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LIBERALIZATION, GLOBALIZATION AND ECONOMIC GROWTH IN SUB-SAHARAN AFRICA

BY

ADDIS KASSAHUN

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVESRISTY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN ECONOMICS

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Liberalization, Globalization and Economic Growth in Sub-Saharan Africa

By
Addis Kassahun Mulat

Approved by the Board of Examiners:

Girma Estifanos	
Advisor	Signature
Assefa Admassie	
Examiner	Signature
Dr. Ch. Paramaiah	
Examiner	Signature

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NEPAD	New Economic Partnership for African Development
MVA	Manufacturing Value Added
M2	Broad Money (Money and Quasi Money)
OPEN	Openness Index
OPEC	Organization of Petroleum Exporting Countries
OLS	Ordinary Least Square
REM	Random-Effect Model
RGDPG	Real Gross Domestic Product Growth
SAP	Structural Adjustment Program
SSA	Sub-Saharan African
TFP	Total Factor Productivity
TNCs	Transnational Corporations
TOT	Terms of Trade
TRIPs	Trade Related Aspects of Intellectual Property Rights
TRIM	Trade-Related Investment Measures
UNDP	United Nations Development Programme
UNCTAD	United Nations Conference on Trade And Development
US	United States
USA	United States of America
WTO	World Trade Organisation
WWII	World War II

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Acronyms

ADL	Adult Literacy rate
AEC	African Economic Community
AGOA	Africa Growth and Opportunity Act
CV	Critical Value
DCs	Developed Countries
DOLS	Dynamic Ordinary Least Squares
DOMCRD	Domestic Credit provided by banking sector
ERA	Economic Report on Africa
EDUEXP	Educational Expenditure
ECM	Error Correction Mechanism
EU	European Union
FEM	Fixed-Effect Model
FDI	Foreign Direct Investments
GAAT	General Agreement on Tariff and Trade
GDP	Gross Domestic Product
HO	Heckscher-Ohlin Model
IFI	International Financial Institutions
ILO	International Labor Organization
IMF	International Monetary Fund
LPA	Lagos Plan of Action
LDCs	Least Developing Countries
LR	Likelihood Ratio
MVA	Manufacturing value Added
MFN	Most-Favoured Nation Principle
MNC	Multi-National Companies
MAI	Multilateral Agreement on Investments
NIEs	Newly Industrialized Economies

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Abstract

In this study attempts has been made to examine the relationships and impact of the key liberalizations and/or globalization variables in economic growth in Sub-Saharan Africa (SSA).

Using panel data, this paper essentially explores the effects of openness to international trade and foreign direct investment (FDI) on economic growth. Given the data and objectives of this study, we used Fixed Effect after testing for long-run relationship using panel co-integration test on variables under consideration. In the due process, there are two analyses were undertaken. First, the time series properties of the variables were ascertained by using the Hadri Panel data unit root test procedure. The results indicate that some of the key variables are I(1). Then, the results from Larson and Johansen panel co-integrating procedures indicates that there is no need to use Error Correction Mechanism (ECM) rather it is appropriate to use the OLS estimation techniques of Fixed-Effect or Random-Effect Model. The specification test which we used, Hauseman test, favored the Fixed-Effect Model based on our data

Almost all the estimation results showed that openness to Foreign Direct Investments (FDI) has positive and significant impact while openness to international trade is insignificant and often negatively affect growth of low-income countries of Sub-Saharan African. The results indicate that openness benefits the high-income group than the low-income group in SSA.

Therefore, policy measures, which aim to bring economic growth through liberalization and integration, need to go beyond openness to international trade. It is worth for SSA countries individually and collectively to creating an enabling environment for investment, enhances the volume of trade at the regional and international levels to increase their level of income. They need to take measures in the areas of improving their human capital development (education or adult literacy etc), industrial value creation and financial deepening.

Key Words: Liberalization, Globalization and Economic Growth

CHAPTER I
INTRODUCTION

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1.1 General Background

At its most comprehensive, globalization is all the forces, which are pushing the world towards becoming a global village. Globalisation is a complex and dynamic process and has been analysed from various perspectives. These include the economic, political and socio-cultural dimensions. As the UNDP notes, "globalisation is a process integrating not just the economy, but culture, technology and governance" (UNDP 2000). But the basic and of course underlying element of it is the economic dimension.

Economic globalisation therefore denotes the widening and intensification of international linkages and interactions in trade, investments and economic policy orientation in the World (Adejumobi 2002; World Bank 1996; Rosenau 1997).

Globalization generally believed to induce economic growth and reduces poverty because more integrated economies tend to grow faster and this growth is usually widely diffused. Integration is the result of reduced costs of transport, lower trade barriers, faster communication of ideas, rising capital flows, and intensifying pressure for migration.

It can be worth noting to quote from one of the book entitled " Globalization and Its Discontents" by Professor Joseph Stiglitz (2002):

> "…. Globalization - the removal of barriers to free trade and the closer integration of national economies - can be a force for good and that it has the potential to enrich everyone in the world, particularly the poor. But, …if this is to be the case, the way globalization has been managed, including the international trade agreements that have played such a large role in removing those barriers and the policies that have been imposed on developing countries in the process of globalization, need to be radically rethought."

According to UNDP, while globalisation is not considered to be a new phenomenon, however, this era is different. It identifies four areas where the new process is different. These are:

(i) New Markets –foreign exchange and capital markets are linked, globally operating 24 hours a day, with dealings at a distance in real time.

(ii) New Tools – Internet links, cellular phones, media networks;

(iii) New Actors – World Trade Organisation (WTO), with authority over national governments; the MNCs, with more economic powers than many states.

(iv) New Rules – multilateral agreements on trade, services, and intellectual property backed by strong enforcement mechanisms and more binding for national governments and reducing the scope for national policy (UNDP 2000, 1).

Generally, most literatures in the area of economic globalization identify three phases of globalization:

The first wave of modern globalization took place from 1870 to1914. Advances in transportation and negotiated reductions of barriers opened up the possibility for some countries to use their abundant land more productively. Flows of goods, capital, and labor all increased dramatically.

We can see the period 1914 to 1945, between the two world wars, as a giant step backward in global economic integration.

Incompetent economic policies, unemployment and nationalism drove governments into beggar-thy-neighbor protectionism. During this period of inward-looking economic policies global growth slowed down: the growth of per capita income fell by around a third, and the number of poor people continued to rise.

The Second wave of globalization took place from 1950 to 1980, one that focused on integration among rich countries. Europe, North America, and Japan concentrated on restoring trade relations through a series of multilateral trade liberalization under the auspices of the General Agreement on Tariff and Trade (GAAT). During this second wave most developing countries remained stuck in primarily commodity exporting and were largely isolated from capital flows.

In part this was due to their own inward-oriented development policies and strategies. Growth in the developing countries also recovered, but less strongly, so the gap between rich and poor countries widened

The most recent wave of globalization-starting around 1980 and continued today-has been spurred by technological advance in transport and communications technologies and by the choice of large developing countries to improve their investment climates and to open up to foreign trade and investment.

For the first time, poor countries have been able to harness the potential of their abundant labor to break into global markets for manufactured goods and for services. Manufactures rose from less than a quarter of developing country exports in 1980 to more than 80 percent by 1998.

The end of the cold war and the ensuing globalization has created the belief that closer integration into the world trading system and by following opening their economy to the world market completely would create more favorable conditions for growth in developing economies and allow them to close the income gap with industrial countries.

This belief has dominated economic policies in most developing countries since the last two decades. The accelerated growth of recent globalizers is consistent with other cross-country statistical analysis that finds that openness to international trade and/or FDI goes hand-in-hand with faster growth. The most that these studies can establish is that more open economy i.e. free trade is correlated with higher growth, and one must be careful about drawing conclusions on causality.

Openness or rapid liberalization of trade and Foreign Direct Investment (FDI) are seen as a vehicle by which increased participation of developing countries in world trade and a rapid expansion of their exports can be achieve. In pursuit of these objectives, Sub Saharan African Countries in general have also enacted and implemented a number of policies. This recent stage of globalization has emphasized global economic interdependencies and new technologies of information and communication. Economic globalization now means integrating national

economy with the international economies. Over-riding restriction in the form of quotas, high tariffs etc are out. In a commonly used expression it is openness and integration of the national economy to the global market.

In general, the issue of accelerated economic growth and its sources has been the main agenda in economic policy formulation for most of the Least Developing Countries (LDCs) of the world since the early 1970's. It is given paramount importance precisely because the economic growth of these countries has been showing a deteriorating trend from time to time and showed increasing divergence.

Hence, in order to evaluate the success of the change in the reforms and over impact of the integration, it is important to explore the linkages between economic growth and globalization and examine the effects of the relationship, quantify the impact of these changes on economic growth in SSA in general and Ethiopia in particular.

1.2 Problem Statement

The degree to which countries have moved toward globalization varies widely. For most Sub-Saharan African in the 1980s and since 1992, and following the World Bank and IMF's Structural Adjustment Program (SAP), a series of reform programmes that are aimed at transforming the economy from a quasi-communist command structure to a market economy have been initiated and implemented. These include deregulation of foreign trade, privatization of public enterprises, the gradual abolition of export subsidies and taxes, devaluation of the exchange rate followed by the introduction of inter-bank foreign currency market, the determination of exchange rates based on market forces, and significant reductions in tariffs and non-tariffs barriers.

Despite the various reform, African countries in general has been faced compounding problem and Africa's lack of responses is said to reflect

- deteriorating balance of trade; deteriorating Terms of Trade (TOT) problems;

1.3 Objective of the Study

Given the problems mentioned above, the purpose of this paper is to explore the linkages and effects of various variables of globalization on economic growth in Africa, particularly SSA.

The general and specific objectives of this study includes

- To investigate the effects of liberalization/openness to international trade, capital flows/foreign direct investment/FDI and technology, labor and financial flows, industrial value added on economic growth in the SSA using panel data analysis (cross-country and time series data) and see the implication for Ethiopia;
- To examine the existence of a critical development level (a threshold of income) below and above which the response of output growth to the key variable/s differ substantially;
- To put forward the policy implications based on the findings of the study.

1.4 The Hypothesis of the study

The hypothesis will be

- To test whether the openness policies adopted in the recent wave of globalization (trade, investment, and technological transfer) has a significant effect on economic growth in Sub-Saharan Africa (SSA).

In a way, it tries to find what possibly play the major roles in integration and globalization in SSA on the ground.

1.5 Significance and Justification of the study

The researchers believe that this research would contribute to our understanding of the overall effect of globalization on economic growth of SSA using the appropriate econometrics model and approaches.

This research build on two important works: the works of Savvides (1995), which is one of the few studies that found on these issues using panel data from all Africa covering the time period of 1960-1987 and the works of Baliamoune (2002) which uses the fixed-effect model for the period covering 1980s –1996 with a panel estimation techniques as suggested in Caselli and Coleman.

This paper tries to use both the fixed and random effect models using three income grouping data and individual country data. The researcher uses both latest STATA 7.0 and Eviews 5.0 Statistical Packages to exploit their comparative advantages.

The 1990s, in particular, involved many economic and policy reforms in Africa. Thus, including the 1990s and some of beginning years of the new millennium (until 2002) helps to capture the extent and effects of openness to international trade, investment and finance (and globalization) better than the 1960s, 1970s or even 1980s.

Besides, the paper also used one of the panel unit root and panel co-integration techniques (tests) to check for short and long run relationships and estimate the variables under considerations.

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CHAPTER II
THEORETICAL AND EMPIRICAL REVIEW OF LITERATURES

2.1 Theoretical Literatures

An open market economy is today generally recognized as the necessary foundation for development, growth and productivity (ILO, 2004). No country can today opt out of the global economy. The challenge is to manage interaction with global markets to ensure growth, development and equity.

Liberal international trade theory, which derives essentially from David Ricardo, emphasises the logic of comparative advantage as the cornerstone of free trade at the international level. Africa's marginal role in the international capitalist system is influenced by and reinforced by this ideology of neo-liberalism.

Conventional Trade Theories

Classical theories of trade, notably the Recardian type, have stressed international differences in technology and real wage level. Their focus has been on factor productivity differences. For Adam Smith's (1776) absolute advantage and Ricardo's (1817) comparative advantage trade theories, the South (underdeveloped economies) need to specialize in the production and export of primary commodities in which they are more efficient to produce (Alemayehu, 2002). The neoclassical factor abundant trade theories also argue the same from a different angle, i.e., since these countries are more endowed with labor they need to specialize in the production and export of labor-intensive products (primary products) (Samuelson, 1948 & 1949; Bhagwati, 1964; Stewart, 1984; Alemayehu, 2002).

Developments in trade, the ones within the neo-classical framework, have shifted attention from such differences in factor productivity towards differences in factor endowments.

The basic idea of this trade theory is the factor proportion theory of the Heckscher-Ohlin model and its extensions. The theory is based on general equilibrium model and the assumptions associated with it, including perfect competition, concavity, constant returns to-scale production function, and well behaved and homothetic preference functions.

