although the Malaysian economy has changed significantly since independence, the many existing differences reflecting uneven development can be traced to the crucial formative decades under colonial rule that shaped Malaysia's economic structure. Helped by favorable commodity prices and some early success in import-substituting industrialization, the Malaysian economy sustained a high growth rate with low inflation until the early seventies. Malaysia's export-led growth record in the last century has been quite impressive. During colonial times, Malaya was, by far, Britain's most profitable colony, credited with providing much of the export earnings that financed British post-war reconstruction. Only a few industries were allowed to develop by the colonial authorities, which generally considered the colonies as suppliers of raw materials and importers of manufactured goods. Most industries then were set up to reduce transport costs of exported or imported goods, such as factories for refining tin-ore and bottling imported drinks. Local industries developed most when economic relations with the colonial powers were weak, e.g. during the Great Depression and the Japanese Occupation (Sundaram and Rock, 1998).

The Malaysian economy diversified from the twin pillars of the colonial economy, i.e. rubber and tin. The Malaysian economy continued to experience rapid economic growth after independence. The average annual growth rate of the Gross Domestic Product (GDP) in Peninsular Malaysia was 5.8 percent during 1957-70 (Rao, 1976). Later, the GDP for the whole of Malaysia rose by an average of 6.9 percent per year between 1971 and 1990 (Malaysia, 1991) and by over eight percent annually from 1988 until 1996, i.e. before the regional financial crisis of mid-1997. Malaysia's export earnings ensured that it did not suffer from shortages of either savings or

foreign exchange, contributing to investments, growth and structural change (Sundaram and Rock, 1998).

The availability of natural resource rents — most notably from petroleum, natural (petroleum) gas, tin, timber and agricultural products — has been very significant for growth, exports, savings, investment, government revenue and fiscal capacity, allowing the government greater latitude and capacity than most other governments in the world. It is important to consider the nature and fate of different types of resource rents by comparing what has happened to those from petroleum and logging.

The Petroleum Development Act of 1974 has enabled the federal government to successfully capture much of the resource rents from petroleum and natural gas resources, providing a modest proportion to the governments of the states where the deposits are located. The PDA gave the federal authorities jurisdiction over petroleum resources, unlike other natural resources — including land, water, forests and minerals — which have been state government prerogatives under the post-colonial federal constitution. In the mid-seventies, petroleum production off the East Coast of Peninsular Malaysia began providentially, as oil prices soared after 1973. Although petroleum had long been extracted off Sarawak by Shell, Malaysia only became a net oil exporter from the mid-seventies. Since the early eighties, petroleum gas production — almost exclusively for export to Japan — has come on-stream. While petroleum royalties are shared with the state government concerned, the federal government controls Petronas as well as other petroleum revenues. Petronas is widely considered to be a well-run company, with a good international credit rating (Sundaram and Rock, 1998).

A higher export duty on crude palm oil exports introduced in Malaysia in the mid-seventies attracted massive investments in processing capacity, which soon led to very intense competition among refiners. This forced refiners to enhance their industrial and technological capabilities rapidly, enabling Malaysia to reach and then define the world technological frontier in palm oil refining within a decade. The rapid development of such capabilities was facilitated by the achievement of new economies of scale and scope (e.g. specialized palm oil — rather than generic vegetable oil — processing). In the face of new protectionist barriers erected by traditional importers who wished to promote the consumption of their own vegetable oils, the Malaysian government also did a great deal to promote palm oil exports to new markets. In some instances, the Malaysian authorities have even encouraged the potential importers to develop

palm oil refining capacities in the importing countries, effectively committing them to future imports of the oil, presumably from Malaysia.

Malaysia's manufacturing growth has been facilitated by both import-substitution (IS) and export-orientation (EO) industrialization policies. Both IS and EO industries have gained from protection and subsidies respectively, e.g. EO rents attracted foreign transnationals to invest in the processing of imported inputs for re-export. Various rents — offered in the form of financial (especially tax) incentives, low wages, good infrastructure, political stability and government support — have attracted risky lumpy investments in export processing, and even in some design activities since the 1980s. Like import substitution, export orientation has also involved distorting relative prices, contrary to the claims that export success has been due to *laissez faire* market policies (Sundaram and Rock, 1998).

Since the early eighties, more emphasis has been given to the development of commercial agriculture — involving larger farms using more profitable, productivity-raising and cost-saving modern management methods — for export markets. While there has not been any spectacular increase in agricultural production in recent years, except for those due to technical advancements, there has been a significant relative as well as absolute decline in the agricultural labour force, although official statistics underestimate the presence of foreign labour, especially of undocumented workers.

The government has become more selectively interventionist since the mid-eighties, even withdrawing in some areas in line with its commitment to economic liberalization, giving the overall impression of incoherent industrial policy. The period since the mid-1980s has also seen new efforts by the government to encourage technological deepening by foreign capital. Rents have been increasingly tied to the development of domestic production capabilities, rather than simply to investment and employment generation, as was the situation before the mid-1980s. Human resources, research and development, linkages, exports and technologically strategic manufactures all enjoy additional tax incentives (Sundaram and Rock, 1998).

### ***3.2.6 Hong Kong***

Hong Kong has a bustling free market economy highly dependent on international trade. Natural resources are limited, and food and raw materials must be imported. Indeed, imports and exports, including re-exports, each exceed GDP in dollar value. Even before Hong Kong reverted to Chinese administration on 1 July 1997 it had extensive trade and investment ties with China. Per capita GDP compares with the level in the four big countries of Western Europe. GDP growth averaged a strong 5% in 1989-97. The widespread East Asian economic difficulties in 1998 hit this trade-dependent economy quite hard, with GDP down 5% (Chou and Wong, 1997).

Hong Kong's continued economic success is thanks to the government's basic policy of minimum intervention and maximum support for businesses. Practices of low taxation, a free and fair market competition, an orthodox legal and financial framework, a fully convertible and secure currency, a highly efficient network of transport and communication, a skilled workforce, the enterprising spirit of locals, a high degree of internationalization, and cultural openness has opened doors to the country's economic growth and stability (Chou and Wong, 1997).

The private sector deals with business decisions and is usually left intact by the government. The taxation system is simple, with corporate tax rate at 16.5 percent (in 1996), which is lower than international standards. Although Hong Kong's natural resources are scarce, it is atoned by its deep-water ports and excellent location that welcomes economic ties from all over the world. Not only is the harbor a generator of the country's income, but the airport also has a reputation of being the world's third busiest in the number of passengers. It is also the second busiest in the volume of cargo handled, which is further increasing after the opening of the new airport on Lantau (Chou and Wong, 1997).

Another of its many reputations is the status of Hong Kong as the world's fifth largest banking center. The country has constituted itself as a major international trade and financial center with proper economic fundamentals. In 1996, Hong Kong's per capita gross domestic product (GDP) was second to Japan and Singapore in East Asia and exceeded that of the United Kingdom, Canada, and Australia (Chou and Wong, 1997).

Apart from its financial and service industry, manufacturing has also been involved in the country's economy. Entrepreneurs fled from the commercial city of Shanghai to build factories that made textiles, toys, and sundries. In the late 1990s, the majority of Hong Kong's industry

was in electronics, textiles and garments, printing, publishing, machinery, fabricated-metal products, plastic products, watches, and jewelry (Chou and Wong, 1997).

It was up until the late 1970s that Hong Kong's business sector was an arena for British companies like Jardine Matheson, Wheelock Marden, Hutchison Whampoa, and the Swire Group. Since then, enterprising Chinese groups with investments in shipping, property, and the textile industry have risen to manipulate some of the British-founded concerns. Looking to their mainland Chinese counterparts as the biggest potential market in the world, Hong Kong Chinese have become more competitive than their British rivals. Thanks to the economic ties with China that was established in the late 1970s, Hong Kong has seen huge successes in its economy. Both countries have benefited from the association with China dominating Hong Kong's trade in goods at 40 percent of the total trade. China's share in Hong Kong's export of foreign-made goods is higher at about 90 percent, making China both the largest market for and the largest source of Hong Kong's goods for re-exports. In 1996, Hong Kong was China's third largest trading partner after Japan and the United States (Chou and Wong, 1997).

Financial and service-center links between Hong Kong and China have also been increasing. The Bank of China is now the second largest banking group in Hong Kong, after the British-based Hong Kong Bank. The country holds about 80 of the world's top 100 banks, making it a well-developed international financial center.

Hong Kong provides financial and business support to China's companies and tourism industries. For the international business and tourist interests that are not familiar with China and its cultures, Hong Kong assists them with promotions by supplying information among other things. In 1996, the Chinese immigration office recorded 29 million trips by Hong Kong Chinese to the mainland and an additional two million visits by foreigners who entered the mainland through Hong Kong (Chou and Wong, 1997).

### ***3.2.7 Singapore***

Singapore's growth story began in 1965 under rather difficult circumstances as it had just been separated from Malaysia and left bereft of a viable hinterland. The unemployment rate had reached 9.2 percent according to the 1966 General Household Survey. Much of the economy was still centered on the entrepot trade, with the commerce sector contributing much to Singapore's GDP. Against the conventional wisdom held at that time, a large-scale industrialization

programme was immediately embarked on by the government to attract multi-national companies (MNC's) in order to leverage on their technological know-how. Building up a manufacturing base was a key policy imperative (Wu and Ping, 2002).

The petroleum industry was given a boost when there were concerted interests by the oil companies to explore the oil fields of East Asia, and Singapore's ship building industry also received a fillip with orders to build and maintain oilrigs and ships. In fact, Shell became the first company to receive the pioneer status under EDB's investment promotion scheme. The Singapore economy grew at an average pace of 11 percent per annum during this period. The manufacturing base gradually strengthened in the ten years of post independence economic development, with the oil sector contributing significantly to the Singapore economy and accounting for 50 percent of Singapore's total domestic exports (Wu and Ping, 2002).

Growth during the period of 1975-1984 had slowed to an average of 7.6 percent per annum, compared to the breakneck pace of 11 percent in the previous period. The share of value added from the manufacturing sector had peaked at 28 percent of the economy in 1980 compared to only 15 percent back in 1965. In addition, the Singapore economy began to move away from its dependence on the oil-related industrial complex, although the effects were still not too discernible. By 1984, the share of electronics exports had increased to more than 20 percent, while oil-related exports remained at slightly below 50 percent (Wu and Ping, 2002).

The break in Singapore's growth came in 1985 when the economy suffered its first reversal since independence. However, the 1985 recession did come as a surprise as the US and Japanese economies had grown at a healthy rate of 3.8 and 4.3 percent respectively. Nevertheless, the recession did point to some inherent weaknesses in the Singapore economy (Wu and Ping, 2002).

First, Singapore's dependence on ASEAN-2 (Malaysia and Indonesia) was evident. The collapse of world commodity prices had slowed ASEAN-2's growth to a crawl of 1.4 percent in 1985 compared to 6.9 percent in the preceding year. Between 1983-1986, Singapore's domestic exports value to ASEAN-2 fell drastically. This had a significant impact on the Singapore economy (Wu and Ping, 2002).

Secondly, Singapore had been too dependent on the oil industry, which accounted for about 50 percent of Singapore's total domestic exports. The price of oil had been on a downward trend since 1980, falling by about 25 percent by 1984. Oil prices, reflecting the overall fall in commodity prices, fell a further 50 percent in 1986. As a result, oil as an engine of growth had

weakened considerably and contributed only an average of 0.4 percentage points per annum during 1975-1984. Overall, the economy was simply not diversified enough to achieve a broad industrial base (Wu and Ping, 2002).

Finally, there were various supply-side factors, such as a tight labour force, high tax rates and high employers' CPF contribution rate, that had resulted in the high cost of doing business in Singapore and rendered their domestic exports less competitive even to healthier markets like Japan and the US (Wu and Ping, 2002).

The 1985-1986 recession brought about an awakening that led to a major effort by the Economic Committee, to restructure the Singapore economy. Several major policy re-orientations took place. Firstly, corporate tax rates were reduced from 40 percent in 1986 to 33 percent in 1987. Employers CPF contribution rate was also slashed from 25 percent in 1985 to 10 percent in 1986, with the eventual long-term rate targeted at a more manageable 20 percent (Wu and Ping, 2002).

In addition to the government's budget measures, much effort had been made to restructure the Singapore economy away from its traditional dependence on oil exports. The electronics industry, especially in computers and related products, had been seen as a viable alternative that would move Singapore up the technology ladder and present itself as a strong export engine. The service sector was also given fiscal incentives similar to those granted for the manufacturing sector (Wu and Ping, 2002).

There was a hint of good fortune as Singapore further reaped a small windfall from the Plaza Accord in 1985, which had resulted in the steep appreciation of the Japanese Yen. Japanese manufacturers needed to re-locate away from Japan to regain competitiveness, and that led to a significant increase in the Japanese investments to Singapore. To some extent, that eased the transition of the Singapore economy (Wu and Ping, 2002).

Nevertheless, the transformation was nothing less than remarkable. Within a few short years since Singapore emerged from the recession, electronics' share of exports had more than doubled from around 20 percent of total domestic exports in 1984 to 42 percent in 1991. In the corresponding period, the share of oil-related exports fell by almost half from 48 percent to 26 percent. Singapore's average annual GDP growth reached 6.7 percent during this period and it kept this pace until 2001 (Wu and Ping, 2002).

### 3.3 Explaining the Determinants of East Asia's Growth

This section will present the debate about the nature of the growth process in East Asia. This debate has implications about the future of the growth process in East Asia. It also raises difficult questions regarding the aspiration of other countries to imitate the East Asian success. But first the study will introduce the basics of growth accounting, a simple method used to decompose growth rates, which lies at the centre of the arguments presented in this debate (Sarel, 2002).

#### 3.3.1 Growth Accounting

The Cobb-Douglas production function is defined as:

$$Y_t = A_t K_t^\alpha L_t^{1-\alpha} \dots\dots\dots (3.1)$$

Where  $Y$  is the amount of output,  $A$  is a technological constant,  $K$  is the amount of capital used as input,  $L$  is the amount of labour used as input,  $t$  is a time subscript and  $\alpha$  is a parameter with a value between 1 and 0.

This production function, with a value of  $\alpha$  around one-third, is often used to approximate the production possibilities of the economy. The reason is that it has many properties that tend to be observed in the national economies, such as constant returns to scale and constant factor income shares (Sarel, 2002).

Dividing equation (1) by the population size, the following is found:

$$y_t = A_t k_t^\alpha l_t^{1-\alpha} \dots\dots\dots (3.2)$$

Where  $y$  is the output per person,  $k$  is the capital per person and  $l$  represents labour per person (or the labour participation rate).

Equation (2) is a static equation. It represents the amount of output, as a function of inputs, in any specific period  $t$ . But from it, a dynamic version that describes how output per person increases over time can be derived:

$$\frac{\Delta y}{y} = \frac{\Delta A}{A} + \alpha \frac{\Delta k}{k} + (1 - \alpha) \frac{\Delta l}{l} \dots\dots\dots (3.3)$$

Equation (3) decomposes the growth rate of output per person into three elements: the first element describes the growth rate of productivity (also called the growth of total-factor

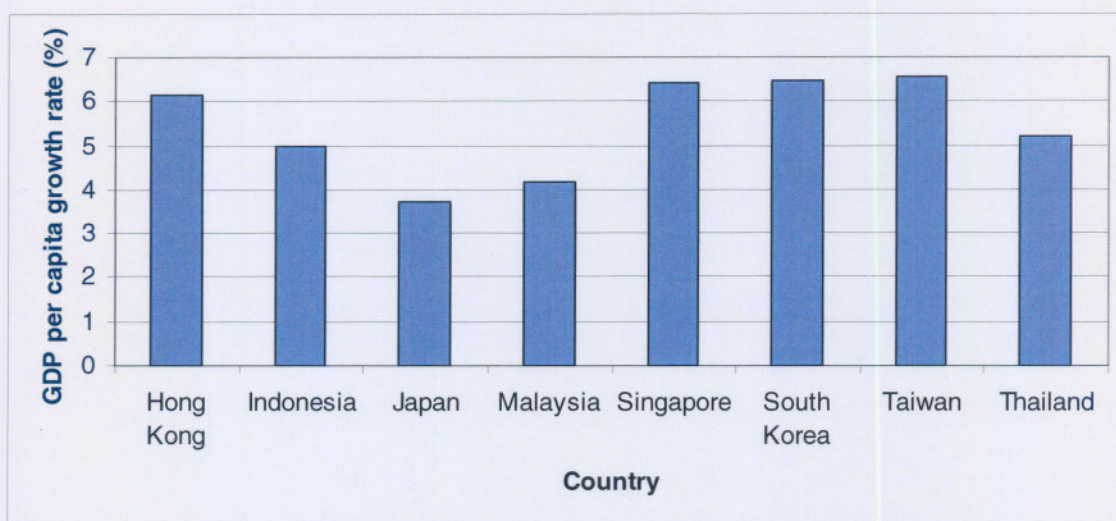
productivity (TFP), the rate of technological progress, or the Solow residual); the second element describes the contribution of the capital stock per person growth rate; and the third element describes the contribution of the labour participation growth rate (Sarel, 2002).

The decomposition done in equation (3) has a very important empirical application. There is a good idea about the magnitude of the parameter  $\alpha$  (about one-third), it is easy to measure the growth rate of output per person, and it is possible, in principle, to measure the capital per person and the labour participation rates. Therefore, the growth rate of technology (or productivity) can be estimated, and the proportion of output growth per person attributable to this technological progress calculated (Sarel, 2002).

The growth decomposition in equation (3) also leads to an interpretation that plays a fundamental role in understanding long-run growth. It points out that a significant and sustained rate of technological progress is the only possible way, in the long run, for an economy to achieve a sustained rate of growth of output per person. The intuition for this result is that the labour participation rate can only increase for a while, but obviously cannot increase without bounds in the long run. Furthermore, higher growth in capital than in labour will lead to diminishing returns to capital with output growth falling over time, even if capital growth is maintained. Therefore, in order to achieve permanent growth, an economy must continuously improve its technology. This kind of growth is called 'intensive growth'. In contrast to intensive growth, increasing output by increasing inputs ('extensive growth') can work only for a limited period, but it cannot last too long (Sarel, 2002).

As is shown in figure 3.1, East Asia must have followed this growth accounting principle, since it has a very high average GDP per capita growth rate since 1970.

**Figure 3.1: Average GDP per capita growth rate over the period 1970-1990**



### **3.3.2 The Extensive Growth<sup>7</sup> Hypothesis**

The collapse of the Soviet economy around 1990, after its apparent success in the previous decades, caught most people by surprise. Among many economists, the favourite explanation of this economic collapse is the 'Extensive Growth Hypothesis'. It is argued that the Soviet economy ran into inevitable diminishing returns after many decades of extensive growth caused by massive accumulation of capital not accompanied by technological progress, just as predicted by the growth-accounting framework (Easterly and Fischer, 1994).

This extensive growth hypothesis raises serious concerns about other economies that invested heavily during the past decades, and in particular some of the East Asian countries. This comparison is explicitly made by Krugman (1994):

'The newly industrializing countries of East Asia, like the Soviet Union of the 1950s, have achieved rapid growth in large part through an astonishing mobilization of resources. Once one accounts for the role of rapidly growing inputs in these countries' growth, one finds little left to explain. East Asian growth, like that of the Soviet Union in its high-growth era, seems to be driven by extraordinary growth in inputs like labour and capital rather than by gains in efficiency.'

<sup>7</sup> The 'Extensive Growth Hypothesis' means increasing output by increasing inputs.

These conclusions convey a pessimistic message:

- The process of economic growth in the most successful economies in East Asia is not at all miraculous: it is just the expected outcome of massive accumulation of inputs.
- The path of growth that these economies followed in the past 30 years is not sustainable. Sooner or later, they will experience a dramatic decrease in their growth rates.
- The societies in these countries paid a huge price for achieving these impressive growth rates: they sacrificed a large amount of consumption and of leisure. Therefore, even if their so-called success can be replicable in other countries, it is probably not wise to do so (Krugman, 1994).

The main issue, of course, is if the nature of the East Asian growth process is indeed extensive, as Krugman concludes, or rather intensive. The 'extensive' view is based mainly on the research of Young (1992, 1994a, 1994b) and of Kim and Lau (1994).

Young (1994b), for example, documents the fundamental role played by factor accumulation in explaining the extraordinary post-war growth of Hong Kong, Singapore, South Korea and Taiwan. His main conclusion is that '... one arrives at total factor productivity growth rates, both for the non-agricultural economy and for manufacturing in particular, which are well within the bounds of those experienced by the OECD and Latin American economies over equally long periods of time. While the growth of output and manufacturing exports in the newly industrializing economies of East Asia is virtually unprecedented, the growth of total factor productivity in these economies is not' (Young, 1994b).

In a different study, Kim and Lau (1994) compare the sources of economic growth of the Four Tigers (Hong Kong, Korea, Taiwan and Singapore) with those of the G5 industrialized countries (the United States, Japan, West Germany, France and the United Kingdom). In this study, Kim and Lau use a new empirical methodology for estimating the relationship between aggregate output and inputs, including technical progress, from inter-country data, called the 'meta-production function'. Their conclusion is that '... the hypothesis that there has been no technical progress during the post-war period cannot be rejected for the four East Asian newly-industrialized countries. By far the most important source of economic growth of the East Asian newly-industrialized countries is capital accumulation, accounting for between 48 and 72 percent of their economic growth, in contrast to the case of the Group-of-Five industrialized countries, in

which technical progress has played the most important role, accounting for between 46 and 71 percent of their economic growth'. Furthermore, they found that 'an international comparison of the productive efficiencies of the G5 countries and the East Asian newly-industrialized countries indicates no apparent convergence between the technologies of the two group of countries' (Kim and Lau, 1994).

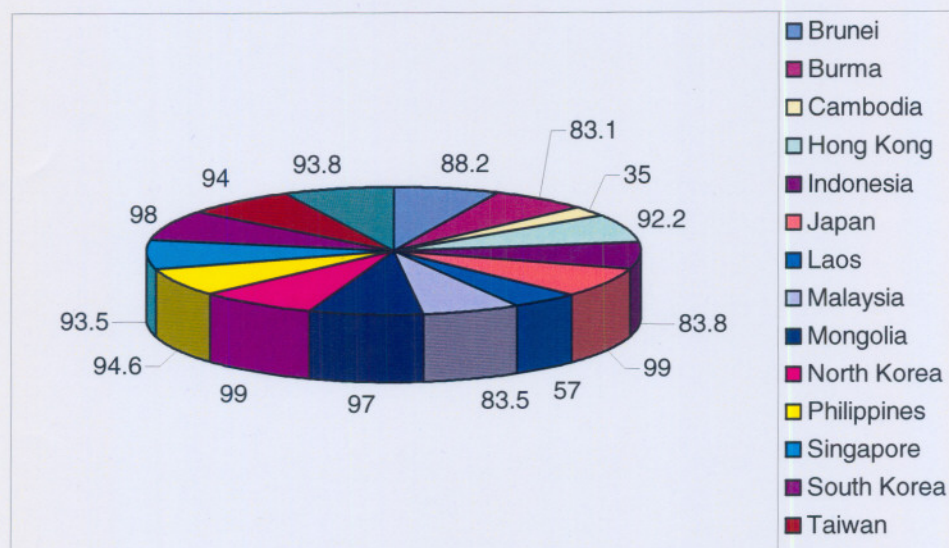
The results of the two studies just described can have a large impact on the views of many economists on the nature of the growth process in East Asian countries, and on their role as models for others. But how conclusive are these results? In general, the conclusions based on these kinds of studies are not very robust, but rather sensitive to the specific assumptions of each particular study (Sarel, 2002).

The main reason for this sensitivity is the estimation process of the capital stock growth rate during the period studied. It is extremely difficult to estimate the capital stock in the base period, especially in the case of countries like the Four Tigers, for which there are no good data before 1960. Such estimation is usually based on heroic assumptions regarding the depreciation rate of the capital stock and the investment flows in the period that precedes the beginning of the period studied. Additional significant problems are estimating the income share ( $\alpha$ ) and the amount of labour per person ( $l$ ) as set out in equation 2 section 3.3.1.

### ***3.3.3 Accumulation of production factors***

One source of East Asian growth has been the accumulation of factors of production. Young (1995) has argued that much of the growth of income per capita in the four East Asian "tigers" can be explained by factor accumulation, including physical and human capital and increasing workforce participation rates (Roemer, 1996).

**Figure 3.2: East Asia's Adult Literacy Rate Percentage**



Source: CIA World Fact Book, 2001

As figure 3.2 shows, the countries in East Asia are all relatively highly literate. The lowest percentage of people literate is in Cambodia with 35 percent and the second lowest is in Laos with 57 percent. The rest is all above 80 percent, which shows that East Asia has a significant advantage over the rest of the developing world. East Asia puts its capital – physical and human – to much more productive use than did SSA. Easterly and Levine (1996) attributed 0.35% of the difference between SSA and East Asian growth rates to differences in the endowments (not the growth) of schooling per adult and 0.68% to differences in the endowments of infrastructure, a total of about 1% a year. But they attribute a growth difference of 1.5% a year to differences in macroeconomic policies. Disparities in East Asian and SSA economic performance lie in different approaches to governance, in stricter adherence to the dictates of factor endowments, and in more suitable macroeconomic, factor market, trade and industrial policies (Roemer, 1996).

Several recent growth accounting exercises have found that East Asian countries extraordinary rate of output growth was due primarily to an equally impressive rate of factor accumulation, with little due to technological progress. Young (1995) showed that in Korea for example, estimates based on data from the national accounts indicate that the capital-output ratio has increased at an average rate of 3.4 percent a year from 1966 to 1990 while the rate of total factor productivity growth (TFPG) has averaged only 1.7 percent a year. To take another example, the

capital-output ratio in Singapore has increased at an average rate of 2.8 percent a year from 1966 to 1990 while the rate of TFPG has average 0.2 percent a year (Hsieh, 2002).

Since these studies suggest that factor accumulation has been the lead factor in East Asia's growth, many economists have reached the conclusion that the industrial revolution in East Asia can largely be explained as transition dynamics in a neoclassical growth framework. More broadly, these studies reinforce the message that a minimalist neoclassical growth model, perhaps augmented with human capital, is sufficient to explain why some countries are rich and others are poor (Hsieh, 2002).

Human capital investments are prominent in virtually all models of East Asian success. Universal elementary education became a norm throughout East Asia. East Asia's more advanced economies have also increased secondary enrolment rates to nearly OECD levels, and developed special programs for building technical skills. For example, Singapore requires 4 percent of earnings to be targeted for training (Soon and Tan, 1993) and Taiwan trains more scientists and engineers per capita than the Japan, Germany or the United States (Petri, 1993).

But educational achievements are also high in less successful countries (the Philippines, for example, leads most other East Asian countries in enrolment statistics, and many Latin American countries also have superior enrolment rates). Thomas and Wang (1992) find that educational expenditures, as a percentage of GDP, are now lower in East Asia than in other LMICs. If human capital accumulation in East Asia is unique, it is not so because of the current scale of the public educational effort. Rather, East Asia appears to stand out in the technical orientation of its educational programs, and in its broad-based, private commitment to learning.

While East Asian capital accumulation is impressive by world standards, there is little evidence that it preceded the region's miracle, or that it reflects unusual determinants. East Asian capital accumulation stands out less in terms of quantity than in terms of quality. It is unusual in the effectiveness of both human and physical investments (Petri, 1993).

### ***3.3.4 Total Factor Productivity Growth***

Empirical studies have shown that much, but not all, of East Asian growth can be attributed to exceptionally large investments in human and physical capital. But the region's total factor productivity (TFP) growth rates are even more unusual than its rates of capital formation (Petri, 1993).

In a study of 87 countries, Page and Petri (1993) found that Hong Kong, Japan, Korea, Taiwan, China and Thailand were within the top decile of all countries in terms of Total Factor Productivity (TFP) growth rates, and that Indonesia, Malaysia, and Singapore were also significant positive outliers. In terms of Chenery, Robinson and Syrquin's (1996) topology of growth, the East Asian economies look more like that of industrialized countries than of developing countries, since they derive nearly half of their output growth from TFP growth rather than accumulation. A second noticeable aspect of East Asian experience is 'hyper speed' growth. While the background rate of growth of East Asian economies is high, seldom do growth rates fall below the four or five percent range. Each has also experienced periods of exceptionally fast growth, at rates reaching into double digits. These spurts have been often sustained over several years, and sometimes decades. Each spurt seems to have been associated with a powerful and often unique 'engine of growth'. Each typically increased savings and strengthened international trade and technology linkages. Each also triggered significant changes in economic structure and large slides down the experience curves of major industries (Petri, 1993).

### ***3.3.5 Initial Endowments***

A country's development prospects are influenced by three sets of factors: initial endowments, policies, and institutions, as set out in the development checklist in table 3.1. The checklist is illustrative and must be interpreted with caution, since the categories are at times subjective and are subject to the time period considered. Nevertheless, it is useful in drawing the patterns emerging from East Asian economies. It dispels the notion that all East Asian economies share identical features; quite to the contrary, it highlights considerable diversity. The checklist also draws a strong contrast between many characteristics common to the first-generation NIEs and those of the second (Leipziger and Thomas, 1993).

Sarel (2002) ran a cross-country regression, comparing the actual data on education and demographics (primary enrollment, secondary enrollment, literacy rate, fertility rate and mortality rate) in eight East Asian countries (Hong Kong, Indonesia, Japan, Korea, Malaysia, Singapore, Taiwan and Thailand) to other developing countries at a comparable income level and found that there is strong evidence that the eight East Asian countries had initial conditions, in terms of education, demographics and inequality, that were significantly different and better than those in other countries with a similar level of income. These findings raise the possibility that these initial conditions may explain the phenomenal growth rates observed in East Asia after 1960.

**Table 3.1: Development Checklist for East Asian Countries**

<b>Development Checklist</b>	<b>Korea</b>	<b>Taiwan</b>	<b>China</b>	<b>Singapore</b>	<b>Hong Kong</b>	<b>Thailand</b>	<b>Malaysia</b>	<b>Indonesia</b>
<b>Initial Endowments</b>								
Natural Resources	No	No	No	No	Yes	Yes	Yes	Yes
Human Capital	Yes	Yes	Some	Yes	No	No	No	No
Foreign Aid	Yes	Yes	No	No	No	No	No	No
<b>Policies</b>								
Macroeconomic Stability	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Export Drive	Yes	Yes	Yes	No	Some	Some	Some	Some
Investment in Human Resources	Yes	Yes	Yes	Yes	Some	Yes	Some	Yes
Import Openness	Some	Yes	Yes	Yes	Some	Yes	Some	Some
Selective Industrial Policies	Yes	Some	Some	No	No	Some	Some	Some
Directed Credit	Yes	Some	No	No	No	Some	No	Some
State-owned Enterprises	Some	Some	Yes	No	Some	Yes	Some	Yes
<b>Institutions</b>								
Central Economic Ministry	Yes	Yes	Yes	No	Some	Some	Some	Some
Strong Bureaucracy	Yes	Yes	Yes	Yes	Yes	Some	Some	Yes
Political Stability	Yes	Yes	Yes	Yes	Some	Yes	Yes	Yes
Visionary Leadership	Yes	Yes	Yes	No	No	Yes	Some	Some
<b>Outcomes (compared with rest of the developing world)</b>								
Growth in the 1960s	High	High	High	High	Better	Average	Average	Average
Growth in the 1970s	High	High	High	High	Better	Better	Better	Better
Growth in the 1980s	High	High	High	High	High	High	High	High

If asked in the early 1950s to name the success stories in the next thirty years, only a seer would have chosen Hong Kong, Korea, Singapore, or Taiwan. All were lacking in natural resources and all had ratios of arable land to population that were so low that meeting basic consumption needs was questionable. The two largest economies, Korea and Taiwan, were heavily dependent on

food aid from the United States. The story of early East Asian success is much less one of favourable initial conditions than of countries turning adversity into opportunities (Leipziger and Thomas, 1993).

From around 1960, the principal distinction between these four NIEs and most low-income countries lay in human resource development. In secondary education, for example, the East Asian economies (except Indonesia and Thailand, but including the Philippines) exceeded the average of other developing countries by many multiples. They combined this high level of education with imported technology and the return of expatriates to produce rapid productivity growth. Korea, Singapore, and Taiwan, produced spectacular gaps in tertiary education in one generation (Leipziger and Thomas, 1993).

A second initial factor was that national vulnerability created the necessity of economic success. Korea was a divided country competing in a cold-war environment with a more industrialized neighbour; Taiwan, also felt compelled to assert its economic independence; Singapore was a city-state thrust into a competitive environment and attempting to reach nationhood; and Hong Kong was a market outpost for China. This political imperative, combined with the work discipline of societies in Korea, Singapore, and Taiwan, seems to have turned weak initial conditions into advantages to an extent seldom seen elsewhere (Leipziger and Thomas, 1993).

A third initial condition was the relative equality of income in the first-generation NIEs. This factor was more of a change brought about by policy than an inheritance. Most other low- and middle-income countries were not able to achieve similar equality of income or assets. Large land reform schemes in Korea, Taiwan and China, did away with the landholding classes and made wage income the main source of advancement. Public housing investments in Singapore and Hong Kong were early priorities of governments bent on maintaining a national consensus on development policies (Leipziger and Thomas, 1993).

Fourth, governments embraced export development. This was not dictated by ideology but by realism. Small size and low incomes dictated that external markets would provide the major source of revenue for these economies. Singapore's leaders are fond of noting that their economy was too small to change international markets, so they decided to change their own economy (Leipziger and Thomas, 1993).

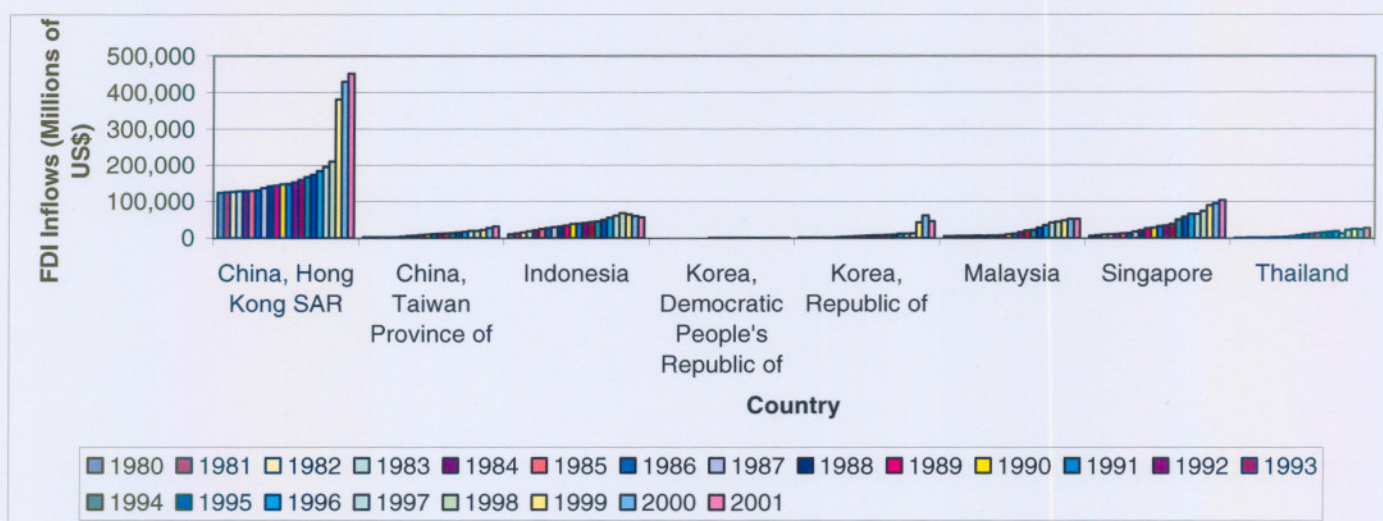
Finally, export drives required domestic entrepreneurship. In Singapore, publicly owned corporations, behaving commercially, took the lead. In Korea the government had to foster the creation of firms, encouraging their growth and laying the foundation for the modern day charbon, or conglomerate. Using the Japanese model of zaibatsu and the general trading company, the Korean government was able to compensate for the apparent lack of entrepreneurship. East Asian economies have done well in monitoring each other's success and, when necessary, in borrowing one another's institutions (Leipziger and Thomas, 1993)

The original "East Asian miracle" was post-World War II Japan, which shared some similar conditions with the early NIEs, Korea and Taiwan. With little in the way of physical assets, all three began with the desire to accumulate capital in their first decade of development. Korea and Taiwan were dependent on large quantities of foreign aid early on; it accounted for as much as 50 percent of fixed investment in some of the early years. For Korea over a period of three decades (1946-76), the United States alone provided more than \$500 (in current U.S. dollars) per capita in economic and military assistance (Leipziger and Thomas, 1993).

For Taiwan, aid was \$425 per capita. Once the growth engine was sparked, however, high domestic savings rates took over and maintained the process of accumulation. The expanding U.S. market of the 1960s and 1970s helped export development in the early NIEs, and the model was Japan. This was particularly true of Korea, which was most inclined to compete directly in large industries such as steel, shipbuilding, and automobiles. Taiwan relied more on a range of smaller firms in most sectors, while Hong Kong and Singapore were intrepid exporters.

Within two decades the "tigers" were firmly established, to the envy of later economies. Foreign direct investment (FDI) inspired the transfer of financing and know-how in the later NIEs.

**Figure 3.3: FDI inflows to East Asian countries; 1980-2001**



Source: Leipziger and Thomas, 1993

The outstanding performance of East Asia was not the result of favorable external conditions. In 1991 Malaysia, Thailand, Indonesia, and the Republic of Korea were the third, fifth, seventh, and eighth largest recipients respectively of FDI among developing countries, after Mexico and China. Together, they accounted for almost a quarter of total flows to developing countries; adding China raises the proportion to more than a third. In Malaysia, FDI accounts for 20 percent of gross domestic investment. The figure is not much lower in the southern Chinese provinces, where the world's fastest growth was being recorded in the 1990s (Leipziger and Thomas, 1993).

In figure 3.3, it can be seen how much FDI inflows went to the respective East Asian countries. Hong Kong received the most FDI inflows with the Democratic People's republic of Korea receiving the least.

Most other regions faced similar external conditions. But the East Asians committed themselves, almost from the outset, to become players on the global scene. With rather similar endowments, Korea and Taiwan followed the Japanese lead, attempting to acquire state-of-the-art technology and inputs. Much of Korea's imitative strategy was a reaction to Japanese dominance and a desire for economic independence. Its work ethic, as seen in its 55-hour average workweek, was motivated by a national drive to succeed (Leipziger and Thomas, 1993).

### ***3.3.6 The Role of Public Policy and of Selective Interventions***

#### ***3.3.6.1 Policies***

Lucas (1988) asked: 'Is there some action a government of India could take that would lead the Indian economy to grow like Indonesia's or Egypt's? If so, what, exactly?' The importance of this question could hardly be exaggerated. A positive answer would be the academic equivalent of possessing a magic ability to transform everything into pure gold. Accordingly, the strongest ambition of the economists who examine the East Asian success is to identify a set of public policies that promote economic growth.

