

**ECONOMIC OPENNESS AND INCOME GROWTH: A
REASSESSMENT OF THE RELATIONSHIP FOR DEVELOPING
COUNTRIES**

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Abstract

This study analyzes the economic growth differentials among developing countries across Sub-Saharan Africa (SSA), Latin America and the Caribbean (LAC), South and East Asia (SEA) and High Performing Asian Economies (HPAEs), in the context of economic openness. We also investigate economic growth differences between developing countries that opened up their economy early (1960s) and those that opened up later (1980s). The results, using the SYS-GMM estimator show that, economic openness as measured by foreign direct investment positively affects economic growth in SSA and HPAEs. In LAC and SEA, it has no effect on growth. Openness as measured by international trade positively affects growth in SSA and HPAEs. In SEA, the effect is mixed while in LAC, trade has no effect on growth. The HPAEs recorded higher positive trade effect on growth relative to the other countries on account of efficiently managed inflation and well developed human capital.

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CHAPTER ONE

1.1 Introduction

The developing world has been characterized by economic growth differentials and persisting regional income inequalities over the past four decades. Countries in Latin America and the Caribbean (LAC), South and East Asia (SEA), Sub-Saharan Africa (SSA) and the high performing Asian economies (HPAEs) have witnessed different levels of growth performances. Although countries in these regions performed similarly well in the 1960s when most of them adopted import substitution industrialization as a medium of attaining accelerated growth in per capita income, their performances varied after the 1960s. The differences in economic performance across the regions have attracted interests in determining their causes. While some attribute the differences to international debt (Sachs, 1985), others attribute it to the financial repression (Roubini and Sala-i-Martin, 1992). Many more have traced it to the degree of openness to international trade, and it is in this context that this thesis seeks to explain the growth differentials recorded in developing countries.¹ The empirical investigation of the economic openness and real GDP growth relationship dates back to the 1970s with the works of Kruger (1978) and Balassa (1982) among others. These studies project economic openness as an ‘engine’ of growth and a means to improving living standards.

During the 1970s and early 1980s, it was widely held among economists and policymakers that, opening up the economy of developing countries was a better way to achieve accelerated growth relative to the adoption of an inward-oriented economy.

¹ See Balassa and Associates (1978), Kessides (1991), Dollar (1992), Chen (1999), Frankel and Romer (1999) and Dollar and Kraay (2003)

Though this view was widely accepted, findings of empirical studies on the exact openness-growth effect have remained uncertain. While some studies predict a positive effect (Hansen and Rand, 2004), others have cast doubts on the robustness of this positive effect (Rodriguez and Rodrik, 2001). The impact of external sector openness on economic growth has therefore been and still remains uncertain among economists and policy makers.

Economic theory explains why and how openness to trade and foreign direct investment (FDI) generate improvement in growth performance. First, openness allows economies to specialize in the production of goods for which they have comparative advantage, either due to factor endowment or technological advancement. Specialization ensures efficient allocation of scarce resources, yielding increased output, higher income and improved standards of living. Secondly, openness to international trade leads to increased market size and competition which yields efficient allocation of scarce resources. Thirdly, opening up the external sector facilitates the transfer of technological know-how and managerial expertise from developed countries to developing countries. Openness to trade and foreign direct investment constitute an effective channel for international transfer of know-how and dissemination of technological progress. If the cost of imitating technological know-how is lower than the cost of internal innovation of such technologies, then economic theory suggests that poorer countries will not only grow, but grow even faster than more developed countries till some point of equilibrium is reached between developed and developing countries in terms of technological know-how. This will however hold only if such developing countries remain open to trade and capital flows. Fourthly, a more open economy is able to avoid sharp contractions in

consumption and investment during periods of temporal income shortfall by running a current account deficit. Similarly, when it has ample savings, an open economy is able to participate in productive investment projects abroad, generating positive net factor payments from abroad and hence increasing its national income. Outward oriented policies that encourage capital inflows also create an enabling and supporting environment for the private sector to thrive and fully contribute to the growth potential of the domestic economy. In essence, the limitation of domestic investment financed solely by inadequate domestic savings is eliminated, allowing for the inflow of foreign investment which bridges the financial gap between domestic capital and the amount of investment required to fully exploit the potential of the private sector and its significant role of fueling domestic growth.

These benefits from openness are supposed to be realized when world trade is relatively more liberalized because countries will be able to trade and interact more with the rest of the world than they would under a less liberalized trade system. However, the experiences among developing countries seem counter intuitive. Hence, the puzzle associated with the high and sustained growth recorded by developing countries (HPAEs) that opened up their economy earlier in the 1960s (dubbed ‘early openers’) when international trade was less liberalized, and the relatively low and sluggish growth recorded by other developing countries (LAC, SSA and SEA) that opened up later in the 1980s (dubbed ‘late openers’) within a more liberalized trade regime.

The adoption of free trade as a means to economic growth dates back to the 18th century following Adam Smith and David Ricardo’s criticisms of the Mercantilist ideas in Europe. Their argument for free trade was premised on the notions of absolute and

comparative advantage. This marked the birth of the free trade revolution. However, the significant move from reliance on inward-looking industrial policies towards outward-looking export-oriented strategies occurred after the late 1940s as many countries reverted to inward-looking strategies prior to and during the World War II. Although Great Britain had adopted free trade policies in the 19th century, most developed countries during the latter part of the 19th century and early 20th century were still very much industrialized and pursuing import protection policies. The United States, Germany, France and Japan were predominantly inward-looking. The Soviet Union in the 1920s and 1930s as well as China after 1949 were no exceptions to the pursuit of inward-oriented strategy to growth (Baldwin, 2004).

The 1940s and 1950s thus marked the beginning of significant world integration through international trade led by developed countries. The period witnessed the proliferation of Regional Trade Agreements (RTAs) which were initially among developed countries (north-north in nature). The formation of the General Agreement on Tariffs and Trade (GATT) in 1947 and the European Economic Community in 1957 are examples of such RTAs. The latter part of the 1960s however saw RTAs take on north-south forms, enabling developed countries to grant tariff concessions and other preferential treatment to developing countries. The Kennedy Rounds of GATT held between 1962 and 1967 are examples of such agreements which were targeted at the expansion of trade in developing countries as means to furthering their economic development. It was not until the late 1970s that most developing countries realized that they could achieve their developmental goals by harnessing the gains from trade

partnerships with other developing countries rather than relying extensively on the rich-north. The proliferation of RTAs thus came to include south-south agreements.

International trade became more liberalized after the late 1970s and 1980s when most developing countries shifted from inward-oriented to outward-oriented growth strategy. The African Caribbean Pacific (ACP) group of states created in 1975 entailed the integration of developing countries towards the goal of achieving sustainable development and poverty reduction. In attaining this, the member states most critically sought to pursue greater integration into the world economy through trade. Hence, all member states were signatories to the Cotonou Agreement with the European Union.² The Geneva round of the GATT multilateral trade negotiations in 1947 was initially signed by 23 countries in an effort to give an early boost to trade liberalization. The number of countries later increased to 102 in the Tokyo round in 1973 and further to 123 by 1986 during the Uruguay round (World Trade Organization, 2012). Subsequent to the 1980s, the world has even become more integrated through trade and foreign capital inflows. Currently, 82% of internationally recognized sovereign states (160 out of 195) are member states of the World Trade Organization which was officially created in 1995, replacing GATT (World Trade Organization, 2012). Other Free Trade Agreements (FTAs) such as the African Growth and Opportunity Act (AGOA) signed into law in 2000 and renewed in June 2015, the Most Favored Nation (MFN) and the Generalized System of Preference under the WTO, the North American Free Trade Agreement (NAFTA) which came into force in 1994 and the Doha Round of trade negotiations among the WTO membership launched in 2001 are some of the existing evidence of how

² Except Cuba

liberalized international trade has become in the past three decades relative to the 1960s. These trade developments have culminated into higher world trade-to-GDP ratios. In 1960, the world economy recorded a total trade to GDP ratio of 24.77%. By 1980, the rate had increased to 38.72%. This has increased over the years to 42.76%, 49.81% and 55.88% in 1995, 2000 and 2010 respectively. By 2013, the ratio had reached 59.41% (World Bank WDI, 2015). It is thus evident that, international trade has become more liberalized after the late 1970s and early 1980s relative to the 1960s.

Empirical studies have however done little, if any, to explain the apparent anomaly associated with the difference in growth experienced by the HPAEs and the other developing countries within different trade regimes that seems even more favorable to the other developing countries. Tagged as the ‘Asian Tigers’, Hong Kong, Singapore, South Korea and Taiwan were the first among developing countries to successfully transition their economies from inward-oriented to an outward-oriented approach to economic growth and development in the 1960s.³ They were followed by Thailand, Malaysia and Indonesia who also went ahead of other developing countries. These countries and the ‘Asian Tigers’ have been referred to as high performing Asian economies (HPAEs) due to the high level of economic growth they experienced after opening up. The ‘miraculous’ growth recorded in South and East Asia between 1960 and 1990 was largely attributed to the growth performance of these HPAEs.

The Asian Tigers were noted for maintaining exceptionally high growth rates such that by the early 2000s all four of them had attained the high income economy

³ With the exception of Hong Kong which was already pursuing open trade and investment policies (Baldwin, 2004).

status. They grew in excess of 7% annually over three decades after opening up (between 1960 and 1990). Since most developing countries in Latin America and Sub-Saharan Africa opened up later in the late 1970s and early 1980s, they have however recorded comparatively, an annual lower average growth rate of about 3.37% between the 1980s and 2010.⁴ After three decades of opening up, SSA and LAC grew less than half of the growth rate experienced by the ‘Tigers’.

Open markets, free trade and other factors have mostly been credited with the boom otherwise known as the economic miracle recorded by the HPAEs. It’s thus puzzling that other developing countries could not and still have not been able to experience such magnitude of sustained growth after opening up their external sector, especially when they are doing so in a relatively more liberal international trade regime. Daumal and Özyurt (2011) explain that opening up the external sector leads to the integration of an economy into global innovation networks and international market contacts which increase the prospects of economic growth. However in a period when the world was relatively less integrated (1960-1980), the HPAEs were able to maintain growth rates twice the rates recorded by other developing countries within a period (1980-2012) when the world had become more integrated.

Although empirical studies on the actual openness-growth nexus exist, it is yet to be made conclusive. None of such studies has investigated the possible reasons for the difference in the growth effect of openness recorded by HPAEs and other developing countries. This thesis therefore reassesses the relationship between external sector openness and economic growth as it pertains to developing countries. It also investigates

⁴ Author’s calculation using data from the World Development Indicator (WDI), World Bank

and explains the apparent anomaly that describes the difference between the openness gains experienced by the HPAEs and developing countries in SSA, LAC and SEA within two different trade regimes.

1.2. Background and Objective

The post-World War II era was marked by the independence movement, with developing countries attaining independence from their colonial rulers. Motivated by the desire to raise living standards, economic development became the prime objective of newly independent developing countries. The quest for rapid growth formed the core of policy making. A widespread view among economists and policy makers in developing countries was that, the best way to achieve accelerated growth was by pursuing import-substitution industrialization. To a very large extent, this approach was justified by a number of reasons.

Having observed the developed countries that colonized them, developing countries perceived import-substitution and industrialization policies to be a catalyst for economic growth. The developed countries (former colonial rulers) had much higher per capita income levels and were much more industrialized. To the developing countries, industrialization was therefore an appropriate means to raising per capita income and improving living standards. An economically viable approach to achieving significant industrialization was perceived to be restricting imports, boosting domestic demand, and using the country's primary-product export earnings to import capital goods for industrialization. The economic prosperity of highly inward-oriented economies such as

Germany, France, the Soviet Union and the United States during the nineteenth and mid-twentieth century were sources of motivation for the adoption of protectionist policies by the developing countries.

Developing countries also had theoretical economic support for adopting inward-oriented economies in the "Infant Industry" argument set forth by Alexander Hamilton (1913) which was widely accepted by many classical and neoclassical economists as a valid exception to the case for worldwide free trade.⁵ The pursuit of inward-oriented economies by developing countries was also premised on the Dependency theory which had become popular during the 1960s.⁶ The dependency theory advocated an inward looking approach to development and an increased role for the state in terms of imposing barriers to trade and promoting nationalization of key industries. Although the protectionist policy approach worked well initially for the developing countries, its drawbacks became increasingly apparent, with a net outcome of a slow paced growth rate relative to the pace at which their economies grew prior to the adoption of import substitution policies (Baldwin, 2004). It subsequently became apparent among economic policy makers of developing countries that the import substitution strategy was not appropriate for most developing countries in raising long-run growth rates.

⁵ the infant industry argument maintains that, during the temporary period when domestic cost in an industry are above the product's import price, a tariff is a socially desirable method of financing the investment in human resources needed to compete successfully with foreign producers. (Baldwin, 2004)

⁶ Dependency theory is the notion that inward investment is a means of enriching a "core" of wealthy states at the expense of a "periphery" of poor and underdeveloped states. Dependency theory therefore encourages inward looking approach to development. It proposes increased state role in imposing inhibitions to globalization in terms of international trade and foreign investment.

By the 1960s, some developing countries began to shift from the inward-oriented to outward-oriented approach to economic growth and development with Singapore, Taiwan and South Korea leading the way and experiencing appreciable levels of success within fairly liberal trade systems. Though other developing countries undertook periodic attempts to liberalize their trade restrictions, most of them still pursued the import-substitution approach to growth until the late 1970s. Countries like Ghana, Uganda, Turkey and Mexico adopted more outward-looking policies in the late 1970s and early 80s. The period also saw a gradual shift in thinking amongst economists and international organizations such as the World Bank and the International Monetary Fund (IMF) from inward-oriented to outward-oriented policies (Baldwin, 2004). The 1990s witnessed the resurgence of the debate over the Dependency theory with majority of the research works focusing on the repercussions of opening up to foreign investment on economic growth. Most findings debunked the argument made by dependency theorists and showed that opening up to foreign capital flows had beneficial rather than detrimental effects on economic growth.

It became increasingly apparent that the inward-oriented approach (import-substitution approach) to growth was not an effective means to raising long run growth rates in developing countries. In identifying what could have gone wrong, Baldwin (2004) discusses two mistakes; an uncritical acceptance of the ‘Infant Industry’ argument and a failure to consider the macroeconomic consequences of import substitution policies. For instance, as noted by Meade (1955), the infant industry argument is premised on technological externalities associated with the learning process. However in reality, the externalities create little or no incentive to entrepreneurs in bearing the

knowledge-acquisition cost. For example, in acquiring the know-how about local production techniques needed to compete with foreign producers, an entrepreneur who bears the innovation cost of such technique faces the challenge of his innovation becoming freely available to other local producers. With free access to the new technique, the entrepreneur who bore the initial innovation cost faces competition from his local competitors (who also use the technique). This drives down the product's price to levels where the initial entrepreneur is unable to recover his cost of the innovation. The fact that technological externalities may not be internalized reduces the incentive to learn and innovate local production techniques needed to compete with foreign producers. The imposition of protective tariffs is no guarantee that individual entrepreneurs will undertake additional investment in knowledge acquisition (Baldwin, 2004). In most developing countries, the infant industries receiving infant-industry protection were therefore slow to grow.