Other theorems, which are associated with the conventional theory, are factor equalization theorem (Stopler-Samuelson Theorem) of gains accruing to the factor used in protected import competing sectors.

Rybczynski theorem of expansion (contraction) of sectors, which are intensive user of the abundant (scarce) factor. As parts of the general case for free market, the cause for free trade derives from the views that, as a production process, international trade is likely to be carried out more efficiently if it is left to the market mechanisms.

Conventional trade theory has been questioned on methodological and empirical grounds. Critics who have emphasized the methodological problems of the conventional model are mainly associated with non-neoclassical formulations while those who have questioned the empirical validity of the model have come from both within and outside the neo-classical framework.

The first empirical test of the Heckscher-Ohlin model had been administered by Leontief (1953). Using input–output analysis, Leontief found that the United State was a net exporter of labor-intensive goods and a net importer of capital-intensive goods. This was not thought to amount to nullification or serious questioning of the theory. Instead, the outcome was labeled "the Leontief paradox" reflecting the strong faith economists have in the Heckscher-Ohlin theory and their reluctance to accept the results of the test. An extensive literature on international trade has been devoted to explain the Leontief paradox.

The attempts were directed at finding reasons why the results of the test must mean something other than the nullification of the Heckscher-Ohlin model itself. However, more recently it has increasingly been admitted that the conventional trade theory is inadequate to explain what is actually happening in the real world (e.g. Helpman, and Krugman, 1985: Porter, 1990).

The explanatory and predictive power of the conventional trade theory has increasingly come under attack from both inside and outside the neo-classical framework of analysis. At least three factors have influenced views on the efficacy of the conventional trade theory: the changing character of international trade, the changing roles and relative competitive position of countries in the world economy and the changing view in the field of economics, especially as regards the analysis of industrial structure and competition.

Patterns of trade have been changing in favor of North-North trade. This phenomenon, which Linder (1961) (as cited by UNU/INTETCH studies) observed, has received more serious attention and extensions have been made in many respects. There has been a relatively steady growth in manufacturing exports, leading to high level of trade between countries with similar endowments. Three quarter of all exports (75%) from the developed countries, have their destination in other Developed Countries (between DCs), which are supposed to be relatively similar in their relative factor endowments (Yoffie, 1993) (as cited by UNU/INTETCH studies).

The implication of this change is that the explanation of the volume of trade on the basis of differences in factor endowments can be no more than partial. Ray (1991), as cited by the same document, the composition of trade is also not adequately explained, since there is substantial two-way trade in goods of similar factor intensity, although it is largely true that countries' net exports seem to reflect a factor content which is consistent with underlying resources. These ongoing tendencies lead to form larger trading block among developed countries.

Increasing globalization has been particularly characterized by the growing role of Transnational Corporations (TNCs), facilitated by the explosive growth in international private financial flows. Further the UNU/INTETCH document explained, during the second half of the 1980s, foreign direct investment (FDI) increased by 29% annually, nearly three times the rate of growth of international trade. Further evidence from this area suggests that alliances are prevalent in global oligopolies, serving ubiquitously as vehicles for the transfer of technology between firms, achieving economies of scale, building technical standards and accessing markets skill and resources (Yoffie, 1993).

These developments have led to a new ranking of the factors creating inter dependencies whereby FDI in manufacturing and services rather than trade is leading internationalization and is influencing location and trade patterns.

During the 1980s, the pattern of internationalization and globalization was further facilitated by deregulation, the globalization of finance and by the enabling features and pressures from new technologies. This development cannot be adequately explained in the conventional trade theory framework.

Finally, increased tension in the international trade environment and rapid technological progress, which is reflected in new products, new processes and increased productivity, have led to a reassessment of the relevance and applicability of conventional trade theory (Haque, 1991) (as cited by UNU/INTETCH). In addition, the experiences of the most successful Newly Industrialized Economies (NIEs) do not seem to conform to the traditional model of specialization.

While both the classical and neoclassical theories argue for equal and fair distribution of the gains from trade between the South (primary commodity exporters) and the North (manufactured goods exporters), they are more optimistic towards primary products in the expectation of prices. They expected that there is a tendency for the prices of primary commodities to rise in relation to manufactures due to:

(i) the pressure of growing population and the process of urbanization would keep wages and cost of production in manufacturing low and

(ii) (ii) as the population expands and/or consumption per head increases, agricultural production and mineral extraction would show diminishing returns and in a market economy, this decline would be reflected in rising relative prices for primary commodities (Singer, 1987; Sarkar, 1986; Spraos, 1982; Balasubramanyam and Sapsford, 1994).

Since trade in primary commodities was considered to be in line with the Heckscher-Ohilin theory, subsequent developments in the mainstream trade theory[1] ignored[2] the issue and give due emphasis to trade in manufactures (North-North trade) (Linder, 1961, cited in Bhagwati, 1964: 27-28; Stewart, 1984; Alemayehu, 2002). However, Stewart (1984) underlined that the pattern of the N-S trade is in accordance with the H-O predictions, does not mean that it is explained by the H-O theory as the assumptions of this theory are even less realistic with respect to N-S than N-N (or South-South, S-S) trade, in particular with respect to identical production functions between countries (which involves equal knowledge about and access to technology). As a matter of fact, the two regions (the North and the South) have so many differences with regard to economic structures other than differences in factor abundance (Stewart, 1984).

According to Stewart (1984) the criteria for assessing the South should generally be much broader than "the gains from trade" literature. The author noted that the issue of unemployment, the terms of trade effect, the effects on X-inefficiency and the question of capital and skill accumulation should be taken in to consideration.

Hence one needs to go beyond the narrow view of conventional trade theory for explaining the current North-South[3] trade situations, where the latter faces terms of trade deterioration for its primary commodity exports. According to recent literatures, SSA countries are losing in Terms of Trade deteriorations not only in primary commodities but also in manufacturing goods and hence, people started questioning the benefits of economic globalization in Africa. And yet continue working to make globalization to bring gain to Africa.

Following the poor performance of exports of developing countries in general and SSA in particular and the early 1980s debt crisis, the IMF and World Bank proposed the Structural Adjustment Program (SAP) policies as a remedy. Since these organizations believe that the problems of SSA's exports are not related to external factors (such as TOT deterioration) but rather to domestic policy problems and supply constraints, they advocated supply-enhancing

[1] Including the Linder's (1961) demand side explanation of trade (in Bhagwati, 1964), Posner's (1961) technological gap model, Vernon's (1966) product cycle model, and the new trade theories.
[2] With the exception of Bhagwati's (1958, 1987) 'immiserizing growth'.
[3] The South in our context is underdeveloped regions that depend on primary commodity exports.

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policies under the umbrella of SAP (Brown and Tiffen, 1992; Goldin et al, 1993; Schief, 1994). Liberalization of both internal and external sectors and devaluation of national currencies is the cornerstone of SAP. By undertaking these measures, developing countries are believed to align incentives with world prices and ensure that producers would receive a higher proportion of world prices (Gilbert and Varangis, 2003). And it was hoped that these incentives would increase domestic production and export receipts and hence, bring economic growth.

The underlying assumption in this policy analysis is that the country, which is undertaking SAP and integrating to the world market, is too small to affect the world market and hence it can supply more exports at the going world price (Goldin et al: 1993). However, the effects of these policies have been questioned from different angles. *First*, the effectiveness of devaluation depends on the Marshall Lerner Condition[4], which is hard to meet for a country exporting primary commodity, in particular agricultural products, due to their low price and income elasticities of demand. Under such situation, devaluation or depreciation of a currency would reinforce further deterioration of TOT (Singer, 1987).

Secondly, virtually all developing countries are advised to undertake this policy package implies that their simultaneous action would result in what is known as the "adding-up effect"[5] or the "fallacy of composition"[6] (Balassa, 1988; Panagariya and Schief, 1990; Akiyama et al, 1993; Coleman and Thigpen, 1993; Goldin et al, 1993; Akiyama and Larson, 1994; Schief, 1994; Gilbert and Varangis, 2003). In other words, the simultaneous increase in exports by all developing countries would shift the global supply curve. Given inelastic world demand for commodities (Akiyama and Larson, 1994; Schief, 1994; Gilbert and Varangis, 2003), this would lead to price declines. If the effect of price declines is more pronounced than the effect of quantity increase, then export revenues would decline and hence real welfare loss for the

[4] This condition states that the sum of elasticities of demand for a country's exports and of its demand for imports has to be greater than unity for a devaluation to have a positive effect on a country's trade balance (Sodersten, 1980: 361).

[5]The adding-up effect refers to the concern that if several developing countries expand their exports simultaneously, they will face a decline in their terms of trade that their export revenues and their real incomes will fall (Panagariya and Schief, 1990: 2; Schief, 1994:1).

[6]The phrase "fallacy of composition" refers to the failure of policy analysis to identify situations in which individual and collective interests diverge (Goldin et al, 1993:160).

producers (Panagariya and Schief, 1990; Akiyama et al, 1993; Coleman and Thigpen, 1993; Goldin et al, 1993; Akiyama and Larson, 1994; Schief, 1994; Gilbert and Varangis, 2003).

The issue of the adding-up effect was in fact originated from Johnson (1958,previously in 1953), where he showed that expansion of an economy may lead to worsening of the terms of trade against it, in the course of international trade. This was also raised by Bhagwati (1987, previously in 1958) in terms of 'immiserising growth', in the sense that the growth-induced deterioration in the terms of trade would outweigh the primary gains from trade.

2.2 Empirical Literatures

The empirical studies in the areas openness and in to the world market through the various liberalization processes shows mixed pictures.

Balimoune (2002), using panel data, explored the effect of openness to international trade, forcign direct investment including other indirect and/or direct indicators of globalization on economic growth. Fixed Effect and adjusted fixed effect (regional-effect) estimations yields consistent with the hypothesis of conditional convergence. The empirical findings fail to substantiate the proposition that greater openness facilitates convergence to higher income levels.

Shahid Yusuf (2001) applied econometrics model to test the effects of openness to trade, physical and financial capital, labor mobility, and advanced communication technology (like internet). He points out that there are strong benefits from closer integration. Openness to trade, factor flows, ideas and communication have powerfully stimulated economic and political progress.

Shrivastava (2001) stated that, theoretically, globalization should result in equalization of long-term prices, factor prices, interest rates, profits etc. subject to differences in natural specialization. Free flow of goods, services, currencies, capital investment and portfolio investments will be possible with greater ease and will positively affect growth.

Dollar (1992) from his analyses of the data (from 95 developing countries including SSA) over the period 1976-85, conclude that trade liberalization and devaluation of the real exchange rate could dramatically improve growth performance in poor countries.

Dollar and Kraay (2001) found that growth generally benefit the poor as much as everyone else, so that the growth–enhancing policies of good rule of law, fiscal discipline and openness to international trade and capital inflows should be the center of successful poverty reduction strategies.

Sachs and Warner (1997b) tested the proposition that open economies converge faster to steady-state income. They found support for the hypothesis that grater openness accelerates convergence in a cross-sectional study that measured openness by the number of years countries were open.

Sachs and Warner (1997) asserted that openness to international trade affects growth in two ways: it affects the level of steady state income and it affects the speed of convergence. Their estimates implied that the speed of convergence is considerably faster for open economies. The researchers have claimed that convergence is facilitated through international factor mobility (financial and physical capital).

To Sachs and Warner, openness encourages greater efficiency in the allocation of scarce resources of the poor economies and also promotes market competition and thus helps reduce monopolies. Also, trade is presumed to serve as a vehicle for the importation of technical innovations and improvements in total factor productivity in the poor economies (ibid).

Romer (1992) and Barro and Sala-I-Marti (1995), among others, have argued that countries that are more open to the rest of the world have a greater ability to absorb technological advances generated in leading nations.

Numerous studies (Balassa 1978; Tyler 1981; Bhagaati 1988; Quah and Rauch 1990; and Edward 1993) have examined the link between imports and export shares in GDP, and economic growth.

Edeward (1997) used nine (9) alternative openness indexes to analyze the connection between trade policy and productivity growth during 1980-1990. His basic regression results focus on three possible determinants of economic growth (TFP growth):

1) The log of initial GDP per capita (GDP65). This variable captures the existence of TFP convergence, and its coefficient is expected to be negative
2) Initial level of human capital.
3) Openness.

His empirical results indicate that after controlling for the initial level of human capital and the degree of openness, Total factor Productivity (TFP) exhibits (conditional) convergence (see also Edwards 1995). Finally, his empirical findings suggest that, with other things given, more open countries will tend to experience faster productivity growth than more protectionist countries.

Other researcher using endogenous growth models explained the relationship between human capital accumulation and GDP growth (Barro 1990 and Mankiw et al 1992). They examined the effects of policy variables and human capital to articulate the hypothesis of conditional income convergence. (Edwards 1992; Harrison 1996; Levin and Raut 1997) have emphasized the role of human capital in making trade openness affect growth. For example, Harrison (1996) tested for this effect through use of a variable reflecting interaction between openness and school enrollment but obtained ambiguous and insignificant results.