It is important to note that the policy approaches adopted by East Asian economies were not uniform. Of the first generation of newly industrialized economies (NIEs), the Republic of Korea, Singapore, and Taiwan, chose a good deal of state intervention, as did Japan earlier on. Hong Kong was an exception for the most part. Among the second generation of successful East Asian economies, Indonesia and Malaysia had little success with their curly interventions, and as they became less interventionist over the past dozen years, their economic performances improved markedly. Other recent NIEs, like Thailand and coastal China, are avoiding interventionist industrial policies in most respects. No one formula or standard prescription has been decisive (Leipziger and Thomas, 1993).

These differences notwithstanding, it could not be pure coincidence that the fastest-growing economies in recent decades are concentrated in East Asia. Indeed, the study of the eight fastest growing East Asian economies found that behind the substantial country variations are significant common features that policymakers elsewhere might take to heart (Leipziger and Thomas, 1993).

Common to successful government interventions was the pragmatism and flexibility to change course as needed. What characteristic of policymaking can be associated with such a pattern? In East Asia it seems that governments are repeatedly able to distance themselves from past policies that have failed or are no longer useful. This flexibility should not be mistaken for good luck. More often it was associated with problems or crises that led to change, as indicated by the following examples:

In Korea the end of the heavy-handed HCI interventions, under which the bulk of industrial credit was absorbed by large capital-intensive industries, was prompted by the second oil shock. When, in 1980, the economy went into recession, the government opted for macroeconomic

stabilization, and the fiscal drain of HCI was no longer affordable. Trade liberalization was begun in earnest. Credit allocation once more favoured exporters, commercial banks were privatised, and troubled HCI industries were put under new management. In the following years, incentives to encourage R&D and technological upgrading were put in place, and interventions concentrated on strategic bailouts rather than on picking winners. In East Asia it seems that governments are repeatedly able to distance themselves from past policies that have failed or are no longer useful (Leipziger and Thomas, 1993).

In 1967 Indonesia was not only poor (with a per capita income of \$50 and with 60 percent of its population living in absolute poverty), it was also indistinguishable from many other inward-oriented developing countries that were awash with licensing restrictions and protection. Hyperinflation produced the 1967 Balanced Budget Amendment and a new dedication to controlling inflation. But despite significant macroeconomic reforms during the 1967-73 period, after the first oil boom the country's inward orientation was encouraged by heavy-handed selective intervention. By 1985 about 28 percent of import categories required licenses, there was a large current account deficit, and the debt service ratio was 40 percent. Faced with a deteriorating macroeconomic situation, the government changed course, with a major devaluation and sharp macroeconomic adjustments. It gradually liberalized trade so that the effective rate of protection on capital goods industries fell by 50 percent between 1987 and 1990.

Countries with oil resources, such as Indonesia and Malaysia, at first reacted to their surpluses predictably, by spending more. However, within five years of the second oil shock both had cut their fiscal deficits and adjusted their exchange rates in order to compete in the region's increasingly tough manufacturing arena (Leipziger and Thomas, 1993).

Macroeconomic policies, far from flawless, were subject to scrutiny and revision, and industrial policies, if they conflicted with prudent macroeconomic policy, were also adjusted or abandoned. An example of policy change is the increasing role of market economics in the southern provinces of China. These "experiments" have been largely successful-in fact, the volume of trade between Quandong and Hong Kong is now almost the size of the Hong Kong's GDP. The success of China's Special Economic Zones (SEZS) in Quandong and Fijian is attributable to the ease with which capital and technology are admitted, the flexibility of wages, the freedom to import materials and remit foreign exchange, and the shift in the state's role toward emphasis on

the provision of infrastructure in the SEZS to attract foreign investment (Leipziger and Thomas, 1993).

The traditional focus of economists has been on policies, which prove to be crucial to the East Asian experience. Regional success has been analyzed by other social scientists, which have emphasized the quality of policymaking, leadership, nationhood, cohesion, and the role of the state. The review of these more intangible features is motivated by the observation that similar policies undertaken elsewhere have proved less productive than in East Asia. Similarly, government interventions in many cases have not had the dire consequences that many would have predicted. One must distinguish between policy interventions and policy distortions, between distortions affecting particular markets and those affecting the economy as a whole, and between pervasive and non-pervasive distortions. The country studies done by the World Bank (1993), found that none of the initial four NIEs-Korea, Singapore, Hong Kong, or Taiwan, China-was generously endowed with natural resources. (The later NIEs-Indonesia, Malaysia, and Thailand were richer in natural endowments.) For the initial NIEs, the only resource was people, in the form of a relatively well-educated labour force. For these first-generation NIEs, economic development was a matter of survival and therefore of national urgency. They met the challenge by forcefully committing themselves to becoming exporters in global markets (Leipziger and Thomas, 1993).

Common to East Asia's success were policies for macroeconomic stability, human resource investments, and outward orientation-quite different from what happened in most other developing regions. Because these economies to a large extent took international prices as an ultimate guide to domestic resource allocation, macroeconomic stability was seen as central to maintenance of competition. In addition, a number of regimes had a strong aversion to inflation, which strengthened the hands of technocrats. In the area of human resources, strong public policies were often augmented with high household investments in education. And in many areas, including export promotion, it was not just the design and selection of policies; it was also efficient implementation. By any standard, implementation of policies was East Asia's forte (Leipziger and Thomas, 1993).

The success of the second-generation NIEs in the 1980s cannot be attributed primarily to favorable external conditions, either. Indonesia, Malaysia, and Thailand were resource niches, but they did not excel until manufactured exports were developed. It is important to note that these

second-generation NIEs laid the foundation for their surge with stable macroeconomic policies and political stability. These factors, plus low labour costs, appealed to foreign investors—those facing higher costs at home, such as Japan in the first instance, but later including Korea and Taiwan, China. Japanese-led foreign investment followed American and regional Chinese capital in the southern tier, providing the transfer of technology that the first-generation NIEs struggled to acquire. This allowed the Asian "cubs" to penetrate the U.S. market, especially during the 1980s. Coupled with aggressive exchange rate policies following the Plaza Accord<sup>8</sup> in 1985, they acquired a strong position as exporters. Malaysia and Thailand emerged among the fastest growing economies in the world in the second half of the 1980s (Leipziger and Thomas, 1993).

### ***3.3.6.2 Government Intervention***

Perhaps the central question in comparing the economic performance of SSA and East Asia is why, over the past three decades, East Asian governments have been more development-oriented? Political stability has certainly played a role. Park's 18-year reign in Korea, the Kuomintang's hold on Taiwan, Britain's colonial regime in Hong Kong and many more all coincided with rapid growth (Roemer, 1996).

Though political stability may be necessary for sustained rapid growth, it is not sufficient. The Philippines, despite long-lived regimes, has not developed rapidly. SSA also has had stable governments for a decade and often much longer in Cote d'Ivoire, The Gambia, Kenya, Malawi, Senegal, Tanzania, Zambia and Zimbabwe, none of which has maintained rapid growth into the 1990s.

For a regime to become developmentally effective, economic development must weigh so heavily in the government's priorities that it is willing to risk political capital to achieve growth. The choice of long-run development over short-run political and personal gain manifests itself in different ways. Rent seeking<sup>9</sup> is a common feature of both East Asia and SSA countries. Yet leaders in East Asia, with the notable exception of Marcos in the Philippines, have understood that growing rents require growing economies; when rent seeking threatened sound economies, the rents were curbed. Leith and Lofchie (1993) observe that, in Ghana before the reforms of the

---

<sup>8</sup> An agreement reached in 1985 by France, Germany, Japan, the United States and the United Kingdom to drive down the price of the dollar (IFCI Risk Institute, 2002)

<sup>9</sup> It is the expenditure of resources in order to bring about an uncompensated transfer of goods and services from another person to one's self as the result of a "favourable" decision on some public policy (Felkins, 1997)

1980s and in other SAA countries, leaders have extracted rents without heed to sustaining growth in the economy that produces them. The result has been economic decline; much as if a renewable but limited natural resource had been overexploited (Roemer, 1996).

Governments in East Asia have been able to choose economic development and reform without sacrificing regime stability and SSA regimes could do the same. Determined political leaders and well-educated officials, often with military-like discipline, combined to elevate public goals above private gain as officials interacted with businessmen to generate export-led growth (Roemer, 1996).

The governments of Indonesia, Malaysia and Thailand have left development more to the market than did Korea and Taiwan. Each one of the rapidly growing economies of East Asia followed the dictates of comparative advantage. Hong Kong, Korea and Singapore, poor in natural resources and capital but well endowed with unskilled labour, based their early development strategies on labour-intensive manufactures. The export mix was not left entirely to existing endowments and market forces. Korea, Singapore and Taiwan did intervene to promote new exports. The most dramatic of these, Korea's heavy and chemical industry drive of the 1970s, probably pushed beyond the market and beyond Korea's comparative advantage at the time. These and similar interventions in East Asia may have accelerated a process that was occurring in any case, but they did not take great leaps beyond the countries evolving capabilities (Roemer, 1996).

All the East Asian countries are endowed with highly productive agricultural land and other natural resources, which determined their export base during the early stages of rapid growth. These countries, not merely accepting their endowments, invested to maintain their cost advantage in traditional exports such as oil, natural gas, metals, timber, rice, palm oil and rubber, and also diversified within primary products into exports of coffee, tea, cocoa and fruit. In Indonesia and Thailand the primary export share of gross domestic product increased from 1970 to 1990, while in Malaysia it was maintained at nearly 40% of GDP, even as manufacturing and modern service industries flourished (Tomich, Roemer and Vincent, 1994).

Thus the three East Asian countries moved into manufacturing, for import replacement and for export, from a solid base of primary export earnings. This strategy helped these economies to avoid the chronic shortages of foreign exchange that crippled SSA manufacturing in the 1980s.

Nor did the East Asian countries succumb to the opposite problem, Dutch disease<sup>10</sup>, which handicaps export industry and agriculture through exchange rate appreciation brought on by rising export earnings. Indonesia, for example, devalued its exchange rate despite booming oil revenues in order to protect agriculture, while investing its oil rents productively in agriculture, education, public health and infrastructure. Employing such policies, Indonesia and Malaysia converted their primary export wealth into sustainable development in other sectors. Nigeria, in contrast, allowed its exchange rate to appreciate, destroying export agriculture, and invested too much of its oil rents in projects with poor long-run returns (Roemer, 1996).

During the 1980s, as agriculture productivity rose and world prices fell for many commodities, Indonesia and Thailand took advantage of their low-cost labour by moving with almost explosive force into labour-intensive export manufacturing, especially in textiles, clothing and electronics. Malaysia had anticipated this development a good decade earlier and by the end of the 1980s was moving into more capital- and skill-intensive exports, notably in electronics. In SSA's, inward-looking policies lost sight of comparative advantage and created a high-cost industrial sector with little export potential (Roemer, 1994).

Industrialization was assisted by the ability of East Asian countries to utilize not only their natural resources, but also all the human resources available to them. They have actively managed their macroeconomies to establish stable and productive climates for investment; have invested heavily in infrastructure and agriculture; and acted to insulate exports from the distortions of protection and rent seeking by making inputs available to exporters at world prices, free of quantitative controls. Export growth in East Asia has come from multinational firms (especially in natural resources and electronics); from medium-sized firms producing labour-intensive goods, many owned by East Asian investors; and from agriculture. Market incentives, not government intervention, played the major role in guiding export growth (Roemer, 1996).

Despite government promotion of a nationalist corporatist developmentalist ideology since the 1980s, "the overwhelming presence of the state and the power of politically influential business interests are seen to have constrained the emergence of more democratic and participatory corporatist processes" (Jomo et. al. 1997 p.19). Rather, "the military leaders allowed politically

---

<sup>10</sup> The deindustrialization of a nation's economy that occurs when the discovery of a natural resource raises the value of that nation's currency, making manufactured goods less competitive with other nations, thus increasing imports and decreasing exports.

marginalized and vulnerable Chinese to run very profitable private business enterprises to their mutual advantage (Jomo et. al, 1997, p.17). Despite a series of selective economic liberalization implemented since the mid-1980s, it is observed that the degree of state intervention in economic activities has been increased rather than reduced in the 1990s in association with a number of ambitious heavy industrialization projects and Habibie's (President of Indonesia in appointed in 1998) highly publicized hi-tech projects (Aryeetey and Nissanke, 1998).

Thus, reviewing the state-business relations, Jomo et al (1997) note the absence of strong corporatist arrangements in East Asia compared to the prevalence of the national and firm-level corporatism in Northeast Asia. More recently, notably after the economic and political crisis of the mid-1980s across the region, emphasis has shifted towards promotion of some corporatism involving private business interests. An example can be found in the establishment of the Malaysian business Council in 1991, which was viewed as one of the manifested efforts to consolidate the "Malaysia Incorporated Policy " adopted in the early 1980s. Similar efforts to promote some corporatism are found in Singapore, where the private sector is increasingly consulted and represented in various consultative institutions and on the boards of state-owned enterprises in the semblance of tri-partisan structures involving employers and the ruling party and controlled trade unions (Jomo et al 1997).

Conservative fiscal management helps growth in two ways. First, it helps make government a contributor to national saving and investment rather than a borrower that consumes private saving and crowds out private investment. Second, it reduces the need and temptation to use seignorage – borrowing from the monetary authority – as a means to finance government deficits. Increasing dependence on seignorage is a path to higher inflation, which, as Fischer (1993) has shown, stifles rapid economic growth (Roemer, 1996).

Of all macroeconomic indicators, the rate of inflation appears to provide the strongest message for economic growth. Fischer (1993: 497) found that the inflation rate was the only macroeconomic indicator that had significant coefficients with all three specifications of the dependant variable (income growth, capital stock growth and productivity growth) and was significant even when all other independent variables (budget balance, parallel market exchange rate premium, terms of trade and variance of inflation) were included in the regressions. Of the

countries with income growth exceeding 4% a year from 1985 to 1993, including Botswana, none had inflation rates over 12% a year. SSA countries in the sample had inflation rates ranging from negative to almost 300%, but none except Botswana had growth rates over 2.5% a year. The low-inflation SSA countries were all in the Franc Zone, where conservative monetary and fiscal policies, leading to low inflation, were employed to defend the overvalued CFA franc for many years, to the detriment of economic growth (Roemer, 1996).

Economic liberalization and privatization policies implemented since the mid-1980s have served to limit some powers of the state in relation to the private sector. However, in the process, the interests of foreign business have been promoted above those of the local business community. Generally, it is assessed that local entrepreneurs have not grown strong enough to advance effectively the agenda of late industrialization (Aryeetey and Nissanke, 1998).

While the powers of local business enterprises remain rather weak, it is widely believed that Overseas Chinese traders have played a crucial role in generating dynamism in East Asia (Jomo et al 1997). They have developed extensive business networks and accumulated substantial capital, heavily relying on informal credit and contracts based on personal trust and kinship, rooted in culture and community sanction. Having networked well among themselves, they have managed to reduce transaction and information and other costs as well as risks involved in cross-border economic transactions. At the same time, in relation to nationalist economic projects, their capital may be foot-loose, more integrated into the international circuit of Overseas Chinese or foreign capital. Since their business activities do not receive definite protection from the laws and regulations of nation-states, the pattern of their investment is often governed by "short-termism" stemming from insecurity against the general background of anti-Chinese sentiments. They tend to invest more either in financial markets, real estate and other speculative, fast and high-yielding activities or in import substituting manufacturing that receive state protection with certainty. As witnessed in 1997, adverse economic and political circumstances could lead to large -scale flight of ethnic Overseas Chinese capital (Aryeetey and Nissanke, 1998).

One of the important external sources of simultaneous growth and structural transformation of the East Asian economies is found in the pan -East -Asian contagious effects. The East Asian economies in recent decades have greatly benefited from dynamism associated with regional industrial restructuring. Industrial relocation within the East Asian region has definitely

contributed a great deal to the export-oriented manufacturing boom of these economies. The response of Japanese firms, and later Korean, Taiwanese and Singaporean firms, as well as European and WE have driven it multinationals, to rapidly shifting comparative advantage and other differential regulatory conditions within the whole East Asian region (Aryeetey and Nissanke, 1998).

### ***3.3.7 Institutions***

In most East Asian countries, selection for the bureaucracy is an honour, and government has been able to pick its officials from prestigious universities. In Korea graduates of Seoul National University fed the bureaucracy, with the best of them going to the core economic ministries. A Confucian level of status ordinarily reserved for scholars also placed bureaucrats in a preferred position. Overseas training often furthered the career prospects of government officials, and ministers frequently vied for the best-trained technocrats. Central banks also managed to attract highly skilled staff as did research institutes, which (particularly in Korea) were strongly affiliated with government. Fellows of the prestigious Korea Development Institute were more highly paid than ministers, and generous financial incentives were offered to returning foreign-trained experts by the research arm of the Ministry of Science and Technology. Indeed the "reverse brain-drain" was a major factor in upgrading the skills of the Korean bureaucracy (Leipziger and Thomas, 1993).

One of the roles of research institutes has been to digest experience from foreign sources. Copying the successful actions of others is considered part of prudent policy. This search for policy lessons and advice extends to international organizations, such as the World Bank, whose advice is sought, if not always followed. Although both the Bank and Korean authorities enjoy noting that the Bank opposed expansion of the automobile industry in the mid-1970s, this is more telling that the Bank's work on trade liberalization and energy pricing actively supported government reforms. East Asia's bureaucracies emphasized managerial organization and functional responsibilities. Governments centred their efforts on core economic ministries, which formulated and coordinated economic policy. A pioneer was Korea's Economic Planning Board, but similar core ministries exist throughout Asia (Leipziger and Thomas, 1993).

How did these technocrats in East Asia succeed where other well-trained bureaucrats failed? Organizationally, economic teams in Indonesia and Korea were coordinated and led by a single,

clearly identified "economic czar"- a coordinating minister for economic, industrial, and financial affairs in Indonesia, and the deputy prime minister and minister of the Economic Planning Board (EPB) in Korea. In Korea the EPB has traditionally contained both the planning apparatus responsible for successive five-year plans and the budget function that finances those plans. Coordination of economic policy was equally strong, if not quite so ministerially prominent, in Malaysia. There the Economic Planning Unit (EPU) reports directly to the prime minister, which is also the case with Singapore's Economic Development Board (EDB) (Leipziger and Thomas, 1993).

Thailand's National Economic and Social Development Board (NESDB) performed a similar coordinating task in forging a consensus on development goals. Nevertheless, there is variation in the roles of economic ministries. Malaysia's EPU is unusual for both its small size and its clear mandate to serve the prime minister, and Thailand's NESDB is distinguished by the unique way it achieves consensus. In both countries one may argue that the central bank's role was critical, and that the strong voice of finance ministries on macroeconomic management usually dominated economic policymaking. In Thailand many assess the critical action that restored the credibility of macroeconomic manager Lent, and laid the basis for Thailand's financial and industrial surge later in the decade seeing the action of the technocrats as devaluing the bank in 1984. In Malaysia the voices of prudence in the Ministry of Finance and Bank Negara kept inflation low for decades, despite variation in industrial policies (Leipziger and Thomas, 1993).

Among planning ministries, those in Korea and Singapore stand out, in part for their ability to implement decisions. The quality of implementation depends on a clear identification by government officials with the goals being pursued. In Korea monitoring of key economic variables (notably exports) was an obsession, and it permeated the bureaucracy. The extra export effort of the "final 100 days" of each year was legendary. Plan targets, although in some sense indicative in market economies, were usually exceeded, and public officials were held accountable for their achievement. Performance evaluation and monitoring systems have become models for the management of public enterprises as well. Singapore's economic policy apparatus has been different but no less effective (Leipziger and Thomas, 1993).

The Economic Development Board, established in 1961, was able to coordinate policy, offer incentives to foreign investors to acquire land, create industrial estates to attract multinational corporations, and take equity stakes in corporations. Beginning with the First Five Year Plan, the

EDB was charged with ending bottlenecks, creating new programs, and spearheading Singapore's development drive. In the process, it created the Jurong industrial estate, began a joint-venture shipyard project with Japan, offered incentives to investors under the 1961 Pioneer Industries Ordinance (which deferred 90 percent of the corporate profits tax for a period of fifteen years for export industries), and promoted exports via the Economic Incentives Bill of 1967. As its economic objectives matured, Singapore played a prominent role in establishing a Joint Industry Training Scheme with the participation of foreign companies and in attracting foreign investors to Singapore (Leipziger and Thomas, 1993).

The role of technocrats in Indonesia is not dissimilar to that of Korea and Singapore. Indonesia's leadership delegated economic policy to a group of senior officials. This alliance has served both parties well, as it combined pragmatic leadership with capable implementation. In Korea President Park quickly formed an alliance with the technocrats he needed to implement his vision of Korean development, relying on engineers to design his industrialization strategy and on economists to secure financing. In Singapore the distinction between political affiliation and technocratic position has often been blurred; the goals of the People's Action Party and the national economic goals were the same (Leipziger and Thomas, 1993).

The East Asian state has a record of maintaining political and economic stability and of pursuing long-term development goals. The first-generation NIES quickly developed enough consensus on development goals and a sufficiently broad distribution of benefits to push the economic agenda forward. How was this accomplished? While we do not have the analytic tools to answer this question definitively, country experiences provide useful insights. In Korea and Taiwan, China, land was a scarce asset, and both regimes were prescient in redistributing land to small farmers. These rural constituencies are still conservative and pro-government today. By contrast, land reform has eluded countries such as the Philippines, and the uneven distribution of income has perpetuated poverty and alienation. Korea managed, over the 1965-85 period, to maintain reasonable equality between urban and rural incomes. Special rural development programs (such as the Sae maul movement), agricultural price supports, and a relatively large rural investment program were prominent features of Korean development. In Singapore early support and trust were built on the housing policies led by the Housing and Development Board (Leipziger and Thomas, 1993).

Through its efforts begun during the First Five Year Plan, public housing construction was one of the plan's top priorities. As a result, owner-occupied housing rose from less than 10 percent of the population in 1970 to 80 percent in 1980. In these first-generation NIEs, the nation of shared sacrifice can be seen in anti-consumption campaigns, long hours for workers and managers, and the virtual absence of capital flight. The corollary of shared return is also seen in the dramatic increases in wages and in the unprecedented gains in social indicators, to the point where absolute poverty has been virtually eliminated.

The role of the state in the second-generation NIEs-Indonesia, Malaysia, and Thailand-is far less uniform. The clarity of equity objectives was perhaps most visible in Malaysia's New Economic Policy, a two-decade plan (1970-90) to reorder the distribution of income and wealth in favour of the Bumiputera (Malay) majority. This goal of raising the incomes of the Malay majority served to unite the Muslim population and may have been responsible for keeping interracial peace. The government's other emphasis, on education and agricultural advance, did yield high returns and can be credited with bringing the percentage of people in absolute poverty down to single digits (Leipziger and Thomas, 1993).

In Thailand there was initially no strong equitable-growth strategy in place. Indeed, there was no consensus for any particular set of development objectives. The country's success came later, largely as a result of prudent macroeconomic policies, the beneficent role of foreign investment, and the contagion factor. Observers credit the relatively conservative bureaucracy with steering a steady course amid political vacillation and upheavals and the monarchy with keeping social stability and a sense of nationhood. Observers have also attributed some of East Asia's economic success to the concentration of political power in many of the countries in question. In Indonesia, Korea, Singapore, and Taiwan, to varying degrees, the state held enormous power, dissent was largely absent, and bureaucrats had a relatively free hand in pursuing reforms (Leipziger and Thomas, 1993).

The greater equality of income in these economies may also have aided reforms by limiting the differences among winners and losers, but the absence of outright opposition to policies decided at the top is said to have expedited economic reforms. In fact, Singapore's former President Lee Kwan Yew has questioned the compatibility of purely democratic models with rapid development. None of the East Asian economies succeeded unless it had three attributes: outward

orientation, macroeconomic stability, and investment in people. These economies were not always blessed with this triad. They developed institutions and policies that delivered it.

Clearly, however, the equating of political control and economic success is far too simplistic and misleading. Authoritarianism has not been in short supply in the developing world; yet in most authoritarian regimes economic policies have been poor and results disastrous. The East Asian experience shows superior performance under a variety of different political situations. Both authoritarian and participatory institutional mechanisms in East Asia managed to achieve features favorable to rapid growth-reducing uncertainty, improving economic incentives, limiting economic controls, providing adequate support services, and, often, providing a strategic vision. All this shows the merit not of political control but, rather, of the ability to use political and institutional features to achieve development objectives. The pragmatism of government meant-with the benefit of hindsight-that when it intervened to speed development; the probability of failure was much lower than elsewhere (Leipziger and Thomas, 1993).

### ***3.3.8 Investments and Exports***

The view of investment and/or exports as the engines of growth is based mainly on one empirical argument and on one theoretical argument. The empirical argument is that most East Asian countries that experience phenomenal growth rates also experience impressive exports (and imports) and investment rates. The theoretical argument in the case of investment is that a high investment rate increases the capital stock, and some endogenous growth theories predict that this can permanently increase the growth rate. In the case of exports, the theoretical argument is that export orientation increases the openness of the economy and exposes it to foreign technology, thus provoking a rapid rate of technological progress (Sarel, 2002).

Among the many suggested determinants of growth in East Asia, the investment rate and export orientation, in particular, are held in very high esteem. Frequently, they are called the 'engines of growth', meaning that these activities are considered not only to contribute directly to growth, but also to generate spill-over effects to the rest of the economy. The policy implication of these views is obvious: if some sectors in the economy contribute to economic growth, while others do not, then the government should increase the growth rate by promoting these 'good' sectors. Therefore, it should promote investment and exports, using policy instruments such as direct

subsidies or preferential allocation of credit. Because of the central role played by investment and exports in the attempts to explain the East Asian growth, and because of the direct policy implications of this central role, this issue deserves special attention (Sarel, 2002).

The increase in one other factor of production bears a tighter relationship to economic growth: availability of foreign exchange. Growth in GDP per capita is closely correlated with growth in the dollar value of exports. The East Asian countries were much more successful than SSA countries in expanding their export earnings over long periods and have been able to grow more rapidly as a result. Export growth serves economic growth in many ways other than financing imports. By seeking world markets for their goods, developing country producers are exposed to more intense competition, gain economies of scale, attract foreign investment and gain better access to improved technologies, all of which contribute to productivity gains. Thus the correlation between GNP and export growth, whatever it may mean for factor accumulation, suggests that openness to trade and the resulting factor productivity gains had much to do with East Asia's higher growth rates (Roemer, 1996).

Because of the region's outward oriented strategies, realistic exchange rates were a hallmark of East Asian macroeconomic policy. Several of miracles began with major exchange rate reforms, which included devaluations, the unification of multiple exchange rates, and commitments to keeping real exchange rates competitive. Some of the region's economies even kept exchange rates undervalued (Taiwan in the 1960s and all of the NICs in the 1980s) in order to build export market shares (Petri 1989). While these aggressive exchange rate policies were initially adopted to solve some severe balance of payments problem (such as the withdrawal of U.S. aid or a price decline for primary exports), they proved so successful in generating export growth that they became a centerpiece of East Asian policy (Petri, 1993).

The combination of budgetary discipline and competitive exchange rate policies has enabled East Asian governments to avoid excessive accumulations of external debt. Only Korea and Indonesia became significant debtors in the 1970s and early 1980s, and both moved decisively to reduce the demand for external funds. Indonesia remains a major debtor, but its debt service obligations are well covered by oil revenues.

The fact that East Asian macroeconomic performance improved over time also raises the question as to whether it caused, or was caused by, economic success. Also, the generalization of

steady, strong performance did not apply to all countries at all times. Real exchange rates became overvalued and/or large public sector deficits emerged in Malaysia in the mid 1970s, Korea in the late 1970s, and Indonesia in the mid 1980s. But these disequilibria were usually short-lived; each triggered devaluations and decisive retrenchments within a short period of time. Due to the exceptional flexibility of East Asian economies, the adjustments were rapidly completed. East Asian countries have not altogether avoided macroeconomic difficulties, but they reacted more quickly and often adjusted less painfully than other developing countries (Petri, 1993).

A controversial aspect of East Asian exchange rate policy has been currency convertibility. The East Asian countries opened their capital accounts and have managed convertible currencies for two decades or more. In SSA, the franc zone had convertibility but no flexibility to adjust the rate, so exports suffered. Outside the franc zone, SSA countries had strict currency controls.

Convertibility in East Asia has had two advantages:

- First, it has imposed a credible discipline on macroeconomic policy: with no exchange controls, the only safeguard against a catastrophic loss of reserves is sound macroeconomic policies.
- Second, convertibility contributes to an attractive investment climate, both because it is a credible guarantor of sound macro policy and because investors, domestic and foreign, know they can repatriate capital without hindrance. Indonesia, Malaysia and Thailand have all attracted substantial flows of foreign direct investment.

Convertibility cannot, however, be called a necessary condition for rapid growth, as Table 3.3 shows. Korea and Taiwan have maintained some foreign exchange controls throughout their periods of rapid growth and have only recently in 1996 begun to dismantle them. What they and other Asian countries shared was flexibility management of their exchange rates. In contrast, the Franc Zone countries, which did maintain convertibility, maintained a fixed rate until 1994 and suffered stagnation or decline in average incomes. On the basis of these comparisons, it is flexibility rather than convertibility that matters (Roemer, 1996).

**Table 3.2: Currency Convertibility and Exchange Rate Flexibility**

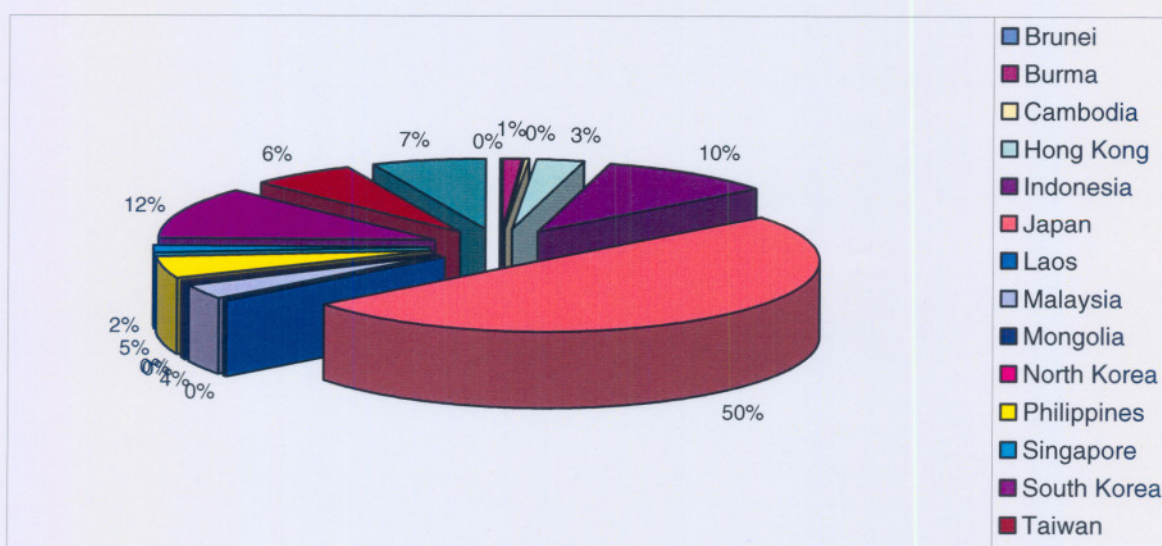
	Convertibility	Foreign Exchange Controls
<b>Exchange Rate Flexibility</b>	Hong Kong	Korea
	Indonesia	Taiwan
	Malaysia	
	Singapore	
	Thailand	
	The Gambia (post -85)	Kenya
<b>Fixed Exchange Rate</b>	Franc Zone countries	Most other African countries

**Table 3.3: GDP Growth Rate, 1980-1995**

East Asian Countries	Growth Rate (%) 1980-1995
Hong Kong	10
Indonesia	4,8
Japan	1,3
Malaysia	8,6
Singapore	10,1
South Korea	9
Taiwan	6,3
Thailand	4,2

Source: CIA World Fact Book, 2001

**Figure 3.4: Share of GDP per country**



Source: CIA World Fact Book, 2001

As can be seen in figure 3.4, Japan holds the biggest share of GDP for East Asia, whereas Mongolia holds the smallest share. This can be attributed to the fact that not all the countries in East Asia grew over the so-called “East Asian Miracle” time period.

#### ***3.3.8.1 Diversification***

Economic diversification has been considered an important component of the national economic development effort in Southeast Asia, at least since the fifties. This has involved diversification in the range of primary commodities produced as well as industrialization, including the processing of raw materials. Such diversification initiatives have often involved going beyond considerations of static comparative advantage. International specialization determined by such static comparative advantage considerations developed without any government interference, even during the colonial era. Most colonial authorities did not insist on a division of labour not justified by such considerations. Thus, for example, much raw material processing emerged under ‘natural protection’ — because of transport costs or physical characteristics — during the colonial period. However, new productive capabilities in which the economy concerned already enjoyed comparative advantage could not develop in such circumstances. Only government intervention through industrial policy measures could create the necessary windows of opportunity for new capabilities to be developed, thus transforming an economy’s comparative advantage (Sundaram and Rock, 1998).

Although the colonial division of labour or specialization under imperial authority largely determined the composition of output and exports before independence in Indonesia and Malaysia, post-colonial governments deemed diversification necessary to reduce their dependence upon and vulnerability to external markets for their generally limited range of primary commodity exports. Hence, diversification involved either greater domestic or external/foreign orientation. Diversification could thus entail more diversified raw material production or more industrial production (Sundaram and Rock, 1998)

One difference in East Asia has been the significant contribution of corporate or firm savings, mainly due to (family) corporate control characteristics, various tax features encouraging reinvestment, rather than disbursement of dividends and the high profitability of investments, due to government support, incentives, protection and regulation. The continued availability of such investment opportunities contributes to a virtuous cycle of accumulation and growth. However,

unlike Northeast Asian (Japanese, South Korean and Taiwanese) companies, Southeast Asian firms' industrial, technological and marketing capabilities have not enabled them to produce for export on their own. Instead, Southeast Asian manufactured exports have primarily come from subsidiaries or companies vertically linked to foreign trans-nationals that have relocated in the region to lower production costs or to overcome import restrictions. Hence, foreign direct investment has been far more important in Southeast Asia than in Northeast Asia, where the governments have been very selective to the point of being restrictive. Whereas much export-oriented manufacturing in Northeast Asia developed from import-substituting industries, such firms in Southeast Asia have been much less linked to the rest of the host economies creating the impression of new manufacturing export enclaves, not unlike the primary producing export enclaves from the colonial era (Sundaram and Rock, 1998).

The banking system and other lending institutions have also been less supportive of manufacturing, especially for export. In the past, the Bretton Woods institutions have successfully promoted the expansion of stock markets in the region. For example, by mid-1997, the total market capitalization of stocks listed in the Kuala Lumpur Stock Exchange (KLSE) was more than four times annual national income. Yet, less than thirty percent of financing of new investments came through the stock market, while only slightly more than twenty percent came from bank lending and almost half came from the firms' own resources, underscoring the significance of corporate savings for corporate investments and growth (Jomo 1997).

Perhaps given the colonial and subsequent experience with export-oriented primary-producing enclaves, East Asia's export-oriented industrialization strategy, besides those industries involving domestic primary products (i.e. resource-based industries), has also been primarily of an enclave nature. But East Asian governments have not just let static comparative advantage considerations and natural protection determine the nature of resource-based industrialization. They have gone well beyond that by actively developing new capabilities through various industrial policy initiatives (Sundaram and Rock, 1998).

In the area of trade policy, the governments have introduced various incentives to increase value addition to exports of traditional primary products, as well as disincentives to discourage primary product exports and encourage investments to increase value addition. Market-based incentives have allowed more flexible implementation besides ensuring greater market responsiveness.

Through government-sponsored or organized trade fairs, export promotion missions and bilateral government-to-government as well as private sector arrangements sponsored by governments, Southeast Asian governments have created new markets. This has been important, particularly in the face of exports facing new trade restrictions in traditional markets as well as potential trade barriers in new markets (Sundaram and Rock, 1998).

Where the quality of government performance has been high, as in Singapore, direct government intervention has generally been very effective and successful. This has been reflected in the effects of specific government regulations and their implementation and enforcement, as well as by the impressive performance of state-owned enterprises in the island republic. Where the likelihood of 'state failure' is higher, market forces as well as greater consultation with and accountability to civil society have served to discipline the state and improved the quality and outcomes of government interventions. However, it is crucial to identify the sources and nature of state failures in determining whether market solutions are necessarily superior; the converse is also true. Other experiences, including those of East Asia, offer important insights into what has happened in particular conditions, and considered correctly, can be useful guides in considering available options, but they should not be treated as inflexible determinants of what should be done in SAA or elsewhere (Sundaram and Rock, 1998).

#### ***3.3.8.2 Direction of Causality***

In section 3.3.3.3 of this study, it was pointed out that a positive correlation between two variables does not prove a direction of causality. Thus, in the case of export orientation and technological progress, the causality can run from the latter to the former. Suppose that some industries significantly improve their technology while other industries do not. Then, it is only natural that those industries with the more advanced technology can compete in the international markets and can increase their quantity of exports. In this case, the data will reveal a strong correlation between the export performance and the rate of technological progress across industries. A similar argument can be made in the case of a positive exports-technology correlation across countries: developing countries that are better in learning and applying advanced foreign technologies will enjoy an important advantage in the world markets and will be able to achieve a strong export performance (Sarel, 2002).

### ***3.3.8.3 Period Averages Versus Initial Conditions***

The main empirical argument for the importance of export orientation and a high investment rate as determinants of growth is the strong positive correlation between these two variables and the rates of growth found in cross-country studies. In particular, the best performing East Asian economies, such as the Four Tigers, display exceptional investment rates and an extremely high degree of openness (defined as the amount of exports and imports relative to the size of the economy). The problem is that in most studies, the observed correlation is between the period averages of these variables and the period averages of the growth rates. The previous section, however, stressed the problem of possible reverse causality between growth and those other variables. This problem greatly reduces the potential of such comparisons of cross-country period averages to identify specific variables as the main determinants of growth (Sarel, 2002).

The problem of reverse causality is a difficult one in growth regressions. There are no simple or perfect solutions to this problem. But one simple partial solution is to observe the values of the explanatory variables at the beginning of the period, rather than to take their average values during the period. Finding, for example, that economies with high growth rates during the period 1960-90 also had high investment rates or a significant export orientation around 1960, would go a long way towards solving the potential problem of reverse causality.