Following the setbacks of the infant industry argument and the negative effects of protectionist policies on macroeconomic variables such as aggregate exports and imports, the inward-oriented approach to development lost its popularity in most developing countries. Theoretical literature on the openness-growth relationship has come to reinforce the need for liberalizing the external sector. According to the theory of 'Comparative Advantage', free international trade allows for the efficient allocation of a country's resources to the production of goods for which it incurs the least resource cost while enabling the import of goods and services that would otherwise be produced domestically at a higher resource cost. The Ricardian model of comparative advantage holds that even if a country has absolute advantage in the production of both goods, trade

is still a preferred option to autarky. This leads to efficient resource allocation across countries and hence increases total world output and welfare. The Heckscher-Ohlin-Samuelson theory also shows that welfare gains are enjoyed from trade through specialization which is based on factor endowment. These static trade models suggest that openness temporarily increases growth due to short-run gains from the reallocation of resources.

Recent growth literature identifies channels through which openness to trade affects economic growth in the long run. According to Harrison and Hanson (1999), less developed countries which open up to international trade, create more opportunities to absorb new ideas, fill in their technological gaps and converge faster to international norms. Endogenous growth models have also shown that, through participation in world markets, trade affects economic growth positively through improvement in Total Factor Productivity (TFP) and growth in knowledge acquisition. Generally, these models suggest that trade leads to accelerated growth in the long run. Economic theory further establishes that there are two main gains from international trade; consumption and production gains which ultimately translate into increase in national output and improvement in collective living standards. This is because international trade causes production to be centered on those sectors where an economy's labour is relatively most efficient resulting in greater output which allows citizens to expand their basket of consumption goods and services at relatively lower prices than they could afford in autarky. Openness to foreign direct investment also serves as a channel for the transfer of know-how, technological progress and managerial expertise from developed to

developing economies, improving the skills and dexterity of labour in developing countries.

The openness and growth relationship in the theoretical framework have however been indistinct. In Thirlwall's Balance of Payments constrained growth model, which explains the trade-growth relationship through the demand-pull characteristics of exports, trade represents an important constraint to economic growth by means of balance of payments problems. A dynamic version of the Ricardian model presented by Findlay (1984) also suggests that trade reduces growth rate. His model indicates that relative to autarky, trade leads to declining growth for countries which export agricultural goods and imports industrial ones. Rodrik (1999) describes the theoretical openness-growth nexus as fundamentally ambiguous.

In line with the theoretical ambiguity surrounding the trade-growth relationship, empirical studies have also suggested inconclusive results on the openness-growth relationship. Nonetheless, most findings of these studies suggest that opening up the external sector boosts economic growth. In an attempt to test the relationship between trade and economic growth, Balassa and Associates (1978) regress the growth rate of exports on the growth rates of output. The study used two measures of output; one without exports and the other with exports. The results of the study show a significant positive relationship between trade and economic growth. The positive relationship was however stronger when output was inclusive of exports. This finding is also consistent with Krueger's (1978) claim that when the growth of exports is faster, the growth of Gross National Product (GNP) is also faster.

To a very large extent, recent empirical research agrees with the positive effect of opening up to foreign investment on economic growth. Firebaugh (1992) argued that foreign investment would adversely affect economic growth if it were less productive relative to domestic capital and if domestic capital is displaced by the relatively less productive foreign investment. De Soysa and Oneal (1999) however show that foreign investment is more productive relative to domestic capital. Using Granger causality test, they also show that FDI stimulates rather than displaces domestic investment; hence developing countries have no reason to eschew foreign investment inflows in pursuit of rapid economic growth. The works of Edward (1998), Frankel and Romer (1999), Fu (2004), Liu et al (2005) and Cheng and Mendy (2012) show that openness in terms of both international trade and FDI is beneficial to economic growth.

Following the discussions on the indistinctive openness-growth nexus and the seeming anomaly associated with the growth benefits from openness experienced by the early and late openers within a more restrictive and a relatively less restrictive trade regime respectively, the objectives of this thesis are set as follows. First, this thesis is done in the Chen (1999) framework, which analyzes the openness-growth relationship in a comparative context. We however extend the analysis to cover regions that are more representative of the developing world. The thesis re-assesses the interaction between economic openness and economic growth within a trans-regional context using Latin America and the Caribbean (LAC), South and Eastern Asia (SEA) and Sub-Saharan Africa (SSA). Secondly, this thesis examines whether intra-regional income inequality can be attributed to external sector openness. That is, whether openness widens the income gap between countries in the same region. If the empirical result is supportive of

the fact that the gains from openness to growth is contingent on the initial income level of a country, then openness could be an important factor in explaining regional inequalities in income between relatively rich and poor countries. Thirdly, this thesis identifies, tests, and explains the sharp contrast between the high rates of growth recorded by the HPAEs within a period when international trade was relatively less liberalized and the relatively low growth rates recorded by the other developing countries in recent times when international trade is relatively more liberalized. To the best of my knowledge, this is the first study that seeks to conduct a trans-regional comparative analysis of the openness-growth relationship in the developing world while investigating the reason behind the difference in the growth-effect of openness as recorded by the HPAEs and other developing countries.

1.3 Thesis Contribution

This thesis makes three important contributions to the economic openness and growth literature. First, it adds to the scanty empirical studies on comparative trans-regional analysis of the openness-growth relationship. The empirical evidence of the openness-growth nexus has been examined within cross-country empirical studies, within-country studies as well as in comparative studies that rely on within-regional variations. Chen (1999) is one of the few, if not the only study that makes a trans-regional comparison. He studies the openness-growth nexus in the context of economic growth differentials among countries in East Asia and Latin America. The study shows that the higher the degree of openness, the greater the growth rate experienced. This thesis therefore addresses the

need for additional and extended trans-regional studies as acknowledged by Jelles (2012). According to him, regional-specific research on the impact of trade should be undertaken in regions other than South and South-East Asia. The thesis therefore extends Chen's (1999) study to cover an additional region. It comparatively analyzes the growth-openness nexus within the context of growth differentials in Latin America, South and East Asia and Sub-Saharan Africa.

This thesis also examines whether external sector openness contributes to the income differentials among countries within a given developing region. That is, whether openness contributes to widening the income gap between countries in the same region. This is relevant to ascertaining whether or not the effect of openness on economic growth is contingent on the initial growth performance of an economy. Precisely, it shows whether openness is more beneficial to relatively richer states than poor states within a given developing region. An empirical result which shows that, the magnitude of the openness effect on growth is contingent on initial growth performance implies that, openness is an important factor in explaining the differences in growth between relatively rich countries and poor countries. Studies that focus on the effect of economic openness on economic growth have used economic models that do not capture the effect of openness on economic growth given the initial level of growth already attained by a country.⁷ This study therefore modifies the 'standard' growth model to include an interaction variable of a country's initial real GDP per capita and its openness to determine if the effect of openness on economic growth is dependent on the level of

⁷ See Krueger (1978), Frankel and Romer (1999) and Dollar and Kraay (2004),

economic growth attained by an economy. In essence, it examines if openness accelerates or decelerates convergence among developing countries.

This thesis further makes a contribution to the openness-growth literature by analyzing the contrast between the high rate of growth recorded by the high performing Asian economies (HPAEs) who opened their economies when the world trade regime was relatively restrictive and the relatively low growth rates recorded by other developing countries such as those in Sub-Saharan Africa and Latin America in recent times when international trade is relatively more liberalized. To the best of our knowledge, this is the first study that investigates the growth differences recorded by the ‘early openers’ and the ‘late openers’ while conducting a trans-regional comparative analysis on the openness-growth relationship in the developing world. This analysis will yield policy recommendations for advancing accelerated growth in developing countries.

1.4 Thesis Organization

The rest of the thesis is organized as follows. The next chapter (chapter two) presents a review of relevant theoretical and empirical literature on the openness-growth nexus. The chapter presents in detail, the conflicting findings of empirical studies that have attempted to explain the openness-growth relationship. Chapter three analyzes and discusses the performance of HPAEs and other developing regions since opening up their external sector. The chapter discusses regional performances in terms of growth, openness to trade and foreign investment inflows, making some comparative analysis of how the trends have differed over the decades. Chapter four presents the econometric

model and the relevant variables that are used to empirically examine the relationship between openness and growth. It also discusses the econometric challenges associated with estimating the econometric model with alternative techniques as well as the rationale behind the choice of the appropriate estimation technique used in this study. In chapter five, we estimate and discuss the empirical findings of the standard growth model. Chapter six summarizes and concludes the thesis with policy recommendations.

CHAPTER TWO

2.1 Economic Openness and Growth: A Review of the Literature

The impact of external sector openness on economic growth has been and still remains a subject of debate among empirical studies. As discussed in the previous chapter, the growth-effect of outward-oriented economic policies remain uncertain in theory and most especially in empirical studies. According to the hypothesis of factor input mobility across sectors, the international trade theory of Heckscher-Ohlin-Samuelson, suggests that openness to international trade may generate substantial gains by reallocating resources between tradable and non-tradable sectors. Other theoretical models however suggest that free trade may hurt growth in income of underdeveloped or agrarian economies. In Bagwahati's (1958) immiserizing growth, export led growth may lead to a decline in national welfare. According to this theory, if growth is heavily export biased, it might worsen the terms of trade of the exporting country. In some instances this decline in the terms of trade may be so large as to outweigh the gains from growth.

In empirical studies, the relationship remains indistinctive. According to Daumal and Özyurt (2011), an open economy can improve the skills and dexterity of its labor force by learning through exporting. More so, opening up the external sector leads to the integration of an economy into global innovation networks and international marketing contacts which provide ideas to local producers to innovate and develop new products. Romer and Gugerty (1997) also argue that openness to the world economy including allowing foreign investment inflows is critical to enhancing economic growth. According to Myint (1958), openness to international trade in developing economies serve as an

effective means to overcoming the narrowness of the domestic market and providing an outlet for surplus products relative to domestic demand. De Soysa and Oneal (1999) find that the inflow of foreign investment has beneficial effects on economic growth. Their study shows that foreign capital penetration has no negative effect on economic growth. Hansen and Rand (2004), Kessides (1991) and Balassa and Associates (1978) are a few of the studies that predict positive growth effect of openness. Nevertheless, Young (1991) poses an argument against the positive effect of openness, claiming that liberalizing trade may push some economies to specialize in low value-added activities such as extraction and exploration of natural resources and production of primary goods. In effect, these non-dynamic sectors face low propensity for technological progress which turns out to be detrimental to long-run economic growth. Studies by Rodriguez and Rodrik (2001) and Harrison (1996) have also cast doubts on the robustness and significance of the positive growth effect of openness. According to Rodriguez and Rodrik (2001), the various indicators of openness used by researchers are poor measures of trade barriers. They also criticize the methods used to ascertain the link between trade policy and growth as having serious shortcomings. After reviewing studies such as Dollar (1992), Ben-David (1993), Sachs and Warner (1995), and Edwards (1998) they find little evidence that openness to international trade are significantly associated with economic growth. The results of Eris and Ulas (2013) suggest that, policymakers should not follow trade-openness-enhancing policies based purely on growth objectives. In their study, they used Bayesian model averaging techniques to investigate the robustness of the relationship between trade openness and long-run economic growth using a cross section of countries over the period 1960–2000. Their results show no evidence that trade

openness is directly and robustly correlated with economic growth in the long run. A study by Tekin (2012) shows similar results for a panel of Least Developed Countries (LDCs). Using Granger causality testing approach and taking into account cross-sectional dependence and heterogeneity issues, his study finds no significant causality relation between openness to trade and economic growth. The results obtained by Amadou (2013) in analyzing the causal relationship between openness and economic growth in the West African Economic and Monetary Union (WAEMU) countries suggest that besides Côte d'Ivoire, trade openness doesn't cause economic growth in WAEMU countries.⁸ A more recent study by Ulaşan (2015) examines the openness–growth nexus in a dynamic panel data framework, using various openness indicators. His findings show that lower trade barriers are not associated with higher growth, implying that trade openness by itself does not boost economic growth.

In spite of the seemingly mixed findings on the openness-growth relationship, the tendency is towards a positive impact of openness on growth. Sachs and Warner (1995) empirically examine the relationship using 122 countries. They show that open countries exhibit higher growth rates relative to inward oriented countries. Hansen and Rand (2004) also examine the causal link between foreign direct investment (FDI) and growth using estimates from heterogeneous panel data. Analyzing the Granger-Causal relationship between FDI and GDP in 31 developing countries, they show that opening up to FDI promotes economic growth. Liu et al (2005) adopt a dynamic approach to investigate the impact of openness on production efficiency improvement and compared

⁸ WAEMU is a regional organization of eight West African countries (Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo) with the objective of promoting regional economic integration and creating a common market.

the link between openness and economic performance in Malaysia, India and China. Their results indicate that openness as measured by international trade and foreign direct investment plays a positive role in improving an economy's production efficiency, although the impact of trade is not as robust as that of FDI. They also report that Malaysia, which had the highest degree of openness, enjoyed the highest economic performance among the three economies. Further studies by Frankel and Romer (1999), Dollar and Kraay (2004), Bussman et al (2002) and Calderon et al (2004), show that opening up the external sector positively impacts per capita income growth.

Recent review of empirical literature on the relationship between openness and the level of national income by Winters and Masters (2013) reinforces the presumption of a positive causal link from trade to income growth, especially by solving endogeneity issues and allowing for heterogeneity between countries. According to them, besides the positive relationship, heterogeneity also suggests openness to trade is less beneficial to low-income countries than other countries, though this is not completely settled. Zeren and Ari (2013) reinvestigate the causality relationship between trade openness and economic growth for the developed countries between 1970 and 2011. Using the Granger non-causality test for heterogeneous panel data, they find that openness increases economic growth in the G7 countries, as is suggested by the endogenous growth theory. They however show that, there is a feedback relationship between the two variables, such that while openness to trade increases growth, the increase in growth increases openness in return. The positive nexus between trade and growth has also been established within rapidly developing countries. In their study, Mercan, Gocer, Bulut and Dam (2013) examine the effect of trade openness on economic growth via panel data analysis method

in a sample of five emerging markets (Brazil, Russia, India, China and Turkey). Their results show that openness affects economic growth positively with a 1% increase in openness level increasing growth at the rate of 0.27%.

2.1.1 Comparative Studies

Other studies have conducted comparative analysis on the openness-growth nexus, relying on within-country variations. According to Daumal and Özyurt (2011), these studies mostly reported robust findings of growth in income benefits from opening up to trade. Rivas (2007) empirically examines the openness-growth nexus across Mexican states. She regresses growth rate of states on trade openness and interacts income levels of various states with trade openness. Her results show that trade openness is beneficial to growth of Mexican states. Furthermore, states with higher income levels are shown to benefit more from openness relative to states with low income levels. Daumal and Özyurt (2011) also perform a similar comparative study over Brazilian states, taking into account each state's initial income level. Covering 26 states over the period between 1989 and 2002, they show that openness is more beneficial to states with higher levels of initial per capita income. In addition, their results show that external sector openness benefits industrialized states more than states with an agricultural based economy. This implies that the gains from openness can be increased in developing countries by shifting from an agrarian based economy that characterizes such countries towards an industrialized economy. Other within-country studies such as Goldberg et al (2010) and Fu (2004) also show positive effect of openness on growth in India and China respectively. The findings

of cross country comparative studies are not any different from those of within-country comparative studies. Kakar and Khilji (2011) examine the causality between openness and growth for Pakistan and Malaysia over three decades. They show that in the long run openness as measured by trade positively affects growth rate in both Pakistan and Malaysia. FDI is however shown to have an opposite causal relationship with GDP in Malaysia, such that GDP growth rather causes increase in FDI.