On the other hand, Oskam et al (2002) pointed out that trade-led growth path is not promising for less-developed countries. The inadequate institutional and infrastructure stance in poor countries, the infant industry argument, exposure to external shock and growth instability and the biased tariffs structure of developed countries are some of the anti trade-driven development path policy for poor countries.

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Oskam et.al (2002) ask: would trade liberalization be taken for guarantee to stimulate even the tradable sector of poor nations without looking into the other macro-economic and micro-economic environments of the nations?

According to Mundlak (2000) openness without the development of the manufacturing and diversified export sector of poor nations would rather turn against the growth possibilities and long-term development opportunities of the poor nations of SSA. It will deteriorate the balance of payment and terms of trade of the poor economies.

Grossman and Helpman (1991), however, present a model where openness affects growth negatively.

The other prominent trade liberalization skeptics include Krugman (1994) who has argued that the effect of openness on growth is, at best very tenuous, and at worst doubtful.

According to Rodrik (1995, 1997), in most studies on openness and economic growth "the trade-regime indicator used is typically measured very badly", and "openness in the sense of lack of trade restrictions is often confused with macroeconomic aspects of the policy regime. Other studies conducted by Francisco Rodriguez and Dani Rodrik (2000) suggests that the relationship between trade liberalization and growth and employment is likely to be "a contingent one, dependent on a host of countries and external characteristics". Differences in country circumstances (such as the level of income or whether a country has comparative advantage in primary commodities or manufacturing) are likely to warrant different strategies of trade liberalization.

With respect to FDI, the evidence suggests that, on the whole, foreign investment does increase growth. Cross-border investments can potentially also raise the rate of growth if there is spillover benefits from the transfer of technology and skills to the local economy. In this case, the investment raises labor productivity and incomes and hence exerts a positive effect on growth and employment. Once again, the empirical evidence reveals mixed outcomes.

On capital account liberalization, there is emerging agreement that the growth benefits to be derived from it are small. Even setting aside the economic and social havoc caused by crises, the gains to developing countries from participating in the current global financial system have been increasingly questioned.

Financial openness has also, in some cases, led to a misallocation of resources and an increase in the real cost of capital. The misallocation arises when information failures lead foreign lenders to finance unsound investment. Thus, there is no single universally valid prescription on the best approach to trade liberalization and openness to FDI flows.

CHAPTER III

OVERVIEW OF MAJOR ECONOMIC REFORMS AND GLOBAL GOVERNING RULES AFFECTING AFRICA'S ECONOMIC PERFORMANCE

Africa and the Challenge of Economic Development: From the Lagos Plan of Action (LPA) to NEPAD

Developing Countries formed a few organizations within and outside the United Nations. The most important was the Group of 77. The Group of 77 (G-77) was established on June 15, 1964. Seventy-seven developing nations signed the "Joint Declaration of the Seventy Seven Countries," issued at the end of the first session of the United Nations Conference on Trade and Development (UNCTAD) in Geneva (Zewde, 2004).

Even more exclusive Third World organizations flexed their muscles; for example, the Organization of Petroleum Exporting Countries (OPEC), challenged the Western dominated economic order by quadrupling the price of crud oil in 1973-74. Other significant organizations included the Non-Aligned Movement (NAM), which was first created in 1961 at the Belgrade Summit as a voice of the developing world.

According to Knasbulatu (1980) the main issues in such organizations revolved around the economic and political needs of the developing nations, and their desire for a new economic and political order in this era of globalisation. For example, the Declaration and Action Program on Establishment of a New International Economic order adopted in May 1974 in a special session of the UN General Assembly reflected a new sense of power felt by the Third World to lead the economic and political sphere of their nations independently from the Western power. In this declaration the Third World countries promoted their demand against the old economic order (Quattara, 1997).

Following these and other developments various ideas have been articulated, proposals put forward and blueprints developed on the path to economic development in Africa. These includes from home origin plan to imported reforms.

3.1 Lagos Plan of Action (LPA)

A major step taken by African leaders to combat the problem of underdevelopment was the economic blueprint of the Lagos Plan of Action (LPA) for the Economic Development of Africa (1980-2000) and Final Act of Lagos of 1980. The goals of self-reliance and self-sustaining development based on the creation of integrated and dynamic national, sub-regional and regional markets.

LPA sought to adopt a new development strategy of inward looking pattern rather the inherited externally oriented pattern. It emphasised, the development of domestic market in Africa rather than reliance on external markets, the control of natural resources by states, the role and importance of domestic factor inputs in development, the imperative of self-sufficiency in food production, the development of human capital and the provision of social infrastructure for the African people.

The Plan envisaged that by the year 2000, the process of regional integration would have matured through the development of sub-regional economic groupings leading to the establishment of the African Economic Community (AEC). About 10 years of intellectual spadework went into the development of the plan. However, in spite of its rigour and clear vision the LPA achieved very little and was indeed scarcely implemented.

Two major issues conspired to undermine the LPA. First, the LPA was a victim of international economic politics. The western nations and its agencies, especially the World Bank, viewed the LPA as a radical choice that must be stalled. The Plan repudiates the whole logic of liberal economic theory about the efficacy of international trade and external markets, and talks about state control of natural resources as against the role of the market and private entrepreneurs. In other words, the LPA was considered to be an attack on *lassie faire* economy.

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3.2 Structural Adjustment Programme (SAP)

Barely a year after the LPA was adopted; the World launched a report, which was counter to the LPA. The report was entitled, "*Accelerated Development in Sub-Saharan Africa: An Agenda for Action*", otherwise known as the Berg report. The report was a scathing criticism of the LPA, eulogising the role of the market and external trade in economic development, with a spirited attack on the state in Africa. The Berg report concludes for Africa to liberalise its economy, cut back on the role of the state and privatise public enterprises. The Berg report later formed the crucible on which the structural adjustment programme (SAP) was constructed in Africa. The World Bank therefore used its leverage on many African countries for them to jettison the LPA.

The second factor that conspired against the realisation of LPA was the festering economic crisis in Africa during the period. Most African countries in the throes of economic crisis of debt burden, serious trade deficits; rising unemployment, industrial collapse, and social upheavals had little choice of manoeuvring than to turn to the International Financial Institutions (IFI) of the World Bank and the IMF for financial support. The conditional ties of the IFI were quite antithetical to the goals of the LPA. Rather than the goal of self-reliance, what the IFI prescribed through SAP was increased dependency through trade liberalisation and externally oriented development strategy. The result was that Africa recorded two decades of economic failure from 1980-2000.

Most Sub-Sahara African countries (since the 1980s) and Ethiopia (since 1992) adopted World Bank and IMF inspired SAPs to rejuvenate their economy and generate economic growth. Although SAP has the declared objective of "improving current and overall balance of payment deficits" (Cornea et al: 1994:51) and "achieving a satisfactory rate of growth with reduced inflation" (Goldstein, 1994), the SAP's policy instruments tend to overlook the cumbersome exogenous factors such as the steady decline in volume of exports and /or fluctuating prices for primary commodities in the world markets, a deteriorating terms of trade for the latter and dimmer prospects for foreign direct investment flows.

Market fundamentalism has become the standard policy framework and economic philosophy, which link most nations together and which define the configuration of domestic and international economic policies (Adejumobi 2002, 1). The underpinning of globalisation is neo-classical market fundamentalism.

Trade liberalization can help boost trade performance and growth, and reduce poverty. But liberalization alone is not a silver bullet. The link between openness, growth and poverty reduction is complex and dependent on country specifics.

In order to create a fair global trading system, developed nations should show greater commitment to working with African countries on the development agenda of the Doha Round. Enhancing market access for African products is of particular importance. The trade policies of rich countries are clearly only part of the problem.

The Economic Report on Africa (ERA) 2004 takes the view that OECD trade policies are a serious constraint to Africa's integration into the global economy. African exports have been handicapped by the industrial country policies such as tariff escalation, tariff peaks and agricultural protectionism.

Reform architects have required African countries to expose their national economies to an open, competitive international environment in a bid to improve domestic resource use and allocation efficiency.

Thus, it should come as no surprise that SAPs complement, if not reinforce, the initiatives by WTO to promote greater integration of many African countries into the world economy. But both these have tended to reinforce the dichotomy of the North-South divide in production and exchange.

For the World Bank and IMF to coerce African countries into devaluing their national currencies in the face of declining terms of trade of, and static demands for, their primary commodities just goes to illustrate how economically fatuous the Bretton Woods institutions are to Africa.

Evidently, the devaluation policy has generated record profits for western multinationals and growing poverty for African economies. The confluence of the three forces, namely, devaluation, declining terms of trade, and static export demand, has inflicted widespread misery in the Sub-Saharan Africa.

If African economies are to experience more integration into the world economy through market arrangements, then it should be *quality* integration. If Africa is to safeguard itself from dire prospects, it will have to forge *regulatory mechanisms*. Pro-market fundamentalists would interpret this as anti-market behaviour. Put succinctly, they would argue that Africa is running away from the market model and is, therefore, continuing to embrace marginalization.

Therefore, some argues that Africa's efforts at de-marginalization should be pursued with caution. Rather than posture to the global gallery of ultra-market fundamentalists, African economies should de-marginalize through selective integration. It would be a tragic mistake for African economies to accept the view that any integration is better than no integration at all.

In recent years, the African continent has begun to recover from the "lost decades" of the 1980s and 1990s. In 2003, Africa was the second fastest growing region in the developing world, behind Eastern and Southern Asia. Real Gross Domestic Product (GDP) grew by 3.8% in 2003 compared to 3,2% in 2002. This encouraging performance was driven by higher oil prices and production, rising commodity prices, increased foreign direct investment (FDI), better macroeconomic management, and good weather conditions.

On the downside, seven economies had negative growth rates, compared to one in 2000 and none in 1999. Africa's share of world trade and global production is not only very low, but has continued to decline in the last two decades. Africa's share of international trade, which was about 5% in the 1980s, stopped to less than 2% in 2000. In addition, the continent has continued to record worsening terms of trade that creates serious balance of payment and debt problem for many African countries. The table below shows the trend in Africa's balance of trade between 1970-1996.

Table 1. Africa's balance of trade, 1970-1996 (US dollars, '000 million)

Trade Type	1970	1980	1990	1996
Exports (goods and Services)	13.6	91.7	84.4	94.4
Imports (goods and services)	15.6	91.7	92.2	116.3
Balance	-2.0	-	-7.8	-21.9

SOURCE: International Monetary Fund, cited in Speaks (2000, 12).

As table 1 indicates, Africa has continued to record adverse terms of trade at a very alarming rate, the 1996 figure of which was over 250% higher than the 1990 figure. Also, Africa has been on the fringe with regard to foreign direct investment (FDI), which is one of the locomotive forces of production and the globalisation process. FDI flows to Africa (including South Africa) declined from $10.5 billion in 1999 to $9.1 billion in 2000. For sub-Saharan Africa, the same scenario is the case. FDI decreased from $8 billion in 1999 to $6.5 billion in 2000. Thus Africa's share of global FDI is less than 1% in 2000 (UNCTAD 2001, 19-20).

While Africa continues to record dismal performance on trade and economic development, the triad of United States, the European Union (EU) and Japan are consolidating their grip on the global economy. Most people agree that the leading nations benefited from international trade and financial systems at the expense of the poor.

3.3 GAAT, WTO and the Different Rounds and Multilateral Agreements

In truth, many pro-market techno-institutional arrangements and mechanisms have been forged or are being stitched at present at the global level to foster greater integration between economies. They include: Multilateral Agreement on Investments (MAI), the Africa Growth and Opportunity Act (AGOA), and TRIPs, TRIM, and TREMs under the WTO regime.

The major institutions that have set the tenor and context for international trade in the post Second World War (WWII) era have been the General Agreement on Tariffs and Trade (GATT) and later the World Trade Organisation (WTO). They have provided the driving force, rules, and regime of incentives for free trade at the global level.

GATT, like the World Bank and the IMF, is the outcome of inter-war dialogue on the shape of the post-war world economy, which took place between the American and British governments. Often, these international institutions are criticised for their roles against the interest of LDCs in general and Africa, in particular. And they have been instrumentals for the advancements of the west.

GATT came into force in 1948. In the post Second World War era, GATT has provided the institutional basis for multilateral trade negotiations. The fundamental purpose of GATT was to achieve "freer and fairer trade" through reduction of tariffs, and elimination of other trade barriers.

GATT has operated on the basis of three principles:

1. Non-discrimination, multilateralism, and the application of the Most-Favoured Nation Principle (MFN) to all signatories,
2. Expansion of trade through the reduction of trade tariffs, and
3. Unconditional reciprocity among all signatories. GATT's goal was to establish world trade regime or universal rules for the conduct of commerce (Gilpin, 1987, 191). GATT has, however, not presided over a totally free trade regime.