## **3.4 Explanatory Theories for the East Asian Economic Growth ‘Miracle’**

Six broad theories for the East Asian miracles have emerged in previous economist literature. For example, the neoclassical approaches have emphasized outward orientation and macroeconomic discipline, the structuralist theories have singled out government leadership in industrial policy and the culturalist explanations have focused on governance and societal characteristics, as shaped by the region's Confucian traditions. In addition to these theories, a fourth mechanism is also proposed, arguing that East Asia's dynamism is at least partly the result of a contagion of regional success. These six theories will be described very briefly below (Petri, 1993).

### ***3.4.1 Explanations Based On The Neoclassical Theory***

For a long time, this was by far the most popular view among professional economists, especially in the West. It is based mainly on the neoclassical approach to economics in general, and to

economic growth in particular, but it also contains some ideological elements of an underlying belief in classical liberalism. The production possibilities of any economy, in this view, are limited at any point in time by the availability of physical resources and by the available technology. The rate of growth in the long run is determined by the rate of technological progress, which is usually viewed as an exogenous phenomenon, or as a natural outcome of the fierce competition in the *laissez faire* economic system. The markets are considered to be generally efficient. In this view, the role of the government in the process of economic development is important but limited. The government should only concentrate on providing public goods and on 'getting the basics right', both in the microeconomic and in the macroeconomic domains. Except for this limited and well-defined role, the government should stay out of the way and abstain from any further interventions in private markets (Sarel, 2002).

In the microeconomic aspects, the government should ensure property rights, law and order, enforcement of contracts and adequate provision of public goods, such as defence, infrastructure, and perhaps basic education and health care. It should avoid high tax rates, price controls, or any other significant distortion of relative prices. On the macroeconomic side, the government should ensure stable and low inflation, avoid excessive budget deficits, promote the integrity of the financial and banking systems, and ensure open markets, as well as stable and realistic exchange rates (Sarel, 2002).

The advocates of this view see the success of East Asia as the natural outcome of these conservative policies. The World Bank (1993) report on the East Asian miracle, for example points out that: 'Macroeconomic management was unusually good, providing the stable environment essential for private investment. Policies to increase the integrity of the banking system, and to make it more accessible to nontraditional savers, increased the levels of financial savings. Education policies that focused on primary and secondary schooling generated rapid increases in labour force skills. Governments either actively encouraged family planning or, at the minimum, did not restrict family planning choices. Finally, all the high-performing East Asian economies kept price distortions within reasonable bounds and were open to foreign ideas and technology, policies that, along with other fundamentals, facilitated efficient allocation and helped to set the stage for high productivity growth' (World Bank, 1993).

The first analyses of the East Asian miracles emphasized neoclassical causes by arguing that the NIEs 'got the fundamentals right' in several key policy areas. In this view, East Asian economies

succeeded because they came closer than other developing countries to providing (1) a stable macroeconomic environment for saving and investment, and (2) a competitive, open economic structure for the spontaneous, efficient growth of enterprise (Kuznets, 1988). Modern versions of this approach retain the neoclassical thrust, but place somewhat more emphasis on investment, especially in human capital and infrastructure (World Bank 1991). Thus, East Asia's miracle economies:

- Adopted an outward oriented trade strategy to build strong linkages with world markets and technology. They achieved this with policies ranging from complete liberalization to export promotion designed to offset protectionist biases favoring domestic industries.
- Pursued conservative macroeconomic policies to create a stable, predictable environment for investment and trade. Imbalances were addressed swiftly and decisively, keeping inflation low, exchange rates competitive, and debt affordable.
- Invested vigorously in human capital to develop an educated and technically competent labour force.
- Maintained competitive markets for factors to facilitate the structural transformation from primary production to manufacturing and eventually to knowledge-intensive industries (Petri, 1993).

### ***3.4.2 Explanations Based On The Structuralism Theory***

Structuralism interpretations of East Asian success emphasize that policy regimes in many East Asian countries departed significantly from market-oriented norms. In the structuralist view, these interventions were key to the region's success, because it would not have been possible to develop infant industries and to upgrade the industrial structure without them. In more sophisticated variants of the argument, these interventions are seen as remedies for market failures in capital markets (Stiglitz 1989) and for externalities in the development of new industries (Petri, 1993).

To overcome these common problems of early industrialization, the East Asian economies:

- Created elite, autonomous bureaucracies that could design and implement sectoral policies without becoming the tool of special interests.
- Targeted sectors that offered strong opportunities for growth and productivity, based on the experiences of similar, more advanced economies (e.g. Japan).

- Directed resources into targeted sectors by 'getting prices wrong' with selective trade restrictions, preferential access to credit and important inputs, and government investment.
- Avoided big policy mistakes by limiting the duration of government support and setting performance-oriented criteria, such as export success, for promoted firms (Petri, 1993).

### ***3.4.3 Explanations Based On The Culturalist Theory***

The culturalist approach argues that Confucian traditions have had a large impact on the economic behavior among agents, and on social organization and methods of governance. Specifically, Confucian cultures may have had an especially high propensity to undertake saving and educational investments, and may have given rise to strong, publicly motivated bureaucracies.

Confucian traditions contributed to these objectives because they:

- Emphasized group values over individual values, giving rise to cohesive forms of political and business organizations.
- Developed meritocratic institutions, creating strong incentives for learning and education.
- Created mutual obligations between government and the governed, yielding (relatively) publicly motivated policy making.
- Legitimized authoritarian rule, leading to long-lived regimes and stable, consistent policies (Petri, 1993).

It is often argued that in East Asia, as in many SSA countries, a strong urge for industrialization was slower to emerge and develop, since the countries were well endowed with natural resources. Resource rents captured by governments from exporting agricultural and mining commodities were long available to finance infrastructural development and social services and to legitimize the role of states in redistribution and "nation building". However, as the 'Dutch Disease' literature suggests, while it has undoubtedly supported the fiscal viability of nation-states, the availability of resource rents is also known to give rise to conditions of soft-budget constraints leading to inefficient deployment of resources.

The process of allocation and distribution of rents has also proliferated political patronage and clientelism as well as unproductive resource-based rent politics such as timber politics and land politics (Jomo and Gomez 1996). Eventually, the high volatility and sharp decline of commodity prices in the world markets since the early 1970s has shaken this sense of complacency of resource-based economies and induced a big push towards labour-intensive export-oriented industrialization.

#### ***3.4.4 Explanations Based On The Revisionist Theory***

The revisionist view does not share the neoclassical belief in the efficiency of the markets. It asserts that, especially in poorer countries, there is many market imperfections (such as externalities in production, credit constrains, monopolies, unfair trade practices by multinationals and foreign firms, and a general lack of access to many markets). Accordingly, the government should play a central role in helping to acquire technology, allocate funds for key projects, and guide the development of the economy. Not surprisingly, the advocates of this view is summarized by De Long and Summers (1991) in their claim that:

‘It is often alleged that a number of countries have succeeded in growing rapidly by pursuing a government-led “development state” approach to development. The rationale for this policy is that countries, which adopt the price and quantity structure of more affluent nations, are more likely to grow than those that possess the structure of poorer countries. The government should jump-start the industrialization process by transforming economic structure faster than private entrepreneurs would’ (De Long and Summers, 1991).

The revisionist view represents a pragmatic approach to policy. It recognizes that sometimes the government has to choose interventions that are firm-specific, highly complex and non-uniform. In extreme contradiction to the neoclassical ‘doctrine’, it allows (and sometimes even recommends) the active use of tax policy with the explicit aim of affecting the relative prices in the economy (Sarel, 2002).

Pai (1991), for example, describes the tax policy in Taiwan during the past 40 years, from his perspective as the Chairman of the Board of the Export-Import Bank and claims that ‘...the remarkable economic development has not been achieved without effort. The hard work of the people and the effective development strategies of the government deserve much of the credit for the achievement. But tax policy also has played an important role in our development and

contributed much to the progress we have enjoyed'. After describing the various tax measures that were adopted by the government during the past 40 years, he concludes: 'It is very clear that the tax incentives described above were aimed at promoting investment in productive enterprises, stimulating export sales, and encouraging saving. Though it is difficult to quantify the contribution of tax incentives to the outstanding performance of the economy, it is generally acknowledged that sound tax policies and their timely adoption deserve part of the credit' (Pai, 1991).

#### ***3.4.5 Nothing Meaningful Can Be Said About Selective Interventions***

In addition to the neoclassical and the revisionist positions, a third powerful argument about public policy can be made, changing the nature of the neoclassical-revisionist debate. This third position essentially claims that the role that such policies play in the determination of economic growth cannot be properly identified. There are at least four reasons for this intellectual pessimism.

- First, in analyzing the 'successful' policies, there is a clear selection bias. As argued by the World Bank, 'were some selective interventions, in fact, good for growth? In addressing this question we face a central methodological problem. Since we chose the high-performing East Asian economies for their unusual rapid growth, we know before we begin analysis that their interventions did not inhibit growth' (World Bank, 1993).

Easterly (1995) makes the same point when he says that 'economists find it much more appealing to study what the successes did right than what failures did wrong: from 1969 to the present there have been 717 articles on Singapore in economics journals. On the Central African Republic, a country of similar population size but opposite performance, the number of articles over this period was: 1. It is not really clear why large positive outliers should contain more information than large negative outliers'.

- Second, in most cases it is impossible to offer a realistic counterfactual scenario. In other words, in analyzing specific policy actions and selective interventions, the most relevant question cannot be addressed: what growth rate would have been observed if these policies had not been in place?

- Third, public policy in the successful East Asian economies is far from homogenous. There is also a large variation in the specific sectors and industries that were targeted for selective interventions across different countries. Indeed, the more the policies pursued by the different countries are examined, the more evident it becomes how different and sometimes contradictory, these policies were.
- Finally, there is a severe problem of determining the correct direction of causality. Many variables related to public policy are found in many studies to be positively correlated with growth. As a result, economists often consider these policies as promoting economic growth. The problem, however, is that observing a specific variable to be positively correlated with growth does not necessarily constitute a proof that this variable generates growth; it can be the other way around. For example, it is much easier for a government to maintain a healthy fiscal position and not to run budget deficits when the economy grows at a rapid pace and tax revenues are constantly increasing, than when the economy does not grow and there is a big demand for social expenditures and fiscal stimulus (Sarel, 2002).

Not understanding the causality between growth and industrialization, in particular, proved to be a very costly mistake for many poor countries that pushed for a rapid industrialization in a futile effort to boost economic growth (Sarel, 2002).

#### ***3.4.6 Explanations Based On The Flying Geese Effect<sup>11</sup>***

The "Flying Geese" thesis advanced by Akamatsu in the 1930s as an economic explanation for Japan's pre-war foreign policy in East Asia has been popularly used to provide an analytical perspective to the pattern of these recent regional development changes in East Asia, whereby each nation involved constantly cultivates "new areas of comparative advantage, resulting in a hierarchical, yet fluid division of labour among economies all striving to industrialize (Jomo et al 1997). This thesis is very much a variant of the product cycle trade theory with emphasis on national location rather than industrial firms' decisions as the unit of analysis (Aryeetey and Nissanke, 1998).

---

<sup>11</sup> Japan took off in the production arena, and pulled East Asia (and indeed good parts of South East Asia) with her- hence the flying geese formation as a metaphor.

Rowthorn (1996) points out that this thesis exaggerates Japan's role as a benign leader of flying geese, which portrays the East Asian development as an overly harmonious process of cooperation. However, there is no disagreement that direct investment flows by Northeast Asian firms have intensified and accelerated the process of widening and deepening of regional manufacturing networks within context of regional economic integration and globalization. They have certainly been a strong force in creating regional dynamism in East Asia (Rowthorn, 1996).

However, this regional dimension of East Asian development can be a liability to economic management of countries involved in the downturn phase of economic activities. As witnessed in the 1997 Asian crisis, it has manifested itself as adverse regional contagion effects. Nidhiprabha (1997) notes that when the Thai *Baht* experienced a high volatility with the sharp devaluation in July 1997, a number of the East Asian currencies were under severe attack by currency market dealers. This widespread contagion effect on currencies is explained by the similar export structure, the high volume of intra-regional trade among these economies, and a fear of competitive devaluation. All countries in the region could not escape this adverse effect, plunging together into a crisis condition. This includes countries such as Singapore, which did not exhibit problematic macroeconomic and financial indicators similar to those of Thailand. As Nidhiprabha (1997) notes, while the correlation between movements of the Southeast Asian currencies was low before the crisis of 1997, the correlation coefficient among them increased sharply to over 0.9 once the crisis set in, making it difficult for traders and investors to diversify risks by using regional currencies and assets in their portfolio (Nidhiprabha, 1997).

### **3.5 Summary**

The purpose of this chapter was to identify the determinants, which caused East Asia's economic growth 'miracle' in the period 1960 - 1990.

It was found that eight of the nine major economies of developing East Asia (China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan China and Thailand) were among the 12 most rapidly growing economies of the world during the 1965-1990 period. Had growth rates been randomly distributed across all developing economies, there is roughly one chance in a million that success would have turned out so regionally concentrated? The coincidence is still more remarkable if one notes Japan's performance relative to other industrial countries, and southern coastal China's relative to China's inland provinces. There is clearly something very significant about being East Asian.

The study pointed out that no other group of developing countries has done as well in fostering growth, reducing poverty, integrating with world markets, or raising standards of living. Over the past twenty-five years, per capita incomes in the region almost quadrupled. Absolute poverty fell by about two-thirds on average, population growth rates declined rapidly, and health and education improved markedly. The first set of success stories, that of the "Asian tigers", has led to a second generation of rapidly industrializing, fast-growing economies. And now China has started a new engine of regional growth. Although often spoken of as a single group, the East Asian economies are, in fact, remarkably diverse. The region includes some of the richest and the poorest of the world's developing countries, some of the most populous and some of the least, some with a store of natural resources and some with virtually none.

Three broad theories for the East Asian miracles have emerged in previous economist literature. Neoclassical approaches have emphasized outward orientation and macroeconomic discipline. Structuralist theories have singled out government leadership in industrial policy. Finally, culturalist explanations have focused on governance and societal characteristics, as shaped by the region's Confucian traditions. In addition to these theories, a fourth mechanism is also proposed, arguing that East Asia's dynamism is at least partly the result of a contagion of regional success.

A country's development prospects are influenced by three sets of factors: endowments, policies, and institutions, as set out in the development checklist. The checklist is illustrative and must be

interpreted with caution, since the categories are at times subjective and are subject to the time period considered. Nevertheless, it is useful in drawing the patterns emerging from East Asian economies. It dispels the notion that all East Asian economies share identical features; quite to the contrary, it highlights considerable diversity. The checklist also draws a strong contrast between many characteristics common to the first-generation NIEs and those of the second tier.

One source of Asian growth has been the accumulation of factors of production. It is argued that much of the growth of income per capita in the four East Asian “tigers” can be explained by factor accumulation, including physical and human capital and increasing workforce participation rates. Several recent growth accounting exercises have found that East Asian countries extraordinary rate of output growth was due primarily to an equally impressive rate of factor accumulation, with little due to technological progress.

Human capital investments are prominent in virtually all models of East Asian success. Universal elementary education became a norm throughout East Asia. East Asia's more advanced economies have also increased secondary enrolment rates to nearly OECD levels, and developed special programs for building technical skills.

Another important factor of production, which bears a tight relationship to economic growth, is the availability of foreign exchange. Growth in GDP per capita is closely correlated with growth in the dollar value of exports. The Asian countries were much more successful than SSA countries in expanding their export earnings over long periods and have been able to grow more rapidly as a result

The combination of budgetary discipline and competitive exchange rate policies enabled the East Asian governments to avoid excessive accumulations of external debt. Only Korea and Indonesia became significant debtors in the 1970s and early 1980s, and both moved decisively to reduce the demand for external funds

Empirical studies have shown that much, but not all, of East Asian growth can be attributed to exceptionally large investments in human and physical capital. But the region's total factor productivity (TFP) growth rates are even more unusual than its rates of capital formation.

In a study of 87 countries, it was found that Hong Kong, Japan, Korea, Taiwan China and Thailand were within the top docile of all countries in terms of Total Factor Product growth (TFPG) rates, and that Indonesia, Malaysia, and Singapore were also significant positive outliers. East Asian economics looks more like that of industrialized countries than of developing countries, since they derive nearly half of their output growth from TFP growth rather than accumulation. A second noticeable aspect of East Asian experience is 'hyper speed' growth. While the background rate of growth of East Asian economies is high, seldom do growth rates fall below the four or five percent range-each has also experienced periods of exceptionally fast growth, at rates reaching into double digits. These spurts have been often sustained over several years, and sometimes decades. Each spurt seems to have been associated with a powerful and often unique 'engine of growth'. Each typically increased savings and strengthened international trade and technology linkages. Each also triggered significant changes in economic structure and large slides down the experience curves of major industries.

In the early 1950s Hong Kong, Korea, Singapore, and Taiwan were all lacking in natural resources and all had ratios of arable land to population that were so low that meeting basic consumption needs was questionable. The two largest economies, Korea and Taiwan, were heavily dependent on food aid from the United States. The story of early East Asian success is much less one of favourable initial conditions than of countries turning adversity into opportunities.

From around 1960, the principal distinction between these four NIEs and most low-income countries lay in human resource development. In secondary education, for example, the East Asian economies (except Indonesia and Thailand, but including the Philippines) exceeded the average of other developing countries by many multiples. They combined this high level of education with imported technology and the return of expatriates to produce rapid productivity growth. Korea, Singapore, and Taiwan, China, produced spectacular gaps in tertiary education in one generation.

A second initial factor was that national vulnerability created the necessity of economic success. Korea was a divided country competing in a cold-war environment with a more industrialized neighbour; Taiwan also felt compelled to assert its economic independence; Singapore was a city-state thrust into a competitive environment and attempting to reach nationhood; and Hong

Kong was a market outpost for China. This political imperative, combined with the work discipline of societies in Korea, Singapore, and Taiwan, China, seems to have turned weak initial conditions into advantages to an extent seldom seen elsewhere.

A third initial condition was the relative equality of income in the first-generation NIEs. This factor was more of a change brought about by policy than an inheritance. Most other low- and middle-income countries were not able to achieve similar equality of income or assets. Large land reform schemes in Korea, Taiwan and China did away with the landholding classes and made wage income the main source of advancement; public housing investments in Singapore and Hong Kong were early priorities of governments bent on maintaining a national consensus on development policies.

Fourth, governments embraced export development. This was not dictated by ideology but by realism. Small size and low incomes dictated that external markets would provide the major source of revenue for these economies. Singapore's leaders are fond of noting that their economy was too small to change international markets, so they decided to change their own economy.

Finally, export drives required domestic entrepreneurship. In Singapore, publicly owned corporations, behaving commercially, took the lead. In Korea the government had to foster the creation of firms, encouraging their growth and laying the foundation for the modern day chaebol, or conglomerate. Using the Japanese model of zaibatsu and the general trading company, the Korean government was able to compensate for the apparent lack of entrepreneurship. East Asian economies have done well in monitoring each other's success and, when necessary, in borrowing one another's institutions.

Perhaps the central question in comparing the economic performance of SSA and East Asia is why, over the past three decades, Asian governments have been more development-oriented? Political stability has certainly played a role. Park's 18-year reign in Korea, the Kuomintang's hold on Taiwan, Britain's colonial regime in Hong Kong and many more all coincided with rapid growth.

For a regime to become developmentally effective, economic development must weigh so heavily in the government's priorities that it is willing to risk political capital to achieve growth. The choice of long-run development over short-run political and personal gain manifests itself in

different ways. Rent seeking is a common feature of both East Asia and SSA countries. Yet leaders in East Asia, with the notable exception of Marcos in the Philippines, have understood that growing rents require growing economies; when rent seeking threatened sound economies, the rents were curbed. In Ghana before the reforms of the 1980s and in other African countries, leaders have extracted rents without heed to sustaining growth in the economy that produces them. The result has been economic decline; much as if a renewable but limited natural resource had been overexploited.

Governments in East Asia have been able to choose economic development and reform without sacrificing regime stability and SSA regimes could do the same. Determined political leaders and well-educated officials, often with military-like discipline, combined to elevate public goals above private gain as officials interacted with businessmen to generate export-led growth.

The governments of Indonesia, Malaysia and Thailand have left development more to the market than did Korea and Taiwan. Each one of the rapidly growing economies of East Asia followed the dictates of comparative advantage. Hong Kong, Korea and Singapore, poor in natural resources and capital but well endowed with unskilled labour, based their early development strategies on labour-intensive manufactures. The export mix was not left entirely to existing endowments and market forces. Korea, Singapore and Taiwan did intervene to promote new exports. The most dramatic of these, Korea's heavy and chemical industry drive of the 1970s, probably pushed beyond the market and beyond Korea's comparative advantage at the time. These and similar interventions in East Asia may have accelerated a process that was occurring in any case, but they did not take great leaps beyond the countries evolving capabilities.

All the East Asian countries are endowed with highly productive agricultural land and other natural resources, which determined their export base during the early stages of rapid growth. These countries, not merely accepting their endowments, invested to maintain their cost advantage in traditional exports such as oil, natural gas, metals, timber, rice, palm oil and rubber, and also diversified within primary products into exports of coffee, tea, cocoa and fruit.

Industrialization was assisted by the ability of East Asian countries to utilize not only their natural resources, but also all the human resources available to them. They have actively managed their macroeconomies to establish stable and productive climates for investment; have invested

heavily in infrastructure and agriculture; and acted to insulate exports from the distortions of protection and rent seeking by making inputs available to exporters at world prices, free of quantitative controls. Export growth in East Asia has come from multinational firms (especially in natural resources and electronics); from medium-sized firms producing labour-intensive goods, many owned by East Asian investors; and from agriculture. Market incentives, not government intervention, played the major role in guiding export growth.

One of the important external sources of simultaneous growth and structural transformation of the East Asian economies is found in the pan-East -Asian 'contiguous effects'. The East Asian economies in recent decades have greatly benefited from dynamism associated with regional industrial restructuring. Industrial relocation within the East Asian region has definitely contributed a great deal to the export-oriented manufacturing boom of these economies. The response of Japanese firms, and later Korean, Taiwanese and Singaporean firms, as well as European and WE have driven its multinationals, to rapidly shifting comparative advantage and other differential regulatory conditions within the whole East Asian region.

Economic diversification has been considered an important component of the national economic development effort in East Asia, at least since the fifties. This has involved diversification in the range of primary commodities produced as well as industrialization, including the processing of raw materials. Such diversification initiatives have often involved going beyond considerations of static comparative advantage. International specialization determined by such static comparative advantage considerations developed without any government interference, even during the colonial era. Most colonial authorities did not insist on a division of labour not justified by such considerations. Thus, for example, much raw material processing emerged under 'natural protection' — because of transport costs or physical characteristics — during the colonial period. However, new productive capabilities in which the economy concerned already enjoyed comparative advantage could not develop in such circumstances. Only government intervention through industrial policy measures could create the necessary windows of opportunity for new capabilities to be developed, thus transforming an economy's comparative advantage.

Common to successful government interventions was the pragmatism and flexibility to change course as needed. What characteristic of policymaking can be associated with such a pattern? In

East Asia it seems that governments are repeatedly able to distance themselves from past policies that have failed or are no longer useful. This flexibility should not be mistaken for good luck. More often it was associated with problems or crises that led to change.

Common to East Asia's success were policies for macroeconomic stability, human resource investments, and outward orientation-quite different from what happened in most other developing regions. Because these economies to a large extent took international prices as an ultimate guide to domestic resource allocation, macroeconomic stability was seen as central to maintenance of competition.

Economic diversification has been considered an important component of the national economic development effort in East Asia, at least since the fifties. This has involved diversification in the range of primary commodities produced as well as industrialization, including the processing of raw materials. In the area of trade policy, the governments have introduced various incentives to increase value addition to exports of traditional primary products, as well as disincentives to discourage primary product exports and encourage investments to increase value addition.

In conclusion, the determinants of East Asia's economic growth was found to be an outward oriented strategy, which built strong linkages with world markets and technology through an export promotion policy. They also pursued conservative macroeconomic policies, which created a stable, predictable environment for investment and trade. Inflation was kept low, exchange rates competitive and debt affordable. Human capital was vigorously invested to develop an educated and technically competent labour force. And finally, competitive markets were maintained for factors to facilitate the structural transformation from primary production to manufacturing and eventually to knowledge-intensive industries.

In chapter 4, the objective will be to test the significance of these determinants in explaining SSA's economic growth between 1960 and 1990.

## **CHAPTER 4: THEORY OF ECONOMIC GROWTH**

### **4.1 Introduction.**

In chapter 1, it was pointed out, that there has been a significant difference between SSA and East Asia's growth in real per capita GDP over the period 1965-1990. More specifically, it was shown that before the early 1980s SSA grew and was expected to keep on growing faster than East Asia, but the East Asian countries real per capita GDP rose twice as fast as in any other regional grouping between 1965-1990. As a result much of SSA remains in poverty with slow growth characterizing many SSA economies over the same period of time.

In chapter 2, the economic growth experience of SSA was discussed, and some of the explanations for the region's slow growth were put forward.

In chapter 3 East Asia's growth experience was discussed. It was shown that the determinants of East Asia's economic growth was found to be an outward oriented strategy, which build strong linkages with world markets and technology through an export promotion policy. They also pursued conservative macroeconomic policies, which created a stable, predictable environment for investment and trade. Inflation was kept low, exchange rates competitive and debt affordable. Human capital was vigorously invested to develop an educated and technically competent labour force. And finally, competitive markets were maintained for factors to facilitate the structural transformation from primary production to manufacturing and eventually to knowledge-intensive industries.

When analysing long series of comparative growth data, two features are immediately apparent. First, some countries are long term 'winners' and others are long term 'losers'. Second, growth rates vary considerably over time, with some countries or groups of countries facing much greater variability in growth than others (Rogers, 2003).

Economies, that achieve large increases in output over extended periods of time, not only enable rapid increases in standards of living, but also have dramatic changes in the economic, political and social landscape. For example, the USA is estimated to produce approximately 30 times as much in 1999 as it did in 1899. This sustained economic growth means that in 1999 USA had an average income per capita of US\$ 34 100. In contrast, SSA had an average income of \$490.

Understanding these vast differences, produced over many decades, has been described as an elusive quest (Rogers, 2003).

In this chapter, the theory of economic growth will be discussed, in order to identify the theoretical determinants of economic growth. This chapter's sections will be as follows: first, the neoclassical model of exogenous growth is set out in section 4.2. The basic model of the endogenous model is described in section 4.3 and in section 4.4, the neoclassical endogenous growth theory is described. Finally, a framework for the empirical analysis of growth across countries is set out in section 4.4. The chapter concludes with a summary.

## **4.2 The Neoclassical Model of Exogenous Growth**

### ***4.2.1 Harrod-Domar Model***

Domar (1946) published an article on economic growth called "Capital Expansion, Rate of Growth, and Employment." This article did not discuss long run economic growth in developing countries; it discussed the relationship between short-term recessions and investment in the United States. Domar assumed that production capacity was proportional to the capital stock. He admitted the assumption was unrealistic. According to Easterly (1998), Domar's model was not intended as a growth model, made no sense as a growth model, and was repudiated as a growth model forty years ago by its creator. However, Domar's growth model became one of the most widely applied growth models in economic history (Easterly, 1998).

Early development economists used Domar's model (called the Harrod-Domar model because of an earlier contribution by Harrod) to calculate a financing gap that needed filling if an economy was going to develop. Like Domar they reasoned that the binding constraint on production was insufficient physical capital, since they thought unskilled labour was in abundant supply. This led them, like Domar, to predict that growth will be proportional to the investment rate; specifically, growth will be equal to the investment divided by the Incremental Capital Output Ratio (ICOR). A target growth rate times the ICOR would give the required investment to meet the growth target. The financing gap was the gap between available financing for investment (such as domestic saving) and the required investment. Filling this gap with aid, the country would get the required investment, which in turn would yield the target growth rate (Easterly, 1998).

Subsequent theory and evidence have not been kind to these predictions. The theory says that investment responds to the incentives to invest in the future. Aid per se does not change those incentives and so does not increase investment. People will consume a permanent flow of aid, not invest it, according to the permanent income theory of consumption. What's more, the financing gap calculation creates perverse incentives for aid - the lower the domestic saving effort, the larger your gap and the more aid you will receive (Easterly, 1998).

#### ***4.2.2 Solow Model***

The Solow growth model was the successor to the Harrod Domar growth model in the academic literature. Solow (1956) pointed out how the Harrod Domar model was incompatible with "people respond to incentives." If capital is the only constraint on production and there is surplus labour, then producers will have an incentive to substitute abundant labour for scarce capital (Easterly, 1998).

Solow therefore assumed that production was a function of both capital and labour, as well as of technology. His startling result was that growth in the long run was a function only of technical change, and not of saving or investment. Saving determined the level of income but not its growth rate. Trying to use saving as the source of growth would run into diminishing returns as the amount of capital per worker kept increasing. So higher saving would yield higher growth only temporarily (Easterly, 1998).

The Solow Framework became the basis for sources of growth accounting. Output growth per person was a weighted average of the growth of capital per person and labour-augmenting technical change. The latter became known as "total factor productivity (TFP) growth." In the long run, growth of output per person and growth of capital per person was both equal to TFP growth. However, in the short to medium run, growth of capital per person could be important. For example, if the saving rate increased from 5 percent to 20 percent, the income path would shift up. During the transition to a higher path, both capital and output would grow faster than TFP. After reaching the higher path, growth would again settle down at the TFP growth rate. Sources of growth accounting examined the relative weight of these long run and medium-run factors. Was the economy in a balanced growth position where growth was at the TFP growth rate, or was it in a transitional state where capital accumulation could temporarily fuel growth?

Solow himself did one of the first sources of growth exercises. He found TFP growth to explain almost all of the growth in US output 1900-1949. This finding was consistent with his theoretical conclusion that technical change determined long run growth. Ironically, some modern sources of growth accounting exercises that place themselves in the Solow tradition claim to account for much of growth with capital accumulation (where capital includes both human and physical capital) (Easterly, 1998).

The best known of these exercises is that of Young (1994, 1996), who found that transitional capital accumulation explained East Asia's rapid growth. Krugman (1996) popularized Young's result in his famous article in *Foreign Affairs* "The Myth of Asia's Miracle." According to this view, East Asia's rapid growth was not a miracle at all, it was simply what to expect from rapid but temporary growth in human and physical capital. (See chapter 3.3.2)

Mankiw, Romer, and Weil (1993) also explained income differences between countries using the Solow model. Taking their cue from Solow's prediction that the level of income is a function of the saving rate, they explained a majority of the cross-country differences in income as due to different saving rates. They included both human and physical capital accumulation in their definition of saving.

Klenow and Rodriguez-Clare (1997) challenged the claim that capital accumulation could explain the bulk of cross-country income and growth differences. Neither Young nor Mankiw, Romer, and Weil had looked at the cross-country variation in growth rates. Capital accumulation could not explain this variation. Klenow and Rodriguez-Clare (1997) calculated that 91% of the cross-country differences in growth rates were due to differences in TFP growth, not capital growth. They also re-examined the Young (1994, 1996) results. They took into account that part of capital accumulation is simply responding to TFP growth. With this proviso, TFP growth explained the larger part of 3 out of the Gang of 4 East Asian miracles.

All of "the capital explains growth" literature of Young (1994,1996) and Mankiw, Romer, Weil (1993) also did not address the endogeneity of capital accumulation. Capital accumulation also responds to incentives. The Solow model predicted that technical change creates incentives for capital to grow at the same rate as TFP growth. Blomstrom et al. (1996) find that growth causes investment rather than the other way around. Attributing growth to capital accumulation in this circumstance is fallacious, because the incentive-creating force was TFP growth (Barro and Sala-i-Martin 1995).

All of SAA had very rapid accumulation of human capital because of massive expansion of primary and secondary enrollment for example, Algeria's secondary enrollment grew from 31 percent in 1985 to 56 percent in 1995. The absence of a growth response to this educational miracle prompted Pritchett (1997) to ask, "Where has all the education gone?"

Looking at some specific examples leads to the conclusion that capital accumulation does not explain the bulk of cross-country growth differences. Zambia over 1960-75 had an average investment rate of over 35 percent, yet could only manage 0.4 percent per capita growth. Korea had an investment rate of 19 percent over 1960-75 and enjoyed per capita growth of over 6 percent (Easterly, 1998).

This evidence suggests that reliance on human and physical accumulation alone does not necessarily yield growth. Development economists should shift their emphasis from increasing human and physical capital investment to increasing technology adaptation, from improving investment to improving policies (Easterly, 1998).

#### ***4.2.2.1 Empirical Study of the Solow Model***

The basic building block of the neoclassical model is an aggregate production function exhibiting constant returns in labour and reproducible capital. The most basic proposition of growth theory is that in order to sustain a positive growth rate of output per capita in the long run, there must be continual advances in technological knowledge in the form of new goods, new markets, or new processes. This proposition can be demonstrated using the neoclassical growth model developed by Solow (1956) and Swan (1956), which shows that if there were no technological progress, then the effects of diminishing returns would eventually cause economic growth to cease (Aghion & Howitt, 1998).

The Solow growth model shows how saving, population growth and technological progress affect the level of an economy's output and its growth over time. It is designed to show how growth in the capital stock, growth in the labour force and advances in technology interact in an economy, and how they affect a nation's total output of goods and services (Mankiw, 2000).

#### 4.2.2.2 The Supply and Demand for Goods

The supply and demand for goods plays a central role in the static model of the economy in the Solow model. By considering the supply and demand for goods, it can be seen what determines how much output is produced at any given time and how this output is allocated among alternative uses. The supply of goods in the Solow model is based on the production function, which states that output depends on the capital stock and the labour force:

$$Y = F(K, L) \quad \dots\dots\dots (4.1)$$

The Solow growth model assumes that the production function has constant returns to scale. This assumption helps to simplify the analysis. Production functions with constant return to scale allows this study to analyse all quantities in the economy relative to the size of the labour force. To see that this is true, set  $z = 1/L$  in the equation  $zY = F(zK, zL)$  to obtain:

$$Y/L = F(K/L, 1) \quad \dots\dots\dots (4.2)$$

This equation shows that the amount of output per worker  $Y/L$  is a function of the amount of capital per worker  $K/L$ . Because the size of the economy does not matter, it will prove convenient to denote all quantities in per worker terms. The study designates these with lowercase letters, so  $y = Y/L$  is output per worker, and  $k = K/L$  is capital per worker. Thus the production function can be written as  $y = f(k)$ , where  $f(k) = F(k, 1)$ .

The demand for goods in the Solow model comes from consumption and investment. In other words, output per worker  $y$  is divided between consumption per worker  $c$  and investment per worker  $i$ :  $y = c + i$ . This equation is the per worker version of the national income accounts identity for the economy. The Solow model assumes that each year people save a fraction  $s$  of their income and consume a fraction  $(1 - s)$ . This idea can be expressed with a consumption function with the simple form  $c = (1 - s)y$ , where  $s$ , the saving rate, is a number between zero and one (Mankiw, 2000)

$$y = c + i \quad \dots\dots\dots (4.3)$$

To see what this consumption function implies for investment, substitute  $(1-s)y$  for  $c$  in the national accounts identity:  $i = sy$ . This equation shows that investment equals saving, thus, the rate of saving  $s$  is also the fraction of output devoted to investment.

The two main ingredients of the Solow model has now been introduced –production function and consumption function-, which describe the economy at any moment in time. For any given capital stock  $k$ , the production function  $y = f(k)$  determines how much output the economy produces, and the saving rate  $s$  determines the allocation of that output between consumption and investment (Mankiw, 2000).

#### 4.2.2.3 Growth in the Capital Stock and the Steady State

The capital stock of any country in its initial stance and its growth over time is of fundamental importance (See chapter 5.2.1, figure 5.2). At any moment, the capital stock is a key determinant of the economy’s output, but the capital stock can change over time, and those changes can lead to economic growth. In particular, two forces influence the capital stock: investment and depreciation. Investment refers to the expenditure on new plant and equipment, and it causes the capital stock to rise. Depreciation refers to the wearing out of old capital, and it causes the capital stock to fall. As already noted, investment per worker  $i$  equals  $sy$ . By substituting the production function for  $y$ , it can express investment per worker as a function of the capital stock per worker:

$$i = sf(k) \quad \dots\dots\dots (4.4)$$

This equation relates the existing stock of capital  $k$  to the accumulation of new capital  $i$ . To incorporate depreciation into the model, the study assumes that a certain fraction  $\delta$  of the capital stock wears out each year. Here  $\delta$  is called the depreciation rate. The amount of capital that depreciates each year is  $\delta k$ . It expresses the impact of investment and depreciation on the capital stock with this equation:

**Change in Capital Stock = Investment – Depreciation**

$$\Delta k = i - \delta k \quad \dots\dots\dots (4.5)$$

where  $\Delta k$  is the change in the capital stock between one year and the next. Because investment  $i$  equals  $sf(k)$ , it can be written as:

$$\Delta k = sf(k) - \delta k \quad \dots\dots\dots (4.6)$$

The higher the capital stock, the greater the amounts of output and investment. Yet the higher the capital stock, the greater also the amount of depreciation.

There is a single capital stock  $k^*$  at which the amount of investment equals the amount of depreciation. If the economy ever finds itself at this level of the capital stock, the capital stock will not change because the two forces acting on it – investment and depreciation – just balance. That is, at  $k^*$ ,  $\Delta k = 0$ , so the capital stock  $k$  and output  $f(k)$  are steady over time. Therefore  $k^*$  is called the steady-state level of capital. The steady state is significant for two reasons. An economy at the steady state will stay there. In addition, an economy not at the steady state will go there. That is, regardless of the level of capital with which the economy begins, it ends up with the steady-state level of capital. In this sense, the steady state represents the long-run equilibrium of the economy (Mankiw, 2000).

#### **4.2.2.4 Savings and Growth**

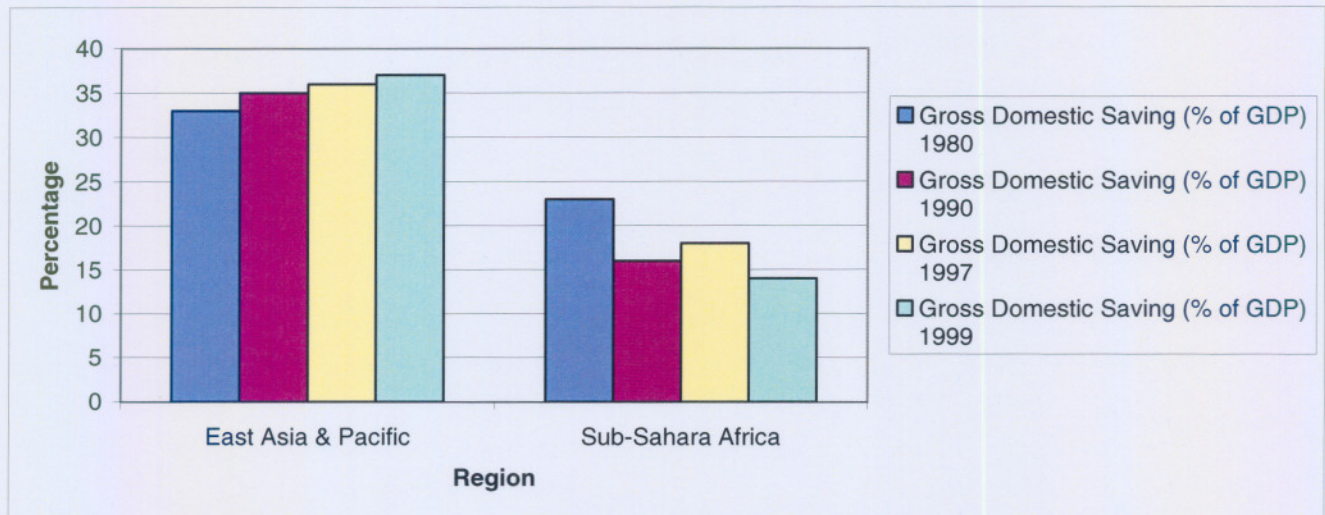
As was discussed in chapter 2.3, weak economic growth helps explain a lower savings rate and as one can see from the hereafter discussion, a higher savings rate is important for investment and thus a growth in capital stock.