Some researchers argue that the impact of trade on growth should not be expected to be homogenous across countries. Chang et al (2009) argue that the growth effect due to openness may be contingent on some structural characteristics. They therefore test this hypothesis empirically by creating alternative interaction variables of trade openness and inflation, openness and education, openness and governance, openness and initial GDP per capita amongst others. Their results show a positive impact of trade openness on economic growth only under certain conditions, such as when the labor market is flexible enough. Calderon et al (2004b) find no growth effect of openness for low level per capital income countries while high-income countries exhibit positive growth-effect of trade openness.

2.1.2 Regional Studies

The openness-growth relationship has also been empirically examined by some regional based studies. The results of such studies however appear to be mixed. Joao et al (2012) assess the relationship between trade agreements, trade integration and economic growth in Asia using 21 South and South East Asian countries over the period 1980 to 2004.

Their results show that openness of either a single country or of its neighbors does not affect a nation's growth. According to them, Panel Granger-Causality tests between openness and growth yield mixed results. Empirical studies of the openness-growth nexus in Africa however show a clear cut effect of openness on growth. Following the econometric methodology of Barro (1991) and Kandiero and Chitiga (2003), Chang and Mendy (2012) examine the impact of openness on growth in Africa. Their study uses a panel data of 36 African countries over the period 1980-2009. Using fixed-effect models, they carry out panel regressions and their results show that openness to both trade and foreign investment is significantly and positively related to economic growth. Using South Africa as a benchmark, they further show that North Africa is the best sub-region in generating positive GDP growth from FDI followed by Central Africa whilst East Africa and West Africa compete for the third and fourth positions. In his study, Jouini (2015) explores the empirical link between growth and openness to international trade, controlling for auxiliary variables in the model for the six Gulf Cooperation Council (GCC) countries over the period 1980–2010. His results show evidence of cointegration relationship between trade and growth, revealing that economic growth responds positively to trade openness over both the short run and long run. His study suggests the non-fragility of the relationship between economic growth and openness to international trade for the GCC region as the result is robust to using various trade openness measures and alternative model specifications

In light of the discussed literature, it is apparent that external sector openness contributes positively to economic growth. The empirical evidence of the positive impact is exhibited in cross-country empirical studies, within-country studies as well as

comparative studies that rely on within-region variations. Chen (1999) is one of the few, if not the only study that makes a trans-regional comparative study of the openness-growth relationship. His study analyzes the impact of openness on growth in the context of economic growth differentials among countries in East Asia and Latin America. The results show that openness is significant to improving growth and also the degree of openness due to outward-oriented policies is an important factor yielding the difference in growth rates between countries in the two regions. The study therefore shows that the higher the degree of openness, the higher the economic growth experienced.

This thesis therefore seeks to address the need for regional-comparative studies on the impact of openness on growth as identified by Jelles (2012). It extends the data sample used by Chen (1999) to include Sub-Saharan Africa. It also uses an updated dataset of openness and growth measures which have changed over a decade since the study by Chen (1999).

CHAPTER THREE

3.1 Regional Trends in Trade, Foreign Direct Investment and Growth

As a mechanism for promoting rapid economic growth in developing countries, outward oriented economic policies, including trade liberalization and foreign investment policies, have been the centerpiece of economic policy reforms since the 1970s. Prior to discussing the empirical openness-growth nexus, this chapter analyzes the growth and openness trends in developing regions during the post 1980s when most developing countries switched from inward oriented to outward oriented development strategies. It also analyzes the differences in the growth trends experienced by the early (HPAEs) and late openers (other developing countries) over the first three decades following their respective pursuit of outward-looking economic policies. The analyses cover Sub-Saharan Africa (SSA), South and East Asia (SEA), Latin America and Caribbean (LAC) and the high performing Asian economies (HPAEs). The trends are computed using a sample of 6 HPAEs over the period 1960 to 1990, and 87 other developing countries consisting of 40 Sub-Saharan African countries, 22 South and East Asian countries and 25 Latin American countries over the period 1980 to 2012. The period is further divided into three sub-decades to reflect economic growth patterns and the adoption and implementation of major openness policies.

The first sub-period (1980-1990) marks the inception of the Structural Adjustment Program (SAP) in developing countries while the second sub-period (1991-2000) captures the boom in information technology investment. The 1990s is also noted for the rapid growth in world trade over world income. Trade grew more than twice as fast as growth in income between 1990 and 1999 according to Martin (2001). The third sub-

period (2001-2010) captures the trend in growth and openness following the inception of such growth and trade policies as the African Growth and Opportunity Act (AGOA), the Doha round of trade negotiations among World Trade Organization members and the Poverty Reduction Strategy Papers (PRSPs) geared towards promoting broad-based economic growth.

3.1.1 International Trade

International trade has long served as an engine of growth. Developing regions have had a fair share of the gains associated with international trade subsequent to opening up their external sector. Developing countries accounted for one-third of world trade in 2008, up from about one-quarter in the early 1970s (IMF 2008). However, the progress made in opening up to international trade has been uneven among the three developing regions as can be observed in figure 3.1. SEA is observed to have made good progress towards integrating into the world economy through trade, followed by LAC whilst SSA appears to have made the least progress over the past three decades.

The figure depicts the early transition made by SEA from inward-oriented approach to outward-oriented approach to economic growth compared to the other developing regions (SSA and LAC). Trade as a percentage of gross domestic product (GDP) is observed to be on the rise in the early 1980s for SEA whilst LAC and SSA experience declining trade-to-GDP ratios. This rising trade-to-GDP ratio in SEA as already mentioned was driven by the HPAs who opened up as early as the 1960s. The adoption and implementation of the SAPs and Stabilization Programs (SPs) under the

auspices of the Bretton Woods Institution in the 1980s coupled with trade policy reforms in the late 1980s and early 1990s saw LAC and SSA join SEA in experiencing increasing rates of trade-to-GDP ratios between the late 1980s and early 1990s.

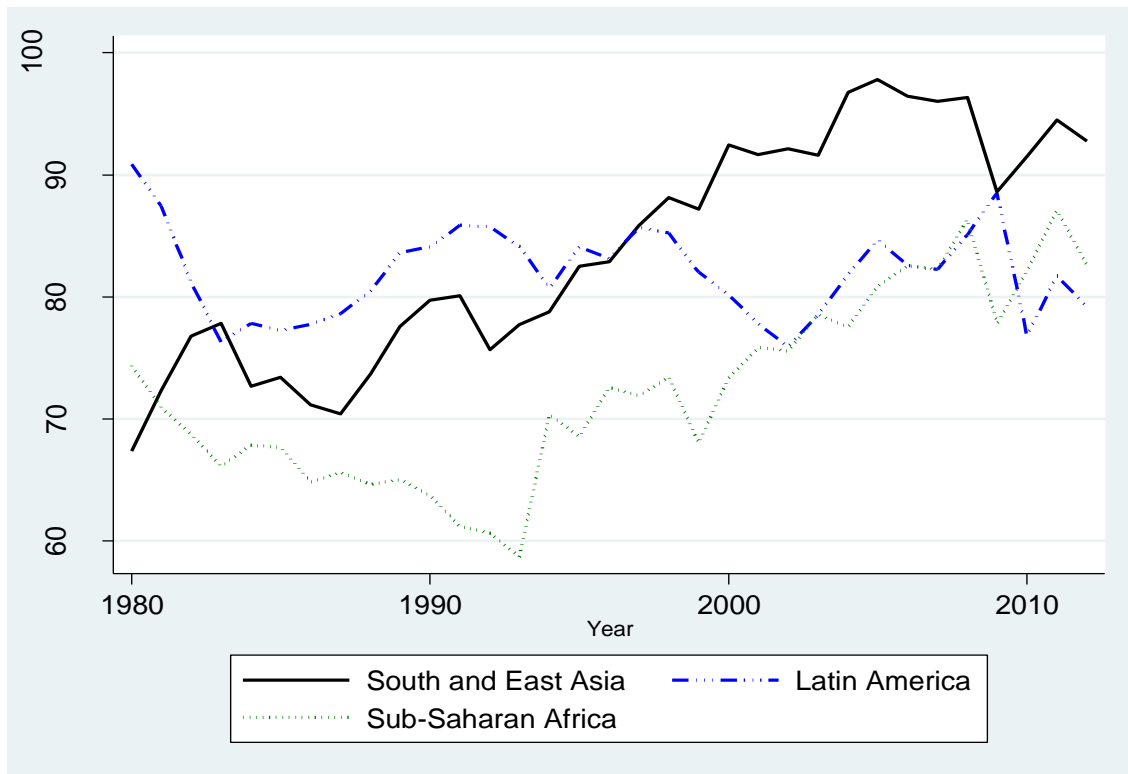


Figure 3.1 International Trade Trends in Developing Regions

Source: World Development Indicators (WDI), World Bank (2013).

The increasing trend continued for all three developing regions till the late 2000s when the world economy experienced a down turn due to the 2007-2008 financial crises. All three regions are however observed to be making good recovery in the early 2010s with rising trade to GDP ratios.

It is observed that after the early 1990s, all three developing regions have experienced upward trending trade-to-GDP ratios. This shows that over the past two

decades, developing countries have pursued outward-oriented economic growth policies than they did prior to the late 1980s and early 1990s. It also shows how liberal the international trade system has become over the years, leading to a more integrated world economy.

3.1.2 Foreign Direct Investment

Foreign direct investment has remained an important contributing factor to economic growth in developing countries and to global economic integration over period under study. Nevertheless there exist variations over time and between regions regarding the level of foreign investment inflows. In this study, foreign direct investment is also used as a measure of economic openness. Figure 3.2 below presents the trend in foreign investment inflows into the three developing regions.

Generally, there has been an increasing growth in the activity of multinational enterprises within all three developing regions. Latin America and the Caribbean performed best among all three regions in attracting foreign investment inflows. Subsequent to the policy reforms in the 1980s (such as the SAPs), Latin America has experienced a fair increase in FDI. The region's largest share of net investment inflows comes from the U.S, Europe and Latin America itself. An interesting observation is made regarding what draws multinational enterprises into investing in these developing regions. Whiles FDI in Africa is predominantly attracted by the primary sector, foreign investment inflows to Asia are mostly manufacturing and services sector motivated. However, in Latin America, FDI appears to be non-sector biased. It is attracted by the

primary sector (Chile, Bolivia), manufacturing (Argentina and Brazil) and by the service sector (Peru and Mexico).

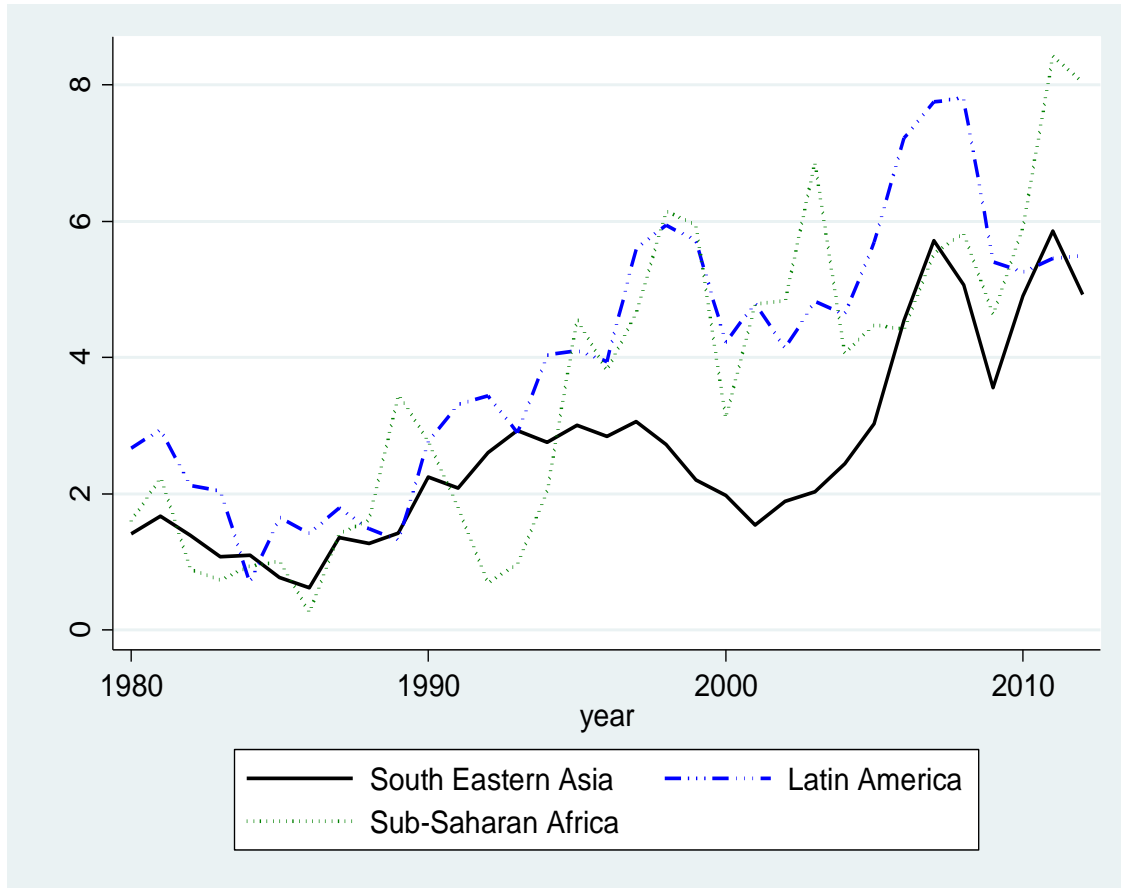


Figure 3.2 Trends in Foreign Direct Investment in Developing Regions

Source: World Development Indicators (WDI), World Bank (2013).

Foreign investment inflows to South and East Asia did not take off until the late 1980s. Though the shift from inward-oriented to outward-oriented approach to development started with countries in the Far East during the 1960s, most South Asian countries started opening up their economies in the early eighties after they had experienced sluggish growth rates throughout the 1970s and early 1980s.

Major outward oriented reforms were implemented as part of the SAPs in the 1980s and early 1990s. From Fig.3.2 it is evident that subsequent to the late 1980s, annual inflows increased until the late 1990s. The Asian crisis of the late 1990s and the crisis of the information technology industry in the early 2000s led to a temporal decline in FDI inflows in all three regions. SSA however experienced stagnated investment inflows between 1980 to the early 1990s while SEA and LAC recorded high FDI inflows. This could be attributed to some factors such as national policies that were hostile to private sector development in general and FDI in particular. Unstable political environment (characterized by civil war) and deteriorating infrastructure specifically in areas of telecommunications, transport and power supply were other significant factors hampering the inflow of FDI into Sub-Saharan Africa.

From the late 1980s onward, the implementation of the SAPs contributed significantly to macroeconomic stability as well as liberalization of trade and investment restrictions. Consequently, FDI inflows to SSA were stabilized at significantly higher levels after the mid-1990s. The global financial crisis however contributed to the decline in FDI inflows in all three regions between 2008 and 2009, after which all three regions made a strong recovery in the late 2000s and early 2010. Generally, it is observed that all three regions have over the thirty years period experienced an increasing trend in foreign direct investment flows. This is evident of how liberal and open developing countries have become and also how integrated the world economy has become.