The contestation between protectionism and free trade amongst the leading members of GATT, depending on what they consider to be in their national interest at any point in time, determines where the pendulum of free trade would swing.

Between 1948 and 1995 GATT undertook about eight rounds of trade negotiations. The interests of the developed countries, especially the United States, the EU and Japan, drove all of it.

One of the noteworthy features of trade liberalisation under GATT is the uneven nature of the process. In other words, GATT's effectiveness has been limited mainly to trade in manufactured products.

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GATT has been successful in maintaining the commitment of the leading western countries to a system of embedded liberalism by skewing the benefits of trade liberalisation in their favour. The ranges of manufactured products that have benefited from trade liberalisation are products produced in the AICs.

The Uruguay round of trade negotiations shows clearly how the developed countries appropriate space in multilateral institutions to further their parochial interests at the detriment of the less developed countries. Indeed, one of the dubious logics on which the structural adjustment programme (SAP) was constructed was to remove market distortions and rent seeking in agricultural production and income through the removal of subsidy to the sector by the state. The same kind of market 'imperfections' and 'distortions', even of a higher degree exists in the western agricultural sector. Yet, such 'distortions' are protected and also given strong political cover by the state.

The high point of the Uruguay rounds was in the new issues, which would fundamentally affect the interests of and struggle for development by Third World countries: These issues are:

1. Multilateral Negotiation and Agreement on "Trade In Services";
2. Trade Related Aspects of Intellectual Property Rights (TRIPs);
3. Trade-Related Investment Measures (TRIM).

The first issue relates to bringing the whole gamut of 'services' under the GATT rule for which trade barriers are to be dismantled and investments protected. The service industry is mostly in the finance and high-tech sector of infrastructure – telecommunications, information technology, etc. With globalisation there has been an increased trade in services.

The conflict that arises between the developed and developing countries on this is well captured by Robert (Gilpins, 1987, 201): The conflict between the advanced and developing countries over services and high technology industries has become intense.

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The second, TRIPs, is about patent rights, which is meant to protect the interests of the MNCS of the western nations.

The last issue, TRIMs, is about providing a safe haven for western investments wherever they may be with favourable domestic conditions for them to prosper. Again, local laws on investments are being subordinated, to allow a free reign to western capital by developing countries.

On the whole, developing countries had little to cheer about after the Uruguay rounds in December 1993, and a product of the process was the setting up of the WTO in 1995, which has taken over and continued from GATT. WTO has worked within the parameters of GATT and has utilised the Uruguay rounds of negotiations and agreements as the basis for regulating international trade.

Most developing countries, especially Africa, played marginal roles in the activities of GATT and also currently of the WTO. The decision-making mechanisms of GATT/WTO are skewed in favour of the developed countries that have greater voting power and control of those organisations. The lopsided character of the WTO in global trade regime is attested to by recent events of the last five years.

> *While the 2001 WTO Ministerial conference in Doha, Qatar held out high hopes that the development concerns of the developing countries will be put on the agenda of multilateral trade negotiations like the issue of market access, subsidy for agricultural products in developed countries, and Trade Related Agreement on Intellectual Property Rights (TRIPS) as it relates to life saving drugs, however, such expectations were shattered by the Cancun Ministerial Conference in September 2003.*

The developed countries remained adamant insisting on no meaningful reforms in the international trade regime. Currently, agricultural subsidy in the Western World is $300 billion, which undermines the competitiveness of Africa's primary products.

Rather than accede to the demands of the developing countries at Cancun, the developed countries were urging the developing countries to further open up their markets.

The reality of the WTO is that the developed countries play the politics and shift the rules as convenient to them. They talk of free trade when it is convenient but play the card of protectionism when disadvantaged. The politics of international trade therefore, as the Uruguay Round demonstrates, is about a politics of denial of development for developing countries

In summary, the interface between GATT/WTO and globalisation is that they are predicated on the same ideology of neo-liberal free trade of capitalist expansionism. An open door trade policy, in which trade barriers are dismantled, national borders are deconstructed, and capital, goods and services are allowed

3.4 Africa Growth and Opportunity Act (AGOA)

There have been various initiatives to improve market access for the poorest developing countries by the advanced nations partly as a way-out from the global trade crisis. The European Union (EU)'s "Everything but Arms" (EBA) agreement, and the United States' Africa Growth and Opportunity Act (AGOA) are two examples.

The United States' African Growth and Opportunity Act (AGOA) were signed into law on 18 May 2000. According to AGOA's webpage (www.agoa.gov), "the Act offers tangible incentives for African countries to continue their efforts to open their economies and build free markets". For some products such as textiles and apparel, where tariffs and quotas are higher, there are significant advantages in belonging to the schemes.

Circumstantial evidence suggests that some African countries have benefited from the access agreement. For instance, South African exports to the USA under AGOA were 45% higher in 2002 than in the preceding year. Nigeria, too, has gained, and accounts for more than 60% of all AGOA exports to the US (although the bulk of this trade is related to the oil industry). Countries have also seen an increase in FDI as a result of AGOA (Khalil, 2004).

Nevertheless, the benefits from AGOA are limited because only "non-sensitive" products are included in the agreement. In addition, excessively tight rules of origin and the restricted list of countries admitted to benefits from the special textile preferences regime reduce the usefulness of the scheme for African textile producers. Moreover, the schemes expire in 2008, and this has dampened the reaction of potential investors. Finally, there is concern that AGOA's benefits will be diluted as the US Government seeks to negotiate free trade agreements with other regions such as the Middle East and Central America.

According to UNCTAD (2003b) preliminary evaluations, these initiatives show modest but important gains for some Sub-Saharan Countries. In general, AGOA has had some encouraging results and should be extended. AGOA has also different face for others!

According to the Act, the U.S. has forged AGOA to enable Sub-Saharan Africa achieve economic self-reliance. It aspires to promote the region's social and economic development through strategies that place a special premium on market-led arrangements in enhancing stable and sustainable growth. These, AGOA believes, would mobilize and allocate resources efficiently, the end-result being employment growth and alleviation of poverty.

But what is the U.S. expecting in return from this mechanism? What are the fundamental requirements to be fulfilled by African countries to secure approval of, and participation in, the American initiative? Interested parties in the Sub-Saharan region would have to satisfy a range of eligibility requirements before they qualify to be members. One of the key conditional ties for AGOA is: Commitment to, and quantifiable progress in, implementing political and neo-liberal economic reforms.

From a cursory glance of AGOA's eligibility requirements, it is crystal clear that the scheme is rooted in the neoclassical paradigm of the Walrasian variety. It is a framework profoundly inspired by the laissez faire traditions and underpinned by an ultra-market liberal ideology. Such a conceptual worldview believes in the unadulterated supremacy of market forces in determining resource allocation in the spheres of production, trade, finance, and investments.

Proactive interventions by states are regarded as acts of sacrilege to be condemned roundly. As such, the idea of effecting policy measures to generate domestic technological capabilities is an anathema in neoclassical circles. This position is advanced with ideological vehemence even though there is overwhelming evidence that market forces alone lead to the underdevelopment of technological capacity. AGOA is a regime of market fundamentalism *par excellence*. Market extremists regard markets as sacrosanct devoid of any flaws or distortive deficiencies.

AGOA's position with regard to *trade in services* has huge implications on Sub-Saharan economies. The mechanism not only asks AGOA members to participate in WTO discussions on services, but also expects them to revise their existing schedules to conform to WTO requirements. It also expects them to advance further commitments in this regard, noting that *competition in the services sector* needs to be fostered by encouraging the removal of tariff and non-tariff barriers.

Against this background, the question that arises is whether AGOA would reduce itself to paradigmatic irrelevance once the region's technological capabilities in the textile and apparel sectors evolve to competent levels sufficiently strong to cause market disruption in the United States.

From the foregoing, it is abundantly clear that Africa has subscribed to a scheme underpinned by a free market ideology, which the U.S. itself violates with impunity and without any qualms of conscience. But the very *laissez faire* based conditional ties of AGOA, which the U.S. has embedded, will only be flouted by African beneficiaries at their own risk.

It will be recalled from previous discussions that globalization is not necessarily a positive-sum process; it can just as well lead to outcomes that are virulently disruptive and asymmetrically disenfranchising.

3.5 New Economic Partnership for African Development (NEPAD)

Recently, a renewed urge to reclaim development in Africa by African leaders is being galvanised which is called the New Economic Partnership for African Development (NEPAD).

NEPAD is the second major attempt by African leaders, after the Lagos Plan of Action, to muster a collective will to engineer economic development in Africa. NEPAD, according to its authors, "centres on African ownership and management. Through this programme, African leaders are setting an agenda for the renewal of the continent.

One of the long-term objectives of NEPAD as the policy document which is relevant to this paper is: eradicate poverty in Africa and to place African countries, both individually and collectively on a path of sustainable growth and development and thus halt the marginalisation of Africa in the globalisation process.

Apart from the fact that NEPAD adopts a sectoral approach in enunciating its goals, which covers the areas of agriculture, manufacturing, export, mining, tourism, science and technology and the environment, the plan adopts a political economy approach to development. Political issues were considered to be central to economic development. Issues of peace and security, democracy and political governance were incorporated in the plan. In addition, an African Peer Review process was to be put in place to monitor these practices.

The major policy areas that call for serious concern in the NEPAD document are:

1. NEPAD's heavy reliance on foreign finance to achieve its aim. NEPAD requires $64 billion annually in order to achieve a 7% growth rate in Africa's economy, the bulk of which is to source from outside the continent.
2. NEPAD's position on the debt crisis: NEPAD talks about debt relief strategies in line with the World Bank initiative of debt relief for Highly Indebted Poor Countries (HIPC).

The reform of trade licensing procedures, were also undertaken in order to reduce fiscal anti-export bias to achieve a non-discriminatory and transparent issuing procedures for trade licenses, and to liberalize import financed with private sources of foreign exchange.

With respect to import trade liberalization, the government has been introducing step-by-step policies, which reduce the level and dispersions of effective rates of protection, average nominal tariff rates and the number of import duty exemptions.

CHAPTER IV

DATA, METHODOLOGY AND MODEL SPECIFICATION

4.1 Data Sources and Definitions

The data used in this study are collected from International Monetary Fund (IFS CD ROM, World Bank (Africa Development Indicators CD ROM, World Development Indicators CD ROM.

Key Variables of the model (see Appendix A and see also World Bank-WDI for more details). The Dependent Variable of the study is the growth in real GDP. The independent variables includes:

1) Openness Index (OPEN);
2) Inward FDI Ratio (FDI);
3) Educational Expenditure (EDUEXP);
4) Adult Literacy rate (ADL);
5) Manufacturing Value Added (MVA);
6) Money and Quasi Money (M2)
7) Domestic Credit provided by banking sector (DOMCRD)

It is worth mentioning to say that FDI and trade shares are commonly used indicators of globalization. The ratio of FDI to GDP is used as a measure of integration in world market.

Given the objective of estimating a GDP growth function, which enables us to know the relationship between economic growth and liberalization and/or globalization indicators, the model specification and the econometric approach of panel data analysis are discussed in the following sections.

The analysis of panel or longitudinal data is the subject of one of the most active and innovative bodies of literature in econometrics. This is partly because panel data provide such a rich environment for the development of estimation techniques and theoretical results (Green 1993). In more practical terms, however, researchers have been able to use time-series cross-sectional data to examine issues that could not be studied in either cross-sectional or time-series settings alone.

A long-standing problem in the analysis of production functions has been the inability to separate economics of scale and technological change. Cross-sectional data provide information only about the former, while time-series data muddle the two effects, with no prospect of separation (Ibid).

This paper uses Panel-data to try to examine the effect of several variables on economic growth. Most of the variables are either indicators of the extent of integration in world markets or tend to be influenced by globalization. For the most part, the correlation among the explanatory variables is rather week.

4.2 The Econometric Methodology

The specification of the econometric methodology employed to examine the relationship between economic growth and key variables characterizing liberalization and/or globalization are presented. This approach will enable us to analyze the impact of liberalization and/or globalization on the economic growth of SSA countries

The availability of data for the period 1970-2004 for the variables mentioned above and the technical characteristics suggest that the panel data estimation technique is more suited to identify the relationships.

According to Hsiao (1986) panel data technique is one that follows a given sample of individuals' (countries') overtime, and thus provides multiple observations on each individual

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(countries) in the sample and has the following advantages over the conventional cross-sectional and time series dataset.

First, they usually give the researcher a large number of data points, increasing the degree of freedom and reducing the collinarity among explanatory variables - hence improving the efficiency of economic estimates.

Second and more important, panel data allows a researcher to analyze a number important economic questions that cannot be addressed using cross-sectional or time series data sets.

Thirdly, whereas micro and macro dynamic effects typically cannot be estimated using a cross-sectional dataset, a single time series data set, usually cannot provide precise estimates of dynamic coefficient either.