Consider what happens to an economy when its saving rate increases. The economy is assumed to begin in a steady state with saving rate  $s_1$  and capital stock  $k^*_1$ . Now the saving rate increases from  $s_1$  to  $s_2$ . At the initial saving rate  $s_1$  and the initial capital stock  $k^*_1$ , the amount of investment just offsets the amount of depreciation. Immediately after the saving rate rises, investment is higher, but the capital stock and depreciation are unchanged. Therefore, investment exceeds depreciation. The capital stock will gradually rise until the economy reaches the new steady state  $k^*_2$ , which has a higher capital stock and a higher level of output than the old steady state (Mankiw, 2000).

The Solow model shows that the saving rate is a key determinant of the steady-state capital stock. If the saving rate is high, the economy will have a large capital stock and a high level of output. If the saving rate is low, the economy will have a small capital stock and a low level of output. A government budget deficit can reduce national saving and crowd out investment. The long-run

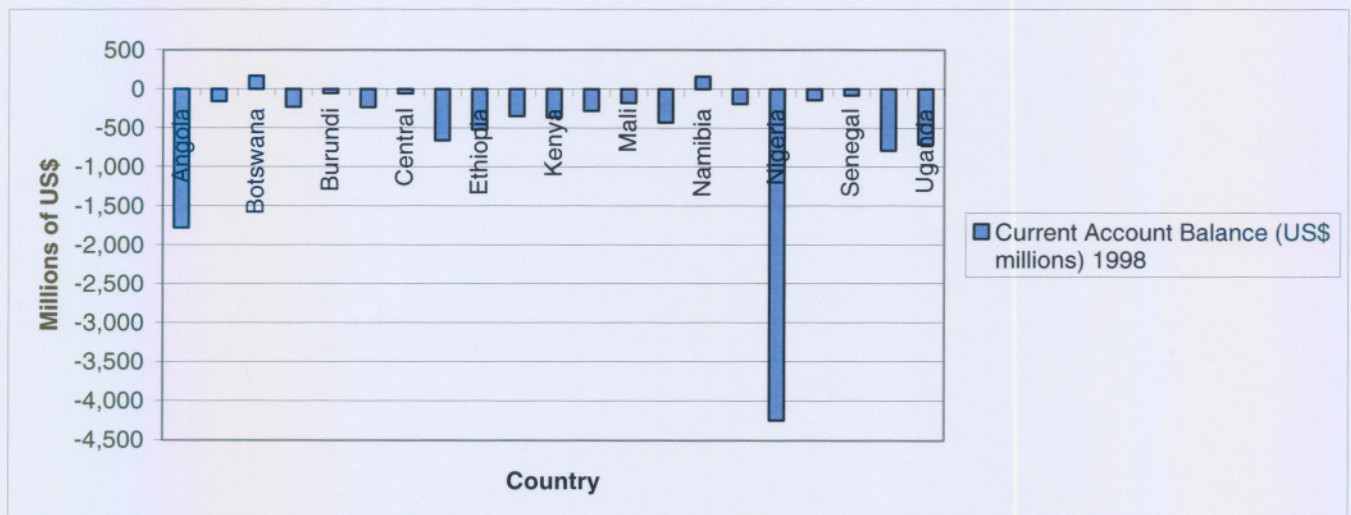
consequences of a reduced saving rate are a lower capital stock and lower national income. This is why many economists are critical of persistent budget deficits (Mankiw, 2000). As can be seen from figure 4.1, the gross domestic saving rate is much higher for East Asia than that for SSA.

**Figure 4.1: Gross Domestic Saving (% of GDP) for East Asia and SSA**



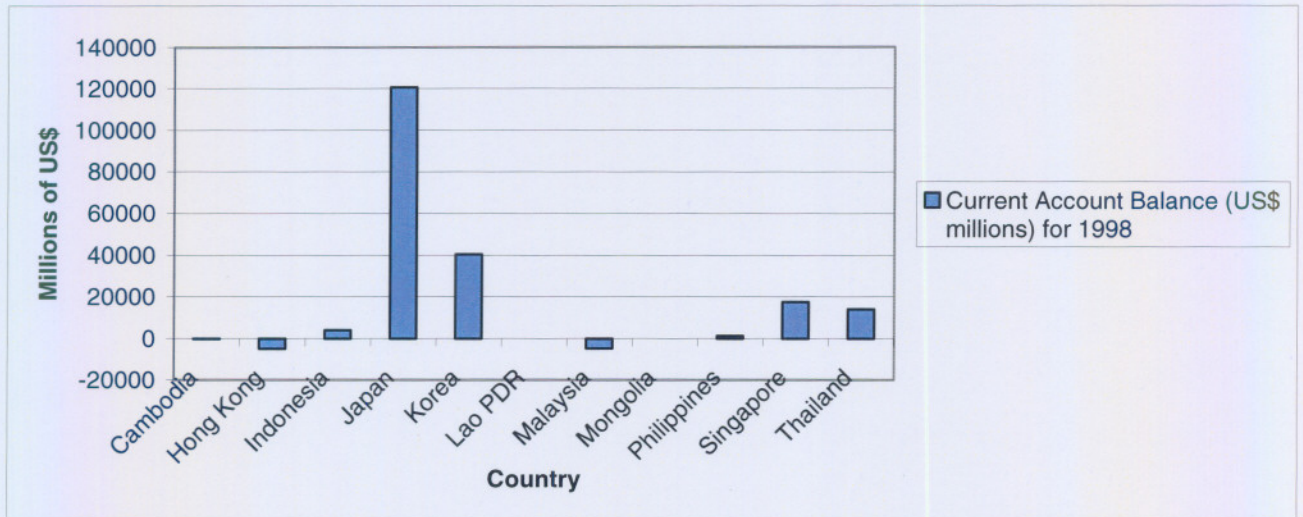
Source: World Development Report 1998/1999 and 2000/2001

**Figure 4.2: Current Account Balance (US\$ millions) for SSA countries**



Source: World Development Report 2000/2001

**Figure 4.3: Current Account Balance (US\$ millions) for East Asian countries**

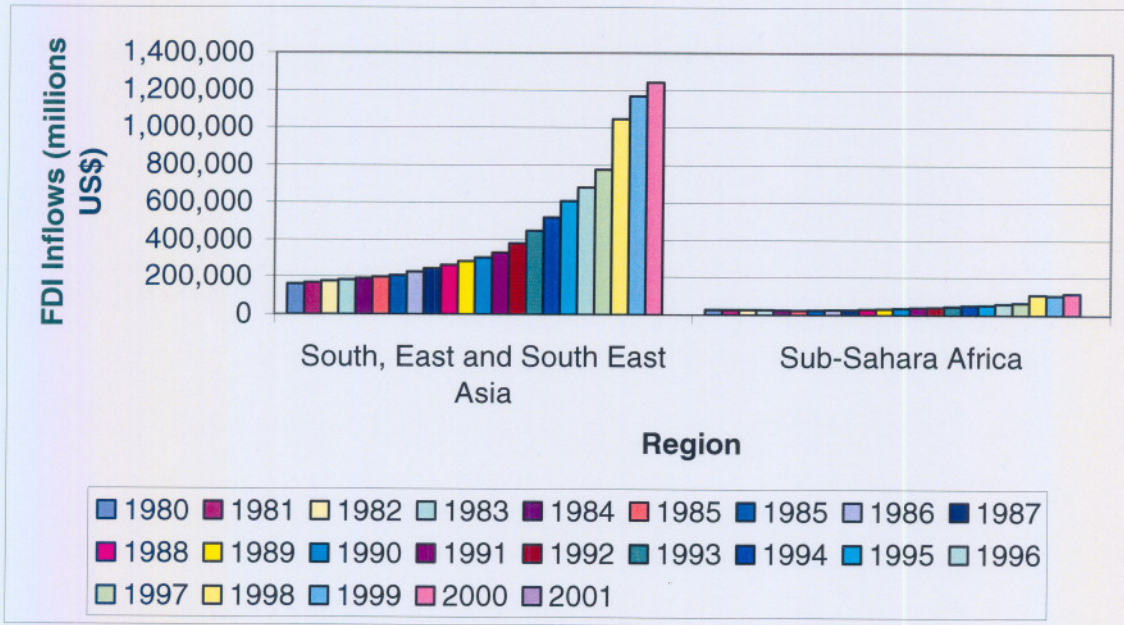


Source: World Development Report 2000/2001

What does the Solow model say about the relationship between saving and economic growth? Higher saving leads to faster growth in the Solow model, but only temporarily. An increase in the rate of saving raises growth until the economy reaches the new steady state. If the economy maintains a high saving rate, it will also maintain a large capital stock and a high level of output, but it will not maintain a high rate of growth forever (Mankiw, 2000).

Another implication is that capital will flow from high-income to low-income countries where capital is scarce. But as one can clearly see from figure 4.1, this is not the case. Foreign direct investment (FDI), has since 1980 been going to East Asian countries where capital is in abundance and not to the SSA countries where there is a capital shortage.

**Figure 4.4: FDI inflows to East Asia and SSA for period 1980-2001**



Source: UNCTAD (World Investment Report, 2001)

#### 4.2.2.5 The Golden Rule

So far, the study has used the Solow model to examine how an economy's rate of saving and investment determines its steady-state levels of capital and income. This analysis might lead the reader to think that higher saving is always a good thing, for it always leads to greater income. Yet suppose a nation had a saving rate of 100 percent. That would lead to the largest possible capital stock and the largest possible income (Mankiw, 2000).

When comparing steady states, it is assumed that a policymaker can set the economy's saving rate at any level. By setting the saving rate, the policymaker determines the economy's steady state. What steady state should the policymaker choose?

When choosing a steady state, the policymakers' goal is to maximize the well-being of the individuals who make up the society. Thus, a benevolent policymaker would want to choose the steady state with the highest level of consumption. The steady-state value of  $k$  that maximizes consumption is called the Golden Rule level of capital and is denoted  $k^*_{gold}$ .

To find steady state consumption per worker, the study begins with the national accounts identity and rearranges it to find:  $c = y - i$ .

Consumption is simply output minus investment. Because the Solow model is looking to find steady-state consumption, simply substitute steady-state values for output and investment. Steady-state output per worker is  $f(k^*)$ , where  $k^*$  is the steady-state capital stock per worker. Furthermore, because the capital stock is not changing in the steady state, investment is equal to depreciation  $\delta k^*$ . Substituting  $f(k^*)$  for  $y$  and  $\delta k^*$  for  $i$ , steady-state consumption per worker can be written as  $c^* = f(k^*) - \delta k^*$ .

According to the above equation, steady-state consumption is what is left of steady-state output after paying for steady-state depreciation. This equation shows that an increase in steady-state capital has two opposing effects on steady-state consumption. On the one hand, more capital means more output. On the other hand, more capital also means that more output must be used to replace capital that is wearing out (Mankiw, 2000).

When comparing steady states, one must keep in mind that higher levels of capital affect both output and depreciation. If the capital stock is below the Golden Rule level, an increase in the capital stock raises output more than depreciation, so that consumption rises. By contrast, if the capital stock is above the Golden Rule level, an increase in output is smaller than the increase in depreciation (Mankiw, 2000).

#### ***4.2.3 Structural Adjustment without adjustment***

In the 1980s, International Financial Institutions (IFIs) made structural adjustment the instrument of the quest to revive growth in stagnant economies. "Structural adjustment" was a catch-all phrase that included exchange rate devaluation, reduction of budget deficits, reduction of inflation, liberalization of controlled prices and interest rates, privatization and restructuring of state enterprises, and reallocation of public spending towards operations and maintenance, health, education, and infrastructure. Unfortunately, the IFIs often wound up disbursing structural adjustment loans without the recipient governments adjusting (Easterly, 1998).

For example, IFIs made 10 adjustment loans to Zambia over 1980-92, yet Zambia hit an all-time high inflation rate of 192 percent in 1992, with triple digit inflation continuing into 1993. IFIs made 15 adjustment loans to Kenya over 1980-92, yet the Kenyan government still ran budget deficits over 8 percent of GDP in 1992-93 (Easterly, 1998).

Privatization and restructuring of state enterprises, has also proven to be problematic in structural adjustment programs. Observers identified Kenya Railways as a financially troubled enterprise in need of remedies as long ago as 1972. The 1983 World Bank Country Economic Memorandum (CEM) identified Kenya Railways as a firm having "severe financial difficulties." It hoped the recently announced policy intentions to "examine and streamline the parastatals" would improve the situation. The 1989 Public Expenditure Review (PER) noted that the government had prepared a Corporate Plan for Kenya Railways, for which the authors had high hopes. Except that there were "considerable delays in implementing the Plan," noted the 1989 PER, resulting in a still "poor financial condition of Kenya Railways." Once again, in 1996, a Bank report noted the "poor financial performance" of Kenya Railways, its "sub-standard" technical performance, and the "urgent" need for "maintenance and upgrading."

The IFIs also have not been very successful protecting capital spending by mandating cuts in current spending. The Operations Evaluation Department (1996) of the World Bank found that in 25 cases where the loan mandated current spending cuts, 15 of the countries actually increased current spending. The (1988) World Development Report of the World Bank found that governments cut capital spending by far more (about 35%) than other public sector categories like wages (about 10%) during fiscal adjustment (Easterly, 1998).

How did it come about that government did not make many of the IFIs required adjustments? Easterly (1998) points out that both government officials and IFI officials respond to incentives. Making adjustment loans to governments in return for policy reforms is a complex game. The governments have the incentive to make improvements to get the loans, and then revert back to their preferred policies after the IFI disburses the loan. The IFIs have the incentive to disburse the loan even when policy reform is doubtful, because they care about the poor in the recipient country (Svensson 1993).

Also, internal bureaucratic incentives in IFIs have sometimes favored making disbursements rather than breaking off relations with the country. Burnside and Dollar (1997) found that aid from the whole donor community had no effect on policy choices by recipient countries.

#### ***4.2.4 Power of the Political Economy***

Why don't governments choose good policies on their own, if these policies would result in better economic performance? The political economy literature identifies some plausible hypotheses, stressing polarization within societies as the problem with reform.

This polarization could occur by income class. In highly unequal societies, the poorer half of the population stands to gain more from redistribution of income than from growth-promoting policies. If majority voting decides policies, the poor majority will vote to tax the minority rich. In more equal societies with shared growth, the majority will have more to gain from growth-promoting policies than from redistributive policies. Inequality therefore causes bad policies, which cause low growth (Alesina and Rodrik 1996, Persson and Tabellini 1996).

Polarization could also occur by economic interest group -- for example, agricultural interests versus industrial interests. If there is uncertainty as to who will gain from the reform, then the majority could block the reform even if the majority stands to benefit. For example, suppose that the economy consists of two interest groups, an agricultural one that makes up 40 percent of the population and an industrial block that makes up the other 60 percent. Suppose that reform benefits everyone in the agricultural interest group and one-third of the individuals in the industrial interest group. Ex-post, there is a 60 percent majority that benefits from the reform. However, suppose individuals in the industrial group have no idea which of them will be among the lucky one-third that benefits from the reform. Those individuals will perceive only a one in three chance of benefiting from the reform, and so everyone in the industrial group will vote against it. The reform will go down to defeat because of the uncertainty as to who benefits (Fernandez and Rodrik 1990).

A war of attrition between interest groups could also delay reform. The group who gives in first must bear the costs of the reform. Each group tries to out-wait the other and so delays the reform (Alesina and Drazen 1991).

Finally, polarization could occur by ethnic group. Suppose that ethnic and linguistic divisions fragment a society, and each group treats the rents created by government as a common pool. Each group will withdraw rents from that common pool without taking into account the effect of their actions on the other groups. Such ethnic polarization thus creates destructive rent-seeking. Easterly and Levine (1997) offer Africa's ethnic polarization as an explanation for the continent's poor economic policies.

Officials in the IFIs did not take into account the disincentives for reform in countries receiving adjustment loans. Structural adjustment lending thus did not prove the panacea for growth that IFIs hoped during the 1980s. It fell short because incentives for government officials in the recipient country to make reforms were not strong enough. It fell short because incentives to make the loans despite the lack of policy reform were too strong in the IFIs (Easterly, 1998).

#### ***4.2.5 Criticism of the Neoclassical Model***

Criticism of the neoclassical model is that it leaves technology growth as an exogenous factor (i.e. external to the behavioral variables of the model). Without technology growth the model asserts that economic growth will, ultimately, cease (Rogers, 2003).

The estimated impacts of saving and labour force growth are much larger than the model predicts (Mankiw, Romer & Weil, 1992).

### **4.3 The New Theories of Growth**

The new theories on economic growth can be divided into three types: (1) those that stress the private agent's own accumulation of all types of capital, (2) those that stress the spillover effects from other private agents' investment to one's own investment, and (3) those that make the rate of technological progress endogenous to economic incentives.

#### ***4.3.1 Augmented Solow Model***

International differences in income per capita are best understood using an augmented Solow growth model. In this model output is produced from physical capital, human capital, and labour, and is used for investment in physical capital, investment in human capital, and consumption (Mankiw, Romer & Weil, 1992).

This model of economic growth has several implications. First, the elasticity of income with respect to the stock of physical capital is not substantially different from capital's share in income. This conclusion indicates, in contrast to Romer's suggestion, that capital receives approximately its social return. In other words, there are not substantial externalities to the accumulation of physical capital (Mankiw, Romer & Weil, 1992).

Second, despite the absence of externalities, the accumulation of physical capital has a larger impact on income per capita than the textbook Solow model implies. A higher saving rate leads to higher income in steady state, which in turn leads to a higher level of human capital, even if the rate of human capital accumulation is unchanged. Higher saving thus raises total factor productivity as it usually measured. This difference between the textbook model and the augmented Solow model is quantitatively important. The textbook Solow model with a capital share of one third indicates that the elasticity of income with respect to the saving rate is one half. The augmented Solow model indicates that this elasticity is one (Mankiw, Romer & Weil, 1992).

Third, population growth also has a larger impact on income per capita than the textbook model indicates. In the textbook model, higher population growth lowers income because the available capital must be spread more thinly over the population of workers. In the augmented model, human capital also must be spread more thinly, implying that higher population growth lowers measured total factor productivity. Again, this effect is important quantitatively. In the textbook model with a capital share of one third, the elasticity of income per capita with respect to  $n + g + \delta$  is  $-\frac{1}{2}$ . In the augmented model this elasticity is  $-2$  (Mankiw, Romer & Weil, 1992).

Fourth, the model has implications for the dynamics of the economy when the economy is not in steady state. In contrast to endogenous growth models, this model predicts that countries with similar technologies and rates of accumulation and population growth should converge in income per capita. Yet, this convergence occurs more slowly than the textbook Solow model suggests. The textbook Solow model implies that the economy reaches halfway to steady state in about 17 years, whereas the augmented Solow model implies that the economy reaches halfway in about 35 years (Mankiw, Romer & Weil, 1992).

More generally, it is indicated that the Solow model is consistent with the international evidence if one acknowledges the importance of human as well as physical capital. The augmented Solow model says that differences in saving, education, and population growth should explain cross-country differences in income per capita.

#### ***4.3.1.1 Accumulation of all types of capital***

The first type of new theories rejects the diminishing returns to capital that prevented capital being a permanent source of growth in Solow's model. According to this view, best summarized in Rebelo (1991), individuals can accumulate all factors of production. The existence of a fixed

supply of workers led to diminishing returns in Solow's model. In Rebelo's model, investing in human capital augments labour. Physical capital and labour-augmenting human capital will grow together at the same rate in the long run, preventing diminishing returns to physical capital.

In Rebelo's model, growth will be a function of the strength of the incentives to invest in physical and human capital. Policy changes that change those incentives will change the long-run rate of growth. Changes in saving rates will change the long run rate of growth, unlike in the Solow model where saving rates determined only the level of income not its long run growth rate. Rebelo's model is the simplest version of what the literature calls "endogenous growth models," where growth is an endogenous function of policy incentives and private behavior. The strong policy effects on growth that we observe in practice (see below) are evidence for this kind of model.

Although growth was endogenous in Rebelo's model and exogenous in the extended Solow model of Mankiw-Romer-Weil, the difference between the two models is not as great as it first appears. Mankiw, Romer, and Weil found a very high share of capital when they included both human and physical capital (up to .8 in the Mankiw 1995 formulation). Rebelo postulated the share of capital as one. The difference between a capital share of one and that of .8 is not so important in practice. Policy will have large level effects in the Mankiw model, which in the transition from one income level to another will look a lot like the growth effects of Rebelo's model (Easterly, 1998).

The basic Solow model shows that capital accumulation, by itself cannot explain economic growth nor the international flows of capital: high rates of saving lead to high growth temporarily, but the economy eventually approaches a steady state in which capital and output are constant. To explain the sustained economic growth that is observed in East Asia, and the lack of FDI flows to SSA, it is necessary to expand the Solow model to incorporate the other two sources of economic growth – population growth and technological progress. Instead of assuming population is fixed, it is now assumed that the population and the labour force grow at a constant rate  $n$  (Aghion and Howitt, 1998).

#### ***4.3.1.2 The Steady State with Population Growth***

If one looks at chapter 2.3.3, one will see, that SSA population growth has exceeded labour force growth by 0.4 percent per annum, and this reduces per capita growth approximately pro rata, as

was established in the Sachs and Warner (1997) regression. This study will now take a look at the population growth as implemented in the Solow model as one of the sources of economic growth.

The study continues to let lower case letters stand for quantities per worker. Thus,  $k = K / L$  is capital per worker and  $y = Y / L$  is output per worker. Keep in mind that the number of workers is growing over time. The change in the capital stock per worker is

$$\Delta k = i - (\delta + n)k \quad \dots\dots\dots (4.7)$$

This equation shows how new investment, depreciation and population growth influence the per worker capital stock. New investment increases  $k$ , whereas depreciation and population growth decreases  $k$ . The term  $(\delta + n)k$  is the desirably break-even investment – the amount of investment necessary to keep the capital stock per worker constant. The amount of investment necessary to provide new workers with capital is  $nk$ , because there are  $n$  new workers for each existing worker, and because  $k$  is the amount of capital for each worker. The depreciation of existing capital is  $\delta k$  (Aghion and Howitt, 1998).

The equation shows that population growth reduces the accumulation of capital per worker much the way depreciation does. Depreciation reduces  $k$  by wearing out the capital stock, whereas population growth reduces  $k$  by spreading the capital stock more thinly among a larger population of workers. The equation can be written as

$$\Delta k = sf(k) - (\delta + n)k \quad \dots\dots\dots (4.8)$$

An economy is in a steady state if capital per worker  $k$  is unchanging. As before, the steady state value of  $k$  is  $k^*$ . If  $k$  is less than  $k^*$ , investment is greater than break-even investment, so  $k$  rises. If  $k$  is greater than  $k^*$ , investment is less than break-even investment, so  $k$  falls (Aghion and Howitt, 1998).

Population growth alters the basic Solow model in three ways. First, in the steady state with population growth, capital per worker and output per worker are constant. Because the number of workers is growing at rate  $n$ , however, total capital and total output must also be growing at rate  $n$ . Hence, while population growth cannot explain sustained growth in the standard of living, it can help explain sustained growth in total output (Aghion and Howitt, 1998).

Second, the Solow model predicts that countries with higher population growth will have lower levels of GDP per person. Finally, population growth affects the criterion for determining the Golden Rule level of capital. To see how this criterion changes, note that consumption per worker is  $c = y - i$ . Because steady-state output is  $f(k^*)$  and steady-state investment is  $(\delta + n)k^*$ , the steady-state consumption can be expressed as

$$c^* = f(k^*) - (\delta + n)k^* \quad \dots\dots\dots (4.9)$$

#### ***4.3.2 Spillovers and Poverty Traps***

The second type of theory saw the individuals' productivity influenced not only by their own investments, but also by spillovers from other individuals' investments. The potential for this kind of spillover is most clear when the theory considers the nature of technological knowledge. Knowledge is a public good in that once created it becomes available to all. It also has the unique feature that it does not get used up while being used; one person's use of knowledge does not preclude the same person's use of the same knowledge. Therefore, one person's investment in new knowledge will benefit everyone in the economy (Easterly, 1998).

If investment in physical capital creates new knowledge (Romer 1986, 1987), then there will be a spillover from each agent's investments to knowledge useful for all the other agents in the economy. Economies that already have high capital will have the highest returns for new investment.

Suppose that both formal schooling and informal interaction between individuals impart knowledge. Then there will be a spillover from the average level of schooling in the economy to each individual's productivity (Lucas 1988).

More society-wide formal schooling will create more knowledge that informal interactions will disseminate. This in turn increases the incentive of the individual to invest in schooling. If the spillover effect is strong enough, then virtuous and vicious circles will form. In the virtuous circle, the level of education in the society is high, so the incentive to invest in education is high, so the level of education in the society will be high. In the vicious circle, the level of education in the society is low, so the incentive to invest in education is low, so the level of education in the

society remains low. Public policy could shift the economy from the vicious circle to a virtuous one by removing taxes on investment in schooling or by subsidizing schooling (Easterly, 1998).

The literature calls the vicious circle a "poverty trap" (Azariadis and Drazen 1990, Murphy, Shleifer, and Vishny 1989). There is substantial informal and formal evidence for poverty traps at various levels of economic aggregation. At the city level, Rauch (1991) found that individuals in high human capital cities earn more than identical individuals in low human capital cities.

At the level of ethnic groups, Borjas (1994) found that individuals in ethnic groups with high average human capital earn more than identical individuals in ethnic groups with low average human capital. (He called this average level of human capital by ethnic group "ethnic capital.")

Ravallion and Jalan (1996) and Jalan and Ravallion (1997), found that households in poor counties in southwest China earned less than households with identical human capital and other characteristics in rich Guangdong Province.

There are also indirect signs of poverty traps at the country level. With poverty traps, initial income is a good predictor of future income because everything depends on whether initial human capital is high enough to get out of the vicious circle into the virtuous circle. Even from a very long run perspective, there is remarkable correlation between initial income and income today (Easterly, 1998).

In the long run data from Maddison (1994) for 36 countries, there is a correlation of .85 between per capita income in 1820 and income in 1992. In more recent data with 125 countries from the Penn World Tables, there is a correlation of .92 between per capita income in 1960 and that in 1985.

Another prediction of the poverty trap model is that countries in poverty traps will not attract physical or human capital from abroad. The low average human and physical capital lowers the rate of return to new capital. Rich countries make their physical capital investments at home or in other rich countries, not in poor countries. The gross annual inflow of portfolio capital over 1970-94 was six cents per capita for the poorest quintile of countries, while it was 189 dollars per capita for the richest countries (Easterly, 1998).

What about human capital? The well-known 'Brain Drain' phenomenon gives the answer - human capital flows to places where it is already abundant. Skilled surgeons or investment bankers or lawyers flow to countries and cities where there is already a concentration of skilled

surgeons or investment bankers or lawyers. Again, this is evidence that there is a productivity spillover from high average skills to the new entrant (Easterly, 1998).

In sum, there is substantial direct and indirect evidence for endogenous growth models in general and for poverty trap models of growth in particular. Policy-induced incentives have strong effects in such models. Countries that start poor tend to stay poor, because the incentives are poor (Easterly, 1998).

## 4.4 Endogenous Growth Theory

### 4.4.1 The Basic Model

To illustrate the idea behind endogenous growth theory, this section will start with a simple production function:  $Y = AK$ , where  $Y$  is output,  $K$  is capital stock, and  $A$  is a constant measuring the amount of output produced for each unit of capital. One extra unit of capital produces  $A$  extra units of output, regardless of how much capital there is. This absence of diminishing returns to capital is the key difference between this model and the Solow model (Romer, 1990).

The study assumes a fraction  $s$  of income is saved and invested. Therefore, capital accumulation is described with an equation similar to the previous ones:

$$\Delta K = sY - \delta K \quad \dots\dots\dots (4.10)$$

This equation states that the change in the capital stock ( $\Delta K$ ) equals investment ( $sY$ ) minus depreciation ( $\delta K$ ). Combining this equation with the  $Y = AK$  production function, and after a bit of manipulation the following is found:

$$\Delta Y / Y = \Delta K / K = sA - \delta \quad \dots\dots\dots (4.11)$$

This equation shows what determines the growth rate of output  $\Delta Y / Y$ . Notice that, as long as  $sA > \delta$ , the economy's income grows forever, even without the assumption of exogenous technological growth. Thus, in this endogenous growth model, saving and investment can lead to persistent growth (Romer, 1990).

### 4.4.2 A Two – Sector Model

Although the  $Y = AK$  model is the simplest example of endogenous growth, the theory has gone well beyond this. The economy has two sectors, which is called manufacturing firms and research universities. Firms produce goods and services, which are used for consumption and investment

in physical capital. Universities produce a factor of production called “knowledge”, which is then freely used in both sectors. The economy is described by the production function for firms, the production function for universities and the capital-accumulation equation:

$$Y = F[K, (1 - u)EL] \quad (\text{production function in manufacturing firms}) \dots\dots\dots (4.12)$$

$$\Delta E = g(u)E \quad (\text{production function in research universities}) \dots\dots\dots (4.13)$$

$$\Delta K = sY - \delta K \quad (\text{capital accumulation}) \dots\dots\dots (4.14)$$

where  $u$  is the fraction of the labour force in universities,  $E$  is the stock of knowledge and  $g$  is a function that shows how the growth in knowledge depends on the fraction of the labour force in universities. As usual, the production function for the manufacturing firms is assumed to have constant returns to scale (Mankiw, 2000).

The model is the cousin of the simple production function of the basic model of the endogenous growth theory:  $Y = AK$ . Most important, this economy exhibits constant returns to capital, as long as capital is broadly defined to include knowledge. As a result, like the  $Y = AK$  model, this model can generate persistent growth without the assumption of exogenous technological progress. Here persistent growth arises endogenously because the creation of knowledge in universities never slows down (Mankiw, 2000).

There are two key decision variables in this model. As in the Solow model, the fraction of output used for saving and investment,  $s$ , determines the steady-states stock of physical capital. In addition, the fraction of labour in universities,  $u$ , determines the growth in the stock of knowledge. Both  $s$  and  $u$  affect the level of income, although only  $u$  affects the steady-state growth rate of income. Thus, this model of endogenous growth takes a small step in the direction of showing which societal decisions determine the rate of technological change (Mankiw, 2000).

As one can see from the above model, a country needs a growing number of the labour force in universities, as to improve the stock in knowledge. This will help ensure competitive advantage and a growth in a country’s income.

#### ***4.4.3 Technological progress endogenous to economic incentives***

It was shown in chapter 2.3.3 that poor public policies in SSA have handicapped households through inefficient education. If a country has poor education, it will lead to low-skilled labour,

which in turn will cause that country to fall behind in technological progress, and hence, lose its competitive advantage (Ablo and Reinikka, 1998). This study will now look at technological progress as incorporated into the Solow model as the second source of economic growth.

According to the Cass-Koopmans-Ramsey (1965) model, the Solow model will now incorporate technological progress, the third source of economic growth into the Solow model. To incorporate technological progress, the study must return to the production function that relates total capital  $K$  and total labour  $L$  to total output  $Y$ . Thus far, the production function has been  $Y = F(K, L)$ . The production function can be written as  $Y = F(K, L \times E)$ , where  $E$  is a new variable called the efficiency of labour. The efficiency of labour is meant to reflect society's knowledge about production methods: as the available technology improves, the efficiency of labour rises.

The term  $L \times E$  measures the number of effective workers. It takes into account the number of workers  $L$  and the efficiency of each worker  $E$ . This new production function states that total output  $Y$  depends on the number of units of capital  $K$  and on the number of effective workers,  $L \times E$ . Increase in the efficiency of labour  $E$  are, in effect, like increases in the labour force  $L$ . The simplest assumption about technological progress is that it causes the efficiency of labour  $E$  to grow at some constant rate  $g$ . This form of technological progress is called labour augmenting, and  $g$  is called the rate of labour-augmenting technological progress. Because the labour force  $L$  is growing at rate  $n$ , and the efficiency of each unit of labour is growing at rate  $g$ , the number of effective workers  $L \times E$  is growing at rate  $n + g$  (Aghion and Hewitt, 1998).

The Solow model will now analyse the economy in terms of quantities per effective worker and allow the number of effective workers to rise. Now,  $k = K / (L \times E)$  stands for capital per effective worker, and  $y = Y / (L \times E)$  stands for output per effective worker. The analysis proceeds just as it did when population growth was examined. The equation showing the evolution of  $k$  over time now changes to

$$\Delta k = sf(k) - (\delta + n + g)k \quad \dots\dots\dots(4.15)$$

As before, the change in capital stock  $\Delta k$  equals investment  $sf(k)$  minus break-even investment  $(\delta + n + g)k$ . Now, however, because  $k = K / EL$ , break-even investment includes three terms:

to keep  $k$  constant,  $\delta k$  is needed to replace depreciating capital,  $nk$  is needed to provide capital for new workers, and  $gk$  is needed to provide capital for the new “effective workers” created by technological progress (Aghion and Hewitt, 1998).

Capital per effective worker is constant in the steady state. Because  $y = f(k)$ , output per effective worker is also constant. Remember, though, that the efficiency of each actual worker is growing at rate  $g$ . Hence, output per worker ( $Y/L = y \times E$ ) also grows at rate  $g$ . Total output [ $Y = y \times (E \times L)$ ] grows at rate  $n + g$ . With the addition of technological progress the model can finally explain the sustained increases in standards of living that is observed (Aghion and Hewitt, 1998).

The introduction of technological progress also modifies the criterion for the Golden Rule. The Golden Rule level of capital is now defined as the steady state that maximizes consumption per effective worker. Following the same arguments that were used before, it can be shown that steady-state consumption per effective worker is

$$c^* = f(k^*) - (\delta + n + g)k^* \quad \dots\dots\dots (4.16)$$

That is, the model has shown that technological progress can lead to sustained growth in output per worker. By contrast, a high rate of saving leads to a high rate of growth only until the steady state is reached. Once the economy is in steady state, the rate of growth of output per worker depends only on the rate of technological progress. According to the Augmented Solow model, only technological progress can explain persistently rising in living standards as well as the flows of FDI to higher-income countries (Aghion and Hewitt, 1998).

Another prediction of the neoclassical model – even when extended to include human capital – is that, in the absence of continuing improvements in technology, per capita growth must eventually cease. This prediction, which resembles those of Malthus (1798) and Ricardo (1817), comes from the assumption of diminishing returns to a broad concept of capital. The obvious shortcoming, however, is that the long-run per capita growth rate is determined entirely by an element – the rate of technological progress – that comes from outside of the model. Thus, the end is a model of growth that explains everything but long-run growth, an obviously unsatisfactory situation (Barro, 1997).

Recent work on endogenous growth theory has sought to supply the missing explanation of long-run growth. In the main, this approach provides a theory of technical progress as one of the central missing elements of the neoclassical model. The inclusion of a theory of technological change in the neoclassical framework is difficult, however, because the standard competitive assumptions cannot be maintained (Barro, 1997).

#### ***4.4.4 Criticism of the Endogenous Model***

According to Rogers (2003), the models are too general and stylized for any robust conclusions.

### **4.5 Economic Growth and Convergence**

#### ***4.5.1 Introduction***

In the 1960s, growth theory consisted mainly of the neoclassical model, as developed by Ramsey (1928), Solow (1956), Swan (1956), Cass (1965) and Koopmans (1965). One feature of this model, which has been exploited seriously as an empirical hypothesis only in recent years, is the convergence property. The lower the starting level of real per capita GDP the higher is the predicted growth rate (Barro, 1997). (See chapter 5.2.1, figure 5.2).

The most widely used and comprehensive database for empirical work on growth is the Penn World Tables, which covers the post 1950 period. When one looks at the average annual GDP per worker growth from 1960 to 1990 against GDP per worker in 1960, it shows the variance in country growth rates, with poorer countries (in 1960) showing more variance. Some countries had negative average growth rates over this period, while others have done spectacularly well. The first big question therefore is what drives the differences between the ‘winners’ and the ‘losers’? (Rogers, 2003)

While it is useful to focus on average growth over long periods, it should not hide the fact that, on average, a country’s growth rate is not highly correlated over short time periods. The low persistence in growth suggests that random shocks may be important, or that the determinants of growth themselves have low persistence. Behind these aggregated correlations, however, is a huge difference between Organisation for Economic Cooperation and Development (OECD) and non-OECD countries. The poorer, non-OECD countries exhibit large intertemporal variation in growth rates. The OECD countries do experience changes in growth over time – but growth rates

are much more persistent than in developing countries. Therefore, the second big question is: why do the growth rates of some countries, or groups of countries, vary so much over time?

#### ***4.5.2 The Convergence Debate***

The two big questions can be framed in a different way; one that focuses the interest on what is, perhaps, one of the most important issues in economics. This concerns whether countries have been converging to a common level of GDP per capita, and is known as the 'convergence debate'. One approach to this issue is to analyse how the variance of the distribution of GDP per worker across countries has changed over time, this is known as testing for  $\delta$ -convergence. The title of Pritchett's paper sums up a worrying trend: 'Divergence, Big Time'. However, using the variance, or the standard deviation, as summary statistics might hide more complex patterns. Various analyses for the 1960 to 1990 period have found that the world distribution of GDP per worker has become bimodal (i.e. 'twin peaks') with, perhaps each country a member of either a poor or rich 'convergence club'. From this perspective, the poor growth performance of many African and Latin American countries appear to form a 'club', whereas OECD countries plus a few success stories form another (Rogers, 2003).

Another method of approaching the convergence question is to use regression analysis to test whether poorer countries are growing faster. This is done by regressing average annual growth rates of GDP per capita or worker, say from 1960 to 1990, on the log of initial GDP per capita of worker. If  $\beta > 0$  then there would be evidence of poorer countries growing faster, which is called absolute convergence. Additional analysis has then included other explanatory variables, for example investment or trade openness, in the regression to control for other aspects of a country's circumstances. When this is done the results show that  $\beta < 0$  and this is called conditional convergence: poorer countries grow faster conditional on other factors being present (Rogers, 2003).