3.1.3 Economic Growth.

The past three decades have witnessed varying economic performances among developing countries. Figure 3.3 below depicts the economic growth trends within the three developing regions between 1980 and 2012. Generally, real GDP per capita growth rates within the three regions fluctuated sharply. Overall, South and East Asian countries achieved better economic performance than Latin America and Sub-Saharan Africa with an annual average real GDP per capita growth rate of 2.82% between 1980 and 2012.

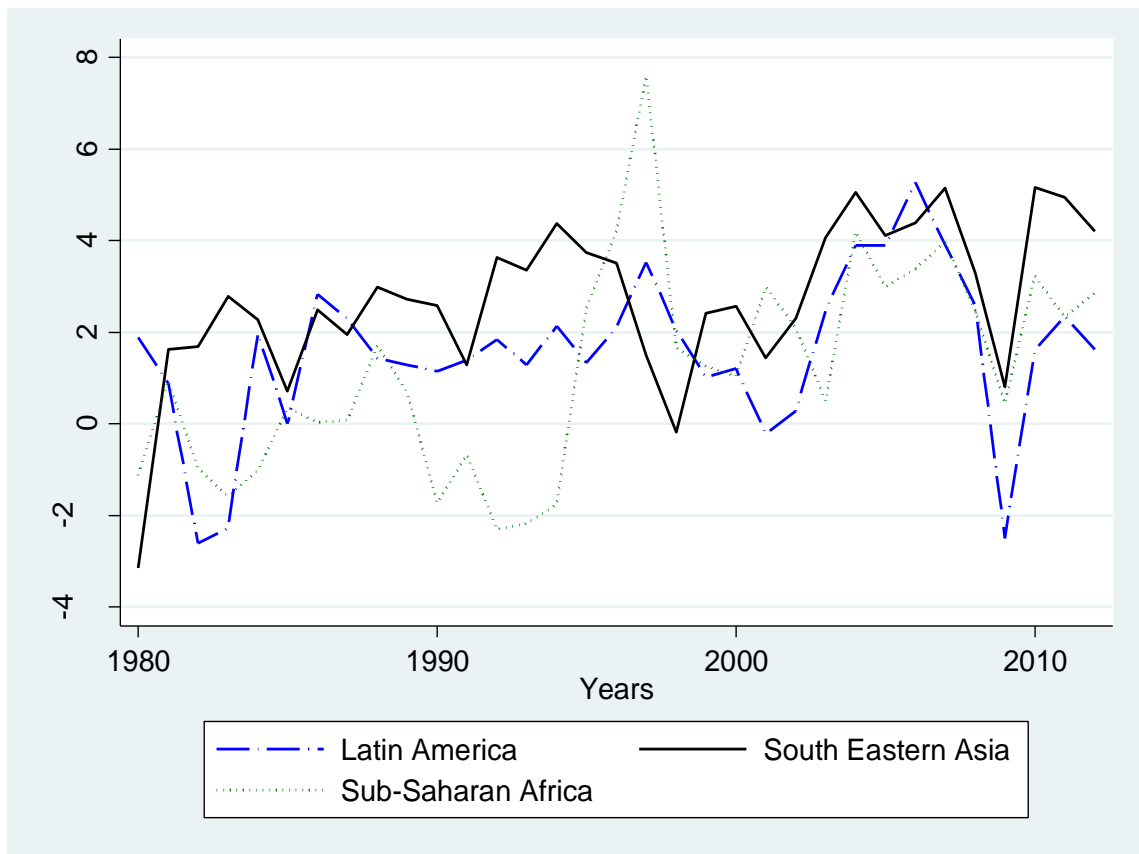


Figure 3.3: Real GDP Per Capita Growth trends among Developing Regions

Source: World Development Indicators (WDI), World Bank (2013)

Latin America comes second with an average annual real GDP per capita growth rate of 1.56% while Sub-Saharan Africa records a 1.29% average annual real GDP per capita growth rate. The sharp contrast between the increasing GDP per capita growth rates recorded by South East Asia relative to the declining growth rates recorded by SSA and LAC in the early 1980s can be attributed to the delay of most countries in Latin America and Sub-Sahara Africa in shifting from the import substitution approach to the outward oriented approach to economic growth and development. The increasing GDP per capita growth rate in SEA in the early 1980s as depicted in Fig. 3.3 can be explained by the robust growth performance of the high-performing developing East Asian economies (including Malaysia, Indonesia, Taiwan, Thailand, South Korea, Hong Kong) as well as China's remarkable growth performance in the early 1980s. The region's remarkable growth performance was predominantly attributed to physical capital formation and total factor productivity growth which comes across as benefits associated with outward-oriented economic policies through the inflow of foreign investment and the adoption of advanced technological know-how from developed trading partners. Most developing countries in LAC and SSA however continued to follow the import-substitution approach to growth which was however yielding diminishing growth rates. Coupled with the debt crisis in the early 1980s, many developing countries in SSA and Latin America experienced declining growth rates in early 1980s until they shifted from the import substitution approach to outward oriented approach. This switch in approach saw LAC and SSA join SEA in experiencing increasing growth rates in the mid-1980s.

The increasing trend continues for all three regions subsequent to the mid-1980s till the latter part of the 1980s. This is mainly attributed to the adoption of the Structural

Adjustment Program (SAP) proposed by the Bretton Woods Institutions in the early 1980s aimed at achieving long-term economic growth in developing countries. The SAPs reflect the neoliberal ideology that drives globalization and hence required developing countries to be more integrated into the international market. Its policies of currency devaluation, lower tariffs on imports and increased free trade have resulted in more developing countries opening up their economies. It is further observed that all the regions experienced increasing growth rates in the mid-1990s except for South East Asia which experienced declining growth rates due to the East Asian Crisis of 1997. Though countries in Latin America and SEA managed to restore growth after the 1982-83 recessions, Sub-Saharan African countries continued to experience stagnation and decline in growth rates even during the first half of the 1990s. This was due to structural and institutional bottlenecks as well as adverse external debts and policy errors. With more countries adopting the SAPs, the region however dispelled pessimisms surrounding its prospects by a fairly broad-based economic upturn in the second half of the 90s. During the same period, average income growth rate exceeded population growth rate for four consecutive years leading to per capita income gains across SSA. The information technology bubble in the mid-1990s could partly explain the recovery and high growth rates maintained in SEA in the late 1990s.

The rising trend in growth persisted for SSA until the second half of the 1990s when the region experienced a generalized slowdown which appears to have continued through the end of the decade and into the early 2000s. The adoption of the Poverty Reduction Strategy Papers (PRSPs) in a bid to enable poor countries experience faster sustainable growth in the early 2000s however saw most countries in all three regions

experience improved economic performance till the mid-2000s. The second half of the 2000s however saw all three developing regions experience a major economic down-turn due to the 2007-2008 global financial crises. Ultimately all three developing regions experienced a recovery in the late 2000s and subsequent improvement in growth performance in 2010.

3.1.4 Growth Trends between ‘Early’ and ‘Late’ Openers

Fig.3.4 depicts the striking difference between the high and sustained growth experienced by the HPAEs who opened up their external sector earlier in the 1960s and the relatively sluggish growth performance experienced by other developing countries which opened up rather late in the 1980s. It shows the growth performance of the HPAEs and the other developing countries within thirty years of opening up their respective external sectors.

Between 1965 and 1990, East Asia was noted for its remarkable record of high and sustained economic growth, with its economies growing faster than those of other developing regions. Most of the growth achievement was however driven by the growth performance of the region’s high performing economies including the Asian Tigers (Taiwan, Singapore, the Republic of Korea and Hong Kong).

Though the ‘Asian Tigers’ opened up their external sector early in the 1960s when the world’s trade system was relatively less liberalized, it is clearly shown that over three decades (1960-1990), they recorded very high growth rates than all other developing countries did over three decades after opening up their external sector.

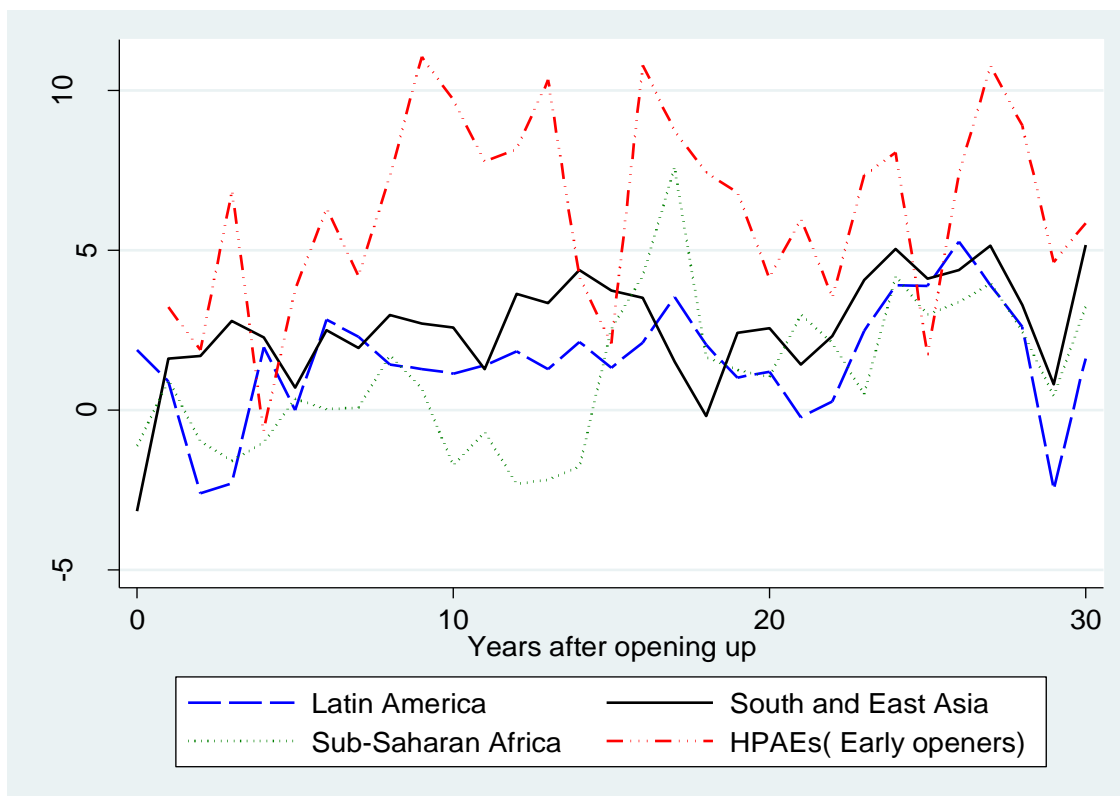


Figure 3.4: Real GDP Per Capita Growth trends between ‘Early’ and ‘Late Openers’

Source: World Development Indicators (WDI), World Bank (2013).

Interestingly, this is true in spite of the fact that the world’s trade system has been relatively more liberalized subsequent to the 1980s than it was in the 1960s and 1970s as discussed earlier. It is however worth noting that, as shown in the graph, the difference between the growth performance of the HPAEs and other developing countries declined over time. Although the difference is shown to be wide within the first two decades of opening up, the last decade after opening up shows relatively less growth performance difference between the HPAEs and the other developing countries. This may imply that, the gains from openness diminish as the world’s trade system becomes more liberalized over time.

Table 3.1 below shows the average real GDP per capita growth rate, trade openness (trade-to-GDP ratio) and foreign direct investment (net foreign investment inflows-to-GDP ratio) over three decades between 1980 and 2012 within the three developing regions. The net of foreign direct investment inflows, defined as new investment inflows less disinvestment from foreign investors is used as a proxy for FDI instead of net foreign investment flows (defined as the sum of investment inflows from abroad and investment outflows from the domestic economy). This is because most developing countries are usually on the receiving end of investment flows.

Table 3.1: Real GDP Growth, Trade And Foreign Direct Investment by Regions

Regions/ Variables	Real GDP Per Capita Growth Rates			International Trade (Trade/GDP)			Foreign Direct Investment (FDI/GDP)		
	1980- 1990	1991- 2000	2001- 2012	1980- 1990	1991- 2000	2001- 2012	1980- 1990	1991- 2000	2001- 2012
LAC	0.43	1.75	2.27*	81.41	83.69	81.23*	1.89	4.32	5.71*
SEA	1.84	2.62	3.74*	74.06	83.24	93.84*	1.29	2.62	3.81*
SSA	-0.26	1.17	2.76*	67.15	67.91	80.73*	1.57	3.42	5.65*

Note: All growth rates, foreign direct investment and international trade ratios are averaged over a decade except those with * which are averaged over 12 years.

Source: Author's computation using data from World Development Indicators (WDI), World Bank (2013)

Therefore, the level of investment allowed into the domestic economy from abroad can be used as an appropriate measure of how open a developing economy is to foreign direct investment.

SEA is observed to have recorded the most impressive real GDP per capita growth rates with an average per capita growth rate of 2.73% over the three decades.

Latin America comes next with an average GDP per capita growth rate of 1.48% over the three decades. Although SSA recorded the least growth performance among the three developing regions with an average growth rate of 1.22% over the three decades, it performed impressively well in the 1990s and 2000s relative to the 1980s. The table also shows that, among the regions under study, SSA is the least open to international trade with an average trade-to-GDP ratio of 71.93% over the three decades relative to 82.71% and 83.71% recorded by LAC and SEA respectively. Although the level of growth performance cannot be tied entirely to the degree of openness, it can be inferred from the table that, the least opened region to trade (SSA) records the least growth performance while the most opened region (SEA) to international trade enjoys the highest growth performance. This provides an apparent direct association between the degree of openness and the level economic growth. This informs the empirical test of the openness-growth relationship in this study.

Surprisingly, the table shows that, SEA is the least open to foreign direct investment among the regions with an average FDI-to-GDP ratio of 2.57% over the 32 years period. Latin America records the highest openness to FDI with an average FDI-to-GDP rate of 3.97% followed by SSA with 3.54%. It is observed that, LAC records higher growth performance relative to SSA just as it is more open to FDI than SSA is. However, SEA's growth performance is approximately twice that of LAC even though SEA's openness to FDI is significantly less than that of LAC. Is it possible then to infer that, the gains from opening up to international trade are greater than the gains from opening up to foreign investments? This study seeks to determine the possible reasons behind such differences in growth rates generated by varying degrees of external sector openness.

CHAPTER FOUR

4.1. Methodology and Model Specification

In the preceding section, we discussed and compared the growth performance of developing countries that opened their economies early and those that opened later. We also discussed the degree of openness as measured by international trade and FDI among SSA, LAC and SEA. The analyses of the growth and openness trends revealed some apparent growth-openness relationships that serve as the basis for further empirical inquiry into the relationship. This section discusses the econometric model and variables used to empirically investigate the growth-openness nexus. Due to the nature of the dataset (panel data), we also discuss the challenges associated with estimating the relationship with various panel data estimation techniques. The section further explains the rationale for the choice of estimation method used and ends with a discussion of the data used in the estimation.

4.1.1 Model Specification and Variables

This thesis empirically examines the impact of economic openness on growth using two measures of openness (total trade to GDP ratio and net FDI inflows to GDP ratio) while controlling for other variables that influence economic growth. We estimate the relationship using three panel datasets of developing regions made up of 87 countries observed over the period 1960-2012. The panel datasets consist of 40 Sub-Saharan African countries, 22 South and East Asian countries and 25 Latin America and Caribbean countries.