If panel data is available, we can utilize the individual differences in explanatory values to reduce the problem of colinearity. Besides the advantage that panel data allow us to construct and test more complicated behavioral models than purely cross-sectional or time sires data, the use of panel data also provides a means of resolving of reducing the magnitude of a key econometric problem that often arises in empirical studies. By utilizing information on both inter temporal dynamics and the individuality of the entities being investigated one is better able to control in more natural way missing or unobserved variables.

4.3 Panel Model Specification

Three general alternative models for Panel Data Analysis include:

1) Variable-Coefficient Model,
   Imposing restrictions on the Variable-Coefficient Model gives us
2) Variable Intercept Model and
3) Pooled Model.

The variable coefficient model assumes variation in all coefficients (both intercept and slopes) across all cross sectional units over time t and i.

The implication is that specific model for each unit i at time t should be estimated. That is, NTK parameters should be estimated using only NT observations (which means for N data points across i, T time series observations overtime t and K parameters). Obviously there is no way that we can estimate such a number of parameters using only NT observations that is much less than the number of parameters.

A Basic Model of Heterogeneity

The basic framework for this discussion is a linear regression model of the form

$$y_{it} = \alpha_i + \beta' X_{it} + \varepsilon_{it} \text{---------- 4.14}$$

Y denotes Real GDP Growth (RGDG) which is the dependent variable, X is a vector of independent variables under the study (FDI_{it},$EDUEXP_{it}$,$OPEN_{it}$,MVA_{it},ADL_{it},M_{2it},$DOMCRD_{it}$), $_{i = 1, N, t = 1, \ldots T.}$ The error term, ε_{it} represents the effects of the omitted variables that are peculiar to both the individual units and time periods.

Variable-Intercept Model

Thus by imposing restrictions on variable-coefficient model, we derived variable intercept model and pooled model for the panel data analysis.

Depending on the assumption about the behavior of heterogeneity, the Variable Intercept Model is sub-divided into two: Fixed Effect Model (FEM) and Random Effect Model (REM).

4.3.1 The Random Effect Model /REM

The Random Effect Model (REM) assumes that all effects of omitted "Individual Time-Varying variables"[7] are each individually unimportant but are collectively significant and possess the property of random terms (Hsiao, 1986). The weight given to the "between-group variation" in the Random Effect Model is greater than zero[8].

The one-way and two-way Random Effect Models (REM) are specified as,

$$Y_{it} = \varpi_o + \partial_1 FDI_{it} + \partial_2 EDUEXP_{it} + \partial_3 OPEN_{it} + \partial_4 MVA_{it} + \partial_5 ADL_{it} + \partial_6 M2_{it} + \partial_7 BANKCredit_{it} + \xi_i + \varepsilon_{it} \quad \text{---------- 4.15}$$

$$Y_{it} = \delta_o + \beta_1 FDI_{it} + \beta_2 EDU_{it} + \beta_3 OPEN_{it} + \beta_4 MVA_{it} + \beta_5 ADL_{it} + \beta_6 M2_{it} + \beta_7 DOMCRD_{it} + \xi_i + \zeta_t + \varepsilon_{it}$$

The variable coefficient model assumes variation in all coefficients (both intercept and slopes) across all cross sectional units over time t and i.

The implication is that specific model for each unit i at time t should be estimated. That is, NTK parameters should be estimated using only NT observations (which means for N data points across i, T time series observations overtime t and K parameters). Obviously there is no way that we can estimate such a number of parameters using only NT observations that is much less than the number of parameters.

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The basic framework for this discussion is a linear regression model of the form

$$y_{it} = \alpha_i + \beta' X_{it} + \varepsilon_{it} \text{---------- 4.14}$$

Y denotes Real GDP Growth (RGDG) which is the dependent variable, X is a vector of independent variables under the study (FDI_{it},$EDUEXP_{it}$,$OPEN_{it}$,MVA_{it},ADL_{it},M_{2it},$DOMCRD_{it}$), $_{i = 1, N, t = 1, \ldots T.}$ The error term, ε_{it} represents the effects of the omitted variables that are peculiar to both the individual units and time periods.

Variable-Intercept Model

Thus by imposing restrictions on variable-coefficient model, we derived variable intercept model and pooled model for the panel data analysis.

Depending on the assumption about the behavior of heterogeneity, the Variable Intercept Model is sub-divided into two: Fixed Effect Model (FEM) and Random Effect Model (REM).

4.3.1 The Random Effect Model /REM

The Random Effect Model (REM) assumes that all effects of omitted "Individual Time-Varying variables"[7] are each individually unimportant but are collectively significant and possess the property of random terms (Hsiao, 1986). The weight given to the "between-group variation" in the Random Effect Model is greater than zero[8].

The one-way and two-way Random Effect Models (REM) are specified as,

$$Y_{it} = \varpi_o + \partial_1 FDI_{it} + \partial_2 EDUEXP_{it} + \partial_3 OPEN_{it} + \partial_4 MVA_{it} + \partial_5 ADL_{it} + \partial_6 M2_{it} + \partial_7 BANKCredit_{it} + \xi_i + \varepsilon_{it} \quad \text{(One-way REM)} \qquad \text{---------- 4.15}$$

$$Y_{it} = \delta_o + \beta_1 FDI_{it} + \beta_2 EDU_{it} + \beta_3 OPEN_{it} + \beta_4 MVA_{it} + \beta_5 ADL_{it} + \beta_6 M2_{it} + \beta_7 DOMCRD_{it} + \xi_i + \zeta_t + \varepsilon_{it} \quad \text{(Two-way REM)} \qquad \text{----------4.16}$$

The basic assumption of REM is that it treats the individual specific (ξ_i) or time specific (ζ_t) or both effects like the standard error term (ε_{it}).

The other assumption in the Random Effect Model is that there is no correlation between the error components and the explanatory variables[9].

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[7] Individual time varying variables are variables that vary across cross sectional units at a given point in time and also exhibit variation through time

[8] The OLS estimator (pooled model) gives a weight of 1 for the between group variation (Hsiao,1986)

[9] One important difference between FEM and REM is the assumption of no correlation between residuals and effect terms. When it is assumed that residual is correlated with the explanatory variable, correlation corrected fixed effect model is estimated (cited in Hsiao, 1987).

4.3.2 The Fixed Effect Model /FEM

Fixed Effect Model (FEM) assumes that variations across all i or over time t or both will be captured by the intercept terms of the regression model and it explicitly allows for the individual and/or time heterogeneity contained in the temporal-cross-sectional data.

The FEM gives zero weight to "between group variation" or it is some time called the 'With-in group estimate' (Hsiao, 1986). It completely ignores the "between source of variation".

The Fixed Effect Model /FEM, which has three[10] alternative models, are estimated depending on the assumptions of heterogeneity:

1) Individual time-invariant model, in which the intercept term is assumed not constant across i while it is constant over time;
2) Period individual-invariant model, in which the opposite assumption is imposed and
3) Individual time-varying model, whereby heterogeneity in dependent variable is assumed across all individual units and over time.

Individual Time-invariant model

The Individual time-invariant model, in which the intercept term is assumed not constant across i while it is constant over time (which is the standard Fixed Effect Model) is given by,

$$Y_{it}=\delta_i+\beta_1 FDI_{it}+\beta_2 EDUEXP_{it}+\beta_3 OPEN_{it}+\beta_4 MVA_{it}+\beta_5 ADL_{it}+\beta_6 M_2+\beta_7 DOMCRD_{it}+\varepsilon_{it} \quad \text{----------4.17}$$

Where δi_{is} unique to each cross sectional unit i. In other words, δ_i is considered as cross sectional dummy variable to account for the effects of those omitted variables that are peculiar to each country but staying constant over time t.

The assumption of constant time effect in individual time invariant model ignores the over time variation (between-variations).

[10] For three alternative assumptions and respective models, see Hsiao (1986)

Fixed or Random Effect

When only a few observations are available for different individuals over time, it is exceptionally important to make the most efficient use of the data across individuals. This is important to estimate that part of behavioral relationship containing variables that differ substantially from one individual to another, in order that the lesser amount of information over time can be used to the best advantage for estimation of the common parts of relationships studied.

According to Hsiao (1986), the choice between the fixed or random effect depends on whether the inference is conditional inference or unconditional (marginal) inference. Where as Green (1993) suggested that the distinction between fixed and random effects models is an erroneous interpretation.

It appears that one way to unify the fixed – effects and random effects models are to assume from the outset the effects are random. The fixed- effects model is viewed as one in which investigators make inferences conditional on the effects that are in the sample. The random effects model is viewed as one in which investigators make unconditional or marginal inferences with respect to the population of all effects.

Based on the nature of our data and the objectives of the study we limit the analysis to this specification. The conclusion that we will make based on the fixed effect model is conditional on the individual and time effects.

Explanation of the expected relationship between the variables

Liberalization of both internal and external sectors and devaluation of national currencies and other financial deepening measures is the cornerstone of the Structural Adjustment Program (SAP) and other reforms undertaken in SSA. By undertaking these measures, SSA countries are believed to align incentives within world prices and ensure that producers would receive a higher proportion of world prices (Gilbert and Varangis, 2003). And it was hoped that these incentives would increase domestic production and export receipts by countries in the short run and increase the economic growth of the countries in the long run.

The policy reforms undertaken in SSA, in general, expected to increase export of commodities from Africa and discourage/reduce imports and hence increase net receipt, increase FDI and domestic investments which expected to increase domestic production (GDP) and trade able goods. For instance, tariff reduction measure is expected to have positive impact on country' export competitiveness position since it reduces the cost of imports for export manufacturing industries (raw materials, intermediate and capital good imports). These are expected to increase the volume of GDP of the countries, the per capita income, and which have implication to the betterment of the social and economic development and economic growth of the countries in the region.

The policy reforms in Africa also undertaken in expectation of raising the productivity of the labor forces, among others, through increasing their human capital developments (increasing education and/or increasing adult literacy rates etc).

The impact of FDI on economic growth in the host economy has been examined in numerous studies. In general, countries that integrated in the world economy tend to have high FDI ratios and significant openness to international trade. The coefficients of these variables would be expected to be positives.

Globalization has also been associated with improved financial development. Money and quasi money (M_2) as per cent of GDP that comprise the sum of currency outside banks, demand

deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government would be expected to expand after reform. Generally, the coefficients of these indicators of financial deepening of the economy are expected to be positive.

Increased expenditure in education and higher literacy rates are also the other positive indicators of globalization. There are numerous theoretical and empirical studies on the positive impact and relation between education and/or human capital development and economic growth. Therefore, the sign for $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$, and β_7 would be expected to be positives.

4.3.3 Panel Data and Panel Co-integration

One important feature of panel data compared to time series and cross section data is its ability to capture heterogeneity of individual/country specific characteristics. To proceed with panel data model discussion, let us re-consider the model discussed above in compact form:

$$y_{it} = x'_{it}\beta + u_{it}, i = 1,...,N; t = 1,...,T \quad \text{----------(4.18)}$$

with i denoting the cross section dimension and t denoting the time dimension. x_{it} is a (k×1) vector of time-varying regressors assumed to be strictly exogenous. The disturbance term u_{it} can be utilized as a two-way error component model (Baltagi, 1995:9) given as:

$$u_{it} = u_i + \lambda_t + v_{it} \quad \text{----------(4.19)}$$

Where μ_i denotes the unobservable individual specific effect, λ_t the unobservable time specific effects and v_{it} denoting the remainder stochastic disturbance term assumed to be independently and identically distributed over i & t with zero mean and variance, σ^2_v (see Baltagi, 1995; Wooldridge, 2003).

Hence, equation (4.18) can be rewritten as:

$$y_{it} = x'_{it}\beta + \mu_i + \lambda_t + v_{it}, i = 1,...,N; t = 1,...,T \quad \text{.....(4.20)}$$

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Given this model, the parameter of interest β can be estimated consistently and efficiently by the OLS estimator after transforming the data by subtracting group means from each observation (Hsiao, 1986; Baltagi, 1995; Wooldridge, 2003).

$$\hat{\beta} = \left[\sum_{i=1}^{N}\sum_{t=1}^{T}(x_{it} - \bar{x}_i)(x_{it} - \bar{x}_i)'\right]^{-1}\left[\sum_{i=1}^{N}\sum_{t=1}^{T}(x_{it} - \bar{x}_i)(y_{it} - \bar{y}_i)\right] \quad \ldots(4.21)$$

Where, $\bar{x}_i = \frac{1}{T}\sum_{t=1}^{T} x_{it}$ and $\bar{y}_i = \frac{1}{T}\sum_{t=1}^{T} y_{it}$

The OLS estimators, however, remains to be valid under certain conditions such as the strict exogeneity of the x variables and static panel models. But we may be interested on the dynamic aspect of our data too in which case we need to raise the issue of time series properties in the panel data. Despite substantial developments in co-integration analysis of time series data, its use in panel data is in at its infancy. In this sub-section we will try to discuss unit root and co-integration tests of panel data based on the available literatures and our accessibility to them.