Evidence of conditional convergence has been interpreted in two broad ways. First, models based on the Solow-Swan framework suggest that  $\beta < 0$  indicates convergence to a country's unique steady state. In Mankiw (1992), for example, they find that countries on average converge to their steady-state at approximately 2 percent per year. The steady-state levels of GDP per capita vary across countries so there is no presumption of  $\delta$ -convergence. Panel data studies using the Solow-Swan framework tend to find higher rates of convergence (Islam, 1995).

The Solow-Swan growth rate in steady-state is the rate of technology growth. In Mankiw et al. (1992) this is assumed to be equal across all countries hence, ultimately, all countries will grow at the same rate, although they will have different GDP per capita. The assumption of equal technology growth across all countries is based on the idea that technology is freely available. In contrast, the technological catch-up literature assumes that technology is difficult to absorb and implement (Lall, 1992).

The second way of interpreting a regression with  $\beta < 0$  is as evidence of poorer countries growing faster due to technological catch-up conditional on other factors. Others have explored the nature of 'absorptive capability', by interacting the log of initial GDP per capita term with other variables, finding some support for the role of human capital, trade openness and study abroad (Sachs & Warner, 1995b).

Looking at convergence in another way; if all economies were intrinsically the same, except for their starting capital intensities, then convergence would apply in an absolute sense; that is, poor places would tend to grow faster per capita than rich ones. However, if economies differ in various respects – including propensities to save and have children, willingness to work, access to technology, and government policies – then the convergence force applies only in a conditional sense. The growth rate tends to be high if the starting per capita GDP is low in relation to its long-run or steady-state position; that is, if an economy begins far below its own target position. For example, a poor country that also has a low long-term position – possibly because its public policies are harmful or its saving rate is low – would not tend to grow rapidly (Barro, 1997).

The concept of capital in the neoclassical model can be usefully broadened from physical goods to include human capital in the forms of education, experience and health. A country that starts with a high ratio of human to physical capital tends to grow rapidly because physical capital is more amenable than human capital to rapid expansion. A supporting force is that the adaption of foreign technologies is facilitated by a large endowment of human capital. This element implies an interaction effect whereby the more a country's growth rate is sensitive to its starting level of per capita output; the greater is its initial stock of human capital (Barro, 1997).

## **4.6 Summary**

In this chapter, the study discussed the theory of economic growth. Both the exogenous and endogenous theory were discussed and empirically verified.

The story of the quest for growth is one of discarding false panaceas and instead applying the principle that "people respond to incentives" (Easterly, 1998).

Among the false panaceas the theory has had to discard as incompatible with "people respond to incentives" are Filling the Financing Gap, Reliance on Human and Physical Capital Accumulation Alone, and Structural Adjustment without adjustment.

Instead the theory has realized that people in the private sector and public sector both respond to incentives. New theories of growth stress that private agents choose the quantity and quality of most inputs into production, and that the return to those inputs may vary depending on what other private agents are doing. Political economy theories describe how government officials respond to incentives when they choose economic policies. If incentives for the private and public sector to invest in the future are good, then growth will happen; if incentives are poor, growth will not happen. Empirical evidence on growth and policy bears out this prediction. People respond to incentives.

All of the growth models discussed in earlier sections predict that national economic policies will have a strong effect on economic growth. Government policies in the augmented Solow model with a high share of capital will affect strongly the level of income. During the transition from the old to the new level, this will imply growth effects. Policies will have a direct effect on growth in the Rebelo model in which human and physical capital accumulation responds to policy-induced incentives. In the poverty trap models, policy can raise or lower the threshold of initial income below, which a poverty trap forms. In the poverty trap models, policies also affect the rate of growth of countries that have escaped the poverty trap.

The correlations between policy and growth could be due to reverse causality from bad growth to bad policy, or the correlation could be due to an omitted third factor that affects both growth and policy. What does the growth literature say about these concerns? First, there are many theoretical models that show policy causing growth, but there is no model in the literature that shows growth causing policy. Second, the literature has used statistical methods to try to resolve causality. King and Levine (1993) use the initial value of financial depth to predict growth over the next 30 years. Levine (1998) uses the legal system as an instrument for financial depth and

still finds a strong effect of financial depth on growth. Easterly, Loayza, and Montiel (1997) remove any third factors by regressing growth *changes* over time on policy *changes*, as well as instrumenting for the latter with initial values. They still find strong effects of variables such as openness and government consumption, as shown above, and other policy variables. These results support the claim that policies cause growth.

The initial excitement centered on “endogenous growth “ theories, in which the long-term growth rate was determined by government policies and other forces contained in the analysis. The first models were standard except that capital was broadened to include human components and to allow for spillover effects. In these settings, the absence of diminishing returns meant that the accumulation of capital could sustain growth indefinitely, although the rates of growth and investment might not be Pareto optimal.

Subsequent analyses argued that technological progress generated by the discovery of new ideas was the only way to avoid diminishing returns in the long run. In these models, the purposive behavior that underlay innovations hinged on the prospect of monopoly profits, which provided individual incentives to carry out costly research. Again, the equilibria were not to be Pareto optimal, and there were some intriguing implications for policy, notably for subsidies to basic research.

Despite these breakthroughs, the recent empirical work on growth across countries and regions has not received its main inspiration from the new theories. Rather, the standard applied framework derives more from the older, neoclassical model, as extended to incorporate government policies, accumulation of human capital, fertility decisions and the diffusion of technology. In particular, the neoclassical model’s central idea of conditional convergence receives strong support from the data: poorer countries grow faster per capita once one holds constant measures of government policy, initial levels of human capital and so on.

Theories of basic technological change are most important for understanding why the world as a whole – and, more specifically, the economies at the technological frontier – can grow in the long run. But these theories has less to do with the determination of relative rate of growth across economies; that is, with the relations studies in cross-country statistical analyses. It is surely an

irony that one of the lasting contributions of endogenous growth theory is that it stimulated empirical work that demonstrated the explanatory power of the neoclassical growth model.

## **CHAPTER 5: DETERMINANTS OF ECONOMIC GROWTH IN SUB-SAHARA AFRICA**

### **5.1 Introduction**

The objective of chapter 3 was to identify, from the theoretical literature, the determinants of economic growth in East Asia between 1960 and 1990. Three sets of factors were identified namely policies, institutions and geography. It was pointed out that these determinants can be seen as proximate and ultimate determinants of economic growth.

The objective of the present chapter is to test the significance of these determinants in explaining SSA economic growth between 1960 and 1990.

The first section of this chapter will be used to identify the model and the variables, subsequently each will be briefly discussed and previous studies results will be incorporated. The second section will be used to discuss the data. The third section will discuss the regression results. The fourth section compares the results to those of Easterly and Levine (1997). The chapter concludes with a summary.

### **5.2 Methodology**

In this paper, the methodology is driven by a desire to address traditional econometric problems in cross-country regressions such as unobserved country effects, outliers, endogeneity, dynamics and model uncertainty. As such various estimators and specifications are used, namely Ordinary Least Squares (OLS), Least Absolute Deviations (LAD), Generalized Least Squares (GLS) (Random-effects) and Generalized Method of Moments (GMM). This section describes the methodology.

#### **5.2.1 Estimators**

In the literature on SSA cross-country growth regressions, two main types of approaches are followed. In the first the sample of countries is restricted to SSA countries. Examples include Fosu (1992) and Ghura (1995). In the second, a worldwide sample is used and the differences in SSA picked up by a dummy variable for SSA countries. Examples include Barro (1991) and Easterly and Levine (1997). Here, the first approach will be followed in an attempt to estimate

the truly SSA determinants of growth and to minimize the heterogeneity between countries that are culturally, historically and geographically distinct.

The single point, period-averaged, cross-section regression analysis consists of estimating:

$$\ln y_{i(t2)} - \ln y_{i(t1)} = -(1 - e^{\beta r}) \ln y_{i(t1)} + \alpha_i X_i + \varepsilon_i \quad \dots\dots\dots (5.1)$$

where  $\ln y$  = per capita GDP of country  $i$

$X_i$  = a vector of determinants of economic growth rates

$\varepsilon_i$  = an error term with the usually assumed properties, including  $E(X_i \varepsilon_i) = 0$

Ordinary Least Squares (OLS) is often used. One of most notable weaknesses of using OLS for cross-country regression analysis is the omitted variable bias due to unobserved heterogeneity. A further problem of OLS regressions is that they are vulnerable to the existence of outliers on the dependent variable. In the case of SSA, Block (2001) remarks that Botswana and Mauritius are important examples of outlying cases in terms of GDP per capita growth. In order to address the problem of outliers, equation (5.1) will also be estimated using a least absolute deviation (LAD) estimator. The LAD-estimator is obtained from a regression that minimizes the absolute deviation around the median of the distribution of the dependent variable. It is thus not sensitive to outlier observations on the dependent variable, and may even be more efficient OLS when the error terms are non-normal (Block, 2001).

Problems of unobserved heterogeneity can best be overcome by the use of panel data estimators. In the case of panel data, more complex estimation strategies have to be followed such as using Generalized Least Squares (GLS) panel data estimators. With panel data, the issue is whether to use a random effects or fixed effects estimation approaches. To illustrate the choice and its implications, consider the following:

Equation (5.2) can be written in the following manner to illustrate the different estimation options when a panel of data is available (showing that panel data models have complex error structures).

$$y_{it} = x_{it} \beta + c_i + u_{it} \quad \dots\dots\dots (5.2)$$

For  $i = 1, \dots, N$  and  $t = 2, \dots, T$  and where  $y_{it}$  = economic growth rate of country  $i$  in period  $t$ ;

$x_{it}$  = a  $1 \times K$  vector of explanatory variables that can vary over  $t$  and  $i$ ;  $c_i$  = unobserved country characteristics, e.g. due to initial technical efficiency, that are constant over the time period, and influence  $y_{it}$ ; and  $u_{it}$  = an idiosyncratic error term with variance  $\sigma_u^2$  with the usual properties.

From equation (5.2) the so-called “between” estimator<sup>12</sup> is OLS applied to the following equation:

$$\bar{y}_i = \alpha + \bar{x}_i \beta + c_i + u_i \quad \dots\dots\dots (5.3)$$

Where  $\bar{y}_i = T^{-1} \sum_{t=1}^T y_{it}$  and so on. It should be noted that the “between” estimator is not consistent because  $E(\bar{x}_i c_i) \neq 0$ .

The fixed effects (or “within”) estimator<sup>13</sup> is obtained by using OLS to estimate:

$$(y_{it} - \bar{y}_i) = (x_{it} - \bar{x}_i) \beta + (u_{it} - u_i) \quad \dots\dots\dots (5.4)$$

The random effects estimator is a weighted average of the estimates produced by the between estimator (5.3) and the within estimator (5.4):

$$(y_{it} - \theta \bar{y}_i) = (1 - \theta) \alpha + (x_{it} - \theta \bar{x}_i) \beta + \{(1 - \theta) c_i + (u_{it} - \theta u_i)\} \quad \dots\dots (5.5)$$

Where 
$$\hat{\theta} = 1 - \sqrt{\frac{\hat{\sigma}_u^2}{T_i \hat{\sigma}_c^2 + \hat{\sigma}_u^2}}$$

Despite the strengths of fixed and random effects estimators based on panel data, there remains two further shortcomings that needs to be dealt with. These are the potential endogeneity of the

<sup>12</sup> The between estimator only uses the variation between the cross section observations.

<sup>13</sup> The within estimator uses the time variation within each cross section of observations.

$X_i$ , as well as the loss of dynamic information. Since economic growth is per definition a dynamic process, and GDP tend to be highly persistent, this might be a serious omission.

The incorporation of dynamics into the model allows equation (5.1) and (5.2) to be rewritten as an AR(1) model as follows:

$$y_{it} - y_{it-1} = \alpha y_{it-1} + x_{it}\beta + c_i + u_{it} \quad \dots\dots\dots (5.6)$$

Where  $\Delta y_{it}$  = the log difference in per capita GDP over a period;  $y_{it}$  = the log of per capita GDP at the start of that period;  $x_{it}$  = a vector of explanatory variables,  $y_i$  = period-specific intercept terms to capture productivity changes common to all countries;  $c_i$  = the unobserved country-specific and time invariant effects (unobserved fixed effects); and  $u_{it}$  = the time variant idiosyncratic error term.

Equivalently, equation (5.6) can be written as:

$$y_{it} = y_i + (\alpha + 1)y_{it-1} + x_{it}\beta + c_i + u_{it} \quad \dots\dots\dots (5.7)$$

By writing (5.7) in first-differences eliminates the time-variant components,  $c_i$ . This solves the problem of omitted variables bias:

$$\Delta y_{it} = y_i + (\alpha + 1)\Delta y_{it-1} + \Delta x_{it}\beta + \Delta u_{it} \quad \dots\dots\dots (5.8)$$

However, it creates another problem, namely endogeneity since it is clear that  $y_{it-1}$  is endogenous to the error term through  $u_{it-1}$ . It will therefore be inappropriate to estimate equation (5.8) by OLS. Nickell (1981) show that this bias will often result in wrongly finding a high rate of convergence. To overcome this problem of endogeneity, an instrumental variable needs to be used for  $y_{it-1}$ . Two approaches, namely Anderson and Hsiao's (1982) instrumental variable (IV) and Arellano and Bond's (1991) two GMM-estimators (first step and second step respectively) have been used in this regard. Anderson and Hsiao (1982) proposed using  $\Delta y_{it-2}$  or  $y_{it-2}$  as instruments. Arellano and Bond (1991) show that using the lagged level,  $y_{it-2}$ , as instrument is superior and that in fact the list of instruments can be extended<sup>14</sup> to include further

---

<sup>14</sup> It is assumed that there is no second-order autocorrelation in the differenced idiosyncratic error term.

$y_{it-3}, y_{it-4}, \dots, y_{it-k}$ . Moreover, the Anderson-Hsiao IV approach can be seen as a special case of two GMM-estimators proposed by Arellano and Bond (1991) to combine the list of instruments efficiently. These two GMM estimators are preferable as they gain efficiency by using additional moment restrictions.

In section 5.3 of this thesis, all the methods/approaches discussed in this section (OLS, random effects and fixed effects) will be used (with STATA 8.0) and compared to estimate the determinants of per capita GDP growth in Sub-Sahara Africa. The following section sets out the variables used in the  $1 \times K \times x_{it}$  vector of explanatory variables.

## **5.3 Model**

### ***5.3.1 Cross-sectional Data***

Following the theoretical framework of chapter 4, this study will use cross-sectional data – this type of data can consist of a sample of individuals, households, firms, cities, states, countries, or a variety of others units, taken at a given point in time – to help and define the determinants that influence any independent variable.

Cross-sectional data are widely used in economics and other social sciences. In economics, the analysis of cross-sectional data is closely aligned with the applied microeconomics fields, such as labour economics, state and local public finance, industrial organization, urban economics, demography and health economics. Data on individuals, households, firms and cities at a given point in time are important for testing microeconomics hypotheses and evaluating economic policies (Wooldridge, 2000).

Different variables sometimes correspond to different time periods in cross-sectional data sets. For example, in order to determine the effects of government policies on long-term economic growth, economists have studied the relationship between growth in real per capita GDP over a certain period (say 1960-1985) and variables determined in part by government policy in 1960 (government consumption as a percentage of GDP and adult secondary education rates). Such a data set might be represented as in Table 5.1, which has been derived from the data set used in the study of cross-country growth rates by De Lang and Summers (1991).

**Table 5.1: A data set on Economic Growth Rates and Country Characteristics**

<i>obsno</i>	<i>country</i>	<i>gpcrgdp</i>	<i>Initial GDP</i>	<i>Exports</i>
1	Algeria	0.89	9	32
2	Angola	3.32	16	50
3	Benin	2.56	13	69
4	Botswana	1.24	18	12
*	*	*	*	*
*	*	*	*	*
*	*	*	*	*
61	Zimbabwe	2.3	17	6

The variable **gpcrgdp** represents average growth in real per capita GDP over the period 1960 to 1985. The fact that the **Initial GDP** (Initial Gross Domestic Product) and **Exports** (exports as a percentage of GDP) correspond to the year 1960, while **gpcrgdp** is the average growth over the period from 1960 to 1985, does not lead to any special problems in treating this information as a cross-sectional data set. The order of the observations is listed alphabetically by country, but there is nothing about this ordering that affects any subsequent analysis (Wooldridge, 2000).

Sometimes the data on all units do not correspond to precisely the same period (Wooldridge, 2000). For example, several countries may be surveyed during different weeks within a year. In a pure cross-section analysis it would ignore any minor timing differences in collecting the data. If a set of countries were surveyed during different weeks of the same year, the study would still view this as a cross-sectional data set. An important feature of cross-sectional data is that it can often assume that it has been obtained by random sampling (Wooldridge, 2000). For example, if the information on wages, education, adult literacy rate and other characteristics are obtained by randomly drawing 500 people from the working population, then it is a random sample from the population of all working people.

Sometimes random sampling is not appropriate as an assumption for analyzing cross-sectional data (Wooldridge, 2000). For example, suppose there is interest in studying factors that influence the accumulation of a country's wealth. A random sample of countries could be surveyed, but some countries may refuse to report their wealth. If, for example, wealthier countries are less likely to disclose their wealth, then the resulting sample on wealth is not a random sample from all countries as a whole.

Another violation of random sampling occurs when the sample from units that is large relative to the population, particularly geographical units. The potential problems in such cases are that the population is not large enough to reasonably assume the observations are independent draws (Wooldridge, 2000). For example, if a study wants to explain new business activity across countries as a function of wage rate, energy prices, corporate and property tax rates, service provided, quality of the work force, and other country characteristics, it is unlikely that business activities in countries near one another are independent.

### ***5.3.2 The Model***

#### ***5.3.2.1 Potential Determinants***

The specified model that will be used over the period 1965-1990 is:

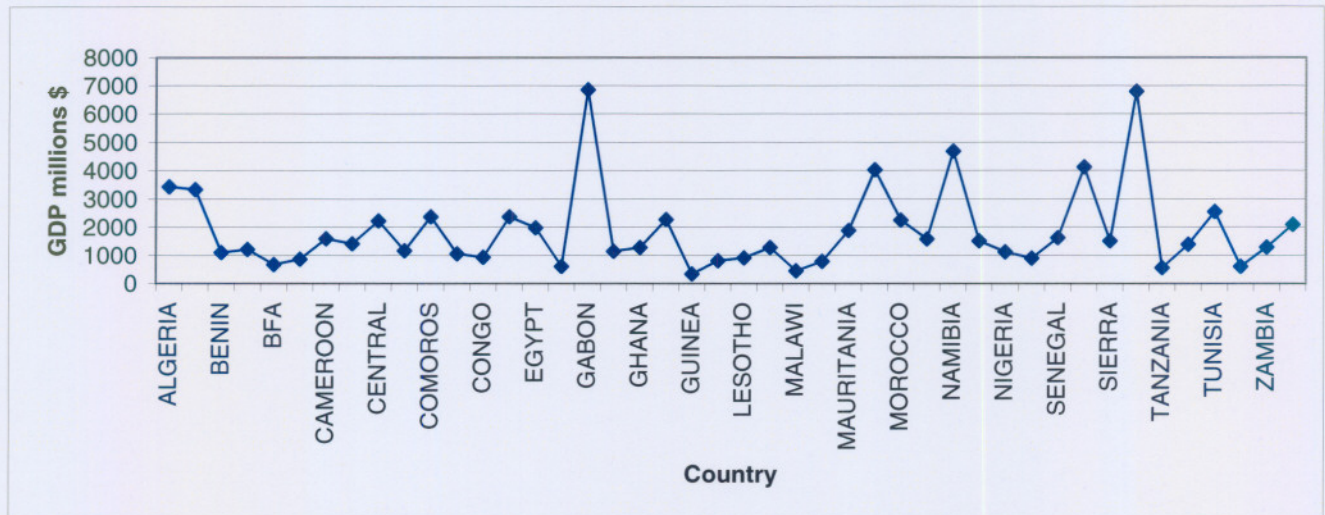
$$\mathbf{Realpcgdp = initialgdp + popgr + exportofgdp + goveffect + asia\_dum + lit70 + politstab + account + regburd + govshare + fdi + landlock + tropics + u}$$

Where real per capita GDP growth is determined by the initial GDP at the beginning of the period 1965 (*initialgdp*), population growth rate (*popgr*), export as a percentage of GDP (*exportofgdp*), government effectiveness index, the Asian dummy, the adult literacy rate (*litr70*), political stability index (*politstab*), accountability (*account*), regulatory burden (*regburd*), government consumption as share of GDP (*govshare*), the average amount of foreign direct investment (*fdi*), dummy for landlockedness (*landlock*), dummy for tropics (*tropics*) and the error term (*u*) for anything the model does not explain.

The variables can be motivated as follows, with cross-reference to other chapters:

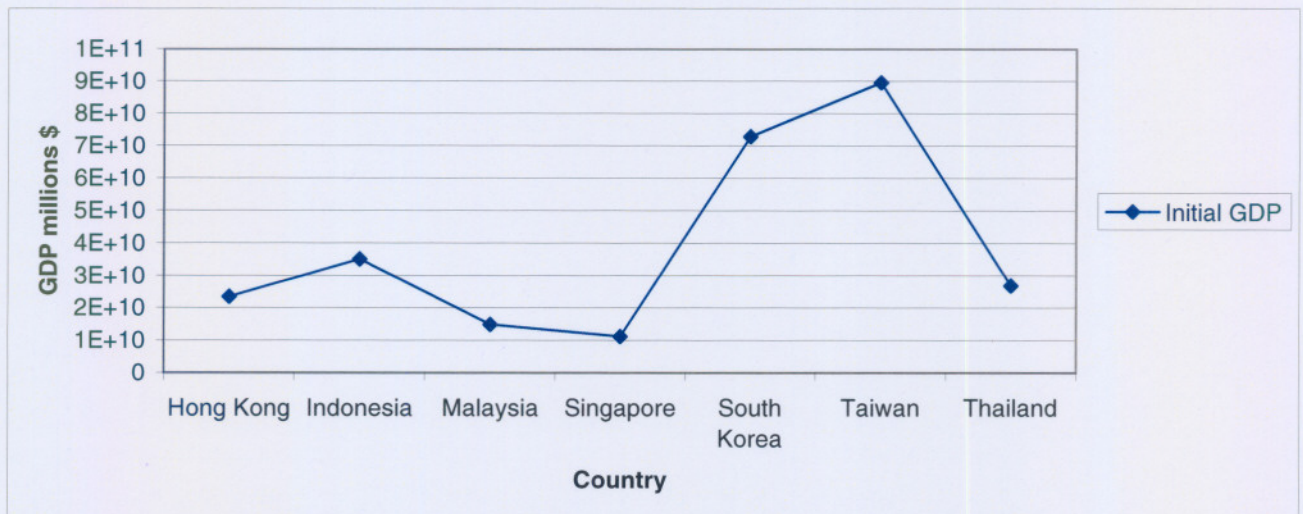
- *Initial GDP*

**Figure 5.1: Initial GDP for selected SSA countries**



Source: Penn World Tables Version 6.1

**Figure 5.2: Initial GDP for selected East Asian countries**

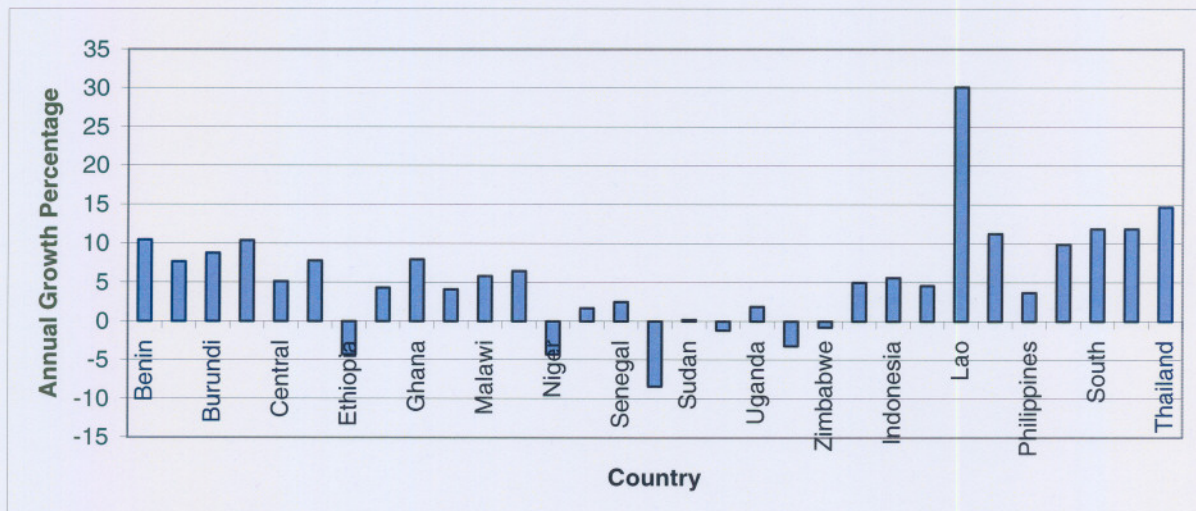


Source: Penn World Tables Version 6.1

In figure 5.1 and 5.2, it shows the different Initial GDPs of several SSA and East Asian countries respectively and following Barro's (1997) conclusion - that for given values of other explanatory variables, the neoclassical model predicts a negative coefficient on initial GDP, which enters in the system in logarithmic form – this study also expects a negative coefficient. The study refers to chapter 3.4.4 and chapter 4.2.1.2 as well as 4.4, where it states that the growth rate tends to be high if the starting per capita GDP is low in relation to its long-run or steady-state position; that is, if an economy begins far below its own target position.

- *Export Growth Rate*

**Figure 5.3: Average Annual Growth Rate of selected countries, 1965-1992**

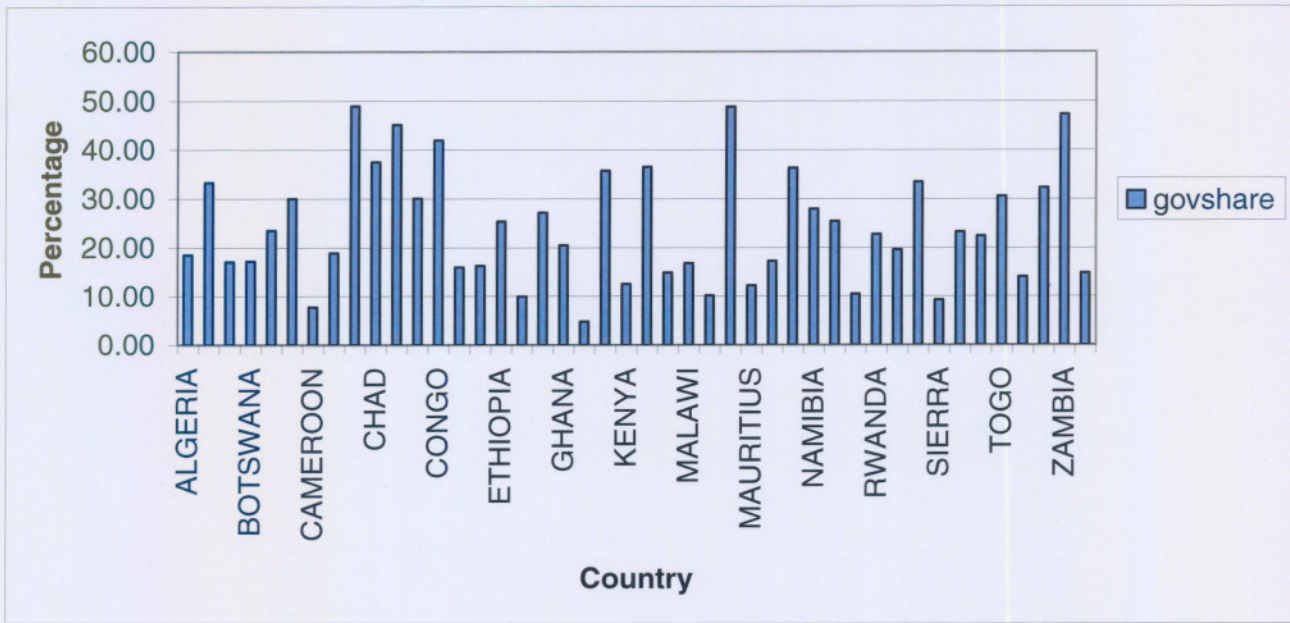


Source: Penn World Tables Version 6.1

In figure 5.3, it can be seen SSA countries have a lower export growth rate than do East Asian countries. Following the study done by Herrera, Perry and Quitero (2000), which stressed the importance that terms of trade shocks (measured as export growth) were the reasons for several countries slowdown in growth, it is the expectation of this study to find a positive effect on growth if alternative risk-hedging instruments is devised, such as commodity-priced indexed debt instrument which would have the desirable property of the country paying less in bad times and more in good times. Thus it is expected to find a positive relationship between export growth rate and real per capita GDP (See chapter 2.2.2, chapter 3.4.2 and chapter 4.3).

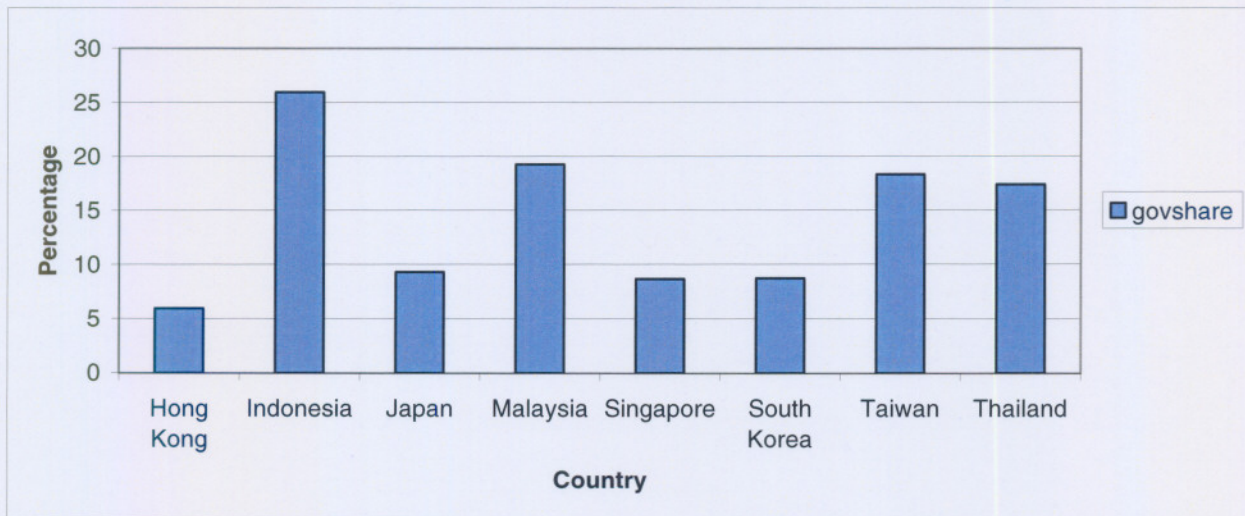
- Government consumption

**Figure 5.4: Government consumption as share of GDP for selected SSA countries, 1970-1990**



Source: Penn World Tables Version 6.1

**Figure 5.5: Government consumption as share of GDP for selected East Asian countries, 1970-1990**

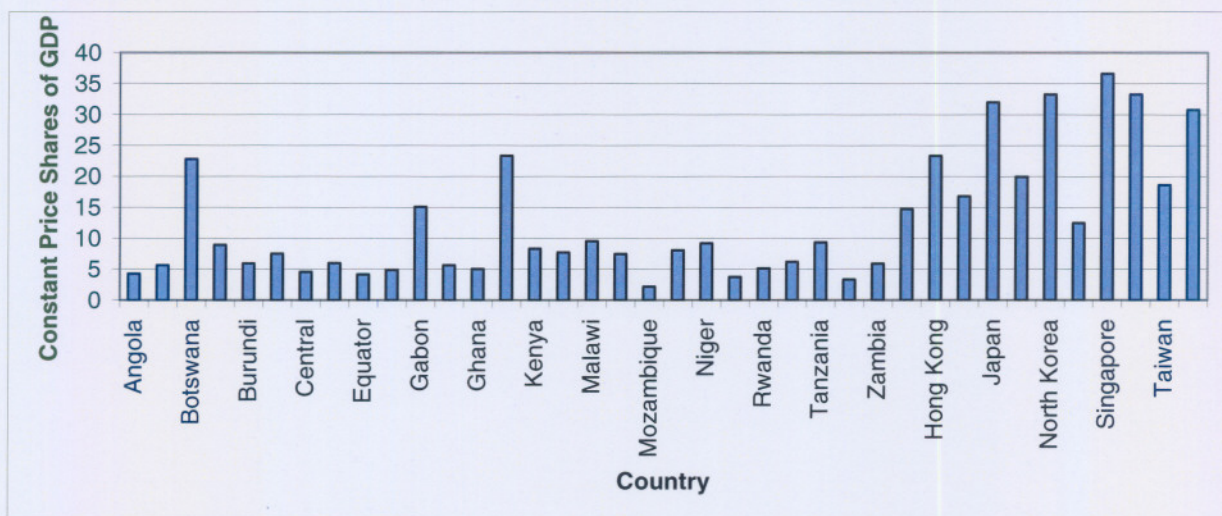


Source: Penn World Tables Version 6.1

The quality of government macro-economic policies is reflected in government consumption. Government consumption as proportion of GDP is used to proxy the effect of government fiscal policy and intervention<sup>15</sup> in the economy. Barro (1991) uses this measure and finds it to be negatively correlated with economic growth. The reasons for a postulated negative relationship between government intervention / consumption and growth can be through a crowding-out effect (of private consumption and investment), through giving rise to a mounting debt burden, taxation and/or inflation that again depresses private investment and productivity. As can be seen from figures 5.4 and 5.5, SSA's government consumption as share of GDP is much higher than East Asian countries.

- *Investment*

**Figure 5.6: Constant Price Shares of GDP for selected countries, 1988**



Source: Penn World Tables Version 6.1

In figure 5.6, it can be seen that the East Asian countries has a much higher constant price share of GDP than do the SSA countries. A higher saving rate raises the steady-state level of output per effective worker and thereby raises the growth rate for a given starting value of GDP. Some empirical studies of cross-country growth have also reported an important positive role for the investment ratio; see, for example, DeLong and Summers (1991) and Mankiw, Romer and Weil (1992). A positive coefficient on the contemporaneous investment

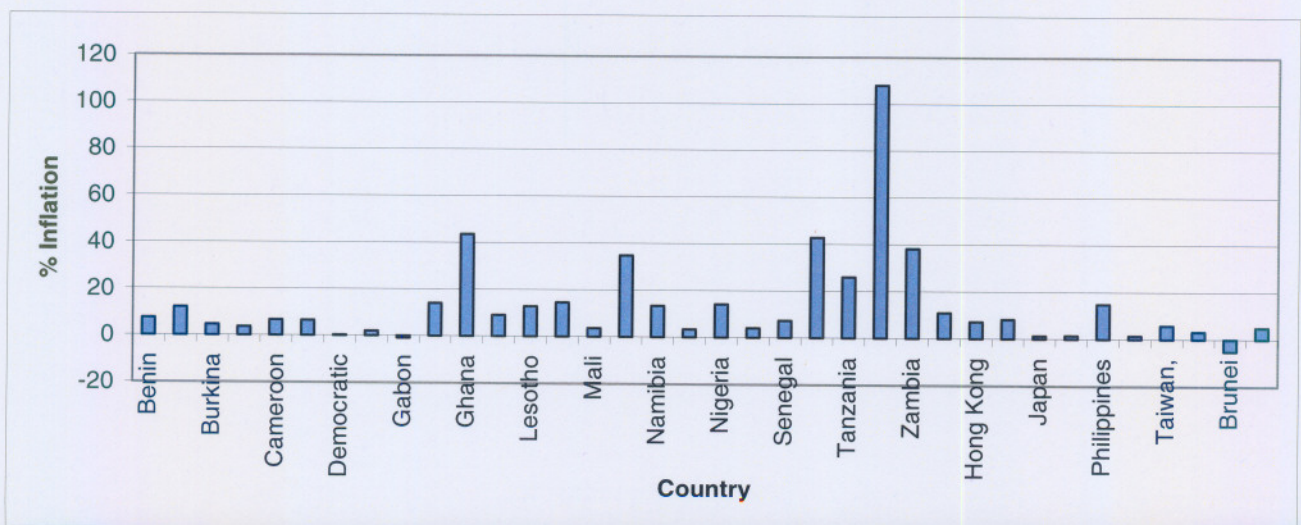
<sup>15</sup> Government interference in the fast-growing countries of East Asia was substantial, but as pointed out by Stiglitz (2001) this interference took the form of industrial policies, not through excessive government spending and taxation.

ratio in a growth regression may reflect the positive relation between growth opportunities and investment, rather than the positive effect of an exogenously higher investment ratio on the growth rate. This reverse effect is especially likely to apply for open economies. A reasonable interpretation of the results is that some policy variables – such as better maintenance of the rule of law, lower government consumption and price stability – encourage economic growth partly by stimulating investment (Barro, 1997).

In the World Bank Policy Research Report on Building an inclusive World Economy (2002), to strengthen the potential benefits of openness, developing countries need a good investment climate in which firms can start up and prosper. A good investment climate is particularly important for small and medium enterprises that will create the bulk of new jobs. Elements of a sound investment climate include efficient but streamlined regulations for entry and exit, a healthy financial system, good infrastructure and good economic governance (contract enforcement, tax administration, safeguards against corruption). Many successful globalizing developing countries are using the international market for services to strengthen the investment climate. Foreign trade and/or investment can help develop financial services, accounting, telecommunications, power, ports, custom administration and other critical areas of infrastructure. Thus, this study predicts a positive relationship between investment and real per capita GDP growth (See chapter 2.2.5.2, chapter 3.4.1 and chapter 4.2.1.2).