The Solow growth model provides the analytical framework for examining the openness-growth relationship in the sense that, it seeks to explain the determinants of economic growth and difference in growth rates across countries. Using standard notations, we specify a Cobb-Douglas production function with labour augmenting technological process as:

$$Y(t) = K(t)^\alpha A(t)L(t)^{1-\alpha} \quad (1)$$

where $0 < \alpha < 1$, Y is output, K is capital, L is labour and A is the level of technology. Labour force and technology are assumed to grow exogenously at the rate n and g respectively, such that:

$$L(t) = L(0)e^{nt} \quad (2)$$

$$A(t) = A(0)e^{gt} \quad (3)$$

Defining $\hat{y} = Y / AL$, $\hat{k} = K / AL$, δ as a constant rate of depreciation, and s as a constant fraction of output that is saved and invested, the dynamic equation for \hat{k} is given by:

$$\dot{\hat{k}}(t) = s\hat{y}(t) - (n + g + \delta)\hat{k}(t) \quad (4)$$

$$= s\hat{k}(t)^\alpha - (n + g + \delta)\hat{k}(t) \quad (4')$$

From equation (4') \hat{k} converges to its steady state value:

$$\hat{k}^* = \left(\frac{s}{n + g + \delta} \right)^{\frac{1}{1-\alpha}} \quad (5)$$

Substituting (5) into (1) and taking logs, the steady state income per capita is expressed as:

$$\ln \left[\frac{Y(t)}{L(t)} \right] = \ln A(0) + gt + \frac{\alpha}{1-\alpha} \ln(s) - \frac{\alpha}{1-\alpha} \ln(n + g + \delta) \quad (6)$$

Following Darku (2011), we write an autoregressive form of the growth model (equation 6) as:

$$\begin{aligned} \ln y(t_2) = & \zeta \ln y(t_1) + (1 - \zeta) \ln A(0) + g(t_2 - t_1) + (1 - \zeta) \frac{\alpha}{1-\alpha} \ln(s) \\ & - (1 - \zeta) \frac{\alpha}{1-\alpha} \ln(n + g + \delta) \end{aligned} \quad (7)$$

where $y(t) = Y(t) / L(t)$ is the per capita income and $\zeta = e^{-\beta_1} (t_2 - t_1)$. Equation (7) is a dynamic panel data model with $(1 - \zeta) \ln A(0)$ being the time invariant individual unit or regional effect term. In a Cobb-Douglas production function with labour augmenting technological process, $g(t_2 - t_1)$ represents growth in knowledge, which is represented by education in this study. Using standard notation of the panel data literature and adding a disturbance term we may re-write equation (7) as:

$$y_{it} = \gamma y_{it-1} + \sum_{j=2}^4 \beta_j x_{it}^j + \mu_i + \varepsilon_{it} \quad (8)$$

Where $y_{it} = \ln y(t_2)$, $y_{it-1} = \ln y(t_1)$, $\gamma = e^{-\beta_1} (t_2 - t_1)$, $\beta_2 = (1 - \zeta) \frac{\alpha}{1-\alpha}$, $\beta_3 = -(1 - \zeta) \frac{\alpha}{1-\alpha}$, $x_{it}^2 = \ln(s)$, $x_{it}^3 = \ln(n + g + \delta)$, $x_{it}^4 = g(t_2 - t_1)$, $\mu_i = (1 - \zeta) \ln A(0)$ and ε_{it} is the usual error term that varies across regions and time periods and has mean equal zero.⁹

⁹ μ_i reflects unobserved fixed effects such as geographical, political factors or quality of institutions and legal systems which vary across countries

In our empirical analysis, we assume the rate of depreciation (δ) is homogenous across countries and hence $x_{it}^3 = \ln(n + g)$ and represents rate of population growth embedded with some level of growth in knowledge (education).¹⁰ We also subtract \ln of the lag of GDP per capita from both sides of equation (8) to obtain the conventional standard growth model (used by studies such as Jalles, 2011 and Dollar and Kraay, 2004) which relates real GDP per capita growth to its lag, investment, education, and population growth. It must be recalled that our main goal is to investigate the effect of openness on income growth. We therefore augment this model with a proxy for trade openness (using trade-to-GDP ratio). We also replace domestic investment ($x_{it}^2 = \ln(s)$) with net foreign direct investment (FDI) inflows-to-GDP ratio as a proxy for investment and also as a measure of the degree of openness to the capital market. Economic growth in most developing economies are significantly influenced by the level of macroeconomic stability, we therefore include inflation to capture the effect of macroeconomic stability on growth. Hence equation (8) is rewritten as:

$$y_{it} = \gamma y_{it-1} + \sum_{j=2}^6 \beta_j x_{it}^j + \mu_i + \varepsilon_{it} \quad (9)$$

Where y_{it} represents GDP per capita growth rate, y_{it-1} represents lag of GDP per capita growth rate, x_{it}^5 and x_{it}^6 represent trade openness (trade as a percentage of GDP) and inflation. The lag of real GDP per capita growth (y_{it-1}) captures the lag effect of the explanatory variables. It takes some time for policies that affect the explanatory variables to actually impact on the economic performance of a country, therefore there may be lags

¹⁰ Given that population growth already expressed in growth terms, we do not take the log of it in our empirical estimation.

between the time policies are implemented and the time they impact on economic growth. As argued by Beck and Katz (1996), including the lagged real GDP per capita growth as an explanatory variable serves as a parsimonious way to account for the continuous effect of explanatory variables in the past. In line with the derivation of the standard growth model, the model in equation (9) is expressed in a semi-log linear functional form. All variables are expressed in log terms with the exception of real GDP per capita growth and population growth rate since they are already expressed as log difference. Education is also expressed in level terms since taking log of it will significantly reduce its values.

Most empirical studies on the openness-growth relationship have used models that seldom capture the effect of trade on economic growth given the initial level of growth in a country.¹¹ In this study, we modify the 'standard' growth model specified in equation (9) to include an interaction variable of a country's initial growth performance and its openness measured by trade ($\text{trade} * y_{it-1}$). This helps us to determine whether or not the effect of openness on economic growth is contingent on the initial growth performance of an economy. Specifically, it helps determine if openness is more beneficial to relatively rich economies than poor economies. Hence it captures the accelerating or decelerating effect of trade openness on convergence. If the coefficient of the interaction variable is negative in sign and statistically significant, then trade openness has resulted in accelerating convergence among the countries in a given region. On the other hand, if the coefficient is positive in sign and statistically significant, then openness as measured by trade has reduced the rate at which countries were converging. With this interaction variable, we are able to assess if openness contributes to the income differences between

¹¹ See Krueger (1978), Frankel and Romer (1999) and Dollar and Kraay (2004),

countries within a particular region. If the gain from openness is greater for relatively rich countries than poor countries, then it must be that openness to trade contributes to widening the gap between rich and poor countries in the same region. After including the interaction term between trade openness and lag of GDP per capita growth, equation (9) is expressed in a standard form as:

$$y_{it} = \beta_0 + \gamma(y_{it-1}) + \beta_2 \ln(fdi)_{it} + \beta_3(pop)_{it} + \beta_4(educ)_{it} + \beta_5 \ln(trade)_{it} + \beta_6 \ln(inf)_{it} + \beta_7(\ln trade * y_{it-1})_{it} + \mu_i + \varepsilon_{it} \quad (10)$$

where $\ln trade * y_{it-1}$ is the interaction term between openness (measured by trade) and lagged GDP per capita growth.¹² Trade and FDI may have a complementary or substitutionary relationship. The exact relationship between these variables remains the subject of many studies. To avoid distortions in our estimates by the link between the openness variables, we estimate equation 10 for trade and FDI separately. More so, external sector openness policies have time lags between their implementation and when they generate intended effect. Since the effect is usually not contemporaneous, the openness variables (trade and FDI) will be lagged five years to capture their true effect on economic growth.

Real GDP per capita growth and external sector openness indicators are the main variables of interest in the empirical estimation of the model specified in equation (10). Real GDP per capita growth rate (y_{it}) shows the level of economic performance within each country. There are two measures of openness. First, external sector openness is measured by the extent to which countries trade with the rest of the world. Openness to

¹² Some studies have used similar specification. See Jalles (2011) and Dollar and Kraay (2004)

international trade is expressed as the ratio of the sum of import and export to GDP. Second, openness is measured by net foreign direct investment inflows (FDI). This was calculated as the ratio of net foreign direct investment inflows (new investment inflows less disinvestment from foreign investors) to GDP.¹³ Education (*educ*) captures the effect of human capital improvement on real GDP per capita growth. Inflation (*inf*) measured by the percentage change in the consumer price index is included to reflect the annual percentage change in the cost (to the average consumer) of acquiring a basket of goods and services and hence the stability in general price levels. Population growth (*pop*) captures the effect of population on real GDP per capita. This effect may be negative when the growth in population is higher than the rate of growth in real GDP per capita.

As discussed earlier, economic theory including the Ricardian model of comparative advantage, the Hecksher-Ohlin-Samuelson theory and endogenous growth models as well as a number of studies on the openness-growth nexus, show that opening up to international trade and foreign investment, affects real GDP per capita growth rate positively. The trade-to-GDP ratio coefficient (β_5) and that of net FDI inflow-to-GDP ratio (β_2) are therefore expected to be positive. If population grows faster than output, then the coefficient of population growth rate (β_3) is expected to be negative. If otherwise, then the coefficient is expected to be positive. The coefficient of education (β_4) is hypothesized to be positive. This is because higher school enrollment rate improves human capital and enhances labour productivity; contributing to higher growth

¹³ Given that most developing countries are usually on the receiving end of foreign investment flows, we use net foreign investment inflows instead of net foreign investment flows as a proxy for the degree of openness to foreign investment.

rate in output (GDP). Theory shows that while inflation could usually be detrimental to economic growth, some moderate level is sometimes beneficial to economic growth. However, given that developing countries are characterized by high rates of inflation, it is expected that the coefficient of inflation (β_6) would be negative because high inflation is detrimental to growth. The coefficient of the interaction variable (β_7) cannot be determined a priori. If openness benefits rich countries more, the coefficient of the interaction variable is expected to be positive. However, if it benefits poor countries more, then the coefficient of the interaction variable is expected to be negative. The coefficient of lagged GDP per capita growth (γ) is expected to be positive and less than one.

4.1.2 Econometric Estimation

For panel data analysis, the common estimation approach used include Pooled Ordinary Least Squares (Pooled OLS), Fixed Effect (FE), Random Effect (RE) and the Generalized Method of Moments (GMM). Estimating the model in equation (10) by OLS faces the challenge of generating inconsistent and biased estimates given the presence of the lagged dependent variable included in the model as a regressor. This is because the lagged dependent variable (y_{it-1}) is positively related to the fixed effect term (μ_i). Besides creating an endogeneity problem, this also violates an assumption that is required for consistency of the OLS estimates. Using OLS attributes the predictive power of the fixed effect to the lagged dependent variable, hence overestimating the coefficient of the lagged dependent variable. Using the ordinary least squares will therefore generate

unrealistic statistical inferences. Dollar and Kraay (2004) and Edwards (1992) used OLS in their estimation of the impact of economic openness on growth. Frankel and Romer (1999) however criticized that using OLS regression may not produce the true effect of trade openness on growth due to the problem of endogeneity.

Issues arising from empirical estimation of dynamic growth models have been discussed in recent literature.¹⁴ The general conclusion is that, the system GMM estimator is the most appropriate approach to estimating dynamic growth models. A major challenge in estimating dynamic growth models such as the one specified in equation (10) with Fixed and Random Effect estimation is that some explanatory variables such as trade or FDI may be endogenous with respect to growth such that a shock to growth rate might also affect trade or FDI resulting in the problem of reverse causality. More so, these techniques face difficulties as a result of the lagged dependent variable included as a regressor in the model. In both methods, the lagged dependent variable is correlated with the fixed effect term since the determinants of the fixed effect contribute to the lagged variable. These challenges are addressed by using the difference generalized method of moments (DIFF-GMM). The problem of endogeneity caused by the lagged dependent variable can be corrected by first differencing the data under the assumption of serially uncorrelated level residuals, using the second and third untransformed lags as instruments (Arellano and Bond, 1991). This implies the following moment condition $E(Y_{it} \Delta \mu_i) = 0$ for all $t = 3 \dots T$. Differencing the data also removes the fixed effect, hence addressing the unobserved fixed effect problem. Applying the transformation to equation (9) gives:

¹⁴ See Caselli et al. (1996), Dollar and Kraay (2004) and Chang et al (2009)

$$\Delta y_{it} = \gamma \Delta y_{it-1} + \sum_{j=2}^6 \beta_j \Delta x_{it}^j + \Delta \varepsilon_{it} \quad (11)$$

And equation (10) becomes

$$y_{it} = \beta_0 + \gamma (y_{it-1}) + \beta_2 \ln(fdi)_{it} + \beta_3 (pop)_{it} + \beta_4 (educ)_{it} + \beta_5 \ln(trade)_{it} + \beta_6 \ln(inf)_{it} + \beta_7 (\ln trade * y_{it-1})_{it} + \varepsilon_{it} \quad (12)$$

Despite the strength of DIFF-GMM in solving the endogeneity problem and removing the fixed effect by first differencing the data, Blundell and Bond (1998) demonstrate that if y is persistent (close to random walk), the DIFF-GMM suffers the ‘weak instrument problem’. That is, untransformed lags are weak instruments for transformed variables as past levels convey little information about future changes. DIFF-GMM thus performs poorly.

The system generalized method of moments (SYS-GMM) developed by Blundell and Bond (1998) addresses the weak instrument problem of DIFF-GMM. It comprises of two equations. The first being the usual DIFF-GMM which uses lagged levels as instruments for equations in first differences. In the second equation, instead of differencing the data to remove the fixed effect, SYS-GMM takes the first difference of the variables to make them exogenous to the fixed effect and uses them as instruments in the level equation. This leads to adding another moment condition, $[E(\Delta w_{it} \mu_i) = 0]$ for all i and t , where Δw_{it} is the instrument and μ_i is the fixed effect. The SYS-GMM estimator is more efficient asymptotically as it explores more moment conditions than the DIFF-GMM estimator which uses only a subset of linear moment conditions. We

therefore follow Daumal and Özyurt (2011) in estimating the dynamic growth model in equation (12) by using the SYS-GMM estimator.

4.1.3. Data Description and Scope of the Study

The empirical analysis of this thesis is conducted using annual data of 7 high performing Asian economies (HPAEs) and selected countries from three developing regions over the period 1960-2012. The regions include Sub-Saharan Africa (SSA), South and Eastern Asia (SEA) and Latin America and Caribbean (LAC). The panel dataset include 40 countries in SSA, 22 countries in South and East Asia and 25 countries in Latin America. The data set is balanced.¹⁵ The HPAEs are excluded from the pool of SEA countries because they opened up earlier than most developing countries. They also have significantly higher average real GDP per capita growth and hence may overshadow the true effect of openness on growth in SEA if the study is conducted by simply pooling them together with the other SEA countries. The choice of the developing regions is basically motivated by the differences between the growth rates recorded by the countries after opening up their economies at about the same time except for some Asian countries. The choice of countries within each region is based on availability of data for key variables. The study period is motivated by the difference in growth recorded by the ‘early’ and ‘late openers’ after opening up to trade in the 1960s and 1980s respectively. The source of data for this study is the World Development Indicators (WDI) of the World Bank.