Panel Unit Root Tests

One advantage of panel unit root tests over time series counter parts is that the power of the tests increase as the cross section component, N, increases. Moreover, it is shown that unlike time series unit root test statistics, which have no standard distribution, the panel data unit root test statistics are asymptotically normally distributed (see Hall and Urga[11], ---; Hadri, 2000; Baltagi and Kao, 2000; Hall and Mairesse, 2002).

We can classify the existing literature on panel unit root tests as those, which test for the null of unit root and those that test the null of stationarity. In the first group we have the studies by Levin and Lin (1992), Im, Pesaran and Shin (1997) and Madalla and Wu (1999) (all of them[12] in Hall and Urga; Baltagi and Kao, 2000 and Harris and Sollis, 2003). And in the second group we have Hadri (2000). The researcher considered Hadri (2000) Test, which is one of the strongest and appropriate depending the data, the nature of the works contained in this study.

[11] Available at http://www.ms.ic.ac.uk/sghall/icms6.pdf

[12] Although we were unable to find these articles, we have excellent reviews by Hall and Urgua (---), Baltagi and Kao (2000) and Harris and Sollis (2003).

Hadri (2000) Test

Hadri (2000: 148) criticizes the above tests of the null of unit root, as "it is a well known fact that the way in which classical hypothesis testing is carried out ensures the null hypothesis is accepted unless there is strong evidence to the contrary". Hence the author argues for test of the null of stationary as well.

Hadri (2000) considers the following model[13]:

$$y_{it} = r_{it} + \beta_i t + \varepsilon_{it} \quad \text{.....(4.22)}$$

Where $r_{it} = r_{i,t-1} + u_{it}$ is a random walk process and ε_{it} is a stationary process. u_{it} and ε_{it} are mutually independent Normal and IID across i and over t. The initial values r_{i0} are treated as fixed unknowns and play the role of heterogeneous intercepts.

Through backward substitution model (4.26) can be rewritten as:

$$y_{it} = r_{i0} + \beta_i t + e_{it} \quad \text{.....(4.23)}$$

Where, $e_{it} = \sum_{i=1}^{t} u_{it} + \varepsilon_{it}$

Now, if $\sigma^2_u = 0$, then e_{it} is reduced to be identical to ε_{it} and is stationary, otherwise it will be non-stationary. Hence the null of stationarity will be H_0: $\lambda = 0$ for all i, against H_a: $\lambda > 0$, where $\lambda = \sigma^2_u/\sigma^2_\varepsilon$.

Let $\hat{\varepsilon}_{it}$ be the residuals from the regression of y on an intercept plus a time trend, the LM statistic is then calculated as:

$$LM = \frac{\frac{1}{N}\sum_{i=1}^{N}\frac{1}{T^2}\sum_{t=1}^{T}S^2{}_{it}}{\hat{\sigma}^2{}_{\varepsilon}} \quad \text{.....(4.24)}$$

Where S_{it} is the partial sum of the residuals as,

$$S_{it} = \sum_{j=1}^{t}\hat{\varepsilon}_{ij}$$

[13] Although the author considered two separate equations with and without time trend, we are considering the more general one only.

and $\hat{\sigma}^2{}_\varepsilon$ is a consistent estimator of $\sigma^2{}_\varepsilon$ under H_0, given by

$$\hat{\sigma}^2{}_\varepsilon = \frac{1}{NT}\sum_{i=1}^{N}\sum_{t=1}^{T}\hat{\varepsilon}^2{}_{it}$$

As T→∞ followed by N→∞ sequentially, the LM test statistic for the null of trend stationary has the following limiting distribution:

$$Z_\tau = \frac{\sqrt{N}\left(L\hat{M}_\tau - \varepsilon_\tau\right)}{\varepsilon_\tau^{\,2}} \Rightarrow N(0,1)$$

Where ε_τ and $\varepsilon_\tau^{\,2}$ are mean and variance of the characteristic function of the random variable $\int V_2^{\,2}$, where $V_2(r)$ is defined to be the second level Brownian bridge. Their values are derived to be $\varepsilon_\tau = \frac{1}{15}$ and $\varepsilon_\tau^{\,2} = \frac{11}{6300}$ (see Hadri, 2000 for details).

Panel Co-integration Tests

Like the time series co integration tests, we have single equation based tests (Pedroni, 1997 and Kao, 1999 in Hall and Urga (---), Baltagi and Kao (2000) and Harris and Sollis (2003); McCoskey and Kao, 1998), and we have multi equation based tests (Larsson et al, 2001; Groen and Kleibergen, 2001). Again in the first group we have tests based on the null of no co-integration in the one hand (Pedroni, 1997 and Kao, 1999; cited in Hall and Urga (---), Baltagi and Kao (2000) and Harris and Sollis (2003)), and tests based on the null of co-integration on the other hand (MCckoskey and Kao, 1998).

Larsson, Lyhagen, and Lothgren (2001) developed a likelihood based (LR) panel co-integration rank test based on the average of the individual rank trace statistics developed by Johansen (1995). The authors considered a VAR (k_i) model of dgp for each individual as:

$$Y_{it} = \sum \Pi_{ik} Y_{i,t-k} + \varepsilon_{it}, i = 1,2,...,N \qquad \text{.....(4.25)}$$

Where for each group i the values $Y_{i,-k+1}, \ldots, Y_{i,0}$ are considered fixed and the errors ε_{it} are IID as $\varepsilon_{it} \sim N_p(0, \Omega_i)$. Then the heterogeneous error correction representation is given by:

$$\Delta Y_{it} = \Pi_i Y_{i,t-1} + \sum \Gamma_{ik} \Delta Y_{i,t-k} + \varepsilon_{it}, i = 1,2,...,N \quad \text{.....(4.26)}$$

Where Π_i is of order p×p and is of reduced rank, with $\Pi_i = \alpha_i\beta_i'$. α_i and β_i are of order p×r_i and of full column rank. The panel co-integration test then amounts to testing, H_0: rank(Π_i) = $r_i \leq r$ for all i = 1,..., N against H_p: rank(Π_i) = p, which means that the N groups in the panel have at most r co-integrating relationships among the p-variables under the null.

Larsson et al (2001) defined the LR-bar statistic as the average of the N individual trace statistics as:

$$\overline{LR}\left\{H(r)/H(p)\right\} = \frac{1}{N}\sum_{i=1}^{N} LR_{iT}\left\{H(r)/H(p)\right\} \quad \text{.....(4.27)}$$

They standardized this statistic as a basis for the panel cointegration rank test defined as:

$$\gamma_{\overline{LR}}\left\{H(r)/H(p)\right\} = \frac{\sqrt{N}\left(\overline{LR}_{NT}\left\{H(r)/H(p)\right\} - E(Z_k)\right)}{\sqrt{Var(Z_k)}} \quad \text{.....(4.28)}$$

Where $E(Z_k)$ is the mean and $Var(Z_k)$ is the variance of the asymptotic trace statistic tabulated in Larsson et al (2001, Table 1). As N and T $\rightarrow\infty$, the standardized panel trace statistic is shown to be asymptotically distributed as Standard Normal under H_0.

On the other hand, Groen and Kleibergen (2001) noted that the Larsson et al test can only be valid if one assumes that the individual model parameters and test statistics are determined independently of each other. They argued that one should allow for interdependencies between the different individuals in co-integration test so as to enhance the power of the test. Hence, the authors stacked VECMs of the different individuals in to a panel VEC model and conducted a co-integration rank test. Since estimating this model requires a software program, which is not released, we are not going to use this method and we are not going to discuss the model here.

Since the numbers of our variables are greater than two, only the Larsson et al (2001) method is appropriate for co-integration test in this study. Hence, we will be using this method.

Estimation of the Parameters

The panel co-integration tests that we have seen earlier can only test the presence of co-integration. The challenge is then to estimate the long run and the short run parameters. Since the econometric technique is not well developed, this issue remains to be difficult.

The study by Larsson et al (2001:123), on which we based our co-integration test, concluded their study by the following statement;

> *Basically every study that has been performed in the non-panel area can be extended to the panel setting. Considering this and the huge amount of research that has been conducted in the area of multivariate co-integration, we believe that the development of various panel VEC models has large potential and that both theoretical and empirical research will receive increased attention in the near future.*

Most recently, studies have been undertaken on methods of estimating the long run co-integration vectors. Of these is the Mark and Sul (2003) study where they used what is known as the Dynamic Ordinary Least Squares (DOLS) method to estimate the coefficients of the long run money demand function from a panel of 19 countries over the years 1956-1996. But we do not have access to the software program developed for such studies and hence is beyond the scope of our study.

One possibility is to take the averages of the long run parameters of each individual country (see for instance Pesaran and Smith, 1995; Pesaran et al, 1996) estimates. The problem with this method, however, is that it is not possible to make inference based on the averaged coefficient. In cases where one coefficient is significant for some countries and insignificant for others, the question of whether to average this coefficient over all countries or not is also another problem.

As also noted in Groen and Kleibergen (2001), the assumption of a heterogeneous panel embodied in such methods ignores the panel dimension of the data, i.e., it assumes that

individual model parameters are determined independently. If this were the case, in fact, there was no need to raise the issue of panel.

Moreover, the existence of a common co-integrating vector for the panel data may also imply that there is a homogeneous long run co-integrating vector. This is also assumed in Mark and Sul (2003) dynamic OLS estimation of panel co-integrating vector. The latter authors introduced the heterogeneous effects in their short run dynamics and individual specific effects (see Mark and Sul, 2003 for details).

CHAPTER V

PRESENTATION OF ESTIMATION RESULTS AND ANALYSIS

In this chapter, first the panel unit root and panel co-integration tests result are briefly stated. Following that both the descriptive and econometrics results are presented and analyzed.

5.1 Panel Unit Root and Co-integration Test Results

It would have been ideal if we use all type of the tests for panel unit root that we discussed in the previous section. However, since we are calculating the statistics manually, due to lack of a software package that has these facilities, we restricted our selves to the Hadri test, which as we discussed earlier, is more powerful than others and easily derived from Eviews 7.0 Statistical Package. The results of this test are summarized in the Appendix C.

In this study different combinations of the explanatory variables have been checked and finally Hadri panel unit root test results reveal that four variables i.e Foreign Direct Investment (FDI), Openness (OPEN), Educational Expenditure (EDUEXP) and Broad Money ($M_{2)}$ are I(1) , non-stationary while the rest found to be I(0), stationary. Since our key variables in the study are I(1), non-stationary, we can go to panel co-integration test.

In the case of panel co-integration tests, for reasons discussed in previously and for its validity in the case of multivariate co-integration analysis, we used only the Larsson et al (2001) co-integration test, which has a readily available table for the test. The Larsson et al (2001) panel co-integration test results show that all calculated values are greater than the critical values, which implies that there is no long run equilibrium. The result justify that we can use the OLS estimation technique. i.e., the Fixed Effect or Random Effect Model and there is no need to go to the Error-Correction Mechanism (ECM). Hence, we continued with the estimation using Fixed-Effects Model (FEM). Johnson and Ni Nardo (1997: 403) argue "many researchers find a precisely estimated fixed-effects estimates more persuasive than a precisely estimated random-

effects estimate". Hausman's test[14] (not shown) for each equation is in favor of the fixed-effect specification. The fixed-effect model estimates country dummies (N-1 parameters), which imposes a significant loss in the degree of freedom and may cause multi-collinarity if the numbers of countries considered are small (Baltagi 2001:13).

5.2 Descriptive Results and Analysis

Economic growth is measured as the average growth rate. Grouping the countries (cross-section) and the years (time) in certain periods help in panel data analysis to avoid spurious results. This could be handled in a five-year or decade based periods to yield periods of equal size (Caselli and Coleman (2001).

As per World Bank (2001), we categorize African countries within three income groups[15] within Africa. The Groups are formed based on Per Capita Income 1995. The cutting points for the grouping are:

- Relatively High Income (. $2000);
- Middle Income group ($1000-1999), and
- Low Income Group (lessthan$998).

From Table 2 below, we can see that about twelve (12) countries each fall in the relatively high income and eleven (11) in moderately middle-income groups, while about eighteen (18) countries fall in lower income groups. Most of the Sub-Saharan African countries are in the middle and lower income groupings within Africa.

The study covers the time from 1970 to 2002. Due to data availability problem, the researcher failed to include all the countries in the Sub-Saharan Africa (SSA). However, a representative data are included for maximum 28 countries in the descriptive analysis part.

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[14] Baltagi (2001:20) points out that the rejection of the null hypothesis under the Hauseman test dose not necessarily imply adoption of the fixed-effect specification, and non-rejection dose not unequivocally indicate that one should adopt the random-effects estimation.