- *Inflation*

**Figure 5.7: Annual Rate of Inflation for selected countries**



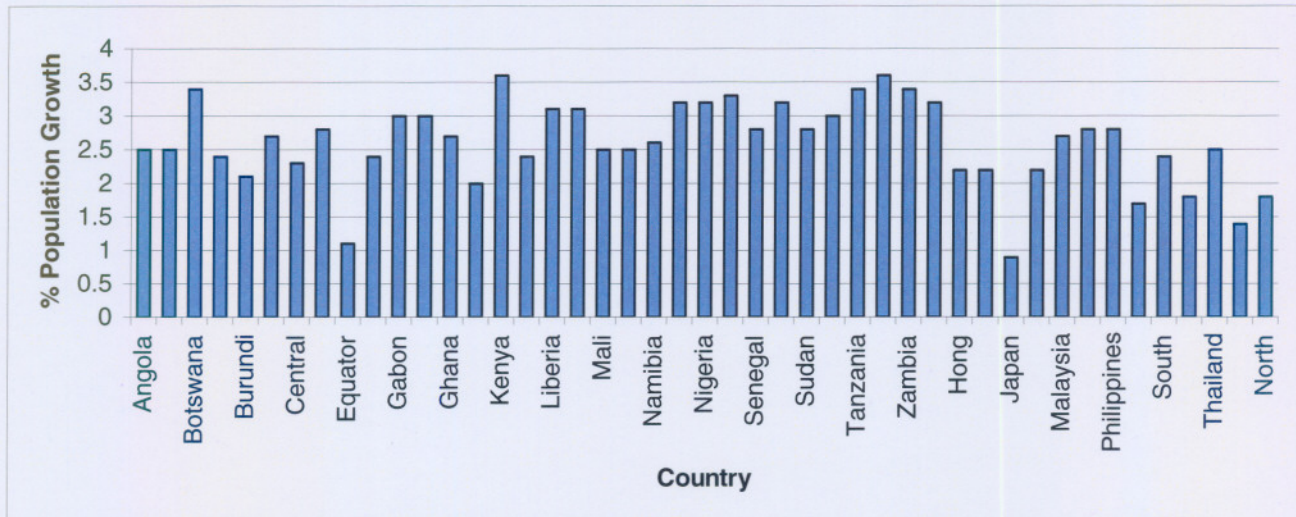
As can be seen for figure 5.7, except for the Philippines, the SSA countries has a much higher rate of inflation than do the rest of the East Asian countries. Following the study of Flassbeck (2002) on exchange rates, the following is noted. The exchange rate is neither a domestic economic policy tool nor a reliable market price. Exchange rate changes should be the necessary concomitant of diverging inflation rates. This is the only position on exchange rates consistent with the widespread conviction that inflation is neither necessary nor permanently exploitable in modern economies. It is the extent to which countries differ concerning their ability to avoid inflation – the change in the value of money over time – that the need changes in the value of money in space. This is not to repeat the outdated naïve version of the purchasing power theory. Exchange rates changes along the lines of PPP should be an economic policy target, just as low inflation rates are.

The only way out for high-inflation countries not members of a monetary union, is to resort to controls on short-term capital flows. If they are able to avoid destabilizing inflows and outflows either by taxing them or by directly limiting their size, the hardest choices and misallocations caused by erratic exchange rate changes can be avoided. But resort to controls does not replace the search for an appropriate exchange rate system. If a high-inflation country opts – despite capital controls – for free trade of goods with its neighbors, it has to find ways to preserve its competitive position, i.e. how to devalue, or not to revalue its currency (Flassbeck, 2002).

In all respects this means returning – as in the Bretton Woods system – to a mix of adaptable exchange rates in combination with controls in the event of a crisis. Since the most problematic sector of the financial market “casino” is by far the foreign exchange market, the large industrial countries in cooperation should develop a “monitoring” and “early warning system” with the emerging nations (Flassbeck, 2002). It is expected to find a negative relationship between inflation and real per capita GDP growth (See chapter 2.3.5 and chapter 3.4.2).

- *Population Growth Rate*

**Figure 5.8: Population Growth Rate (%) for selected countries; 1960-1990**

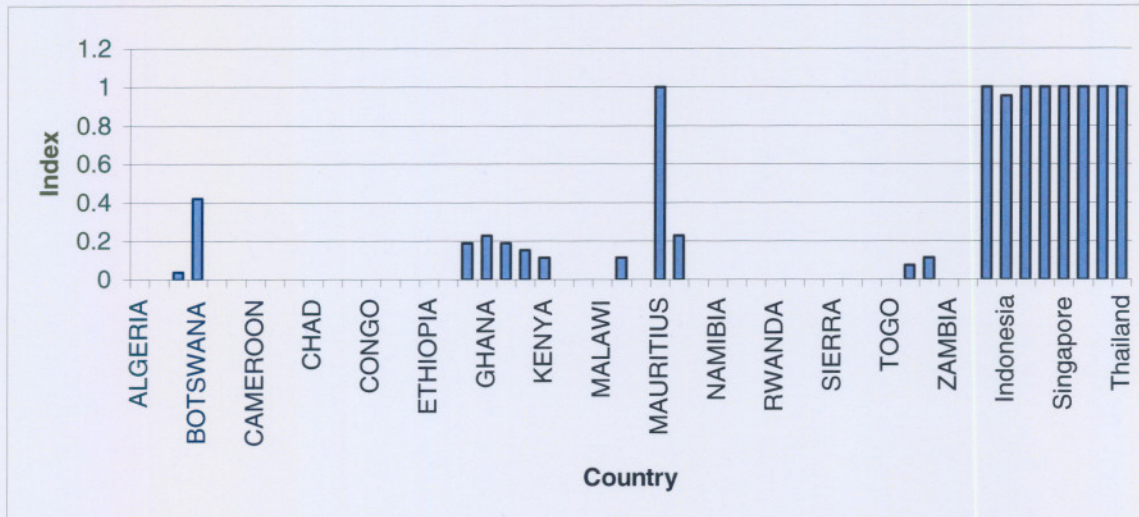


Source: Penn World Tables Version 6.1

As can be seen from figure 5.8, population growth rate is overall higher in SSA countries than is the case in East Asian countries. Foreign aid has a positive effect on growth in a good policy environment. Countries with good policies and significant amounts of aid (3-7% of GDP) perform very well, but donors direct their aid to countries with a small population relative to their income. Thus, the lower the population growth rate, the more aid you receive. Thus it is expected that population growth rate will have a positive relationship with real per capita GDP growth, because the fewer people in a country, the higher real per capita GDP (Barro, 1991). (See chapter 2.3.3, chapter 3.4.1 and chapter 4.2.2.1).

- *Openness*

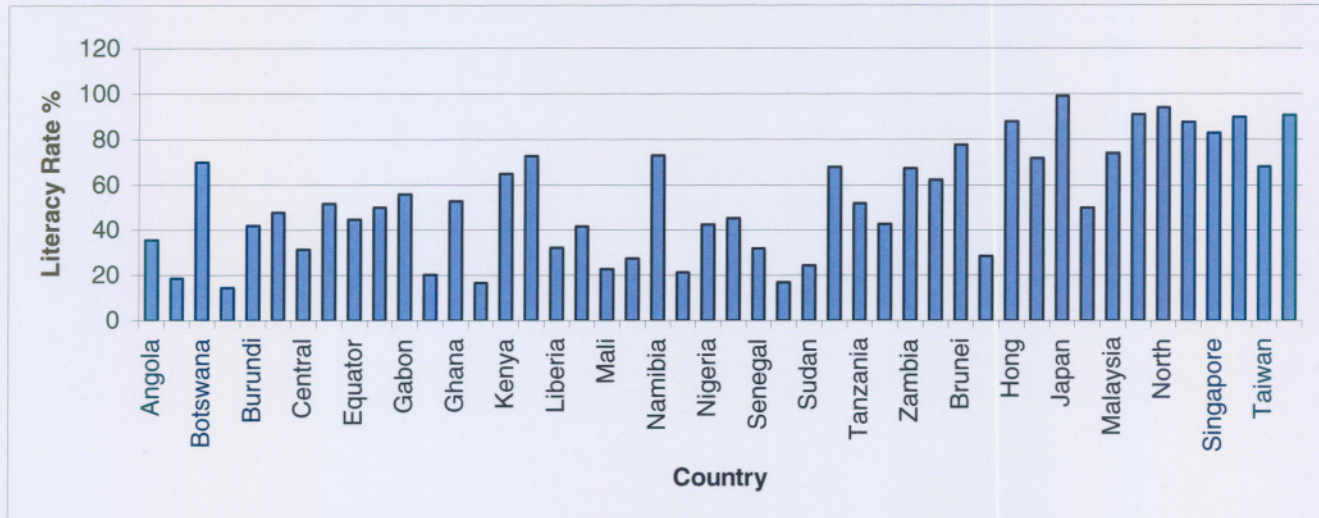
**Figure 5.9: Degree of Openness as measured by Sachs and Warner for selected countries; 1970-1990**



If the study takes a look at the openness indicator as measured by Sachs and Warner (1995), it will be noticed that the East Asian countries is considered far more open than the SSA countries (as 1 is considered very open and 0 not open at all). Sachs and Warner (1995) claim that liberal trade policies cause growth. They developed a measure of openness based on tariff rates for capital equipment, the extent of non-tariff barriers, and the degree of distortions in the foreign exchange market (proxied by the parallel market premium). Dollar (1992) creates an index of the price level adjusted for factor endowments, arguing that high prices for tradable goods reflect high levels of import protection and finds a significant effect on growth. Frankel and Romer (1999) find that openness as measured by the share of trade in income is robustly related to long-term growth. This is supportive of models in which access to markets accelerates growth and thus has a positive relationship with real per capita GDP growth (World Bank, 2002). (See chapter 2.2.3 and chapter 3.4.2).

- *Adult Literacy Rate*

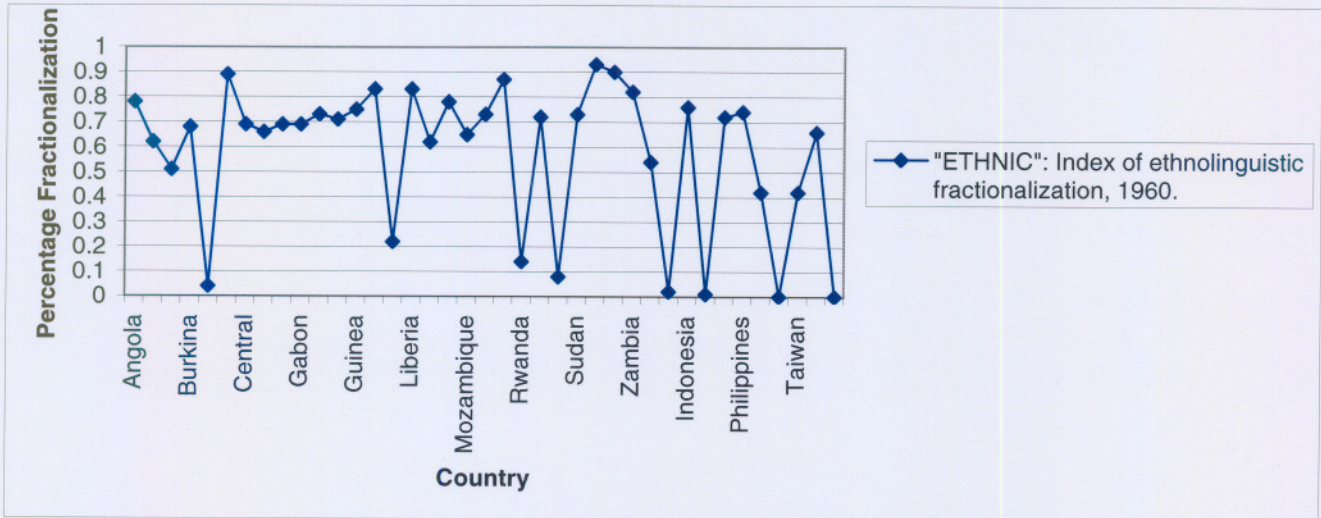
**Figure 5.10: Adult Literacy Rate (%) for selected countries; 1980**



When looking at figure 5.10, it can be seen that all the East Asian countries, with the exception of Burma with 28.8 percent and Lao Peoples Republic with 50 percent, has an average adult literacy rate above 50 percent. In contrast to this, if one looks at the SSA countries, there are only a few significant countries with an average above 50 percent. Showing that East Asian countries are generally more adult literate than the SSA countries. Integration with the global economy increases the return to education. This can be positive, provided that there is a sound education system providing services to all. The rapid growth in new globalizing economies generates resources that can be used to strengthen the delivery of education and health services, so that the poor can participate in this growth and benefit from it. A good education system that provides opportunities for all is critical for success in this globalizing world (World Bank, 2002). Thus leaving the study to expect a positive coefficient. (See chapter 2.3.1, chapter 3.4.1 and chapter 4.2.2.2).

- *Ethnic*

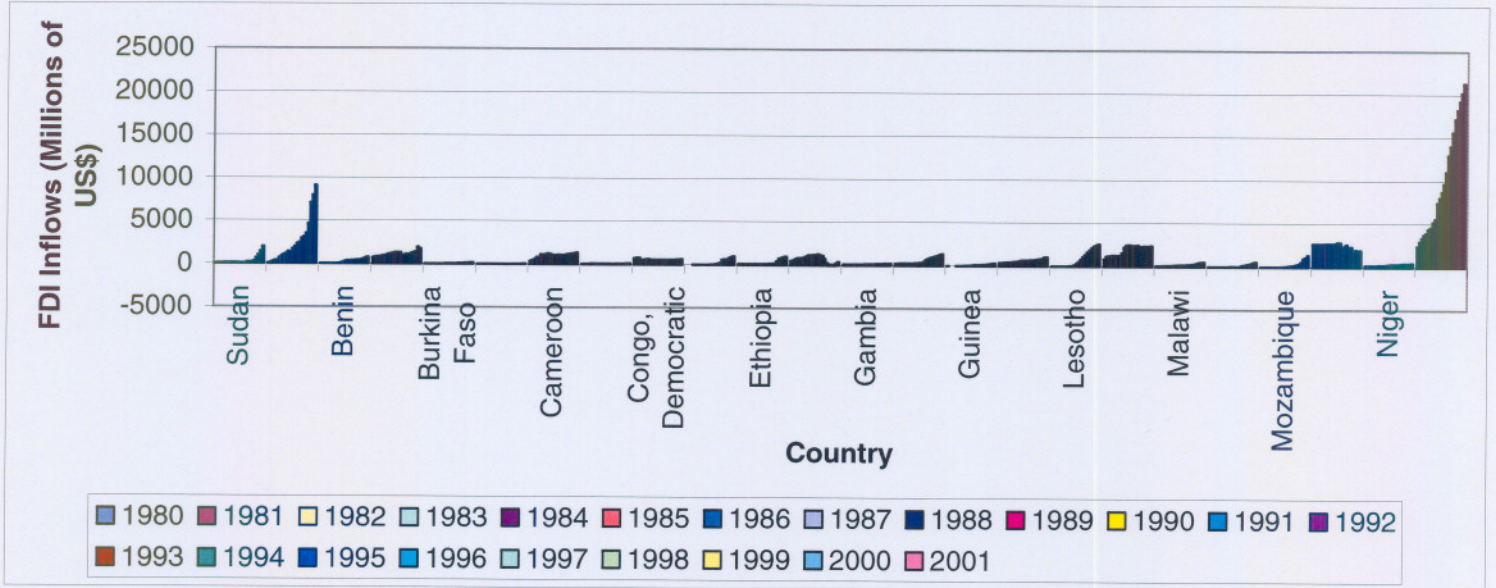
**Figure 5.11: “ETHNIC”: Index of ethnolinguistic fractionalization; 1960**



In figure 5.11, it can be seen that more of the SSA countries are considered to be fractionalized than East Asian countries. Some observers, such as Friedman (1962), believe that political and economic freedom is mutually reinforcing. In this view, an expansion of political rights – more “democracy” – fosters economic rights and tends thereby to stimulate growth. But the growth retarding aspects of democracy have also been stressed. These features involve the tendency to enact rich-to-poor redistributions of income (including land reforms) in systems of majority voting and the enhanced role of interest groups in systems with representative legislatures (Barro, 1997). Following on Barro’s conclusions, a positive relationship is expected from coups d’etat (the number of extra constitutional or forced changes in the top government elite and/or its effective control of the nation’s power structure in a given year, unsuccessful coups are not counted) and negative relationships from the dummies civil war and ethno linguistic fractionalization. (See chapter 2.3.1).

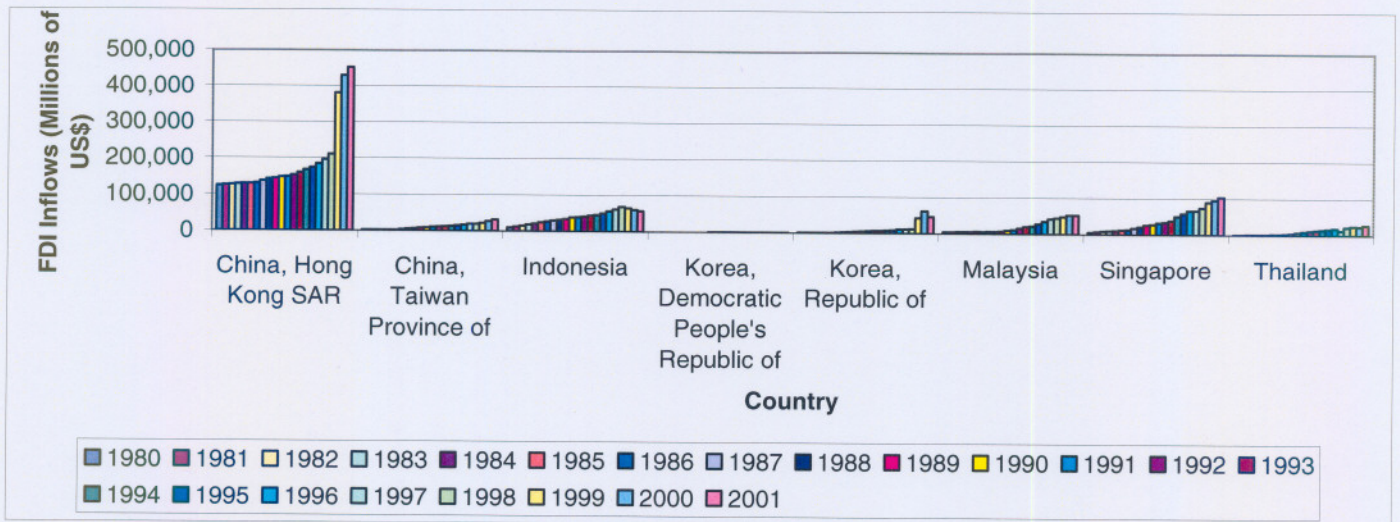
- *Foreign Direct Investment*

**Figure 5.12: FDI inflows into selected SSA countries; 1980-2001**



Source: UNCTAD (World Investment Report, 2001)

**Figure 5.13: FDI inflows into selected East Asian countries; 1980-2001**



Source: UNCTAD (World Investment Report, 2001)

FDI inflows are defined as the inflows of the FDI that comprise of capital received from a FDI enterprise by a foreign direct investor. There are three components in FDI: equity capital, reinvested earnings and intra-company loans (Unctad, 2001). As can be seen from the above two figures, FDI flows much more in terms of millions of dollars to the East Asian countries than to the SSA countries.

FDI is an amalgamation of capital, technology, marketing and management. Transnational corporations (TNCs) undertake FDI to enhance their competitiveness. By spreading activities over different locations, the TNCs capture new markets. Setting up local facilities allows them to serve their customers better. FDI is also used to acquire new resources and skills abroad. In host countries, labour is combined with domestic and foreign owned physical capital in the production process (Krugell, 2001).

FDI affects growth directly by increasing the stock of physical capital – new inputs supplement those in the production process. Investment drives capital accumulation, which drives growth. FDI affects growth indirectly through effects concomitant with greater openness: technology spillovers and knowledge transfers. Technological spillovers from TNCs promote technological upgrading in the host country. This leads to process innovations whereby old goods are produced using newer technologies. FDI induces human capital development through knowledge transfers (Krugell, 2001).

The existing stock of knowledge in the recipient economy is augmented through labour training and skill acquisition and diffusion. Knowledge transfers may also take the form of alternative management and organizational arrangements. Technology and human capital have productivity spillover effects by which FDI leads to increasing returns to domestic production. This promotes growth in the long run (Krugell, 2001).

**Table 5.2 The Determinants**

Potential Determinants	Chapter discussed	Data	Variable name	Source of data
<b>Initial Endowments</b>				
Natural Resources	Chapters 2,3,4	Initial GDP 1980	initialgdp	World Development Report, 1992
Human Capital	Chapters 3,4	Adult Literacy Rate 1985	adultlit	Human Development Report, 1994
Human Capital	Chapters 3,4	Population Growth Rate 1960-1990	popgr	Human Development Report, 1994
ODA	Chapters 2,4	ODA per capita 1989	odapc	Human Development Report, 1995
Foreign Direct Investment	Chapters 2	FDI per capita 1980	fdi	World Development Report, 1992
<b>Policies</b>				
Inflation	Chapters 2, 4	Annual Rate of Inflation 1980-1989	infla	World Development Report, 1994
Total External Debt	Chapter 2	Millions Of US\$ Debt 1980	exdebt	World Development Report, 1992
Export Growth Rate	Chapters 2,3,4	Average Annual Growth Rate 1980-1992	exportgr	World Development Report, 1994
Investment	Chapters 2,3,4	Constant Price Shares of GDP 1989	invest	World Development Report, 1995
Openness	Chapters 2,3,4	Current Prices 1980-1992	ope	Human Development Report, 1996
Regulatory Burden	Chapters 2,3	Average	regburden	Kaufmann, Kraay and Zoido-Lobaton, 1999
Political Stability	Chapters 2,3	Dummy Variable	politstab	Kaufmann, Kraay and Zoido-Lobaton, 1999
Accountability	Chapters 2,3	Dummy Variable	account	Kaufmann, Kraay and Zoido-Lobaton, 1999
Government Effectiveness	Chapters 2, 3	Dummy Variable	goveffect	Kaufmann, Kraay and Zoido-Lobaton, 1999
<b>Institutions</b>				
Coups d'Etat	Chapters 2,3	Dummy Variable	coups	Easterly and Levine Data Set, 1997
Civil War	Chapters 2,3	Dummy Variable	civwar	Easterly and Levine Data Set, 1997
Ethnic	Chapters 2, 3	Indexed from 1960 Dummy Variable	ethnic	Easterly and Levine Data Set, 1997
Landlockness	Chapter 2	Dummy Variable	landlock	Gallup, Sachs and Mellinger, 1999
Tropics	Chapter 2	Dummy Variable	tropics	Gallup, Sachs and Mellinger, 1999

In the above table, all the potential determinants are listed. It also shows where in the study the determinants were discussed and also what sources were used to retrieve the data. The data is classified under three sub-categories namely; Initial endowments, Policies and Institutions. The

study did this, because it is the feeling of this study that these three categories are the prime influencing factors.

## 5.4 Regression Results

### 5.4.1 The Africa Dummy

In Table 5.3 the study presents four regressions that purport to explain SSA growth performance. In each, the dependent variable is the average growth rate of per capita GDP over two decades or longer. These regressions use a near-global sample of countries, and impose the same specifications for all regressions save for the inclusion of regional dummies as level or interaction effects.

**Table 5.3: The Africa Dummy in Four Growth Regressions**

Variable	Barro-Lee	Easterly-Levine	Sachs-Warner	Collier-Gunning
<b>Period covered</b>	1965-85	1960-89	1965-90	1960-89
<b>Policies</b>				
Investment/GDP	0.078 (0.028)			0.0013[4.72]
Africa Inv/GDP				0.00043[2.48]
Openness	0.033(0.0087)	0.020[4.63]	8.48[3.41]	0.0184[5.21]
Log GDP Openness			-0.77	
Africa Openness				0.0111[1.88]
Institutions			0.28[3.49]	
Financial depth		0.015[2.54]		
Fiscal stance	-0.131	-0.088	0.12[5.34]	
<b>Initial Conditions</b>				
Initial Income	-0.026	0.066[2.69]	-1.63	
Idem squared		-0.005		-0.0009
Labour force - pop			1.20[3.41]	
Landlocked			-0.58	-0.00789
ELF		-0.016		-0.0148
Male schooling	0.0090(0.0044)			
Female schooling	-0.0052			
Schooling		0.009[2.28]		0.0148[1.64]
Life expectancy	0.0712(0.0148)		45.53[2.58]	
Idem squared			-5.4	
Natural res exports			-3.28	
Social disturbance	-0.0163	-14.874		-0.000004
Tropics			-0.85	
Latin America	-0.0087	-0.017		-0.0132
East Asia	0.0040(0.0057)			
Africa	-0.0116	-0.012	0.02[0.05]	-0.0052

Source: Easterly and Levine 1997

SSA's slow growth is "explained" if it is fully accounted for by differences between SSA and other regions in the standard explanatory variables. If successful, this implies that the SSA dummy will be significant. Some regressions have found the Africa dummy to be both large and significant (e.g. Barro and Lee 1993; Easterly and Levine 1997); others eliminate it (Sachs and Warner 1997; Collier and Gunning 1997; Temple 1998), though to an extent by transferring the puzzle elsewhere. Sachs and Warner (1997) find a significant "tropics" dummy. Collier and Gunning (1997) found that the Africa dummy significant when interacted with some of the explanatory variables (as given in Table 5.3); interactions with the other variables in the regression are all significant (Easterly and Levine, 1997). This study also found the Africa dummy to be very significant. The dummy captures that one determinant which eludes economists and keeps everybody speculating about the true reasons for the East Asian "Miracle".

#### ***5.4.2 Determinants of East Asian economic growth***

The study used the following countries for its model: Burma, Brunei, Cambodia, North Korea, Hong Kong, Indonesia, Lao Peoples Republic, Malaysia, Mongolia, Philippines, South Korea, Singapore, Taiwan, Thailand and Japan. Notably East and South East Asia does not occupy such a big region, therefore there is only 15 countries to be used. The data was collected mainly from World Development Reports (1992-1996), Human Development Reports (1992-1996), the Easterly and Levine Data Set (1997), Penn World Tables Version 6.1, Kaufmann, Kraay and Zoido-Lobaton (1999), Gallup, Sachs and Warner (1995), World Development Indicators (2003) etc.

The initial regression model used all of the 15 countries to estimate which determinants had a significant impact on real per capita GDP growth, but since there was some problems in collecting the specific data required for Burma, Brunei, Cambodia, Lao, Mongolia, Philippines and North Korea it was necessary to drop them from the model.

The reason for this was that the model is only allowed a specific degree of freedom and when the data set has a lot of unfilled gaps, auto-correlation sets in. Auto-correlation is when the fault term is dependent on a previous one dragged one year. This can happen because some data sets are complete and others are not, causing auto-correlation.

What the study did then, was to drop Burma, Brunei, and the rests. Then another problem arised. Because the study was left with only 8 countries and the degree of freedom was 6, it meant that no more than 5 independent variables could be regressed against the dependent variable, real per capita GDP growth rate, at one time. Because this was a problem, which meant that the results of the regression analysis would be compromised, it was decided to select all the countries (East Asia as well as SSA) and regress them together and thus adding a dummy variable for SAA.

#### ***5.4.3 Determinants of Sub-Sahara African economic growth***

The study used the following countries in the regression model: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Democratic Republic of Congo, Cote D'Ivoire, Egypt, Equator Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe. As can be seen, because Sub-Sahara Africa is such a big region, there was no problem with finding enough countries for the regression model. The data was also primarily collected form World Development Reports (1992-1996), Human Development Reports (1992-1996), the Easterly and Levine Data Set (1997), Penn World Tables Version 6.1, Kaufmann, Kraay and Zoido-Lobaton (1999), Gallup, Sachs and Warner (1995), World Development Indicators (2003) etc.

In the SSA regression model there were fewer problems. Data was more readily available as was not the case for East Asia, but there was still a few countries such as Benin, Angola, Niger and a few others, where gaps in the data set was seen. The degree of freedom was 16 and that allowed for 9 independent variables to be regressed against the dependent variable real per capita GDP growth rate. But since there was the above-mentioned problem with East Asian country data, SSA was thrown together with East Asia and a dummy for Africa was inserted.

Since the study cannot incorporate all the determinants as set out in table 5.2 – the reason being multicollinearity can exist between determinants – the study will use a proxy of determinants in the regression analysis.

For the estimation of the growth equations a number of estimation methods are used, in order to address the most important shortcomings of cross-section analyses based on OLS. To illustrate the difference estimation method makes to results, the standard OLS cross-section results are first reported.

#### ***5.4.4 OLS Cross-section and Random and Fixed Effects Panel Data Regressions for GDP per capita growth***

In the cross-country growth model interest lies in determining how policies, institutions and geography affects economic growth once unobserved heterogeneity has been controlled for. One serious limitation is that OLS may produce biased and inconsistent estimates since they may not take into consideration the endogeneity of some of the regressors and may suffer from omitted variable bias. To overcome these shortcomings, panel data techniques are advised. Using panel data allows one not only to investigate dynamic relations, but also to control for unobserved cross-section heterogeneity. A fixed effects estimator will also be used to estimate the regression. The Hausman specification test will also be done, to see whether or not the null-hypothesis can be rejected. The single year / point OLS regression results, the fixed effects and the random effects using STATA 8.0, is reported in table 5.4.

The model explains 98% of the variance in per capita GDP growth. Under policies, initial GDP, population growth rate and exports, as a percentage of GDP was all of the expected signs. This shows that initial GDP is negatively linked with GDP per capita growth and thus sustains the theory that the higher the initial GDP, the slower the economic growth will be in the future. The significant negative coefficient on initial GDP per capita implies conditional convergence.

Population growth rate is also negatively linked since the more people in the country, the less will be their individual GDP because it has to be divided between a whole lot more of people. Exports as a percentage of GDP is positively linked, because exports will obviously boost your economic growth and ensure the country of comparative advantage.

Under institutions, government effectiveness and accountability are also of the expected signs. Government effectiveness is negatively linked, since incompetence in the government will surely stifle the country's economic growth since they will not know how to encourage the factors which leads to economic growth.

The Asian dummy is also very significant. The dummy was brought in, because as mentioned above, there was a problem with the amount of East Asian countries that could be used for the regression analysis. The dummy indicates that there are one or more determinants, which caused East Asia's economic growth, which could not be caught in the analysis. This can either be because the study failed to identify the potential determinant(s) or simply because the determinant(s) is/are not measurable and thus not testable.

**Table 5.4: Regression Analysis Results for GDP per capita Growth**

Estimation methods	OLS		FE**		RE***	
Variables	Coef.	P>t	Coef.	P>t	Coef.	P>t
initialgdp	-1.2E-12	0.000*			-1.3E-12	0.000*
popgrowth	-0.411	0.011	-0.107	0.623	-0.233	0.103
govshare	-0.006	0.343	-0.003	0.882	-0.008	0.304
fdiofgdp	1.5E-10	0.807	2.8E-10	0.266	2.5E-11	0.898
exportofgdp	0.008	0.046*	-0.018	0.109	0.007	0.047*
accountability	0.296	0.028*			0.200	0.270
polinstability	0.182	0.212			0.175	0.347
goveffectiveness	-0.336	0.036*			-0.297	0.126
regburden	-0.266	0.107			-0.205	0.333
asia_dum	5.138	0.000*			5.456	0.000*
literacy70	-0.003	0.436			-0.005	0.305
landlockness	0.004	0.983			0.004	0.983
tropics	-0.273	0.249			-0.273	0.247
Adjusted R <sup>2</sup>	0.984		0.053		0.985	
Corr (u <sub>1</sub> , X <sub>b</sub> )			-1		0	
Prob>chi2					0	
Hausman (Prob>chi2)					N/A	

\* Significant at the 5% and at the 10 % level

\*\* Fixed Effects Estimator

\*\*\* Random Effects Estimator

#### ***5.4.5 OLS Cross-section and Random and Fixed Effects Panel Data Regressions for Exports as percentage of GDP***

The study then examined exports, seeing as this was a significant variable which came up out of the results for both GDP per capita growth and the general level of GDP per capita. OLS was

once again found to be biased, although some very good results were obtained. It was found that under policies, exports as a percentage of GDP are influenced by investment share of GDP, external debt as a percentage of GDP and FDI. This shows that the average share of investment in real GDP is positively linked to exports, as this not only brings much needed finance into the country, but also the necessary business confidence which SSA countries lack. External debt is negatively linked, since the amount of money the government spends on servicing these external debts, helps to stifle their country's exports through excessive export taxes, tariffs etc.

FDI is positive since investment in a country affects growth directly by increasing the stock of physical capital – new inputs supplement those in the production process. Investment drives capital accumulation, which drives growth. FDI affects growth indirectly through effects concomitant with greater openness: technology spillovers and knowledge transfers. Technological spillovers from TNCs promote technological upgrading in the host country. This leads to process innovations whereby old goods are produced using newer technologies. FDI induces human capital development through knowledge transfers

Under geography, landlockness and tropics were found to be significant. Landlockness effects exports negatively, since the further away you are from the nearest port/river the less inclined one will be to enter the export market since your cargo insurance and freight costs will be excessively high. Tropics are also negative because in tropical countries, convergence is conditional on their ability to achieve economies of scale – through for instance urban agglomeration, more homogeneous populations and greater integration into the world economy. Another reason is a backlog in productivity growth as well as posing inherent difficulties in agriculture and public health.

Under institutions, accountability, government effectiveness, regulatory burden and the percentage of urban population were found to be significant. For explanations on accountability and government effectiveness see 5.4.3. Regulatory burden on companies does impact negatively since it has been argued that it may influence firm size and as such the productivity of firms, given that scale effects may be important in SSA. Specifically, biases in tax policy may favor the creation of smaller firms as a way of avoiding taxes and regulations.

**Table 5.5: Regression Analysis Results of Exports as percentage of GDP**

Estimation methods	OLS		FE**		RE***	
	Coef.	P>t	Coef.	P>t	Coef.	P>t
invshare	0.561	0.022*	-0.144	0.504	0.147	0.445
landlock	12.360	0.007*			15.050	0.034*
tropics	21.627	0.000*			14.545	0.087
externaldebt	-6.1E-10	0.003*	-2.9E-10	0.060	-4.0E-10	0.004*
inflationrate	-0.149	0.074	-0.063	0.347	-0.086	0.164
fdiofgdp	2.1E-08	0.000*	8.3E-09	0.001*	1.1E-08	0.000*
accountability	-9.954	0.002*			-11.575	0.047*
goveffectiveness	8.609	0.013*			15.784	0.006*
regburden	7.063	0.034*			4.944	0.408
savings	0.143	0.191	0.824	0.000*	0.610	0.000*
urbanpopulation	0.561	0.000*	0.253	0.116	0.422	0.000*
Adjusted R <sup>2</sup>	0.745		0.321		0.700	
Corr (u <sub>1</sub> , X <sub>b</sub> )			0.037		0	
Prob>chi2					0	
Hausman (Prob>chi2)					0.066	

\* Significant at the 5% and at the 10 % level

\*\* Fixed Effects Estimator

\*\*\* Random Effects Estimator

#### ***5.4.6 OLS Cross-section and Random and Fixed Effects Panel Data Regressions for GDP per capita (Level)***

As is shown in table 5.6, it was found that the level of GDP per capita is significantly influenced by initial GDP per capita, population growth rate, FDI, savings, exports as a percentage of GDP and government effectiveness. For explanations on these determinants the study refers to 5.4.4 and 5.4.5. Since one common determinant keeps popping up, namely exports as a percentage of GDP, one can conclude that if SSA were to improve their exports as a percentage of GDP, it will be able to grow economically more faster.

**Table 5.6: Regression Analysis Results of GDP per capita**

Estimation methods	OLS		FE**		RE***	
Variables	Coef.	P>t	Coef.	P>t	Coef.	P>t
initialgdp	4.8E-09	0.000*			5.0E-09	0.000*
literacy70	-28.047	0.058*			-25.994	0.169
ethnicity	-20.418	0.077			-19.936	0.193
landlock	-157.360	0.789			-400.544	0.587
tropics	-898.162	0.164			-752.056	0.382
popgrowth	-1256.280	0.001*	-1488.495	0.000*	-1373.914	0.000*
externaldebt	-4.7E-08	0.080	-2.2E-08	0.309	-3.1E-08	0.167
inflationrate	6.182	0.573	0.544	0.962	-0.146	0.988
fdiogdp	1.0E-06	0.040*	2.0E-06	0.000*	1.7E-06	0.000*
savings	37.370	0.002*	-10.194	0.677	28.852	0.041*
exportofgdp	68.720	0.000*	74.859	0.000*	68.432	0.000*
accountability	507.645	0.350			457.429	0.528
polinstability	-448.987	0.340			-325.712	0.600
goveffectiveness	-1204.607	0.020*			-1307.516	0.049*
regburden	1104.777	0.053*			1009.955	0.176
asia_dum	-984.926	0.290			-1507.368	0.195
Adjusted R <sup>2</sup>	0.859		0.384		0.881	
Corr (u <sub>1</sub> , X <sub>b</sub> )			-1.000		0	
Prob>chi2					0	
Hausman (Prob>chi2)					0.595	

\* Significant at the 5% and at the 10 % level

\*\* Fixed Effects Estimator

\*\*\* Random Effects Estimator

## 5.5 Comparative Analysis

In this section, the study will look at Easterly and Levine's (1997) cross-country regression analysis. This is done purely for comparative reasons as well as to provide additional support for the above results.

### 5.5.1 Easterly and Levine's explanation

Easterly and Levine (1997) found in their cross-country regression to explain growth, that understanding SSA's growth tragedy requires not only an accounting of the relationship between slow growth and unfavorable country characteristics, but also an understanding of why country characteristics were so unfavorable. SSA's poor growth – and resulting low income – is

associated with low schooling, political instability, underdeveloped financial systems, distorted foreign exchange markets, high government deficits, and insufficient infrastructure. High ethnic diversity is closely associated with low schooling, underdeveloped financial systems, distorted foreign exchange markets and insufficient infrastructure. While motivated by SSA, these results are not particular to SSA. In evaluating the extent to which cross-country differences in ethnic diversity explain cross-country differences in public policies and political stability, they conducted the analysis on a broad cross section of countries. The results lend support to theories that interest group polarization leads to rent-seeking behavior and reduces the consensus for public goods, creating long-run growth tragedies (Easterly and Levine, 1997). This study also found that literacy rate, political stability, lack of FDI and thus distortions in the foreign exchange markets, insufficient infrastructure (such as distance from nearest port/river, landlockness etc.) and external debt contributes to SSA growth tragedy.

To put their results in context, they compared SSA's growth tragedy to East Asia's growth miracle. Taken together, SSA's high budget deficits, financial shallowness, substantial black market exchange rate premiums, high political instability, weak infrastructure, and low human capital account for 2.6 percentage points of the 3.4 percentage point differential between East Asia and SSA (Table 5.7). Although these factors appear to explain most of the East Asia-SAA growth differences, they are offset by one factor that was in SSA's favor. SSA's income at the beginning of each decade was much lower than East Asia's. This convergence effect predicts that SSA should have grown 1.1 percentage points faster than East Asia, so that on net, the non-ETHNIC explanatory variables account for 1.5 percentage points (2.6-1.1) of the 3.4 percentage point growth differential. The non-ETHNIC variables account for about two-fifths of the growth difference (Easterly and Levine, 1997). This is precisely what this study also found. In figures 5.1 and 5.2 it can clearly be seen that SSA's initial GDP was much lower than that of East Asia, meaning that SSA should have grown economically much faster than East Asia.