¹⁵ As a developed country, Japan is excluded from the HPAEs.

CHAPTER FIVE

5.1 Estimation and Econometric Results

In the preceding chapter, we specified and discussed the model to be used to empirically examine the openness-growth relationship. In this section, we estimate and discuss the results of the standard growth model specified in equation (12), using panel data of countries within each of the three regions. As mentioned earlier, equation (12) is estimated for trade and FDI separately. The results are discussed in two sub-sections. The first, presents a comparative regional analysis of the openness-growth relationship across the three developing regions. The second, discusses the difference between the growth effect of trade experienced by the ‘early openers’ (HPAEs) and the ‘late openers’ (other developing countries). To do this, we estimate the openness-growth relationship over a period of 30 years after each category of countries opened up their economies. The relationship is thus estimated for HPAEs over the period 1960-1990 and 1980-2010 for the other developing countries. We also report the Arellano and Bond test for second order autocorrelation (AR (2)), and the Sargan tests for over-identifying restriction.

5.2 The Growth-Openness Model

In Tables 5.1A and 5.1B below, we present the results of the openness-growth relationship estimated using a pooled data of all the three developing countries with regional dummies. The primary objective of using this approach is to test for the statistical significance of the difference in coefficient estimates among the regions.

Table 5.1A – Openness (measured by international trade) and Income Growth in Developing countries :Pooled Regression

Variables	Dependent Variable: GDP per capita growth rate (Y_{it})
	gmm estimates
y_{it-1}	0.132*** (4.02)
$trade_{it-5}$	-0.925 (0.63)
SSA dummy	-19.703*** (2.68)
SEA dummy	-11.360 (1.12)
$trade_{it-5} * SSA$ dummy	4.272** (2.56)
$trade_{it-5} * SEA$ dummy	2.919 (1.25)
educ	0.001 (0.09)
inf	-0.504*** (4.06)
pop	1.028* (1.86)
$trade_{it-5} * y_{it-1}$	-0.340* (1.69)
constant	7.594 (1.13)
Sargan test, p-level	0.379
AR(2) test, p-level	0.469

Notes: ***, ** and * represents 1%, 5% and 10% significance level respectively. Absolute values of the 't'-statistic are reported in parentheses.

The result in Table 5.1A shows that economic openness as measured by international trade is positively related to real GDP per capita growth in SSA and SEA but negatively related to real GDP per capita growth in LAC. SSA enjoys 0.04 more of an increase in per capita GDP growth than LAC, for a one percent increase in openness as

measured by international trade.¹⁶ This result is statistically significant at 5% level of significance. The trade coefficient estimates for SEA and LAC are however not statistically significant. SSA thus enjoys the most benefit from opening up to international trade relative to SEA and LAC. The p-values of 0.379 and 0.469 reported for the Sargan and Arellano Bond (AR (2)) tests confirms the validity of the chosen instruments and hence supports the validity of the results while also confirming the absence of autocorrelation.

The result in Table 5.1B also shows that economic openness as measured by foreign direct investment is positively related to real GDP per capita growth in SSA and SEA but negatively related to real GDP per capita growth in LAC. SSA enjoys 0.009 more of an increase in per capita GDP growth than LAC, for a one percent increase in openness as measured by FDI. This result is statistically significant at 5% significance level. The FDI coefficient estimates for SEA and LAC are however not statistically significant. SSA is therefore the only country that benefits from opening up to FDI. The p-values of 0.934 and 0.631 reported for the Sargan and Arellano Bond (AR (2)) tests support the validity of the results and confirm the absence of autocorrelation.

For more regional specific results, which underscore the objective of this study, we split the entire sample of developing countries into the three regions and re-run the model specified in equation (12) separately on each region to obtain region-specific results. The discussion of the openness-growth relationship will thus be centered on these results which are presented in Tables 5.2A and 5.2B.

¹⁶ Given that in our regression, the dependent variable is in levels and the explanatory variables in log terms, the coefficient estimates are divided by 100 and interpreted as a $\beta/100$ change in GDP per capita growth from a one percent change in the explanatory variable.

Table 5.1B – Openness (measured by FDI) and Income Growth in Developing countries :Pooled Regression

Variables	Dependent Variable: GDP per capita growth rate (Y_{it})
	gmm estimates
y_{it-1}	0.147*** (7.67)
fdi_{it-5}	-0.677 (1.61)
SSA dummy	-1.032 (1.41)
SEA dummy	-0.978 (1.09)
fdi_{it-5} *SSA dummy	0.955** (2.23)
fdi_{it-5} *SEA dummy	0.635 (1.24)
fdi_{it-5} * y_{it-1}	-0.509* (1.69)
Educ	0.002 (0.27)
Inf	-0.553*** (4.86)
Pop	-0.319 (0.96)
Constant	4.187*** (4.28)
Sargan test, p-level	0.934
AR(2) test, p-level	0.631

Notes: ***, ** and * represents 1%, 5% and 10% significance level respectively. Absolute values of the 't'-statistic are reported in parentheses.

Given that the objective of the study is to assess and compare the relationship across different regions, the region-specific results will help in making regional based policy recommendations. This therefore allows for policies to be more accurately designed and targeted towards developing countries given their unique regional characteristics.

Table 5.2A – Openness (measured by international trade) and Income Growth in Developing countries (1980-2012): Regional Specific Regression

Variables	Dependent Variable: GDP per capita growth rate (Y_{it})		
	gmm estimates		
	SSA	LAC	SEA
y_{it-1}	0.280*** (6.99)	0.168** (2.16)	0.456*** (9.17)
$trade_{it-5}$	1.364*** (3.07)	0.813 (0.92)	-0.325 (0.68)
Educ	0.014 (1.25)	-0.007 (0.54)	0.006 (0.57)
inf	-0.296* (1.87)	-0.565*** (2.73)	-0.371* (1.77)
pop	-0.124 (0.24)	0.314 (1.03)	-0.585 (1.31)
$trade_{it-5} * y_{it-1}$	-0.367*** (2.75)	0.145 (0.66)	-0.295** (2.29)
constant	-3.589* (1.76)	-0.718 (0.18)	4.282** (2.17)
Sargan test, p-level	0.207	0.881	0.727
AR(2) test, p-level	0.194	0.113	0.254

Notes: ***, ** and * represents 1%, 5% and 10% significance level respectively. Absolute values of the 't'-statistic are reported in parentheses.

The econometric specification tests; Sargan test and Arellano Bond test for autocorrelation (AR (2)) are also reported. The Sargan test assesses the validity and efficiency of the SYS-GMM estimator. It tests the validity of the chosen set of instrumental variables by assuming that the residuals are not correlated with the instruments. The p-values of 0.207, 0.881 and 0.727 reported for the Sargan test for SSA, LAC and SEA respectively in Table 5.2A indicate failure to reject the null hypothesis that the instruments as a group are exogenous. This confirms the validity of the chosen instruments and hence supports the validity of the results. It also suggests that the results

are not weakened by many instruments. The AR (2) test for autocorrelation has a null hypothesis of no autocorrelation. It is applied to the differenced residuals and just like the Sargan test, a higher p-value is preferred. This is because; it implies failure to reject the null hypothesis that there is no autocorrelation. The p-values of 0.194, 0.113 and 0.254 reported for the AR (2) tests for SSA, LAC and SEA respectively in table 5.2A, implies the absence of autocorrelation in the specification of the estimated model.

Column 2 represents the results for SSA. The coefficient of the lagged real GDP per capita growth is positive and statistically significant at 1% significance level. For SSA, openness as measured by trade is positively related to real GDP per capita growth. This positive coefficient estimate is in line with the findings of some empirical studies and the relationship predicted by economic theory.¹⁷ The estimated coefficient of openness implies that, a 1% increase in trade results in a 0.01364 increase in the growth rate of per capita income of Sub-Saharan African countries. This could be explained by the economic benefits associated with opening up to trade as discussed earlier in the previous chapters. In the 1980s, the World Bank and the IMF identified trade policies as part of the primary causes of slow growth and trade marginalization in Africa. The Bank argued and proposed that orthodox macroeconomic management and in particular trade liberalization represents the road to economic recovery in SSA and that more adjustment was required. By mid 1980s, almost all Sub-Saharan African countries had implemented comprehensive and substantial economic policy reforms. The reforms were further encouraged by the astounding performance of some East Asian countries that had opened up to trade earlier. The implementation of comprehensive economic and trade reforms by

¹⁷ See Chang and Mendy, (2012) and Chen (1999)

the early 1990s in most SSA countries have been a major contributing factor to the positive growth in real GDP per capita. Subsequent to opening up their external sector, most SSA countries have benefited from access to increased market size, transfer of technological know-how and managerial expertise as well as increased output due to specialization amongst others. The interaction variable between trade and lagged real GDP per capita growth has a negative coefficient estimate with a magnitude of 0.367. The estimated coefficient is statistically significant at 1% significance level and implies that higher income countries experience 0.00367 less growth for every 1% increase in trade. This implies that trade is more beneficial to low income countries than it is to high income countries in SSA. Therefore, openness to international trade accelerates convergence in the Sub-Saharan Africa region.

Inflation is estimated to be negatively related to real GDP per capita growth in SSA, with a magnitude of 0.296. This implies that, inflation in SSA has been detrimental to the growth of real GDP per capita. A 1% increase in inflation results in a decline of 0.00296 in real GDP per capita growth rate. This result is statistically significant at a 10% level of significance. Macroeconomic theory and empirical studies show that, although moderate levels of inflation is favorable for growth, higher levels of it is detrimental to growth. Unfortunately, most countries in SSA are characterized by higher inflation rates. Inflation rates have been high for most of the region's well performing economies such as Nigeria, Ghana, Angola and Mozambique due to a number of factors. Most critical of such factors include escalating prices of food and transportation as well as the erosion of the domestic currency's value against the U.S dollar and other major currencies. To a large extent, these could explain the negative effect of inflation on income growth as

estimated. As expected, given the definition of GDP per capita, the results show that population growth rate is negatively related to the growth rate of real GDP per capita. However, this result is not statistically significant. Education is estimated to be positively related to per capita income growth. However, it is not statistically significant in affecting income growth. This is indicative of the mismatch between the skills acquired in schools and the skills required in the job market, which characterizes most SSA countries.

The results for LAC are presented in column 3. The coefficient of the lagged per capita income growth is positive and statistically significant at 5% significance level. The results indicate that, opening up the external sector of Latin American countries has not been significant in impacting real GDP per capita growth rates. Although the trade coefficient estimate is positive, the result is not statistically significant. Similarly, opening up to trade is not significant in either accelerating or decelerating the process of convergence among Latin American countries. This is depicted by the coefficient estimate of the interaction variable (Trade and lagged GDP per capita growth), which is not statistically significant.

Inflation is negatively and significantly related to real per capita GDP growth of Latin American countries with a 1% increase in inflation resulting in a 0.00565 decline in real GDP per capita growth. The result is statistically significant at a 1% level of significance. By implication, inflation has been detrimental to per capita income growth as it pertains to most developing countries. Education in LAC is not statistically significant in affecting real GDP per capita growth. This could equally be attributed to the mismatch between skills provided by the educational system and the skills required

by the job market. Similarly, population growth is not statistically significant in affecting GDP per capita growth.

Estimation results for the openness-growth nexus in SEA are presented in the 4th column. As expected, the coefficient of lagged GDP per capita growth is positive and statistically significant at 1% significance level. External sector openness as measured by trade in SEA is negatively related to real income per capita growth. This result is however not statistically significant. Nevertheless, when trade is interacted with growth performance, the coefficient of the interaction variable is negative and statistically significant at 5% level of significance. This means that, while trade may not be statistically significant in affecting growth within the entire region, it may contribute to accelerating the process of convergence within the region, as trade tends to be detrimental to high income countries relative to low income countries. The negative and insignificant trade coefficient estimate may be explained by the nature of most trade agreements in the region. That is, most of the trade agreements have been regional based. Since the trend of regionalism reached South-East Asia in the 1980s, it has been accompanied by sharp increase in RTAs. Four of such RTAs were established between 1980 and 1990 (Jalles, 2011). Intra-regional trade had become relatively important in South-East Asia. Although broad liberalization seems to be growth enhancing, the effect of most RTAs which had gained prominence in the region had no impact on growth while others tended to be detrimental to growth. This result is similar to the findings of Jalles (2011). His study shows that, in SEA the effect of international trade on real GDP per capita growth is mixed if not detrimental in some cases, once endogeneity is accounted for. He uses the Sachs-Warner index to show that broad liberalization is positively and significantly

related to growth however, this effect is offset by a negative impact of belonging to the South Asian Preferential Trade Arrangement (SAPTA).

As expected, education is positively related to real GDP per capita growth in SEA with an estimated coefficient of 0.006. The result is however statistically insignificant as it is with the other developing regions. In line with economic theory and empirical studies, inflation and population growth rates are both estimated to be negatively related to real GDP per capita growth in SEA. The coefficient estimate for inflation is statistically significant at 10% significance level but the population growth estimate is not statistically significant. Generally, it is shown that, openness as measured by international trade has led to increasing real GDP per capita growth rates of countries in SSA and some low income countries in SEA while countries in LAC have not been significantly impacted by trade. The implementation of comprehensive and substantial trade policy reforms has thus paid off especially for developing countries in SSA.

Estimation results for the effect of external sector openness measured by FDI on income per capita growth in SSA, LAC and SEA are presented in Table 5.2B below. Here, our discussion of the results will be focused on the variables of main concern (FDI and GDP per capita growth). The p-values of 0.986, 0.482 and 0.691 reported for the Sargan test for SSA, LAC and SEA respectively indicate failure to reject the null hypothesis that the instruments as a group are exogenous. It also suggests that the results are not weakened by many instruments. The p-values of 0.226, 0.857 and 0.118 reported for the AR (2) tests for SSA, LAC and SEA respectively, implies the absence of autocorrelation in the specification of the estimated model. External sector openness measured by FDI is positively related to real income growth in SSA. A 1% increase in

FDI increases real GDP per capita growth rate by 0.00611. This result is statistically significant at 1% significance level. This implies that, FDI has contributed significantly to real GDP per capita growth in SSA subsequent to opening up to foreign direct investment.

Table 5.2B – Openness (measured by FDI) and Income Growth in Developing countries (1980-2012): Regional Specific Regression

Variables	Dependent Variable: GDP per capita growth rate (Y_{it})		
	gmm estimates		
	SSA	LAC	SEA
y_{it-1}	0.193*** (4.17)	0.127** (2.58)	0.438*** (7.47)
fdi_{it-5}	0.611*** (3.58)	-0.162 (0.68)	0.009 (0.07)
educ	0.014 (1.23)	-0.001 (0.11)	0.002 (0.19)
inf	-0.037 (0.20)	-0.416** (2.47)	-0.023 (0.09)
pop	0.146 (0.28)	0.224 (0.79)	-0.272 (0.53)
$fdi_{it-5} * y_{it-1}$	-1.025*** (3.33)	0.319 (1.10)	0.079 (0.28)
constant	1.210 (1.32)	2.454*** (2.63)	1.935** (1.99)
Sargan test, p-level	0.986	0.482	0.691
AR(2) test, p-level	0.226	0.857	0.118

Notes: ***, ** and * represents 1%, 5% and 10% significance level respectively. Absolute values of the 't'-statistic are reported in parentheses.