[15] Income Group: If one follows World Bank 2003 GNI per capita income which is calculated using Atlas method the grouping will different: low income, $760 or less; lower middle income, $766-$3,035, upper middle income,

Table 2: Income Groups Within Africa in USD

N0		Income in 1975 US$	Income in 1995 * US$	Ratio
Relatively High Income Countries				
1	South Africa	4593.20	8631.20	1.88
2	Mauritius	1422.20	7592.50	5.34
3	Gabon	3615.00	6258.50	1.73
4	Botswana	773.62	5843.30	7.55
5	Namibia	4217.00	5232.30	1.24
6	Tunisia	1451.80	4943.40	3.41
7	Algeria	1952.60	4698.30	2.41
8	Swaziland	1499.00	4085.10	2.73
9	Morocco	1009.70	3126.10	3.10
10	Egypt	657.58	2941.90	4.47
11	Zimbabwe	1117.30	2547.60	2.28
12	Angola	1091.00	2105.10	1.93
Average		1950.00	4833.78	2.48
Moderately Middle Income Countries				
1	Guinea	1273.50	1746.90	1.37
2	Ghana	801.30	1709.80	2.13
3	Cote d.Ivoire	900.07	1533.50	1.70
4	Mauritania	699.12	1526.90	2.18
5	Gambia	650.26	1450.60	2.23
6	Cameroon	676.48	1446.00	2.14
7	Togo	745.04	1371.30	1.84
8	Senegale	638.35	1292.20	2.02
9	Central Africa	647.41	1127.50	1.74
10	Kenya	401.37	1027.30	2.56
11	Cong Rep	243.18	1016.10	4.18
Average		697.83	1386.19	1.99

$3,036-$9,385; and high income, $9,386 or more. Low-income and middle- income economies are sometimes referred to as developing economies. Classification by income may not necessarily reflect development status.

Table 2 Cont....

N0		Income in 1975 US$	Income in 1995 * US$	Ratio
Lower Income Countries				
1	Uganda	681.09	998.93	1.47
2	Dem Rep Cong	980.72	945.40	0.96
3	Guinea –Bissau	327.88	855.05	2.61
4	Benin	334.95	845.93	2.53
5	Burkina Faso	294.99	836.19	2.83
6	Chad	414.28	828.64	2.00
7	Nigeria	405.42	824.99	2.03
8	Madagascar	511.83	801.19	1.57
9	Zambia	579.89	754.37	1.30
10	Niger	458.09	736.41	1.61
11	Rwanda	377.79	736.35	1.95
12	Mali	311.66	736.35	2.18
13	Mozambique	404.34	657.75	1.63
14	Burundi	282.47	644.41	2.28
15	Sirra Leon	395.42	613.62	1.55
16	Ethiopia	411.63	563.01	1.37
17	Malawi	234.78	545.83	2.35
18	Tanzania	429.99	472.31	1.10
Average		435.23	741.04	1.70

Source: World Bank (2001)

In the first three chapters of this paper, we have seen some important features on the key indicators of globalization, especially about openness to international trade, FDI and economic growth in SSA, which leads us to examine different prepositions:

1) Countries that undertake measures to liberalize their trade and abolish impediments to inward Foreign Direct Investment (FDI) grew faster.

From the Table 3a below, we observe that for the period covering 1990-1994, countries in the first category of relatively high GDP growth (with GDP growth greater than 3%) are placed as a 'relatively high' economic growth group in the first column. When we include other information on the highest openness index, and highest FDI to GDP ratios, we find 10 countries in the first column are also among the top 13 in column 7/or column 9. This implies, they were among the top 13 with the highest openness index and/or FDI ratio.

2) Countries that have low openness to trade and/or insignificant inward FDI achieve lower economic growth.

The data from Table 3a indicates that out of the 15 countries with negative or low GDP growth rates (less than 0.5 % growth), about 10 were also included among the countries with the lowest openness index and/or FDI ratio.

3) Higher openness will allows faster convergence, in the sense that more open low-income countries grow faster than closed low-income countries (Sachs and Warner 1997b). In contrast to this view, we argue that there might be a threshold effect.

In the case of Africa, particularly to the low-income SSA countries with higher illiteracy rates, the effects from higher integration in the world markets may be insignificant or negative at least in the short run. Therefore, globalization may be good for African but only for those countries that are not the poorest (with low income groups in SSA). This implies that countries that are quite open to international trade and FDI, and also have relatively high per capita income grow faster.

Table 3a, Column 3-6 displays information on per capita income in 1975 (as initial income) and in 1990. The top half of Table 3a shows that 8 countries that are in column 7 and/or column 9, are excluded from the high-growth group. Three (3) of these countries have negative growth (The Congo Republic, Angola and Zambia). Gabon and Angola are both in the high-income group. However, in 1990-94, Gabon had divestment equal to 0.5 per cent of its GDP, while Angola was in State of War.

If country is not poor (relatively high-income country), it is quite open to international trade and /or receive reasonable amount of FDI, then it will potentially achieve stronger economic growth.

The poor country (relatively low-income country) can also achieve high economic growth if they have other ingredients other than trade openness and FDI (for instance, huge foreign aid and grant, debt relief). Uganda has been cited as one of the SSA countries that received huge foreign assistance during the 1990s and could be a possible explanation for its impressive performance in this period while its openness index is 29.03 second from the lowest and the lowest FDI ratio, 0.81.

There could be a threshold income level above which the effect of openness and/or integration into the global economy could be significant and lead to faster growth.

From the two tables (3a and 3b), we can see that there is no country that is open to trade, and foreign capital, and relatively high income, included in the negative-growth group, unless there is exception (war, sever drought etc). This suggests that in order to benefit from increased openness, a country needs to have a threshold level of income.

Table 3a: Trade Openness, FDI and Economic Growth (1990-1995)

N0	1 Country	2 GDP Growth	3 Country	4 Income in 1975 in USD	5 Country	6 Income in 1990 in USD	7 Country	8 Openness	9 Country	10 FDI Ratio
Relatively high GDP Growth Rates										
1	UGN	6.04	SAF	4593.00	SAF	8323.60	SWZ	162.78	SWZ	7.03
2	MRS	5.43	NAM	4217.00	MRS	5638.90	GAM	131.54	NGA	4.4
3	TUN	5.03	GAM	3615.00	GAB	5207.40	MRS	127.92	ANG	3.41
4	BOT	4.66	ALG	1952.60	BOT	4930.50	NAM	120.83	ZAM	2.37
5	NAM	4.40	SWZ	1499.00	ALG	4544.50	ANG	105.39	TUN	2.32
6	GHA	4.15	TUN	1451.80	NAM	4332.10	COR	104.56	GAM	2.03
7	BEN	3.97	MRS	1422.20	TUN	3915.20	MRT	96.71	GNA	1.46
8	SWZ	3.87	GUI	1273.50	SWZ	3703.70	BOT	92.69	EGY	1.39
9	GUI	3.72	ZIM	1117.30	MAR	2899.90	TUN	89.40	MAR	1.38
10	NGA	3.63	ANG	1091.00	EGY	2517.00	GAB	84.10	MOZ	1.12
11	EGY	3.61	MAR	1009.70	ZIM	2366.40	NGA	80.67	UGN	0.81
12	GBS	3.52	CDR	980.72	ANG	1593.60	ZAM	74.23	MRS	0.73
13	MAR	3.25	CDI	900.07	CAM	1581.40	TOG	67.63	CHD	0.73
Very Low or Negative Growth Rates										
1	SAF	0.20	TZN	429.99	MAD	820.82	GBS	48.42	ETH	0.19
2	CDI	0.10	CHD	414.28	CHD	768.21	GNA	47.80	MAL	0.15
3	NGE	0.03	ETH	411.63	NGA	767.02	CAM	46.30	COR	0.13
4	MAD	0.01	NGA	405.42	COR	751.86	BENN	43.93	CAM	0.09
5	BUR	-0.07	MOZ	404.34	UGN	746.75	MAD	43.86	SAF	0.08
6	COR	-0.12	KNY	401.37	NGE	741.96	CHD	41.52	CDI	0.08
7	CAF	-0.78	SRL	395.42	BUR	725.84	SAF	40.59	BUR	0.06
8	ZAM	-0.83	RWD	377.79	BKF	707.32	CAF	40.58	NGE	0.03
9	ALG	-0.85	BEN	334.95	BEN	703.53	CDR	40.07	MAL	0.03
10	TOG	-1.01	GBS	327.88	GBS	703.29	BUR	38.31	ALG	0.02
11	SRL	-1.85	MAL	311.66	MAL	584.83	BKF	37.77	NAM	0.00
12	CAM	-3.74	BKF	294.99	MOZ	543.65	NGE	36.30	CDR	-0.01
13	ANG	-5.42	BUR	282.47	ETH	488.51	RWD	33.15	CAF	-0.27
14	CRD	-8.57	COR	243.18	MLW	474.83	UGN	29.03	GAB	-0.50
15	RWD	-11.5	MLW	231.78	TZN	455.30	ETH	21.82	BOT	-0.98

Source: Own Computation from World Bank (2001, 2002)

4) Greater integration of world economies implies higher competition in international and domestic markets. This may suggest that globalization could change the linkages between openness and economic growth. That is, as globalization intensifies, in order to grow at the same rates as before, countries may need to be more open to international trade and FDI.

From Table 3b, which includes the same information as Table 3a, but for the next half of the decade (1996-2000) we observed that the highest openness index has increased (162.78 to 184.92 which is 12%) and the lowest openness index also increased (21.82 to 28.05 which is 22%). In both periods, there are more than 5 countries with above 100 openness indexes.

The highest level of FDI as a percentage of GDP also increased (from 7.03 to 12.61 which is 44%) and the lowest level of FDI ratio also increased (from –0.98 to 0.00 which is 98%).

In the second period (1996-2000), as the openness index and FDI ratio increase, we observe that the number of African countries that achieved an average growth rate of at least 5% increases (from 3 countries in Table 3a column 1 to about 13 countries in Table 3b column 1).

Table 3b: Trade Openness, FDI and Economic Growth (1996-2000)

NO	1 Country	2 GDP Growth	3 Country	4 Income in 1975 in USD	5 Country	6 Income in 1995 in USD	7 Country	8 Openness Index	9 Country	10 FDI Ratio
Relatively high GDP Growth Rates										
1	RWD	15.72	SAF	4593.20	SAF	8631.20	SWZ	184.92	ANG	12.61
2	MOZ	8.33	NAM	4217.00	MRS	7592.50	MRS	130.33	ZAM	4.59
3	UGN	7.67	GAB	3615.00	GAB	6258.50	COR	124.97	MOZ	4.26
4	MLW	6.77	ALG	1952.60	BOT	5843.30	NAM	118.75	NGA	3.75
5	ANG	6.48	SWZ	1499.00	NAM	5232.30	GAM	112.04	SWZ	3.50
6	CDI	5.58	TUN	1451.80	TUN	4943.40	ANG	105.24	GAG	2.99
7	EGY	5.36	MRS	1422.20	ALG	4698.30	MRT	96.24	CDI	2.97
8	ETH	5.36	GUI	1273.50	SWZ	4085.10	GAM	91.06	GAM	2.87
9	BKF	5.33	ZIM	1117.30	MAR	3126.10	TUN	88.81	UGN	2.69
10	SEN	5.23	ANG	1091.00	EGY	2941.90	ZIM	82.21	MLW	2.35
11	TUN	5.17	MAR	100970	ZIM	2547.60	CDI	81.82	ZIM	2.35
12	BEN	5.07	CRD	980.72	ANG	2105.10	NGA	78.99	TZN	2.15
13	MAL	5.02	CDI	900.07	GUI	1746.90	BOT	76.86	MAL	2.14
14	MRS	4.98	GNA	801.30	GNA	1709.80	GNA	75.61	YUN	1.88
15	BOT	4.80	BOT	773.62	CDI	1533.50	SEN	73.13	YOG	1.77
Very Low or Negative Growth Rates										
1	KNY	2.71	KNY	401.37	ZAM	754.37	GUI	44.95	SRL	0.33
2	NGA	2.46	SRL	395.42	NGE	736.41	EGY	44.34	MRT	0.32
3	SAF	2.33	RWD	377.79	RWD	736.35	CAF	42.71	COR	0.25
4	MAR	1.91	BEN	334.95	MAL	678.39	BKF	41.05	RWD	0.18
5	ZAM	1.59	GBS	327.88	MOZ	657.75	ETH	41.00	KNY	0.18
6	COR	-0.04	MAL	311.66	BUR	644.41	NGE	40.95	MAR	0.11
7	GBS	-1.18	BKF	294.99	SRL	613.62	SRL	38.50	BUR	0.07
8	BUR	-2.29	BUR	282.47	ETH	563.01	UGN	33.31	CDR	0.02
9	CDR	-2.78	COR	243.18	MLW	545.83	RWD	30.23	ALG	0.01
10	SRL	-6.30	MLW	231.78	TZN	472.31	BUR	28.05	NAM	0.00

Source: Own Computation from World Bank (2001, 2002)

From the descriptive discussion part, there seems evidence that greater openness to international trade promote economic growth primarily in relatively higher-income African countries implying that threshold effects may be crucial to the effectiveness of openness.