The direct effect of ETHNIC on growth is relatively modest. The direct effect explains an additional 0.2 percentage points of the growth differential. The indirect effect of ETHNIC on growth: ETHNIC helps account for long-run growth differences by explaining public policy decisions. ETHNIC is 0.74 in the 27 observations for the SSA group included in the sample and 0.53 in the 19 observations for the East Asia group. They found that ETHNIC indirectly accounts for about 28 percent of the 2.6 percentage point growth difference attributable to political/policy

indicators. When they included the direct effects of ETHNIC, ETHNIC alone explains about one percentage point of the 3.4 percentage point East Asia-SSA growth differential.

**Table 5.7: Decompositions of Growth Differentials between SSA and East Asia**

	SSA - East Asia growth differential accounted for this variable	% of difference in each variable explained by ETHNIC	Growth differential implicitly explained by ETHNIC through variable
<b>Political/policy indicator RHS variables:</b>			
Log schooling	0.50%	43%	0.20%
Assassinations	0.00%	3%	0.00%
Financial depth	0.30%	21%	0.10%
Black market premium	0.80%	13%	0.10%
Fiscal surplus/GDP	0.50%	11%	0.10%
Log telephones per worker	0.50%	60%	0.30%
(1) Total effect through political/policy indicator RHS variables on growth	2.60%	28%	0.70%
ETHNIC - Soviet	0.20%		0.20%
(2) Joint effect of all policy indicator and ETHNIC RHS variables	2.80%	34%	1.00%
Convergence effect	-1.10%		
(3) Joint growth effects of all RHS variables	1.70%	56%	1.00%
Residual unexplained differences of which:	1.70%		
Africa dummy	1.30%		
(4) Actual per capita growth Differential, East Asia-Africa	3.40%	28%	1.00%
Ethnic diversity:			
Africa: 0.744			
East Asia: 0.527			

Source: Easterly and Levine (1997)

## 5.6 Summary

In chapter 1 the study identified the determinants of economic growth in East Asia between 1960 and 1990. Consequently, the study completed the objective of testing these determinants in explaining SSA's economic growth in this chapter.

As was expected, all the independent variables that were used in the quantitative analysis had the expected coefficient. The Initial GDP had a negative coefficient. The export growth rate was positive because the more your exports grow so does your real per capita GDP. Population growth rate is negative because the less people you have, the more is your real per capita GDP. Adult Literacy Rate is positive because more educated people are more able to run a country's economic environment, make better decisions and can help their own country to become more competitive with such as high-skilled labour and Research and Development. Investment in infrastructure (roads, ports and telecommunications) can help to significantly reduce inventory levels (and thus the cost of doing business), thus making the country more competitive. Foreign direct investment was also positive, as this helps to enhance competitiveness and acquire new skills and resources abroad. The various institution policies such as government effectiveness, accountability, political stability and regulatory burden were all positively correlated. Landlockedness and tropics are negative since this inhibits exports and thus economic growth. The quality of government macro-economic policies is reflected in government consumption. Government consumption as proportion of GDP is used to proxy the effect of government fiscal policy and intervention in the economy. This measure is found to be negatively correlated with economic growth. The reasons for a postulated negative relationship between government intervention / consumption and growth can be through a crowding-out effect (of private consumption and investment), through giving rise to a mounting debt burden, taxation and/or inflation that again depresses private investment and productivity.

Easterly and Levine (1997) also found in their cross-country regression, to explain growth, that understanding SSA's growth tragedy requires not only an accounting of the relationship between slow growth and unfavorable country characteristics, but also an understanding of why country characteristics were so unfavorable. SSA's poor growth – and resulting low income – is associated with low schooling, political instability, underdeveloped financial systems, distorted foreign exchange markets, high government deficits, and insufficient infrastructure. High ethnic

diversity is closely associated with low schooling, underdeveloped financial systems, distorted foreign exchange markets and insufficient infrastructure.

SSA's and Asia's significant performance gap might be better explained by there being poorer institutions in SSA as measured by the Knack and Keefer (1995) index and Kaufman et al.'s (1999) 'rule of law' composite index. Recent literature has raised some doubts about the success of export-oriented industrialization in SSA, a strategy that led to astounding growth in East Asia from the mid-1980s to the mid-1990s. Wood and Berge (1997) suggested that SSA could not export manufactures because of a 'low skills to land ratio, which has caused its comparative advantage to lie in primary exports'.

Thus creating the emerging consensus in the economic development literature that SSA's overall dismal growth record is attributable in great part to the lack of sound economic policies in many of the SSA countries. What has remained unclear, however, is the relative importance of the roles of domestic versus global factors. In large part such a distinction might be considered artificial since, for instance, the impacts of internationally originating shocks can be considerably mediated by domestic policies. Nevertheless, the design and conduct of appropriate policies require that policy makers, domestic or external, understand the relative importance of these roles in order to allocate scarce resources optimally. According to Fosu (2002), 'environmental variables', which consist mostly of external forces, have been more important than 'policy' (domestic) factors in explaining economic stagnation in SSA countries. In the light of increasing globalization, understanding the role of the global setting in the growth of SSA economies has become even more pressing (Fosu, 2002).

Growth may be affected by many determinants that are wholly or largely independent of macroeconomic policy, such as climate, health, education and training, research, and so on. The determinant that is most directly affected by macroeconomic policy is investment, both public and private. Admittedly, when government expenditures are varied as part of macroeconomic policy, expenditure on health, education, and research may be affected. Neoclassical growth theory made a distinction between changes that would affect the rate of growth of output, and those that would affect only the level of output. In particular, it was held that a rise in the investment ratio alone would eventually have no effect on the rate of growth of output. In long-run equilibrium, only the rate of growth of population, and the rate of labour-augmenting

(Harrod-neutral) technical progress determined this latter rate, and these were independent of the investment ratio. But there is no value in this distinction, because investment is often needed for technical progress (as well as being caused by it).

In this light, it becomes possible for a higher investment ratio (or an increase in the productivity of investment) to cause a higher rate of economic growth indefinitely, indeed forever. In any case, an increase in the rate of investment can influence the rate of growth by moving the economy from one (growing) level of output to a higher one. Successful macroeconomic policy may, on the one hand, be identified with stabilization, that is, with minimizing the consequences of exogenous disturbances while avoiding the creation of sustainable changes in inflation by the operation of the instruments of macroeconomic policy themselves.

If stability seems to be advantageous for the long-run growth, this must mainly be because either stable growth results in a higher level of interest in relation to GNP, or because investment within a framework of stable growth of both GNP and investment is more efficient than investment with a stop-go scenario. Domestic or foreign savings must match investment. Changes in terms of trade may affect the growth of real GNP or GDP. The terms of trade do not affect real product growth directly, since this is measured at constant prices. Yet an improvement in the terms of trade should result in more profitable investment opportunities and thus be favorable for growth, raising both the level and the productivity of investment. GNP is a better measure of success than gross domestic product, since net payments to foreigners are not part of national income and do not contribute to national welfare.

The ratio of savings to GNP is a constraint on the ratio of investment to GNP (notwithstanding the possibility that investment may to some extent create savings). A rise in private savings permits higher total investment unless such a rise merely compensates for a fall in public savings as the public sector relies more on borrowing and less on taxation. Whether or not higher interest rates cause a rise in savings has been the subject of much debate and econometric investigation. The evidence on balance seems to support a positive effect, which means that higher savings stimulates higher growth.

Thus, it is the findings of this study that policies, institutions and geographical factors determine SSA's growth performance. In particular factors such as initial GDP, exports as a percentage, government effectiveness, political stability, landlockedness and tropics, external debt,

population growth rate and literacy rate. If SSA could some way improve their policies and focus on becoming more open to international trade and thus promoting their exports, it may improve their economic growth rate.

The study thus did achieve its objectives of:

- Identifying the determinants of economic growth in East Asia between 1960 and 1990
- Testing the significance of these determinants in explaining SSA economic growth between 1960 and 1990

Although many of the same determinants, which determined East Asia's economic growth were found to be significant in the SSA experience, it was also found that the African dummy were extremely significant. This means that not all the determinants, which caused East Asia's economic growth, could be identified, and thus creates an avenue for further research.

## **CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Summary**

It was the purpose of this study to identify the determinants of economic growth in East Asia over the period 1960 to 1990, and to determine whether these determinants were also relevant in explaining economic growth in SSA. The hypothesis of this study was that the determinants of economic growth in East Asia were similar to the determinants of economic growth in SSA.

In light of the hypothesis and research question, the objectives of this study was:

- To identify the determinants of economic growth in East Asia between 1960 and 1990
- To test the significance of these determinants in explaining SSA economic growth between 1960 and 1990
- To identify the possible lessons for SSA from the East Asian experience.

The first objective was achieved in chapters 2 and 3. The second objective was achieved in chapter 4 and 5. The last objective will be achieved in this chapter.

In chapter 1, it was seen that to a large extent, SSA has been bypassed by globalization. About 240 million Africans live on less than \$1 a day, have no access to safe water, and are functionally illiterate. The total GDP of SSA is a little more than that of Belgium – but, while Belgium has a population of 10 million people, SSA has a population of over 600 million people. It is evident that SSA's market is small in absolute terms.

Within the context of globalisation, one can contrast SSA's growth "tragedy" over the last three decades with the economic "miracle" of East Asia. The economic performance of eight East Asian countries – Japan, South Korea, Taiwan, Hong Kong, Singapore, Thailand, Malaysia and Indonesia – have been described as a "Miracle" because of their economies' dramatic growth. Although before the early 1980s SSA grew and was expected to keep on growing faster than East Asia these eight countries real per capita GDP rose twice as fast as in any other regional grouping between 1965 and 1990 (Bloom, 1999). In contrast, much of SSA remains in poverty with slow growth characterizing many SSA economies over the same period of time.

Given that globalization of economic and business activity is one of the most important trends in the world economy and seeing that SSA plays a minor role on the world economic stage while East Asian economies have grown rapidly, the question asked is: what lessons, if any, can SSA learn from East Asia in increasing exports of manufacturing products within the current globalizing world economy?

Despite differences over time and across countries, the growth record in SSA has generally been dismal overall over the past decades. Gross domestic product (GDP) growth was relatively high for SSA until the mid-1970s, registering an average annual rate of 5.4% during 1960-74. However, over the next two-and-a-half decades growth averaged only 2.0% per year. Similarly, on a per capita basis the average was 2.6% during the earlier period, but fell to -0.9% per year over the latter period.

With an average current account balance of -3.8% of GDP for the period 1990-96 for SSA, the need for external flows remains significant. While East Asia has been able to attract large amounts of private capital flows to finance resource gaps, SSA has failed to do the same, creating significant gaps that have had to be filled with official aid.

The greater outward orientation in East Asia is identified as one of the main causes of the difference in growth performance with SSA. Taking export performance as an example, the difference between East Asia and SSA as highlighted in Figures 1.3-1.6, shows that the value of East Asian countries exports have grown rapidly in comparison to those of selected countries from SSA.

Countries in East Asia have also upgraded their linkages with the world economy; in other words, there has been a qualitative improvement. This has included a diversification in primary exports and an upgrading into the export of primary-processed and manufactured products. In addition, particularly since 1987, East Asia also attracted large amounts of direct and portfolio investment.

Thus, there are many different explanations being offered for the growth of the East Asian economies and the lack of growth in the SSA economies. The study have analyzed various reasons and explanations.

In chapter 2, it was noticed that in the 1960s, SSA's future looked bright. On the basis of Maddison's (1995) estimates of per capita GDP for a sample of countries, during the first half of the century SSA had grown more rapidly than East Asia; by 1950 the SSA sample had exceeded the East Asian sample. In the 1950s there were uncertainties of political transition, but after 1960 SSA was increasingly free of colonialism, with the potential for governments that would be more responsive to domestic needs. During the period 1960-1973, growth in SSA was more rapid than in the first half of the century. Indeed, for this period, SSA growth and its composition were indistinguishable from the geographically very different circumstances of East Asia. Political self-determination in SSA and economic growth seemed to be proceeding hand-in-hand.

However, during the 1970s both the political and economic situation in SSA deteriorated. The leadership of many SSA nations hardened into autocracy and dictatorship. SSA's economies first faltered and then started to decline. While SSA experienced a growth collapse, nations of South East Asia modestly improved their economic performance. A good example of this divergence is the comparison of Nigeria and Indonesia. Until around 1970, the economic performance of Nigeria was broadly superior to that of Indonesia, but over the next quarter-century outcomes diverged markedly, despite the common experience for both countries of an oil boom in a predominantly agricultural economy. Since 1980, aggregate per capita GDP in SSA has declined at almost 1 percent per annum. The decline has been widespread: 32 countries are poorer now than in 1980. By 1999, SSA was the lowest-income region in the world.

Two main features characterize the current position of SSA in world trade: first, it has a small and declining share in world trade and second, its presence in world trade is largely confined to primary exports and the importation of non-primary products.

East Asia's 'miraculous' development success (in terms of equity as well as growth) has been intimately associated with the export of manufactures. By contrast, countries whose exports still consist largely of primary products most notably in SSA have done far less well. This broad correlation between export composition and development performance raises some controversial questions in the development literature, both about the causes of economic progress and about the best policies for achieving it. The question that arises from this analysis is whether SSA countries can emulate the development experience of the East Asian countries.

Doubts have been raised about the scope for other developing countries to follow East Asia down the road of export-oriented industrialization. The problem is that many of these countries, particularly those in SSA and to some extent Latin America, do not have a comparative advantage in manufacturing, because they have inadequate resource endowments. More specifically, they have too low a ratio of human resources to natural resources, or, in other words, of skill to land, which causes their comparative advantage to lie instead in primary exports.

The fast growing East Asian economies are much more open today than at their initial stages of development, when their interventionist policies could hardly be considered openness enhancing. Indeed, some have argued that it was not so much openness but capital accumulation that led to the rapid development of the East Asian countries. However, as these economies grew, the need to open up became imperative, as new markets were required to overcome bottlenecks in the economy. The most comprehensive measure of openness is that used by Sachs and Warner (1995). According to that study, an economy is considered 'open' to trade if it satisfies all of the following five conditions: (1) average tariff rates below 40%, (2) average quota and licensing coverage of imports of less than 40%, (3) a black market exchange rate premium of less than 20%, (4) no extreme controls (taxes, quotas and state monopolies) on exports and (5) not considered a socialist country. Sachs and Warner (1997) found that the 1965-90 average growth rate of GDP per capita was positively associated with openness. They also uncovered the fact that, when their measure of openness was included in their model, the SSA dummy variable became insignificant, suggesting that the most important distinction between SSA and other economies is a lack of openness.

The lack of foreign aid to SSA countries deserves a look since it is known as an exogenous factor for the lack of growth. Prospects of future aid flows to SSA remain uncertain due to budgetary pressures in many donor countries, competing claims on donor resources and changes in the ranking of strategic and economic interests, especially following the end of the cold war. The European Commission (EC), the traditional aid giver to SSA, has changed the distribution composition of ODA in favor of other regions.

Has aid to SSA been effective? The answer depends on what it was intended to achieve. As a tool of transferring resources, the results have been mixed. As a project funding gap filler, the answer

would be positive. When aid was primarily intended to bridge the gap between the country's investment target and domestic savings, it did help to bridge that gap, in gross terms. Externally derived resources, aid also bridged the foreign exchange gap in import dependent economies of SSA. But over a long period, even those seemingly positive achievements started to be put to test. Indeed, the frequent resort to project rehabilitation and SAPs in the 1980s is an adequate testimony to this conclusion. Also when a yardstick of graduation is applied, unlike in South East Asia, no country in SSA has been weaned off from aid.

The main critical deficiencies, which explain the low level of effectiveness of aid to SSA, are lack of ownership of the development agenda, poor aid coordination, deficiencies in resource allocation and budget management and proliferation of aid projects.

Total external debt for SSA increased from US\$84 billion in 1980 to US\$226 billion in 1995, with a debt service ratio of 14.5 per cent, a debt/GNP ratio of 81 per cent and a debt/exports ratio of 241 per cent. Sixteen SSA countries were categorized as unsustainable and possibly distressed. While these countries are eligible for debt relief under the HIPC (Heavily Indebted Poor Countries) initiative, the real challenge is to find more substantial and wide-ranging approaches to debt relief.

The implications of the debt burden for development in SSA are far-reaching. Many countries have to allocate considerable amounts of budgetary expenditure to external debt servicing. The debt burden is obviously enormous in relation to SSA's debt servicing capacity and has become a major inhibiting factor for the recovery of growth and exports.

Easing the burden of unsustainable debt would free government resources for more productive developmental activities, reduce transactions costs (which are a massive burden on policy-makers) and help restore macroeconomic stability and investor confidence. A dollar of reduced debt is therefore likely to be more valuable than an additional dollar of conventional aid. There is an overwhelming case that significant further reductions in the external debt of debt-distressed-low income countries would improve growth prospects in SSA, and particularly if the resources made available are truly additional.

Repeated debt rescheduling has not solved the problems and there is an urgent need to devise new and more effective ways of reducing the SSA debt burden dramatically. The adoption and implementation of Trinidad Terms, which proposed a reduction of two-thirds in the stock of official bilateral debt, should be the immediate objective of creditor governments. The HIPC initiative should be expanded, its eligibility conditions made more flexible and the completion point of the HIPC criteria advanced.

One effective mechanism for integrating SSA countries into the global economy would be for OECD countries to guarantee open markets for SSA exports and commit themselves to help reintegrate SSA into the world economy. This is particularly important for key sectors such as agriculture and textiles. This is where SSA's comparative advantage lies; yet these are the most protected markets.

SSA suffers from the following, thus causing many investors not to invest in SSA: civil strife, macroeconomic instability, slow economic growth and small domestic markets, inward orientation and burdensome regulations, slow progress on privatization, poor infrastructure, high wage and production costs.

Debates on the causes of the above-mentioned crisis have centered on two categories of factors.

- The first category comprises exogenous factors such as bad weather, deteriorating terms of trade, fluctuating international interest rates and reduced inflows of foreign aid.
- The second category of explanations emphasizes endogenous factors such as inappropriate domestic policies, including incentive structures, and the mismanagement of public resources.

The debate on the causes of slow SSA growth has offered many different explanations. These can be usefully grouped into a two-by-two matrix, distinguishing on the one hand between policy and exogenous "destiny" and, on the other, between domestic and external factors.

It has largely been argued by some that the main causes of SSA's slow growth were external, with the debate focusing upon whether external problems were policy-induced or exogenous. Especially during the 1980s, the World Bank, the International Monetary Fund and bilateral

donors came to identify exchange rate and trade policies as the primary causes of slow growth in SSA.

Recently, attention has shifted to possible domestic causes of slow growth within SSA nations, but the debate as to the relative importance of policy-induced and exogenous problems has continued. Sachs and his co-authors have attributed slow growth to “the curse of the tropics”. SSA’s adverse climate causes poor health, and so reduces life expectancy below that in other regions, which puts it at a disadvantage in development. The adverse climate also leads to leached soils and unreliable rainfall, which constrains SSA agriculture. SSA nations also appear to have more ethnic diversity than other poor nations of the world, which may make it harder to develop an interconnected economy. In contrast to the domestic destiny argument, it has been emphasized that domestic policy factors such as poor public service delivery has a significant impact. SSA governments have typically been less democratic and more bureaucratic than their East Asian and Latin American counterparts.

Weak economic growth helps explain a lower savings rate and a higher proportion of flight capital for SSA compared to the less developed nations of East Asia and Latin America. Richer countries tend to see their population growth rates drop off, so the poverty of SSA has helped to keep its birth rates high, even as compared to the world’s other less developed economies. Similarly, poverty may have increased the incidence of SSA’s numerous civil wars, as well as being a consequence of them.

It is believed that while the binding constraint upon SSA’s growth may have been externally oriented policies in the past, those policies have now been softened. In the late 1990s, the chief problem was these policies, which were ostensibly domestically oriented, notably poor delivery of public services. These problems are much more difficult to correct than exchange rate and trade policies, and so the policy reform effort needs to be intensified. However, even widespread policy reforms in this area might not be sufficient to induce a recovery in private investment, since recent economic reforms are never fully credible. Investment rating services list SSA as the riskiest region in the world. Indeed, there is some evidence that SSA suffers from being perceived by investors as a “bad neighborhood”. Analysis of the global risk ratings shows that while they are largely explicable in terms of economic fundamentals, SSA as a whole is rated as significantly more risky than is warranted by these fundamentals. Similarly, private investment

appears to be significantly lower in SSA than is explicable in terms of economic fundamentals. SSA thus seems to be treated as a meaningful category by investors.

The perception of high risk for investing in SSA may partly be corrected by the passage of time, but reforming SSA governments can also take certain steps to commit themselves to defend economic reforms. Internationally, governments may increasingly make use of rules within the World Trade Organization, and shift their economic relations with the European Union from unreciprocated trade preferences to a wider range of reciprocated commitments. Domestically, there is a trend to freedom of the press, and the creation of independent centers of authority in central banks and revenue authorities, all of which should generally help to reinforce a climate of openness and democracy, which is likely to be supportive of economic reform.

Four key results have emerged from a few micro-econometric analyses of export behavior in SSA.

- First, although manufacturing exports are low and marginal, which is consistent with the macro-story related in Wood and Berge (1997), large firms export as much as similar firms in other countries. Bigsten et al. (1999) analyzed the determinants of exporting using the panel data of 450 firms from four SSA countries over the period 1991-1995. They found that 71% of large firms export. This figure compares well with other regions, even including the USA. Using the 1992 US census of manufactures covering around 200 000 plants, Bernard et al. (2000) found that exporters are five times the size of non-exporters. While only 21% of plants export, these plants account for 60% of the output of US manufacturing .
- The second finding of particular importance is that the effect of exporting on efficiency appears to be larger in SSA than in comparable studies of other regions of the world, as reported in Clerides et al. (1998), which is consistent with the smaller size of domestic markets. Indeed, Bigsten et al. (2001) found evidence of a learning-by-exporting effects as well as self-selection of the most efficient firms into exporting. However, a similar result found in Chinese firms (Kraay, 1999) tends to suggest that the difference, if any, is between developing and industrialized countries and not between SSA and the rest of the world.

- Third, SSA exports are relatively capital intensive and unskilled labour-intensive exports are, with the exception of Mauritius, negligible. In addition, Bigsten et al. (1999) found that firm size is the single most consistent determinant of export market participation. Export performance is rather industry driven, the highly capital-intensive wood processing industry being the most export intensive in Ghana and Cameroon.
- Finally, the fourth fact is that observable skills, for example, in education and experience of the workforce, do not necessarily affect firms' exports and investment. Soderbom and Teal (2000) found that only the underlying efficiency with which the firm operates is shown to be a significant determinant of both investment and exports. Besides the often-mentioned lack of good quality micro-data for SSA and East Asian countries, comparing performance at the firm level across countries raises some serious methodological issues.

Aid fatigue and fiscal pressures in the industrial countries have made it more difficult for developing countries to attract official capital flows. In such an environment, SSA has no recourse but to tap private foreign capital to raise productivity levels necessary for sustained increases in living standards. With many East Asian and Latin American countries growing rapidly and far ahead of most SSA countries in terms of putting in place the financial infrastructure needed to efficiently absorb foreign capital, most SSA countries will have to undertake speedy policy and structural reform to attract private flows. Market discipline is likely to be severe in the initial stages, and countries that backtrack on reform will find their access to international capital limited and what is available to them will be provided on costlier terms.

Whilst in chapter 3, it was seen that explaining East Asia's success is extremely important, for at least two reasons. First, such an explanation might show the way to replicate this success in other regions of the world. Second, even if East Asia's success is not replicable elsewhere, there is an urgent intellectual need to solve the puzzle of the phenomenal East-Asian growth rates.

Eight of the nine major economies of developing East Asia (China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan China and Thailand) were among the 12 most rapidly growing economies of the world during the 1965-1990 period. Had growth rates been randomly distributed across all developing economies, there is roughly one chance in a

million that success would have turned out so regionally concentrated? The coincidence is still more remarkable if one notes Japan's performance relative to other industrial countries, and southern coastal China's relative to China's inland provinces. There is clearly something very significant about being East Asian.

No other group of developing countries has done as well in fostering growth, reducing poverty, integrating with world markets, or raising standards of living. Over the past twenty-five years, per capita incomes in the region almost quadrupled. Absolute poverty fell by about two-thirds on average, population growth rates declined rapidly, and health and education improved markedly. The first set of success stories, that of the "Asian tigers", has led to a second generation of rapidly industrializing, fast-growing economies. And now China has started a new engine of regional growth. Although often spoken of as a single group, the East Asian economies are, in fact, remarkably diverse. The region includes some of the richest and the poorest of the world's developing countries, some of the most populous and some of the least, some with a store of natural resources and some with virtually none.

Three broad theories for the East Asian miracles have emerged in previous economist literature. Neoclassical approaches have emphasized outward orientation and macroeconomic discipline. Structuralist theories have singled out government leadership in industrial policy. Finally, culturalist explanations have focused on governance and societal characteristics, as shaped by the region's Confucian traditions. In addition to these theories, a fourth mechanism is also proposed, arguing that East Asia's dynamism is at least partly the result of a contagion of regional success.

A country's development prospects are influenced by three sets of factors: endowments, policies, and institutions, as set out in the development checklist. The checklist is illustrative and must be interpreted with caution, since the categories are at times subjective and are subject to the time period considered. Nevertheless, it is useful in drawing the patterns emerging from East Asian economies. It dispels the notion that all East Asian economies share identical features; quite to the contrary, it highlights considerable diversity. The checklist also draws a strong contrast between many characteristics common to the first-generation NIEs and those of the second tier.

One source of East Asian growth has been the accumulation of factors of production. It is argued that much of the growth of income per capita in the four East Asian "tigers" can be explained by factor accumulation, including physical and human capital and increasing workforce participation

rates. Several recent growth accounting exercises have found that East Asian countries extraordinary rate of output growth was due primarily to an equally impressive rate of factor accumulation, with little due to technological progress.

Human capital investments are prominent in virtually all models of East Asian success. Universal elementary education became a norm throughout East Asia. East Asia's more advanced economies have also increased secondary enrolment rates to nearly OECD levels, and developed special programs for building technical skills.

Another important factor of production, which bears a tight relationship to economic growth, is the availability of foreign exchange. Growth in GDP per capita is closely correlated with growth in the dollar value of exports. The East Asian countries were much more successful than SSA countries in expanding their export earnings over long periods and have been able to grow more rapidly as a result

The combination of budgetary discipline and competitive exchange rate policies enabled the East Asian governments to avoid excessive accumulations of external debt. Only Korea and Indonesia became significant debtors in the 1970s and early 1980s, and both moved decisively to reduce the demand for external funds

Empirical studies have shown that much, but not all, of East Asian growth can be attributed to exceptionally large investments in human and physical capital. But the region's total factor productivity (TFP) growth rates are even more unusual than its rates of capital formation.

In a study of 87 countries, it was found that Hong Kong, Japan, Korea, Taiwan China and Thailand were within the top decile of all countries in terms of Total Factor Product growth (TFPG) rates, and that Indonesia, Malaysia, and Singapore were also significant positive outliers. The East Asian economies look more like industrialized countries than developing countries, since they derive nearly half of their output growth from TFP growth rather than accumulation. A second noticeable aspect of East Asian experience is 'hyper speed' growth. While the background rate of growth of East Asian economies is high, seldom do growth rates fall below the four or five percent range-each has also experienced periods of exceptionally fast growth, at rates reaching into double digits. These spurts have been often sustained over several years, and sometimes decades. Each spurt seems to have been associated with a powerful and often unique

'engine of growth'. Each typically increased savings and strengthened international trade and technology linkages. Each also triggered significant changes in economic structure and large slides down the experience curves of major industries.

In the early 1950s Hong Kong, Korea, Singapore, and Taiwan were all lacking in natural resources and all had ratios of arable land to population that were so low that meeting basic consumption needs was questionable. The two largest economies, Korea and Taiwan, were heavily dependent on food aid from the United States. The story of early East Asian success is much less one of favourable initial conditions than of countries turning adversity into opportunities.

From around 1960, the principal distinction between these four NIEs and most low-income countries lay in human resource development. In secondary education, for example, the East Asian economies (except Indonesia and Thailand, but including the Philippines) exceeded the average of other developing countries by many multiples. They combined this high level of education with imported technology and the return of expatriates to produce rapid productivity growth. Korea, Singapore, and Taiwan, China, produced spectacular gaps in tertiary education in one generation.

A second initial factor was that national vulnerability created the necessity of economic success. Korea was a divided country competing in a cold-war environment with a more industrialized neighbour; Taiwan, China, also felt compelled to assert its economic independence; Singapore was a city-state thrust into a competitive environment and attempting to reach nationhood; and Hong Kong was a market outpost for China. This political imperative, combined with the work discipline of societies in Korea, Singapore, and Taiwan, China, seems to have turned weak initial conditions into advantages to an extent seldom seen elsewhere.

A third initial condition was the relative equality of income in the first-generation NIEs. This factor was more of a change brought about by policy than an inheritance. Most other low- and middle-income countries were not able to achieve similar equality of income or assets. Large land reform schemes in Korea, Taiwan and China, did away with the landholding classes and made wage income the main source of advancement public housing investments in Singapore and

Hong Kong were early priorities of governments bent on maintaining a national consensus on development policies.

Fourth, governments embraced export development. This was not dictated by ideology but by realism. Small size and low incomes dictated that external markets would provide the major source of revenue for these economies. Singapore's leaders are fond of noting that their economy was too small to change international markets, so they decided to change their own economy.

Finally, export drives required domestic entrepreneurship. In Singapore, publicly owned corporations, behaving commercially, took the lead. In Korea the government had to foster the creation of firms, encouraging their growth and laying the foundation for the modern day charbon, or conglomerate. Using the Japanese model of zaibatsu and the general trading company, the Korean government was able to compensate for the apparent lack of entrepreneurship. East Asian economies have done well in monitoring each other's success and, when necessary, in borrowing one another's institutions.

Perhaps the central question in comparing the economic performance of SSA and East Asia is why, over the past three decades, East Asian governments have been more development-oriented? Political stability has certainly played a role. Park's 18-year reign in Korea, the Kuomintang's hold on Taiwan, Britain's colonial regime in Hong Kong and many more all coincided with rapid growth.

For a regime to become developmentally effective, economic development must weigh so heavily in the government's priorities that it is willing to risk political capital to achieve growth. The choice of long-run development over short-run political and personal gain manifests itself in different ways. Rent seeking is a common feature of both East Asia and SSA countries. Yet leaders in East Asia, with the notable exception of Marcos in the Philippines, have understood that growing rents require growing economies; when rent seeking threatened sound economies, the rents were curbed. In Ghana before the reforms of the 1980s and in other African countries, leaders have extracted rents without heed to sustaining growth in the economy that produces them. The result has been economic decline; much as if a renewable but limited natural resource had been overexploited.

Governments in East Asia have been able to choose economic development and reform without sacrificing regime stability and SSA regimes could do the same. Determined political leaders and well-educated officials, often with military-like discipline, combined to elevate public goals above private gain as officials interacted with businessmen to generate export-led growth.

The governments of Indonesia, Malaysia and Thailand have left development more to the market than did Korea and Taiwan. Each one of the rapidly growing economies of East Asia followed the dictates of comparative advantage. Hong Kong, Korea and Singapore, poor in natural resources and capital but well endowed with unskilled labour, based their early development strategies on labour-intensive manufactures. The export mix was not left entirely to existing endowments and market forces. Korea, Singapore and Taiwan did intervene to promote new exports. The most dramatic of these, Korea's heavy and chemical industry drive of the 1970s, probably pushed beyond the market and beyond Korea's comparative advantage at the time. These and similar interventions in East Asia may have accelerated a process that was occurring in any case, but they did not take great leaps beyond the countries evolving capabilities.

All the East Asian countries are endowed with highly productive agricultural land and other natural resources, which determined their export base during the early stages of rapid growth. These countries, not merely accepting their endowments, invested to maintain their cost advantage in traditional exports such as oil, natural gas, metals, timber, rice, palm oil and rubber, and also diversified within primary products into exports of coffee, tea, cocoa and fruit.

Industrialization was assisted by the ability of East Asian countries to utilize not only their natural resources, but also all the human resources available to them. They have actively managed their macroeconomies to establish stable and productive climates for investment; have invested heavily in infrastructure and agriculture; and acted to insulate exports from the distortions of protection and rent seeking by making inputs available to exporters at world prices, free of quantitative controls. Export growth in East Asia has come from multinational firms (especially in natural resources and electronics); from medium-sized firms producing labour-intensive goods, many owned by East Asian investors; and from agriculture. Market incentives, not government intervention, played the major role in guiding export growth.

One of the important external sources of simultaneous growth and structural transformation of the East Asian economies is found in the pan-East-Asian contiguous effects. The East Asian economies in recent decades have greatly benefited from dynamism associated with regional industrial restructuring. Industrial relocation within the East Asian region has definitely contributed a great deal to the export-oriented manufacturing boom of these economies. The response of Japanese firms, and later Korean, Taiwanese and Singaporean firms, as well as European have driven its multinationals, to rapidly shifting comparative advantage and other differential regulatory conditions within the whole East Asian region.

Economic diversification has been considered an important component of the national economic development effort in East Asia, at least since the fifties. This has involved diversification in the range of primary commodities produced as well as industrialization, including the processing of raw materials. Such diversification initiatives have often involved going beyond considerations of static comparative advantage. International specialization determined by such static comparative advantage considerations developed without any government interference, even during the colonial era. Most colonial authorities did not insist on a division of labour not justified by such considerations. Thus, for example, much raw material processing emerged under 'natural protection' — because of transport costs or physical characteristics — during the colonial period. However, new productive capabilities in which the economy concerned already enjoyed comparative advantage could not develop in such circumstances. Only government intervention through industrial policy measures could create the necessary windows of opportunity for new capabilities to be developed, thus transforming an economy's comparative advantage.

Common to successful government interventions was the pragmatism and flexibility to change course as needed. What characteristic of policymaking can be associated with such a pattern? In East Asia it seems that governments are repeatedly able to distance themselves from past policies that have failed or are no longer useful. This flexibility should not be mistaken for good luck. More often it was associated with problems or crises that led to change.

Common to East Asia's success were policies for macroeconomic stability, human resource investments, and outward orientation—quite different from what happened in most other developing regions. Because these economies to a large extent took international prices as an

ultimate guide to domestic resource allocation, macroeconomic stability was seen as central to maintenance of competition.

Economic diversification has been considered an important component of the national economic development effort in East Asia, at least since the fifties. This has involved diversification in the range of primary commodities produced as well as industrialization, including the processing of raw materials. In the area of trade policy, the governments have introduced various incentives to increase value addition to exports of traditional primary products, as well as disincentives to discourage primary product exports and encourage investments to increase value addition

In chapter 4, the study looked at the theory of economic growth and realized that the story of the quest for growth is one of discarding false panaceas and instead applying the principle that "people respond to incentives" (Easterly, 1998).

Among the false panaceas the theory has had to discard as incompatible with "people respond to incentives" are Filling the Financing Gap, Reliance on Human and Physical Capital Accumulation Alone, and Structural Adjustment without adjustment.

Instead the theory has realized that people in the private sector and public sector both respond to incentives. New theories of growth stress that private agents choose the quantity and quality of most inputs into production, and that the return to those inputs may vary depending on what other private agents are doing. Political economy theories describe how government officials respond to incentives when they choose economic policies. If incentives for the private and public sector to invest in the future are good, then growth will happen; if incentives are poor, growth will not happen. Empirical evidence on growth and policy bears out this prediction. People respond to incentives.

All of the growth models discussed in earlier sections predict that national economic policies will have a strong effect on economic growth. Government policies in the augmented Solow model with a high share of capital will affect strongly the level of income. During the transition from the old to the new level, this will imply growth effects. Policies will have a direct effect on growth in the Rebelo model in which human and physical capital accumulation responds to policy-induced incentives. In the poverty trap models, policy can raise or lower the threshold of initial income below, which a poverty trap forms. In the poverty trap models, policies also affect the rate of growth of countries that have escaped the poverty trap.

The correlations between policy and growth could be due to reverse causality from bad growth to bad policy, or the correlation could be due to an omitted third factor that affects both growth and policy. What does the growth literature say about these concerns? First, there are many theoretical models that show policy causing growth, but there is no model in the literature that shows growth causing policy. Second, the literature has used statistical methods to try to resolve causality. King and Levine 1993a use the initial value of financial depth to predict growth over the next 30 years. Levine 1998 uses the legal system as an instrument for financial depth and still finds a strong effect of financial depth on growth. Easterly, Loayza, and Montiel 1997 remove any third factors by regressing growth *changes* over time on policy *changes*, as well as instrumenting for the latter with initial values. They still find strong effects of variables such as openness and government consumption, as shown above, and other policy variables. These results support the claim that policies cause growth.

The initial excitement centered on “endogenous growth “ theories, in which the long-term growth rate was determined by government policies and other forces contained in the analysis. The first models were standard except that capital was broadened to include human components and to allow for spillover effects. In these settings, the absence of diminishing returns meant that the accumulation of capital could sustain growth indefinitely, although the rates of growth and investment might not be Pareto optimal.

Subsequent analyses argued that technological progress generated by the discovery of new ideas was the only way to avoid diminishing returns in the long run. In these models, the purposive behavior that underlay innovations hinged on the prospect of monopoly profits, which provided individual incentives to carry out costly research. Again, the equilibria were not to be Pareto optimal, and there were some intriguing implications for policy, notably for subsidies to basic research.

Despite these breakthroughs, the recent empirical work on growth across countries and regions has not received its main inspiration from the new theories. Rather, the standard applied framework derives more from the older, neoclassical model, as extended to incorporate government policies, accumulation of human capital, fertility decisions and the diffusion of technology. In particular, the neoclassical model’s central idea of conditional convergence

receives strong support from the data: poorer countries grow faster per capita once one holds constant measures of government policy, initial levels of human capital and so on.

Theories of basic technological change are most important for understanding why the world as a whole – and, more specifically, the economies at the technological frontier – can grow in the long run. But these theories has less to do with the determination of relative rate of growth across economies; that is, with the relations studies in cross-country statistical analyses. It is surely an irony that one of the lasting contributions of endogenous growth theory is that it stimulated empirical work that demonstrated the explanatory power of the neoclassical growth model.

In chapter 5, the study did a regression analysis to explain the growth per capita GDP.

As was expected, all the independent variables that were used in the quantitative analysis had the expected coefficient. The Initial GDP had a negative coefficient. The export growth rate was positive because the more your exports grow so does your real per capita GDP. Population growth rate is negative because the less people you have, the more is your real per capita GDP. Adult Literacy Rate is positive because more educated people are more able to run a country's economic environment, make better decisions and can help their own country to become more competitive with such as high-skilled labour and Research and Development. Investment in infrastructure (roads, ports and telecommunications) can help to significantly reduce inventory levels (and thus the cost of doing business), thus making the country more competitive. Foreign direct investment was also positive, as this helps to enhance competitiveness and acquire new skills and resources abroad. The various institution policies such as government effectiveness, accountability, political stability and regulatory burden were all positively correlated. Landlockedness and tropics are negative since this inhibits exports and thus economic growth. The quality of government macro-economic policies is reflected in government consumption. Government consumption as proportion of GDP is used to proxy the effect of government fiscal policy and intervention in the economy. This measure is found to be negatively correlated with economic growth. The reasons for a postulated negative relationship between government intervention / consumption and growth can be through a crowding-out effect (of private consumption and investment), through giving rise to a mounting debt burden, taxation and/or inflation that again depresses private investment and productivity.