FDI inflows into the region have mostly been directed to the natural resource sectors. It has therefore complemented inadequate domestic capital and helped increase the regions' economic benefit from its resource endowment. FDI has helped bridge the financial gap between required domestic investment and the existing domestic savings (domestic

capital) in SSA. The interaction variable between FDI and real GDP per capita growth has a negative coefficient with a magnitude of 1.025 and statistically significant at 1% significance level. This implies that, opening up to FDI is more beneficial to low income countries relative to high income countries in SSA. This is because high income countries experience 0.01025 less of an increase in growth for every 1% increase in FDI. Openness to foreign direct investment therefore accelerates convergence in SSA.

External sector openness measured by FDI is negatively related to per capita GDP growth in LAC. The FDI coefficient estimate is however not statistically significant. Although the region is shown in earlier discussions to have recorded on average the highest foreign direct investment inflows relative to SSA and SEA, the estimated coefficient implies that, FDI has not been significant in affecting real GDP per capita growth. Similarly, opening up to FDI neither facilitate nor tempers the process of convergence. This is implied by an insignificant coefficient estimate for the interaction variable between FDI and GDP per capita growth. Although external sector openness measured by FDI has a positive relationship with income growth in SEA, the result is not statistically significant. By implication, FDI has nether affected real income growth nor the process of convergence as the coefficient of the interaction variable between FDI and GDP per capita is also not statistically significant.

While broad trade liberalization has promoted economic growth for some developing countries, the differences in the trade effect could stem from the effect of intra-regional trade liberalization policies. Sub-Saharan Africa has benefited most from trade with a coefficient estimate of 1.364. Openness to trade has however been insignificant in affecting growth in LAC and in some countries in SEA. Given that most

developing countries could not reap the expected gains from north-south trade relationships, the south-south RTAs began to occupy an integral part of economic policies of most developing countries in the late 1970s. The south-south RTAs were therefore perceived as the key strategy for transforming the economies of first Asia and subsequently Africa. Regionalism became relatively important in South-East Asia in the 1980s and 1990s and was accompanied by a sharp increase in RTAs (Jalles, 2011). However intra-SSA trade was very limited and hardly grew over time within the same period (Foroutan and Pritchett, 1993). It is shown however that, the RTAs rather than the broad trade liberalization accounts for the negative effect of trade on growth in SEA.¹⁸ Venables (2003) also finds that developing countries would benefit more from trade if they pursued north-south trade liberalization agreements than they would if they pursue south-south RTAs.

It could also be observed that SSA and SEA have negative and significant coefficient estimates for the interaction variable between trade and GDP per capita growth, with the exception of LAC which has an insignificant coefficient estimate for the interaction variable. This implies that, generally, developing countries in SEA and SSA with relatively higher real GDP per capita growth tend to benefit less from trade relative to countries with lower real GDP per capita growth. In terms of significance of the coefficient estimates, the results imply that with the exception of LAC, the level of a country's economic performance in SEA and SSA has an effect on the level of benefit obtained from opening up to trade. By extension, the reported coefficient of the

¹⁸ See Jalles, 2011.

interaction variable also implies that, opening up to trade accelerates convergence in SSA and SEA.

5.3 Openness Effects on Income growth for ‘Early’ and ‘Late Openers’

A continued process of openness to the global economy and removal of trade barriers has occurred over the past three decades in many developing countries. This has increasingly made the world market more integrated than it was in the late 1950s and 1960s. Although Great Britain had liberalized its trade policies in the 19th century, most developed countries including the United States, Germany, France and Japan were still very much inward-oriented. The 1940s and 1950s marked the beginning of significant efforts towards substantial reduction of tariffs and other trade barriers with the formation of such liberalizing trade agreements as the General Agreement on Tariffs and Trade (GATT) in 1947. Although it was initially signed by mostly developed countries, it was later extended to include developing countries in the Kennedy Rounds held in 1962 and 1967. The Geneva round of GATT in 1947 was signed by 23 countries. By 1973 the number had increased by 343% to 102 in the Tokyo round and further to 123 by 1986 in the Uruguay round. Out of 195 recognized sovereign states, 160 are currently member states of the World Trade Organization (WTO) which was officially created in 1995 to replace GATT. This is one of many examples which shows that world trade was relatively less liberalized prior to the 1980s.

However as earlier discussed, there exist a difference between the high growth recorded by the Asian Tigers and other high performing Asian economies (HPAEs)

which opened up their external sector earlier in the 1960s and the relatively sluggish growth performance recorded by the other developing countries which opened up their external sector later in the 1980s. Table 5.3A and 5.3B present the results for the effect of economic openness measured by trade and FDI respectively on real GDP per capita growth for the late openers (developing regions) and the early openers (HPAEs) using equation (12). Discussion of results in table 5.3B will be focused on the variables of main concern (FDI and GDP per capita growth).

The regression results for the HPAEs cover a sample of six countries made up of the Asian Tigers (Hong Kong, the Republic of Korea, Singapore and Taiwan) and the other countries (Indonesia, Malaysia and Thailand) that make up the HPAEs over three decades (1960-1990) subsequent to opening up their economies.¹⁹ That of the other developing regions also covers three decades (1980-2010) after opening up their economies. We also report the openness-growth relationship in the other developing regions over the period 1960 to 1980. This enables us to assess the role of economic openness to real GDP per capita growth in the other developing regions prior to significantly opening up their external sector in the 1980s. The econometric specification tests (Sargan and AR (2)) support the robustness of the results presented.

As can be observed, openness as measured by trade was not significant in influencing real income growth in SSA and SEA prior to the 1980s when most of these countries had not significantly opened up their external sector. Although trade was significant in affecting GDP per capita growth in LAC, the effect was negative. A 1% increase in trade led to a 0.0245 decrease in GDP per capita growth. This result is

¹⁹ Taiwan is excluded in this study due to unavailability of data.

statistically significant at 1% level of significance. Subsequent to opening up to trade in the 1980s however, SSA recorded a positive and significant effect of trade on per capita income growth, with a 1% increase in trade leading to a 0.01262 increase in GDP per capita growth. In SEA and LAC however, trade remains insignificant even though it used to have a negative effect on income growth in LAC prior to the 1980s.

Table 5.3A Effects of Openness to Trade on Income Growth

Variables	Dependent Variable: GDP per capita growth rate (Y_{it})						
	Late Openers						Early Openers
	SSA		SEA		LAC		HPAEs
	1960-1980	1980-2010	1960-1980	1980-2010	1960-1980	1980-2010	1960-1990
y_{it-1}	0.241** (2.31)	0.282*** (6.94)	0.250* (1.80)	0.429*** (8.07)	0.380*** (4.95)	0.235** (2.54)	0.159* (1.96)
$trade_{it-5}$	2.582 (0.98)	1.262*** (2.75)	0.373 (0.43)	-0.487 (0.98)	-2.458*** (3.37)	1.414 (1.33)	1.469** (2.52)
educ	-0.007 (0.07)	0.011 (0.88)	0.079*** (2.80)	-0.019 (0.02)	-0.025 (0.83)	0.001 (0.05)	-0.021 (1.13)
inf	-0.222 (0.25)	-0.295* (1.82)	-0.255 (0.39)	-0.418* (1.96)	-0.917** (2.16)	-0.532** (2.23)	0.591* (1.85)
pop	-0.627 (0.16)	-0.102 (0.19)	4.155* (1.79)	-0.899* (1.96)	0.442 (0.50)	0.309 (0.82)	-4.190*** (3.25)
$trade_{it-5} * y_{it-1}$	-1.068* (1.83)	-0.252* (1.74)	-0.155 (0.45)	-0.348** (2.59)	-0.134 (0.54)	-0.281 (1.12)	-0.735*** (2.74)
constant	-5.670 (0.57)	-3.265 (1.55)	-4.587 (1.23)	5.607*** (2.69)	13.030*** (3.65)	-2.920 (0.61)	1.684 (0.73)
Sargan test	0.481	0.913	0.618	0.711	0.563	0.346	0.303
AR(2) test	0.699	0.499	0.549	0.571	0.175	0.254	0.235

Notes: ***, ** and * represents 1%, 5% and 10% significance level respectively. Absolute values of the 't'-statistic are reported in parentheses.

This provides an empirical evidence of the role openness has played in improving income growth in some developing countries subsequent to the implementation of trade liberalizing policies. However, openness to trade has significantly and positively affected real GDP per capita growth in the HPAEs over the thirty years period after they opened up to trade. They recorded a higher positive effect of openness than SSA or any of the other developing regions did over the thirty-year period of opening up to their external sector with a coefficient estimate of 1.469. We test the significance of the difference between the trade coefficient estimates for the HPAEs and SSA using the Wald test involving linear combinations of parameters. The test is based on the null hypothesis that the coefficient estimate for the HPAEs is significantly different from that of SSA. The result shows that the difference between the openness coefficient estimate for HPAEs and SSA is statistically significant at a P-value 0.7218. Hence we fail to reject the null hypothesis that, the trade coefficient estimates are significantly different.

As can be seen in Table 5.3B, the HPAEs also benefitted most from opening up to FDI than any of the other developing countries. A 1% increase in FDI led to a 0.01088 increase in GDP per capita growth while in SSA, a 1% increase in FDI led to a 0.00655 increase in GDP per capita growth. This may be because, unlike other developing regions, the HPAEs opened up their external sector earlier in the 1960s and 1970s and became the prime choice for Multinational Enterprises (NMEs) which wanted to out-source labor intensive parts of their production. Subsequently, the region has remained a prime destination of FDI due to growing regional market and natural resources. More so, some countries in the region consciously promoted FDI inflows. Indonesia adopted and implemented liberalized FDI regulatory frameworks. Singapore invested more of its

public funds into attracting foreign MNEs (Sjoholm, 2013). With the economic benefits associated with FDI inflows, it is not surprising that the region's results show a significant and higher positive FDI coefficient.

Table 5.3B Effects of Openness to FDI on Income Growth
Dependent Variable: GDP per capita growth rate (Y_{it})

Variables	Late Openers						Early Openers
	SSA		SEA		LAC		HPAEs
	1960-1980	1980-2010	1960-1980	1980-2010	1960-1980	1980-2010	1960-1990
y_{it-1}	0.471*** (2.90)	0.192*** (3.97)	0.262 (0.81)	0.434*** (6.89)	0.604*** (2.88)	0.106** (2.04)	0.350*** (3.13)
fdi_{it-5}	-1.117 (0.98)	0.655*** (3.51)	-0.068 (0.13)	0.011 (0.07)	-0.024 (0.03)	-0.188 (0.75)	1.088** (2.05)
educ	0.028 (0.41)	0.014 (1.15)	0.013 (0.20)	-0.008 (0.60)	-0.021 (0.22)	-0.010 (0.76)	0.013 (0.64)
inf	-3.400*** (2.76)	-0.017 (0.09)	0.566 (0.430)	-0.047 (0.18)	-0.606 (0.48)	-0.423** (2.41)	0.667 (1.54)
pop	-4.065 (1.25)	0.142 (0.26)	-0.863 (0.12)	-0.596 (1.08)	1.955* (1.88)	0.089 (0.27)	-9.546** (2.39)
$fdi_{it-5} * y_{it-1}$	2.938** (2.15)	-1.061*** (3.16)	-0.990 (0.74)	-0.029 (0.10)	0.238 (0.15)	0.440 (1.33)	2.677** (2.53)
constant	13.414** (2.53)	1.190 (1.23)	1.729 (0.20)	2.600** (2.44)	2.178 (0.67)	2.996*** (2.99)	9.708*** (3.29)
Sargan test	0.177	0.517	0.875	0.751	0.380	0.419	0.996
AR(2) test	0.112	0.560	0.899	0.356	0.883	0.858	0.225

Notes: ***, ** and * represents 1%, 5% and 10% significance level respectively. Absolute values of the 't'-statistic are reported in parentheses.

Although the high economic growth recorded by the early openers between 1960 and 1990 (dubbed the economic miracle) cannot be entirely attributed to the gains from opening up to international trade, it is shown that trade played an important role in

increasing growth rates.²⁰ Total factor productivity and factor accumulation have been cited as sources of the high sustained growth of the HPAEs (Page, 1994). Nonetheless, trade also had an indirect effect on the growth of these economies through its positive effect on total factor productivity (TFP) growth rates (through the adoption of international best practices). It is therefore not unusual that the coefficient estimate for trade is shown to be equally significant and relatively higher than that of the other developing regions.

The results present what seems like an anomaly in the sense that, the other developing countries have enjoyed a system of ‘free trade’ subsequent to opening up their economy relative to the HPAEs which opened up in a relatively more restricted trade regime. It is thus expected that the other developing countries should benefit more than the HPAEs from opening up their external economy since they have enjoyed a wider international market size. However, the reverse is what is depicted in the results. In order to affirm the seeming anomaly or claim otherwise, we investigate some factors that could explain the difference between the gains from openness recorded by the HPAEs and the other developing countries. By economic theory and intuitive reasoning, we identify two socio-economic factors that could explain the difference in the gains from openness experienced by the two groups of countries. First, economic theory shows that human capital development through education is critical to inducing a positive growth effect from trade. Technological progress is very important in enhancing the growth of an economy and in developing countries, external sector openness serves as a means to advancing technology through the adoption of technological know-how from developed

²⁰ See John Page (1994)

trading partners. However, a well-trained and highly skilled domestic labour force is required for the adoption and efficient use of the international best practices and technological know-how associated with trading with developed countries. Hence the relevance of education to inducing positive growth effect of trade through technological progress. Secondly, economic theory shows that achieving macroeconomic stability is critical to enhancing economic growth and inducing a positive effect of openness on growth. Theory shows that, some level of inflation (low-to-moderate) is good for an economy to thrive, however high levels of inflation is detrimental to growth. In relation to openness, low-to-moderate inflation levels induces positive effect of trade relative to high inflation levels which make an economy's export less attractive and less competitive on the international market. The gains from opening up an economy's external sector is thus contingent on how attractive or competitive its exports are on the international market and hence how high, moderate or low its inflation rate is.

To further investigate the aforementioned seeming anomaly, we extend the openness-growth model specified in equation (12) to test for the statistical significance of the factors identified above as contributing to the difference in trade benefits to growth experienced by the HPAEs and the other developing countries. To do this, we include two interaction variables (trade and improved education, trade and low inflation) to determine if there exist any additional effects or indirect effect of trade on growth through these contributing factors. The extended openness-growth model is thus expressed as;

$$\begin{aligned}
y_{it} = & \beta_0 + \beta_1 \ln(y_{it-1}) + \beta_2 \ln(\text{trade})_{it} + \beta_3 \ln(\text{inf})_{it} + \beta_4 (\text{educ})_{it} + \\
& \beta_5 (\text{pop})_{it} + \beta_6 (\ln \text{trade} * \ln y_{it-1})_{it} + \beta_7 (\ln \text{trade} * \ln \text{inf})_{it} + \\
& \beta_8 (\ln \text{trade} * \text{educ})_{it} + \varepsilon_{it}
\end{aligned} \tag{13}$$

Where $\ln \text{trade} * \ln \text{inf}$ and $\ln \text{trade} * \text{educ}$ represent the interaction terms between trade and low inflation and improved education respectively. Both interaction variables are expected to be positively related to growth as earlier discussed. To analyze the trade benefit differentials between the HPEAs and the other developing countries, we estimate equation (13) for both groups over three decades after they each opened up their external sector. That is between 1960 – 1990 and 1980 – 2010 respectively.