Easterly and Levine also found in their cross-country regression, to explain growth, that understanding SSA's growth tragedy requires not only an accounting of the relationship between

slow growth and unfavorable country characteristics, but also an understanding of why country characteristics were so unfavorable. SSA's poor growth – and resulting low income – is associated with low schooling, political instability, underdeveloped financial systems, distorted foreign exchange markets, high government deficits, and insufficient infrastructure. High ethnic diversity is closely associated with low schooling, underdeveloped financial systems, distorted foreign exchange markets and insufficient infrastructure

SSA's and East Asia's significant performance gap might be explained by there being poorer institutions in SSA as measured by the Knack and Keefer (1995) index and Kaufman et al.'s (1999) 'rule of law' composite index. Recent literature has raised some doubts about the success of export-oriented industrialization in SSA, a strategy that led to astounding growth in East Asia from the mid-1980s to the mid-1990s. Wood and Berge (1997) suggested that SSA could not export manufactures because of a 'low skills to land ratio, which has caused its comparative advantage to lie in primary exports'.

Thus creating the emerging consensus in the economic development literature that SSA's overall dismal growth record is attributable in great part to the lack of sound economic policies in many of the SSA countries. What has remained unclear, however, is the relative importance of the roles of domestic versus global factors. In large part such a distinction might be considered artificial since, for instance, the impacts of internationally originating shocks can be considerably mediated by domestic policies. Nevertheless, the design and conduct of appropriate policies require that policy makers, domestic or external, understand the relative importance of these roles in order to allocate scarce resources optimally. According to Fosu (2002), 'environmental variables', which consist mostly of external forces, have been more important than 'policy' (domestic) factors in explaining economic stagnation in SSA countries. In the light of increasing globalization, understanding the role of the global setting in the growth of SSA economies has become even more pressing (Fosu, 2002).

Growth may be affected by many determinants that are wholly or largely independent of macroeconomic policy, such as climate, health, education and training, research, and so on. The determinant that is most directly affected by macroeconomic policy is investment, both public and private. Admittedly, when government expenditures are varied as part of macroeconomic policy, expenditure on health, education, and research may be affected. Neoclassical growth

theory made a distinction between changes that would affect the rate of growth of output, and those that would affect only the level of output. In particular, it was held that a rise in the investment ratio alone would eventually have no effect on the rate of growth of output. In long-run equilibrium, only the rate of growth of population, and the rate of labour-augmenting (Harrod-neutral) technical progress determined this latter rate, and these were independent of the investment ratio. But there is no value in this distinction, because investment is often needed for technical progress (as well as being caused by it).

In this light, it becomes possible for a higher investment ratio (or an increase in the productivity of investment) to cause a higher rate of economic growth indefinitely, indeed forever. In any case, an increase in the rate of investment can influence the rate of growth by moving the economy from one (growing) level of output to a higher one. Successful macroeconomic policy may, on the one hand, be identified with stabilization, that is, with minimizing the consequences of exogenous disturbances while avoiding the creation of sustainable changes in inflation by the operation of the instruments of macroeconomic policy themselves.

If stability seems to be advantageous for the long-run growth, this must mainly be because either stable growth results in a higher level of interest in relation to GNP, or because investment within a framework of stable growth of both GNP and investment is more efficient than investment with a stop-go scenario. Domestic or foreign savings must match investment. Changes in terms of trade may affect the growth of real GNP or GDP. The terms of trade do not affect real product growth directly, since this is measured at constant prices. Yet an improvement in the terms of trade should result in more profitable investment opportunities and thus be favorable for growth, raising both the level and the productivity of investment. GNP is a better measure of success than gross domestic product, since net payments to foreigners are not part of national income and do not contribute to national welfare.

The ratio of savings to GNP is a constraint on the ratio of investment to GNP (notwithstanding the possibility that investment may to some extent create savings). A rise in private savings permits higher total investment unless such a rise merely compensates for a fall in public savings as the public sector relies more on borrowing and less on taxation. Whether or not higher interest rates cause a rise in savings has been the subject of much debate and econometric investigation. The evidence on balance seems to support a positive effect, which means that higher savings stimulates higher growth.

After the conclusion in chapter 3 that the determinants of East Asia's economic growth were: (1) an outward oriented strategy, which build strong linkages with world markets and technology through an export promotion policy, (2) conservative macroeconomic policies, which created a stable, predictable environment for investment and trade, (3) an inflation rate that was kept low, (4) competitive exchange rates, (5) affordable debt as well as the fact the (6) human capital was vigorously invested to develop an educated and technically competent labour force and finally, (7) competitive markets were maintained for factors to facilitate the structural transformation from primary production to manufacturing and eventually to knowledge-intensive industries, these determinants were analyzed in chapter 5 and showed that policies, institutions and geographical factors determine SSA's growth performance. In particular factors such as initial GDP, exports as a percentage of GDP, government effectiveness, political stability, landlockedness and tropics, external debt, population growth rate and literacy rate. If SSA could some way improve their policies and focus on becoming more open to international trade and thus promoting their exports, it may improve their economic growth rate.

## **6.2 Recommendations**

Despite its steady growth, East Asia is still grappling with serious challenges, including environmental degradation, infrastructural bottlenecks, and poverty. But if there is a single firm lesson to be drawn from the region in the past few decades, it is that difficult challenges have a history of being met.

If accumulation has been the cause of Asian growth, then SSA policies to induce higher saving and investment in equipment, infrastructure and education should be necessary to accelerate growth. These would include budget balance or even surplus, reform of government expenditures, high interest rates for savers, possibly subsidized rates for borrowers, high taxes on consumption and forced saving schemes.

There is a significant degree of consensus on the key economic policies that SSA should implement that provide a foundation for encouraging development in general and integration with the global economy in particular. Such policies would include:

- Investment in human and physical capital (education, transport and communication infrastructure);
- Maintaining a stable macroeconomic environment (for example, maintaining low inflation; keeping budget deficits manageable; maintaining an appropriate and stable real exchange rate; and maintaining stable and appropriate real interest rates);
- Outward orientation, in particular maintaining a competitive and stable exchange rate.

The extent to which the global setting may influence SSA economies depends on their degree of exposure to the outside world, namely openness. However, measuring this concept is tricky. For instance, export-promoting policies that subsidize export may enhance openness by augmenting the size of the export sector. However, that same policy distorts international prices and, thus, reduces openness. Thus, whether a country that undertakes such a policy is considered more open or not will depend on how the concept is measured. Nonetheless, a recent review article on openness concluded that

Open economies do grow more rapidly than closed economies....

whether the measure of openness has to do with exchange rate overvaluation, relative price distortions, tariffs and quotas, share of trade in GDP, the black market premium, or a composite measure combining some of these with state monopolization of commodity exports and general socialism (Easterly, 1995, p.48).

For SSA to integrate more successfully into the global economy and becoming more competitive so as to increase their economic growth rate, they will need to concentrate on improving the general economic policy and institutional situation. In this regard, three broad conclusions can be made:

### ***1. The importance of sound “general” economic policies -***

These include investment in human and physical capital, a stable macroeconomic environment and greater outward orientation. These were the basis for East Asia’s performance. In particular, analyses indicate that many countries in SSA still do not have the macro-economic policy stance that would enable them to maximize their external performance. (What kind of "targets" can be set in this regard?) In particular, there is still a need to reduce anti-export bias. However, sound general policies seem a necessary but not a sufficient foundation; although policy stances have improved considerably in SSA, export and growth performances remain fragile.

### ***2. The importance of improving “general” institutional foundations***

Rather than technical capacity building, the key would seem to be, through reform, to improve the general institutional foundations. Surveys indicate that many countries in SSA do not have "adequate" institutional foundations for growth. In this regard, the key institutional foundations to aim for are political commitment and credibility, an efficient and non-corrupt bureaucracy; a degree of bureaucratic insulation from political pressures, a positive relationship between government / bureaucracy and the private sector and basic property and contractual rights. (What kind of "targets" can be identified in this regard?) In particular, there is a real need for a balanced approach to the state – a strategy to strengthen the capacity to undertake important functions as well as to reduce unnecessary or negative aspects. It is likely that establishing sound institutional foundations will represent the greatest challenge for SSA for many years to come.

### ***3. Policy Choices and Institutional Capability***

The key recommendation is to concentrate scarce institutional capability on the most important development priorities. For most countries in SSA, this means that the state should focus on the tasks outlined in points 1 and 2 above.

Specific policies do seem in some cases to have improved the level and nature of integration with the global economy. Given the lack of general foundations, most SSA counties would be ill advised, however, to pursue specific policies. It is unlikely that a specific policy or institutional measure will work if the general ones are unfavorable. In terms of a selective export oriented strategy very few countries come close to satisfying the conditions outlined by Lall (1997).

(What kind of "targets" can be identified regarding the necessary conditions to make these policies successful in SSA?) In SSA countries with adequate policy and institutional foundations, some of the lessons from East Asia could be considered. The most important of these (and probably most easily replicable) are the "export push" strategies pursued by Malaysia, Indonesia and Thailand. In most countries, it would seem that these should be concentrated on the primary sector and focus on issues such as creating or supporting institutions for research and development, education and training and infrastructure. These should be limited in scope, based on objective performance criteria and time bound (Court and Yanagihora, 1998).

At the micro level, SSA countries will need to take concerted action on many fronts:

- Improve infrastructure;
- Strengthen banking systems;
- Develop capital markets by accelerating the pace of privatization and broadening the domestic investor base;
- Formulate an appropriate regulatory framework and a more liberal investment regime;
- Introduce competitive labour market policies while creating and maintaining institutions for upgrading human capital; and
- Reform the judiciary system and contain corruption.

It needs emphasizing that a piecemeal approach, even one including tax holidays and other investment incentives, is unlikely to sway investor decisions and attract international resources on a sustainable basis.

While microeconomic factors are difficult to quantify, the macroeconomic factors used in the empirical analysis done by Bhattacharya, Montiel, and Sharma (1996) yielded clear-cut conclusions. In SSA, economic characteristics like output growth, openness, relative stability of real effective exchange rates, low external debt, and high investment rates have encouraged private capital flows. The first three of these have been crucial for drawing in FDI and the last two factors, coupled with output growth, have been particularly important for obtaining foreign private loans (Bhattacharya, Montiel, and Sharma, 1996).

### **6.3 Lessons**

The lessons that SSA can learn from the East Asian experience are as follows:

- SSA should adopt an outward oriented trade strategy so as to build strong linkages with world markets and technology. SSA can achieve this with policies ranging from complete liberalization to export promotion designed to offset protectionist biases favoring domestic industries.
- SSA should pursue conservative macroeconomic policies as to create a stable, predictable environment for investment and trade. And imbalances should be addressed swiftly and decisively, so as to keep inflation low, exchange rates competitive, and debt affordable.
- SSA should invest in human capital so as to develop an educated and technically competent labour force.
- SSA should move away from primary product production to manufacturing and eventually to knowledge-intensive industries.
- SSA should create elite, autonomous bureaucracies that could design and implement sectoral policies without becoming the tool of special interests.
- SSA should target sectors that offer strong opportunities for growth and productivity, based on the experiences of similar, more advanced economies.
- SSA should direct resources into the above-targeted sectors by 'getting prices wrong' with selective trade restrictions, preferential access to credit and important inputs, and government investment.
- SSA should avoid big policy mistakes by limiting the duration of government support and setting performance-oriented criteria, such as export success, for promoted firms.
- SSA should emphasize on group values over individual values, giving rise to cohesive forms of political and business organizations.

- SSA should develop meritocratic institutions, creating strong incentives for learning and education.
- SSA should create mutual obligations between government and the governed, yielding (relatively) publicly motivated policymaking.
- SSA should legitimize authoritarian rule, leading to long-lived regimes and stable, consistent policies.

#### **6.4 Avenues for further research**

Although there are important lessons for SSA from the experience of East Asia, the sectoral and spatial structures of an increasingly prosperous SSA will be more like those of the Americas. Because it is land-abundant, as is America, SSA will always have a larger primary sector and a smaller manufacturing sector than the land-scarce regions of Asia and Europe. Moreover, because much of its land is far from the sea, which raises internal transport costs, a prosperous SSA will be like America also in having a relatively unpopulated interior, based on agriculture and mining, with urban industrial concentrations on its coasts. SSA could surpass the current income level of South America, although it may never quite catch up with North America because of its tropical climate and its division into many countries, which obstructs internal movement of goods, ideas and people. What is mainly needed to raise SSA from poverty to prosperity are improvements in governance, which will reduce the risks of investment and encourage the return of flight capital, physical and human (Wood, 2002).

Similar improvements in governance are needed in all poor countries, but the policy priorities of land-abundant SSA differ from those of land-scarce Asia in three areas.

- First, it is even more crucial for SSA to apply knowledge to nature by promoting scientific research, education and training in agriculture and mining.
- Second, to overcome the problems of spatial dispersion, SSA must spend more on transport and communications and facilitate movement of people, especially from the interior to the coasts.
- Third, SSA must ensure widely distributed access to land and education, so that high levels of inequality do not slow growth and perpetuate poverty (Wood, 2002).

## **BIBLIOGRAPHY**

ABLO, E. & REINIKKA, R. 1998. Do budgets really matter: evidence from public spending on education and health in Uganda. Washington D.C.: World Bank. Policy research working paper no. 1926

AFRICAN DEVELOPMENT BANK. 1999. African development report: infrastructure development in Africa. Oxford: Oxford University Press.

AGHION, P. & HOWITT, P. 1998. Endogenous growth theory. London: MIT Press.

AKIYAMA, T & LARSON, D. 1994. The adding up problems strategies from primary commodity exports in Sub-Saharan Africa. Washington D.C.: World Bank. Policy research paper no. 1245

ALESINA, A. & DRAZEN, A. 1991. Why are stabilizations delayed? *American economic review*, 81 (5): 1170-1188.

ALESINA, A. & RODRIK, D. 1994. Distributive politics and economic growth. *Quarterly journal of economics*, 109 (2): 465-490.

ANDERSON, T.W. & HSIAO, C. 1982. Formulation and estimation of dynamic models using panel data. *Journal of econometrics*, 18 (1): 47-82.

APPLETON, S. 1999. Changes in poverty in Uganda. Centre for the study of African economies working paper: WPS/99/22.

ARELLANO, M. & BOND, S. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of economic studies*, 58 (194): 277-297.

ARYEETEEY, E & NISSANKE, M. 1998. Asia and Africa in the global economy: economic policies and external performance in South East Asia and Sub-Sahara Africa. (Paper prepared for

presentation at the United Nations University – African Economics Research Consortium Conference “Asia and Africa in the global economy”) Tokyo. (Unpublished.)

ARYEETEY, E., COURT, J., NISSANKE, M. & WEDER, B. 1998. Strengthening Africa’s participation in the global economy. Report from expert consultative meetings organized by the United Nations University and the African Economics Research Consortium.  
[Web:] [http://www.unu.edu/Hq/academic/Pg\\_area4/globalafrica.htm](http://www.unu.edu/Hq/academic/Pg_area4/globalafrica.htm). [Date of access: 10 Sep. 2002].

ASIAN DEVELOPMENT BANK. 2003. Economics and statistics. [Web:]  
<http://www.adb.org/Statistics/default.asp> [Date of access: 15 June, 2003].

AUTY, R. M. 1990. Resource based industrialization: sowing the oil in eight less developed countries. Oxford: Clarendon Press.

BALDWIN, R.E. 1993. Review of theoretical developments on regional integration. (Paper presented at the first project workshop on regional integration and trade liberalization in Sub-Saharan Africa, African Economic Research Consortium, 24 December 1993). Nairobi (Unpublished.)

BARRO, R. J. 1991. Economic growth in a cross-section of countries. *Quarterly journal of economics*, 56 (2): 407-443.

BARRO, R. J. 1997. Determinants of economic growth: a cross-country empirical study. Cambridge: Harvard Institute for International Development. Development discussion paper no. 579

BARRO, R. J. & SALA-I-MARTIN, X. 1995. Economic growth. New York: McGraw-Hill.

BAUER, J. 1972. Dissent on development: studies and debates in development economics. Cambridge: Harvard University Press

BERNARD, A.B. & JENSEN, B. 2001. Who dies: international trade, market structure, and industrial restructuring. New York: US National Bureau of Economic Research. Working paper no.W8327.

- BEVAN, D., COLLIER, P. & GUNNING, J.W. 1993. Trade shocks in developing countries: consequences and policy responses. *European Economic Review*, 37 (2): 557-565.
- BHATTACHARYA, A., MONTIEL, P.J. & SHARMA, S. 1998. How can Sub-Sahara Africa attract more private inflows? *Finance and development*, 34 (2): 3-6.
- BIGGS, T. & SRIVASTAVA, P. 1996. Structural aspects of manufacturing in Sub-Sahara Africa: findings from a seven-country enterprise survey. Washington D.C.: World Bank. RPED Discussion Paper.
- BIGSTEN, A., APPLETON, S., COLLIER, P., DERCON, S., FAFCHAMPS, M., GAUTHIER, B., GUNNING, J.W., ODURO, A., OOSTENDORP, R., PATTILO, C., SODERBOM, M., TEAL, F., & ZEUFACK, A. 2000. Rates of return on physical and human capital in Africa's manufacturing sector. *Economic development and cultural change*, 48 (4): 801-27.
- BIGSTEN, A., COLLIER, P., DERCON, S., FAFCHAMPS, M., GAUTHIER, B., GUNNING, J.W., HABARUREMA, J., ISAKSSON, A., ODURO, A., OOSTENDORP, R., PATTILO, C., SODERBOM, M., TEAL, F., & ZEUFACK, A. 1999. Export of African manufacturers: macro policy and firm behaviour. *Journal of international trade and economic development*, 8 (1): 53-71.
- BLOCK, S.A. 2001. Does Africa grow differently? *Journal of development economics*, 65 (2). 443-467.
- BLOOM, D. & SACHS, J. 1998. Geography, demography, and economic growth in Africa. *Brooking papers on economic activity*, 2: 207-95.
- BORJAS, G. 1994. Ethnic capitals and intergenerational mobility. *Quarterly journal of economics*, 107: 123-150.
- BROWN, M.B. & TIFFEN, P. 1992. *Short changed: Africa and world trade*. London: Pluto Press.

- BURNSIDE, C. & DOLLAR, D. 2000. Aid, policies, and growth. *American economic review*, 90 (4): 847-868 p.
- CAMPOS, J.E. & ROOT, H.L. 1996. The key to the Asian miracle: making shared-growth credible. Washington D.C.: Brookings Institution.
- CHENERY, H., ROBINSON, S. & SYRQUIN, M. 1986. Industrialization and growth: a comparative study. New York: Oxford University Press.
- CHIBBER & LEECHOR. 1995. From adjustment to growth in Sub-Saharan Africa: the lessons from the East Asian experience applied to Ghana. *Journal of African economies*, 4 (1): 83-114.
- CHOU, W.L. & WONG, K. 1997. Hong Kong and the Asian crisis. (Paper presented at the conference on "Dynamics, Economic Growth and International Trade"). (Unpublished.)
- CHRISTENSEN, S., DOLLAR, D., SIAMWALLA, A. & VICHYANOND, P. 1993. Lessons of East Asia: Thailand, the institutional and political underpinnings of growth. Washington D. C.: World Bank.
- COLLIER, P. 1997. Globalization: what should be the African policy response? Oxford: Centre for the study of African economies, University of Oxford.
- COLLIER, P. & GARG, A. 1998. On kin groups and wages in the Ghanaian labour market. *Oxford bulletin of economics and statistics*.
- COLLIER, P. & GUNNING, J.W. 1999. Explaining African economic performance. *Journal of economic literature*, 37 (1): 64-111.
- COLLIER, P., HOEFFLER, A. & PATILLO, C. 1998. Flight capital as a portfolio choice. Washington D.C.: World Bank. World Bank policy research paper no. 2066.
- COLLINS, S. & BOSWORTH, B.P. 1996. Economic growth in East Asia: accumulation versus assimilation. *Brookings papers in economic activity*, 2: 135-203.

COURT, J. & YANAGIHORA, T. 1998. Asia and Africa into the global economy: background and introduction. New York: United Nations University.

COUTSOUKIS, P. 2000. Taiwan Economy. [Web:]  
[http://www.photius.com/wfb2000/countries/hong\\_kong/hong\\_kong\\_economy.html](http://www.photius.com/wfb2000/countries/hong_kong/hong_kong_economy.html) [Date of access: 8 Feb. 2003].

DEATON, A. & MILLER, R. 1996. International commodity prices, macroeconomic performance and politics in Sub-Sahara Africa. *Journal of African economics*, 5 (3): 99-191.

DE LANG, J.B. & SUMMERS, L.H. 1991. Equipment investment and economic growth. *Quarterly journal of economics*, 106 (2). 445-502.

DERCON, S. 1997. Wealth, risk and activity choice: cattle in western Tanzania. *Journal of development economics*, 108 (7): 215-225.

DOLLAR, D. 1992. Outward-oriented developing economies really do grow more rapidly: evidence from 95 LDCs, 1976-1985. *Economic development and cultural change*, 40 (3): 523-544.

DOLLAR, D. & ZEUFACK, A. 2000. Why are Thai firms more productive than Kenyan firms: using firm-level data to explore international differences in productivity and investment climate. Washington D.C.: World Bank Development Research Group.

EASTERLY, W. 1995. Explaining miracles: growth regressions meet the gang of four. In ITO, T. & KRUEGER, A.O. (eds), "Growth Theories in Light of the East Asian experience". Chicago: The University of the Chicago Press: 298-299.

EASTERLY, W. 1998. Troubles with neighbours: Africa's problem, Africa's opportunity. *Journal of African economics*, 7 (1): 120-142.

EASTERLY, W. & DOLLAR, D. 1999. The search for the key: aid, investment and policies in Africa. *Journal of African economics*, 8 (4): 546-577.

- EASTERLY, W. & FISCHER, S. 1994. What can we learn from the Soviet collapse? *Finance and development*, 31 (4). 2-5.
- EASTERLY, W. & LEVINE, R. 1995. Africa's growth tragedy: a retrospective. Washington D.C.: World Bank. Working paper no. 1503.
- EASTERLY, W. & LEVINE, R. 1997. Africa's growth tragedy: policies and ethnic divisions. *Quarterly journal of economics*, 112 (4): 1203-1250.
- ELBADAWI, I. 1998. Can Africa export manufactures? Washington D.C.: World Bank. World Bank policy research working paper no. 2120.
- ELBADAWI, I. A., NDULU, B.N. & NDUNG'U, N. 1996. Debt overhang and economic growth in Sub-Sahara Africa. In IQBAL, Z. & KANBUR, R. (eds), "External Finance for Low Income Countries". Washington D. C.: International Monetary Fund.
- ELBADAWI, I. A. & SCHMIDT-HEBBEL, K. 1997. Macroeconomic policies, instability and growth in the world. *Journal of African economics*, 6: 125-136.
- FAFCHAMPS, M., GUNNING, J.W. & OOSTENDORP, R. 1998. Inventories, liquidity and contractual risk in African manufacturing. Stanford: Department of Economics, Stanford University.
- FISCHER, S. 1993. The role of macroeconomic factors in growth. *Journal of monetary economics*, 32: 485-512.
- FLASSBECK, H. 2002. The exchange rate: economic policy tool or market price? Geneva: United Nations conference on trade and development. (Unpublished.)
- FOSU, A.K. 2002. The global setting and African economic growth. *Journal of African economics*, 10 (3): 282-310.

- GALLUP, J.L. & SACHS, J.D. 1998. Geography, and economic growth. (Paper presented in proceedings of the annual World Bank conference on development economics). Washington D. C.: World Bank.
- GELB, A., KNIGHT, J.B. & SABOT, R.H. 1989. Public sector employment, rent seeking and economic growth. *Economic Journal*, 101: 1186-1199.
- GHURA, D. & GRENNES, T.J. 1993. The real exchange rate and macroeconomic performance in Sub-Saharan Africa. *Journal of development economics*, 42: 155-174.
- GILLIS, M. 1988. Indonesia: public policies, resource management and the tropical forest. In REPETTO, R. & GILLIS, M. (eds), "Public policies and the misuse of forest resources". Cambridge: Cambridge University Press, 43-113.
- HERRERA, S., PERRY, G. & QUINTERO, N. 2000. Output fluctuations in Latin America: what explains the recent slowdowns? Washington D.C.: World Bank, macroeconomic and growth department. Working Paper no. 2333.
- HSIEH, C. 2002. What explains the industrial revolution in East Asia: evidence from the factor markets. *The American review*, June.
- HUSAIN, I. 1994. Structural adjustment and long-term development in Sub-Saharan Africa. In VAN DE HOOVEN, R. & VAN DER KRAAJ, F. (eds), "Structural adjustment and beyond in Sub-Saharan Africa". London: James Curry.
- ISHAM, J. & KAUFMANN, D. 1999. The forgotten rationale for policy reform. *Quarterly journal of economics*.
- ISHAM, J., KAUFMANN, D. & PRITCHETT, L. 1995. Government and the returns on investment. Washington D.C.: World Bank. Policy research working paper no.1550
- ISLAM, N. 1995. Growth empirics: a panel data approach. *Quarterly journal of economics*, 110: 1127-1170.

- JOMO, K.S. 1997. Southeast Asia's misunderstood miracle: industrial policy and economic development in Thailand, Malaysia and Indonesia. Malaysia: Westview Press.
- JOMO, K.S. & GOMEZ, T. 1996. Rents and development in multi-ethnic Malaysia. In AOKI, M., KIM, H. & OKUNO-FUJIWARA (eds), "The role of government in East Asian economic development". Oxford: Clarendon Press.
- KAUFMANN, D., KRAAAY, A. & ZOIDO-LOBATON, P. 1999. Aggregating governance indicators. Washington D.C.: World Bank. Policy research working paper no. 2195
- KAYIZZI - MUGERWA, OLUKOSHI & WOHEMUTH (eds). 1998. Towards a new partnership with Africa: challenges and opportunities. Uppsalla: Nordiska Africainstitutet.
- KILLICK, T. 1992. Explaining Africa's post-independence development experiences. (Paper presented at the second Biennial conference on African economic issues: 13-15 October 1992.) Abidjan. (Unpublished.)
- KING, R.G. & LEVINE, R. 1993. Finance, entrepreneurship and growth: theory and evidence. *Journal of monetary economics*, 32: 513-542.
- KIM, D. & KIM, S. 2003. Globalization, financial crisis and industrial relations: the case of South Korea. *Industrial relations*, 42 (3): 341-367.
- KIM, J. & LAU, L.J. 1994. The sources of economic growth of the East Asian newly industrialized countries. *Journal of the Japanese and international economies*, 8 (3): 235-271.
- KLENOW, P. & RODRIQUEZ-CLARE, A. 1997. The neoclassical revival in growth economics: has it gone too far? In BERNANKE, B. & ROTEMBERG, J. (eds), National Bureau of Economic Research, Macroeconomics Annual 1997. Cambridge: MIT Press.
- KNACK, S. & KEEFER, P. 1995. Institutions and economic performance: cross-country tests using alternative institutional measures. *Journal of economics and politics*, 7:207-228.
- KRUGELL, W. 2000. On the determinants of foreign direct investment in Sub-Sahara Africa. Warwick: University of Warwick. (Dissertation – MSc Economics.)
- KRUGMAN, P.R. 1994. The myth of Asia's miracle. *Journal of foreign affairs*, 73 (6). 62-78.

LALL, S. 1995. Structural adjustment and African industries. *World Development*, 23 (12): 2019-2031.

LEE, K.S. & ANAS, A. 1991. Manufacturers' responses to infrastructure deficiencies in Nigeria: private alternatives and policy options. *In* CHIBBER, A. & FISCHER, S. (1991).

LEIPZIGER, D.M & THOMAS, V. 1993. Lessons of East Asia: an overview of country experience. Washington D.C.: World Bank. Working paper for the International Bank for Reconstruction and Development

LIDDLE, R.W. 1991. The relative autonomy of the third world politician: Suharto and Indonesian development in comparative perspective. *International studies quarterly*, 35: 403-427.

LITTLE, I.M.D., COOPER, R.N., CORDEN, W.M. & RAJAPATIRANA, S. 1993. Booms, crisis and adjustment: the macroeconomic experience of developing countries. Oxford: Oxford University Press. Published for the World Bank.

LUCAS, R.E. 1988. On the mechanics of economic development. *Journal of monetary economics*, 22 (1): 3-42.

LYAKURWA, W.M. 1998. Primary exports and primary processing for exports in Sub-Saharan Africa. (Paper presented at the African Economic Research Consortium/United Nations University Conference on "Asia and Africa on global economy", August 3-4, 1998.) Tokyo. (Unpublished.)

MACINTYRE, A. 1993. The politics of finance in Indonesia: command, confusion, and competition. *In* HAGGARD, S., LEE, C.H. & MAXFIELD, S. (eds), "The politics of finance in developing countries". Ithaca: Cornell University Press.

MADDISON, A. 1995. Explaining the economic performance of nations. Aldershot: Edward Elgar.

MANKIWI, N.G. 2000. Macroeconomics. New York: Worth Publishers, Harvard University.

MENGISTAE, T. 2001. Preliminary report on firm competitiveness in India. Washington D.C.: World Bank.

MONOKROUSSOS, G. & KRAAY, A. 1999. Growth forecasts using time series and growth models. Macroeconomic and growth divisions policy research department. Washington D.C.: World Bank. Working paper no. 2224.

MUTALEMWA, D. 1998. Asia and Africa in the global economy. (Supporting paper on foreign aid development in SSA).

NIDHIPRABHA, B. 1997. Macroeconomic management and development process: the Southeast Asian perspective. (Paper presented at the African Economic Research Consortium / United Nations University Conference on "Comparative Development Experiences in Africa and Asia", November 1997.) Johannesburg. (Unpublished.)

PAGE, J.M. & PETRI, P.A. 1993. Productivity change and strategic growth policy in the Asian miracle. Washington D.C.: World Bank. Working paper no.2655

PAI, P.P. 1991. Tax policy and economic development in the republic of China. *Industry of free China*, 76 (6): 47-56.

UNIVERSITY OF PENNSYLVANIA. 1996. PENN WORLD TABLES VERSION 6.1. [Web:] <http://www.bized.ac.uk/dataserv/penndata/pennhome.htm> [Date of access: 30 Aug. 2003.]

PERSSON, T. & TABELLINI, G. 1995. Double-edged incentives: institutions and policy coordination. *CEPR discussion paper series*, no.1141.

PETRI, P.A. 1988. Korea's export niche: originals and prospects. *World development*, 16 (1).

PETRI, P.A. 1993. The lessons of East Asia: common foundations of East Asian success. Washington D.C.: World Bank. Working paper for International Bank for Reconstruction and Development.

- PRADHAN, S. 1996. Evaluating public spending. Washington D.C.: World Bank. World Bank discussion paper no. 323
- PRITCHETT, L. 1996. Where has all the education gone? Washington D.C.: World Bank. Policy research working paper no. 1581.
- PREBISCH, R. 1954. Five stages in my thinking about development. *In* BAUER, P., MEIER, G. & SEERS, D. (eds), *Pioneers in Development*. New York: Oxford University Press.
- RAO, V. 1989. Government size and economic growth: a new framework and some evidence from cross-section and time-series data. *American economic review*, 79: 272-280.
- RAVALLION, M. & JALAN, J. 1996. Growth divergence due to spatial externalities. *Economic letters*, 53: 500-521.
- REBELLO, S. 1991. Long-run policy analysis and long-run growth. *Journal of political economy*, 99 (3): 500-521.
- RIDDELL, R.C. 1990. *Manufacturing Africa: performance and prospects of seven countries in Sub-Saharan Africa*. London: James Curry.
- RIMMER, D. 1990. *Staying poor: Ghana's political economy 1950-1990*. Oxford: Pergman.
- RODRIK, D. 1994. King Kong meets Godzilla: the World Bank and the East Asian miracle. *In* FISHLOW, A., et al. (eds), *Miracle or Design: lessons from the East Asian experience*. Washington D.C.: Overseas Development Council.
- RODRIK, D. 1998. Trade policy and economic performance in Sub-Sahara Africa. Cambridge: National Bureau of Economic Research. Working paper no. 6562.
- ROEMER, M. 1986. Increasing returns and long-run growth. *Journal of political economy*, 94: 1002-1037.
- ROEMER, M. 1994. *Asia and Africa: towards a policy frontier*. Harvard: Harvard Institute for International Development. Development discussion paper no. 485.
- ROEMER, M. 1996. *Could Asian policies propel African growth?* Harvard: Harvard Institute for International Development

- ROGERS, M. 2003. A survey of economic growth. *The economic record*, 79 (244): 112-135. .  
United Kingdom: Oxford, Harris Manchester College.
- ROWTHORN, R. 1996. East Asian development: the flying geese paradigm reconsidered.  
UNCTAD special study report no.8
- SACHS, J. & WARNER, A. 1995. Economic reform and the process of global integration.  
*Brookings papers on economic activity*, 1: 1-117.
- SACHS, J. & WARNER, A. 1997. Sources of slow growth in African economies. *Journal of African economics*, 6 (3): 335-376.
- SAREL, M. 2002. Growth in East Asia: what we can and what we cannot infer from it.  
International Monetary Fund.
- SHARMA, R. 1993. The 'missing middle' in Sub-Saharan Africa: role of south-south cooperation, research and information for the non-aligned and other developing countries. New Delhi: Interest Publications.
- SHEIFLER, A. & VISHNY, R. 1993. Corruption. *Quarterly journal of economics*, 108: 599-617.
- SODERBOM, M. & TEAL, F. 2000. Skills, investment and exports from manufacturing firms in Africa. Centre for the study of African economies. Oxford: University of Oxford. Working paper no. 2000.8.
- STIGLITZ, J.E. 1989. Markets, market failures, and development. *American economic review*, 79 (2): 197-203.
- STIGLITZ, J. 1997. Can aid facilitate development? (Paper prepared for World Bank-OECF symposium on a new vision for development cooperation in the 21<sup>st</sup> century, September 1997) Tokyo. (Unpublished.)

SUNDARAM, J.K., & ROCK, M. 1998. Resource exports and resource processing for export in South East Asia.

SVENSSON, J. 1998. Reforming donor institutions: aid tournaments. Washington: World Bank.

THOMAS, V. & WANG, Y. 1992. Government policies and productivity growth: is East Asia an exception?

TOMICH, T., ROEMER, R. & VINCENT, J. 1994. Development from a primary export base. *In* LINDAUER & ROEMER: 151-94.

UNCTAD. 1993. Developments and Issues in the Uruguay round of particular concern to developing countries. TD/B/39(2)/CPR. 1, 15 March 1993(a).

UNCTAD. 1993. Follow-up to the recommendations adopted by the conference at its eighth session: evolution and consequences of economic spaces and regional integration processes TD/B/40(1) 7, 23 July 1993(b).

UNIDO. 1993. African industry in figures: Vienna.

VAN DE WALLE, N. 1998. Managing aid in Africa: the rise and decline of the structural adjustment regime. (Paper prepared for the AERC-ODC Collaborative Research Workshop on Managing the Transition from Aid Dependency in Sub Saharan Africa, May 21-22, 1998). Nairobi. (Unpublished.)

VOORTMAN, R.L., SONNEVELD, B.G.L.S. & KEYSER, M.A. 1999. African land ecology: opportunities and constraints for agricultural development. Amsterdam: Free University of Amsterdam.

WANGWA, S.M. 1997. The managing of foreign aid. *ESRF discussion paper series*. Dar es Salaam.

WANGWE, S.M. 1998. Towards a new partnership: partnership between Tanzania government and the Nordic countries. In KAYIZZI - MUGERWA, OLUKOSHI & WOHLGEMUTH (eds). Towards a new partnership with Africa: challenges and opportunities. Uppsalla: Nordiska Africa Institute.

WOOD, A. 2002. Could Africa be like America? Department of international development. Working paper AW-ABCDE5a. England.

WOOD, A. & BERGE, K. 1997. Exporting manufacturers: human resources, natural resources and trade policy. *Journal of development studies*, 34: 35-59.

WOOD, A. & MAYER, J. 1998. Africa's export structure in a comparative perspective. (Paper prepared for UNCTAD's project on African development in a comparative perspective.) (Unpublished.)

WOOLDRIDGE, J.M. 2000. Introductory econometrics: a modern approach. New York: South-Western College Publishing, a division of Thomson Learning.

WORLD BANK. 1981. Accelerated development in Sub-Sahara Africa. Washington, D.C.: World Bank

WORLD BANK. 1989. Sub-Sahara Africa: from crisis to sustainable growth. Washington, D.C.: World Bank.

WORLD BANK. 1990. World development report. New York: Oxford University Press.

WORLD BANK. 1992. World development report. New York: Oxford University Press.

WORLD BANK. 1993. The East Asian miracle: economic growth and public policy. New York: Oxford University Press.

WORLD BANK. 1996. World development report. New York: Oxford University Press.

WORLD BANK. 2002. Building an inclusive world economy. The International Bank for Reconstruction and Development. A co publication of the World Bank and Oxford University Press.

WORLD DEVELOPMENT INDICATORS. 2003. International Bank for Reconstruction and Development: World Bank. [CD-Rom]

WORLD DEVELOPMENT REPORT. 1998/1999. Knowledge for development. World Bank: Oxford University Press.

WORLD DEVELOPMENT REPORT. 2000/2001. Attacking poverty. World Bank: Oxford University Press.

WORLD FACT BOOK. 2003. Country profiles. [Web:] <http://www.cia.gov> [Date of access: July. 2003.]

WORLD TRADE ORGANIZATION ANNUAL REPORT. 1996. Vol. 1. Special topic: trade and foreign direct investment.

WU, F. & PING, T.J. 2002. Singapore's changing growth engines since 1965: an economic history of nimble adaptability. Economics division ministry of trade and industry.

YEATS, A., AMJADI, A., EINCKE, U. & NG, F. 1997. Did domestic policies marginalize Africa in the world trade? Washington D.C.: World Bank.

YEATS, A. & FRANCIS, N.G. 1996. Open economies work better: did Africa's protectionist policies cause its marginalisation in world trade? Washington D.C.: World Bank. Policy research working paper no.1636.

YEATS, A., AMJADI, K., REINICKE, E & FRANCIS, N.G. 1997. Did domestic policies marginalise Africa in international trade? Washington D.C.: World Bank.

YOUNG, A. 1994b. The tyranny of numbers: confirming the statistical realities of the East Asian growth experience. National Bureau of Economic Research. Working paper no. 4680

YOUNG, A. 1995. The tyranny of numbers: confronting the statistical realities of the East Asian growth experience. *Quarterly journal of economics*, 34 (4): 641-680.