Table 5.4 below presents the results for the empirical estimation of the extended openness-growth model. The econometric specification tests; Sargan and AR(2) validate the results presented. As can be observed from column (5), openness as measured by trade has a positive indirect effect on real GDP per capita growth through improved education and low-to-moderate levels of inflation. The coefficient estimates for the trade-education and trade-inflation interaction variables are positive and statistically significant at 1% and 10% respectively. These results imply that, for every 1% increase in education, openness (trade) contributes 0.00473 more to real GDP per capita growth through improved education. Openness also contributes 0.00298 more to real GDP per capita growth for every 1% decline in inflation. The positive effects of the trade-education and trade-inflation interaction variables, goes to reinforce the role of education and low-to-moderate inflation in augmenting the positive effect of openness on real GDP per capita growth of the HPAEs.

Table 5.4 Results from the extended Openness-Growth model

Dependent Variable: Real GDP per capita growth rate (Y_{it})				
Variables	LATE OPENERS			Early Openers
	SSA	SEA	LAC	HPAEs
	1980-2010	1980-2010	1980-2010	1960-1990
y_{it-1}	0.246*** (6.02)	0.436*** (8.23)	0.152*** (2.72)	0.185* (1.85)
$trade_{it-5}$	1.460*** (3.02)	-0.379 (0.80)	-0.827 (1.53)	1.835*** (3.15)
educ	0.018 (0.64)	0.005 (0.44)	-0.021 (1.31)	-0.030 (1.62)
inf	-0.210 (1.28)	-0.459** (2.14)	-0.663*** (3.49)	0.785** (2.50)
pop	0.107 (0.20)	-0.874* (1.86)	-0.374 (0.98)	-4.305*** (3.48)
$trade_{it-5} * y_{it-1}$	-0.437*** (3.00)	-0.313** (2.37)	0.119 (1.01)	-0.831*** (3.18)
$trade_{it-5} * educ$	0.187 (1.28)	-0.202 (1.39)	0.006 (0.04)	0.473*** (2.76)
$trade_{it-5} * inf$	0.320** (2.73)	0.062 (0.57)	0.128 (0.91)	0.298* (1.78)
constant	-4.996** (2.32)	5.310*** (2.71)	7.311*** (2.80)	0.178 (0.08)
Sargan test	0.288	0.266	0.427	0.231
AR(2) test	0.402	0.699	0.353	0.278

Notes: ***, ** and * represents 1%, 5% and 10% significance level respectively. Absolute values of the 't'-statistic are reported in parentheses.

In contrast, SSA, SEA and LAC did not experience any positive indirect effect of trade on growth through education. The coefficient of the trade-education interaction variable is statistically insignificant in all three developing regions. Although SSA experienced some positive indirect effect of trade on growth through moderate inflation, same cannot be said about SEA and LAC whose coefficient estimate of the trade-inflation interaction variable is statistically insignificant. Given the poor performance of

the other developing countries in improving education, it is not surprising that none of them experienced a positive indirect effect of openness on growth through education. In effect, SSA, LAC and SEA have not been able to improve their educational system well enough to become information imbibing and technologically oriented. This has led to their inability to build their human capital well enough to harness the gains of trade which include the adoption of advanced technologies and best practices from developed trading partners.

The results presented in Table 5.4 reinforce the factors (improved education and low-to-moderate inflation) identified as being some of the reasons for the trade benefit differential recorded by the early and late openers. It therefore clarifies the seeming puzzle of why the early openers recorded high and sustained growth when they opened up to trade in a relatively less liberalized trade regime as against the relatively low and sluggish growth experienced by the late openers who opened up later in a more liberalized trade regime. First, the inability of SSA, LAC and SEA to exploit the gains from opening up to their economies as the HPAEs did is a contributing factor to the difference in openness effect on growth recorded by the two groups. As mentioned earlier, the economic miracle experienced by the HPAEs has been partly attributed to total factor productivity (TFP) growth and part of this growth in TFP has been attributed to the adoption and implementation of international best practices and technological know-how which comes along as a major gain from trading with developed countries. However, it is worth noting that, the HPAEs were able to adopt and master these international best practices and technology because they had well trained and highly skilled domestic labour force. In essence, their trade strategies were complemented with

human capital development. While they opened up their economy, they also invested into human capital development through broad-based educational policies. Hence, they were able to adopt foreign knowledge and use imported capital to improve their economic performance. As discussed in the previous section, education in most developing countries have been insignificant or at best contributed less to economic growth. Moreover, there exist persistent mismatch between skills acquired through the educational system and the skills required by the job market. In effect, these economies haven't been able to develop their labour force well enough to take advantage of the gains from trade. They have been inefficient in using imported capital and technology as well as in implementing international best practices.

Second, in contrast to other developing economies, the HPAEs were successful at attaining macroeconomic stability. While they opened up their external sector, the HPAEs were successful at creating and sustaining low-to-moderate inflation rate relative to the other developing countries. The HPAEs were not immune to high budget deficit which characterizes most developing countries, but they were more efficient in keeping their deficits within limits set by their ability to finance them without destabilizing their macro-economy. Although Thailand and Malaysia's budget deficits were above that of the Philippines, Brazil, Argentina and Mexico in the 1980s, they were more successful at financing their deficits without causing macroeconomic instability (Page, 1994). By keeping public deficit within prudent financing bounds, the HPAEs were able to avoid money creation-induced-inflation which has been a major affliction to most developing countries, in trying to address their high debt ratios. Relative to the other developing countries, money creation was constant among the HPAEs. Consequently, they

experienced low-to-moderate rates of inflation when they opened up their external sector. This made their exports more attractive and generated increased world demand for their exports which works towards the improvement of their current account and hence increasing the contribution of trade to economic growth. On the contrary, the other developing countries noted for high public deficits have not been able to escape the macroeconomic consequence of high public sector deficit beyond prudent financing limits. They have thus suffered relatively high inflation rates which makes their export unattractive and less competitive on the international market. Although they have benefited from a more liberal trade regime, their exports have been less competitive. In effect, external sector openness has not been much beneficial to the other developing countries as it was to the HPAEs due to high inflation rates in the economies of the other developing countries.

The factors discussed above show that, what seems an anomaly, should not actually be considered as such. This is because, although the other developing countries have enjoyed free trade, they have failed to keep pace with global technological advancement. The labour force in these regions has not been well developed enough to exploit the transfer of technological know-how and managerial expertise that comes with trading with developed countries. More so, these economies have been inefficient in keeping public deficits in limits that ensures macroeconomic stability. Inflation in these regions has thus been high, making their exports less competitive on the international market. On the contrary, the HPAEs complemented their liberal trade policies with socio-economic policies that placed them in the appropriate position to exploit every gain that comes with opening up to multilateral trade. In effect, though they faced a relatively less

liberalized trade regime, they experienced higher openness gains in terms of growth in GDP per capita due to their ability to maintain macroeconomic stability through low-to-moderate inflation. They were also able to technologically catch-up with the developed world by improving their educational system to produce well developed and skilled human capital. With the technological know-how adopted from developed trading countries, they were able to add value to their export by diversifying the composition of their exports to include value-added goods. With these reasons, it is only normal that the HPAEs benefited more than the other developing countries did when they each opened up to trade in different trade regimes that tended to be even more favorable to the other developing countries than it was to the HPAEs.

Openness is shown in this study to be beneficial to economic growth in developing countries. There is therefore no reason for these countries to impose economic exile on themselves through international trade protections and foreign exchange controls. More so, the findings on the HPAEs' openness-growth relationship show that opening up is not enough to attain the level of accelerated growth desired in developing countries. Although the conditionality clauses attached to the loans advanced by the Bretton Woods institutions to developing countries have been criticized over their effects on the social sector, the findings discussed above shows otherwise. It reinforces the stabilization policies put forward by the IMF and the World Bank's Structural Adjustment Programs (SAPs) as the right principles required to accompany the elimination of self-imposed economic exile in developing countries. As shown by the HPAEs' experience, there is the need for developing countries to adopt and efficiently implement a coordinated set of mostly restrictive fiscal and monetary policies aimed at

reducing inflation, budget deficits and improving their balance of payments. Pursuing greater hospitality to foreign investment and other structural adjustment policies such as reallocation of public spending towards operations and maintenance, health, education, and infrastructure are equally crucial in complementing openness to international trade to yield the level of growth required in developing countries.

CHAPTER SIX

6.1 Summary and Conclusion

Some mainstream economists share the view that economic openness has significantly accounted for the persisting growth differentials between developing countries over the past three decades. It has therefore been the center piece of recent reforms and economic policies in developing countries. The arguments in favor of openness are premised on a number of reasons. Openness promotes efficient allocation of resources through comparative advantage which forms the basis of international trade. It facilitates the dissemination of knowledge, technological progress and managerial expertise. More so, openness through trade encourages competition in domestic and international market while expanding the market size available to domestic producers.

Some empirical studies suggest that outward oriented economies have experienced better economic performance relative to inward oriented economies. Development policies in developing countries have therefore entailed strategies geared towards opening up the external sector of these countries. Nevertheless, mainstream economists remain divided on the empirical growth effect of external sector openness. While some point to minimal growth effect (Lee et al, 2004), others identify a significantly positive effect (Sachs and Warner, 1995, Edwards, 1998). Others such as Rodriguez and Rodrik (2000) have however cast doubts on the robustness of the significant positive growth effect of openness. Even more interesting is the seeming anomaly associated with the growth differential experienced by the early (HPAEs) and late openers (other developing countries) when they opened up to trade. In a relatively

less liberalized trade regime, the HPAEs recorded higher gains from openness relative to what the other developing countries experienced in a more liberalized trade regime. This thesis contributes to the economic growth and external sector openness discussion by empirically examining the growth-openness relationship in the context of a regional analysis. Besides determining the direction of the effect of openness on economic growth, this thesis also contributes to the openness-growth literature by examining and explaining some factors that account for the difference between the gains from openness experienced by the HPAEs and the other developing countries.

The empirical investigation led to some interesting findings. First, external sector openness is positively related to the growth performance of some developing countries. In SSA, openness as measured by FDI impacts the rate of real GDP per capita growth positively and significantly. In LAC and SEA however, openness as measured by FDI does not affect real GDP per capita. While openness to international trade has no significant effect on real GDP per capita growth in LAC and SEA, it does have significant effects in SSA countries. In SSA, openness as measured by trade is positively related to real GDP per capita growth.

Among the three developing regions, SSA benefits most from openness measured in terms of both trade and FDI. In SEA however, openness to trade is detrimental to growth in higher income countries. In lower income countries, trade has no impact on income growth. The HPAEs recorded more benefits from FDI relative to the other developing countries. The group also recorded a higher positive effect of trade on growth than recorded by SSA and more significant effect of trade than the effect recorded by LAC and SEA. This implies that, the difference between the income growth experienced

by the HPAEs and the other developing countries can be explained by the difference in the gains from openness. It is further shown that, the HPAEs did enough in terms of complementing trade liberalizing policies with other socio-economic policies that enabled them maximize the gains from opening up their external sector. SSA, LAC and SEA on the other hand, have enjoyed periods of 'free trade' but have done little to benefit fully from opening up to international trade. It is therefore not unusual that the HPAEs performed better economically after opening up their external sector in a more restrictive trade regime relative to how the other developing countries have performed after opening up in a relatively less restricted trade regime. Though East Asia is known to have recorded a high and sustained growth between the 1960s and 1990s, it is not surprising that this performance was driven by the miraculous growth of the HPEAs. The results generally imply that, opening up the external sector alone is not enough to yield high positive effect on real income per capita of developing countries. Complementing openness policies with socio-economic policies that ensure macroeconomic stability and well developed human capital is equally very necessary.

The results also show that, the growth effect of openness could be dependent on the level of growth attained by a given country. It is shown that there is an additional effect of openness on real GDP per capita growth through the level of economic growth in a region. The effect however differs over the regions. In LAC, the trade effect on real per capita income growth of countries is independent of their initial income level. In SEA and SSA, openness to international trade translates into lesser growth in real GDP per capita of relatively richer countries than poorer ones. This tends to accelerate convergence within the regions. Coupled with the degree of openness, the level of

economic performance attained by developing countries plays a role in determining the level of growth benefit obtained from external sector openness.

6.2. Policy Recommendations

The empirical results suggest that external sector openness contributes positively to the growth of real per capita income as seen in SSA. Hence openness could be good for developing countries. This is shown by the positive and significant effect of openness as measured by FDI on real GDP per capita growth in Sub-Saharan Africa and in the High Performing Asian Economies. Openness as measured by trade also positively and significantly affects real income per capita growth in the HPAEs and SSA countries. This thesis recommends that, developing countries need not impose economic exile on themselves but instead engage in multilateral trade with the rest of the world. More so, the HPAEs' orientation to opening up to the international market provides developing countries with a range of policy frameworks. Equal attention should be given to macroeconomic policies directed at stabilizing the economy, which entails addressing the persistent rise in general price levels, effective management of budget deficits, which is very typical of developing countries and precisely, pursuing policies that limit deficits within levels that can be financed without destabilizing the macro-economy.

Inasmuch as developing countries seek to take advantage of the larger world market, it is important that they implement socio-economic policies geared towards human capital development. We propose that, governments should adopt and promote social policies that aim at investing into human capital development in terms of education

and health especially among the poor. This will help build human capital which in the long run enhances the ability of the labour force to adopt and implement advanced technological know-how and international best practices that come along with trading with more advanced economies. This eventually leads to an improvement in total factor productivity which is equally a critical source of economic growth. These policy recommendations tend to reinforce the principles that should accompany openness-based policies in developing countries as proposed by the World Bank and IMF through the Structural Adjustment Programs (SAPs) and Stabilization policies.

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Appendix

Appendix A.1.1: List of Selected Countries

Table A.1.1: List of selected countries

sub-Saharan Africa (SSA)	South and East Asia (SEA)	Latin America (LAC)	High Performing Asian Economies (HPAEs)
Angola	Bangladesh	Argentina	Korea Republic
Botswana	Bhutan	Belize	Indonesia
Burkina Faso	Cambodia	Bolivia	Malaysia
Burundi	China	Brazil	Thailand
Cabo Verde	Fiji	Colombia	Hong Kong
Cameroon	India	Costa Rica	Singapore
Central African Republic	Kiribati	Cuba	
Chad	Lao PDR	Dominica	
Congo, Dem. Rep.	Mongolia	Dominican Republic	
Congo, Rep.	Nepal	Ecuador	
Cote d'Ivoire	Pakistan	El Salvador	
Equatorial Guinea	Papua New Guinea	Grenada	
Ethiopia	Philippines	Guatemala	
Gabon	Samoa	Guyana	
Gambia, The	Solomon Islands	Honduras	
Ghana	Sri Lanka	Jamaica	
Guinea	Tonga	Mexico	
Guinea-Bissau	Vanuatu	Nicaragua	
Kenya	Vietnam	Panama	
Lesotho		Paraguay	
Liberia		Peru	
Madagascar		St. Lucia	
Malawi		St. Vincent and the Grenadines	
Mali		Suriname	
Mauritania		Venezuela, RB	
Mauritius			
Mozambique			
Namibia			
Niger			
Nigeria			
Rwanda			
Senegal			
Seychelles			

Sierra Leone
South Africa
Sudan
Swaziland
Togo
Uganda
Zambia
Zimbabwe