5.3 Econometrics Results

Here, results of the estimation that shows the relationship between the growths rate with other explanatory variables are presented and interpreted. The main objectives of the following econometric estimation tables of the models is to know the effects of the explanatory variables in three different equations using Fixed-Effects Model (FEM) for twenty four (24) countries in SSA for which all the relevant data available for the period covering (1970-2002).

Table 4a: All Three - Income groups within Africa together

(RGDPG)	(1)	(2)	(3)
FDI	0.185**	0.184**	0.205**
	(0.084)	(0.091)	(0.091)
	0.028(significant at 0.05)	0.044 (significant at .05)	0.024 (significant at 0.05)
EDUEXP		-0.026*	-0.089*
		(0.260)	s.e (0.259)
		0.918 (insignificant)	0.732 (insignificant) at 0.1
OPEN	-0.002*	-0.0024*	-0.002*
	(0.011)	(0.014)	s.e (0.013)
	0.888 (insignificant)	0.861(insignificant)	0.897(insignificant)
ADL	0.072**	0.061*	0.133***
	(0.033)	(0.040)	s.e (0.047)
	0.032 (significant at 0.05)	0.126(insignificant at 0.05)	0.005(Significant at 0.01)
M2			9.53e-06***
			s.e (2.58e-06)
			0.000 (Significant) at 0.01
MVA		-0.00013*	0.00009*
		(0.0005)	s.e (0.00045)
		0.126 (insignificant)	0.930 (insignificant) 0.05
DOMCRD			-7.20e-06**
			s.e (3.17e-06)
			0.023 (Significant at 0.05)
Cons	-0.809*	-0.028009	-3.569
	(1.805)	(2.049217)	(2.959)
	0.654(insignificant)	0.989 (insignificant)	0.228 (insignificant)
Number of obs	790	790	790
R^2 within	0.012	0.014	0.052
between	0.049	0.0664	0.136
F-test	2.68**	2.78**	3.62***

*indicates significance at 10% (weakly significant), **indicates significance at 5% (moderately significant), and ***indicates significance at 1% (highly significant). Standard errors are in parentheses

Fixed Effect Model (Within) Regression Results

The estimation results of significant value of F-test with lower P-value show the overall fitness of the model is good and indicated that the null hypothesis that all the coefficients of the model are zero simultaneously could be rejected.

Considering individual coefficients, we can see that in the regression equation (1), the signs for Foreign Direct Investment (FDI), Adult Literacy rate (ADL) are positive and significant at 5% while the sign for OPEN is negative and insignificant;

In the regression equation (2), the signs for Foreign Direct Investment (FDI) and Adult Literacy rate (ADL) are positive and significant at 5% to affect real GDP growth (RGDPG) while the signs for Openness (OPEN) and Expenditure on Education (EDUEXP) are negative and insignificant.

Finally, in the regression Equation (3), we find that the signs for Foreign Direct Investment (FDI), Adult Literacy rate (ADL), Broad Money (M2) and Manufacturing Value Added (MVA) are positive as expected and significant to affect RGDPG whereas the signs for Openness (OPEN), Expenditure on Education (EDUEXP) are negative and insignificant. Domestic Credit (DOMCRD) is negative but significant.

A closer look at the results from the three equations gives the impression that the estimates of each variable in all the equations have no big difference. We can rely in one of them (Equation 3) and interpret the key results.

When we see the two key indicators, Foreign Direct Investment (FDI) and Openness (OPEN), a unit increase in FDI raises RGDPG by 0.205 and a unit increase in Openness index reduce RGDPG by 0.002.

In most literatures, the variable called Educational Expenditure (EDUEXP) and Adult Literacy rate (ADL) are representing the same thing. In fact, the inclusion of the former in Equation (3) did not change the magnitude and variability measures of the later. But, as we can see the result, the variable EDUEXP was negatively affecting RGDPG, which is contrary to our expectation. The result shows that a unit increase in Educational Expenditure (EDUEXP) reduced RGDPG by 0.089 whereas a unit increase in ADL increased RGDPG by 0.133. The possible explanation for this negative sign could be, among other things, the very low level efficiency of educational expenditure and infrastructures in SSA. Besides, most countries focused on expanding education by focusing on quantity not on quality of education.

The magnitudes of the marginal effects of the remaining variables on real GDP growth in SSA are very small. Although the sign of Manufacturing Value Added (MVA) was positive its effect is very low.

We note that the estimates in all equations indicate that the coefficients on Foreign Direct Investment (FDI) are positive and significant. The results suggest that increases in inward FDI relative to GDP enhance economic growth. On the other hand, openness to international trade has negative coefficients in all equations implying that increased openness may subject countries to adverse effects.

While we would expect openness to enhance economic growth through market linkages (export sector) and improved firm productivity and competitiveness, an argument in support of a negative relationships can easily be made.

An open country that abolishes import duties and other barriers to trade may find itself unable to export its manufacturing and/or benefit from advanced technology if its human capital and/or physical capital stocks are too low. In some cases, the competition effect resulting from increased inflows of FDI may be stronger than technology effect/domestic firms access to imported advanced foreign technology), causing a decline in the productivity and/or output in the domestic sector.

Additionally, international macroeconomic shocks tend to affect small open economies more intensely than they do closed economies.

The finding of a negative influence of openness on economic growth is in contrast with most findings in the literature. However, these findings also suggest that openness may require other ingredients in order to become growth enhancing.

In the following section we look into what the results look like between income groups within Africa.

Table 4b and 4c give us the econometrics results in connection with Income Groups within Africa. We considered 8 countries from each group to maintain an equal group size.

We have selected eight (8) countries from the relatively high-income group such as Botswana, Gabon, Mauritius, Swaziland, Zimbabwe, Algeria, Morocco and Egypt.

From the middle-income countries, we considered other eight (8) countries middle-income countries such as Congo Republic, Mauritania, Gambia, Zambia, Togo, Cameroon, Central Africa and Ghana.

Finally, we considered the remaining other eight (8) countries with low-income selected (Benin, Madagascar, Chad, Congo democratic Republic, Burkina Faso, Niger, Rwanda and Burundi) from the Lower Income group.

This grouping could help to examine the possibility of threshold effect and to make deeper analysis in the study. One finds the following regressions results using Fixed-Effect Model (FEM):

In the following Table 4b, when low-income group is considered separately, only FDI became significant while all the other variables including openness became insignificantly affect real GDP growth.

Table 4b: Low-Income and relatively closed countries

(RGDPG)	(1)	(2)	(3)
FDI	0.283** (0.137) 0.040 (significant at .05)	0.277** (0.143) 0.054 (significant at .05)	0.259** s.e (0.132) 0.052(Significant at 0.05)
EDUEXP		-0.179* (0.559) 0.1749 (insignificant)	-0.013* s.e (0.570) 0.982 (insignificant)
OPEN	-0.035* (0.026) 0.187 (insignificant)	-0.032* (0.028) 0.243(insignificant)	-0.021* s.e (0.026) 0.416(insignificant)
ADL	0.002* (0.055) 0.978(insignificant at 0.1)	0.014* (0.058) 0.815(insignificant at 0.1)	0.040* s.e (0.081) 0.626(insignificant at 0.01)
M2			0.000046*** s.e (6.68e-06) 0.000 (Significant) at 0.01
MVA			0.0011* s.e (0.0009) 0.237 (insignificant) at 0.1
DOMCRD			-0.00006*** s.e (8.71e-06) 0.000(Significant at 0.05)
Cons	0.983* (3.87) 0.800(insignificant at 0.1)	0.594* (4.29) 0.890 (insignificant at 0.1)	-0.351* (5.80) 0.952 (insignificant at 0.1)
Number of obs	252	243	220
R^2 within	0.021	0.02	0.23
Between	0.0001	0.0602	0.06
overall	0.0004	0.0004	0.21
F-test	2.24**	2.13**	1.58

Note: *indicates significance at 0.1, **indicates significance at 0.05 and ***indicates significance at 0.01. Standard errors are in

However, when we considered the middle-income group alone (Table 4c below), most of the key variables are the expected sign. Especially, the signs for openness and EDUEXP became positives. The result for relatively higher-income group (not shown) also yields as similar signs as the middle-income group but with more significant values. These results are consistent with our results in the descriptive results. Reaffirm the possibility of threshold effects.

Table 4c: Middle-Income and relatively opened countries

(RGDPG)	(1)	(2)	(3)
FDI	0.049* (0.139) 0.727 (insignificant at 0.1)	0.044* (0.154) 0.777(insignificant at 0.1)	0.082* (0.138) 0.554 (insignificant at 0.1)
EDUEXP		0.607* (0.371) 0.103 (insignificant at 0.1)	0.655** s.e (0.369) 0.077(significant at 0.1)
OPEN	0.015* (0.018) 0.403 (insignificant at 0.1)	0.030* (0.025) 0.231(insignificant at 0.1)	0.042** s.e (0.025) 0.094 (significant)
ADL	0.059* (0.061) 0.337 (insignificant at 0.1)	0.112* (0.069) 0.110 (insignificant at 0.1)	0.097* s.e (0.078) 0.215 (insignificant at 0.1)
M2			7.35e-06** s.e (3.98e-06) 0.066 Significant at 0.05
MVA			0.002** s.e (0.0012) 0.086 (significant at 0.05)
DOMCRD			-2.96e-06 s.e (1.20e-06) 0.014 (Significant at 0.05)
Cons	-0.798* (2.96) 0.788(insignificant at 0.1)	-2.22 (3.65) 0.543 (insignificant at 0.1)	-1.21* (4.439) 0.785 (insignificant at 0.1)
Number of obs	235	203	203
R^2 within	0.0102	0.027	0.059
Between	0.0011	0.011	0.014
overall	0.0043	0.008	0.003
F-test	2.63**	3.01**	3.60**

Note: *indicates significance at 0.1, **indicates significance at 0.05 and ***indicates significance at 0.01. Standard errors are in

From the regression results of the Low and Middle-Income groups in SSA together (Table 4b and 4c), we find that countries with relatively high-income tend to benefit most from openness.

The econometric evidence is not in favor of a positive relationship between expenditure on education (relative to GDP) and economic growth for low-income SSA group. This is hardly unexpected for the group of countries under study, as the efficiency of education expenditure is often very low. On the other hand, improved literacy seems to enhance economic growth as shown by the result associated with regression equations.

Given the low level development of the financial sectors in Africa in general and SSA in particular, the result is hardly unexpected for the group of countries under study, as the efficiency of domestic credit is often very low. The marginal productivity/responses of financial indicators to RGDPG are very small.

Greater integration of developing countries in world markets tends to be associated with a higher share of manufacturing (this variable could also proxy for the share of manufacturing in merchandise exports) from SSA countries, hence the inclusion of the variable, Manufacturing Value Added (MVA) in the other equation help to test the degree of integrations. The coefficient associated with this variable is positive in both equations. The marginal productivity/responses of MVA to RGDPG is very small.

In nutshell, we note that the estimates in all equations indicate that the coefficients on Foreign Direct Investment (FDI) are positive and significant in SSA region. The marginal effect of the estimates of FDI is better than the other indicators of globalization. The results suggest that increases in inward FDI relative to GDP plays a key role in enhancing economic growth. On the other hand, openness to international trade has negative coefficients in all equations where the low-income group is considered implying that increased openness in low-income countries may subject countries to adverse effects.

It is worth emphasizing that the theoretical and empirical data have shown that, in general, closed economy dose not grow faster than an open economy. But the effect of openness may be conditional on other ingredients.

This study is not exhaustive and comprehensive analysis of globalization and related issues. Therefore, the writer suggests further research and empirical investigation in the area of globalization with incorporation of the possible impacts of the presence and/of absence of good governance, institutions, foreign aid/grant, debt relief, and the impact of term of trade (TOR) deteriorations in SSA.

There seems evidence that greater openness to international trade promote economic growth primarily in higher-income African countries, implying that threshold effects may be crucial to the effectiveness of openness.

6.2 Policy Implications

We have seen that the low-income group of SSA countries showed a very low or negative real GDP growth rates. They are characterized by low volume of trade, low per capita income, low level of educational expenditure (human capital) and undeveloped financial sectors. The industrial sector of these countries are at a very low stages and internationally uncompetitive.

In this global system where the effects of international rules and agreements are profound, it could be difficult to give one best solution and governments in Africa should take alternatives scenarios, we need to take individual and collective action within and outside Africa and utilize the opportunities:

- To strengthen the partnership with the developed countries market through Market Access special arrangements like AGOA; The Developed Nations, in their part, need to show greater commitment to make fair global trading system and also show greater commitment with African countries on enhancing market access for African products;

- To work aggressively toward regional economic integration efforts and stand together in the creation of a fair global trading system;
- Continuously lobby the developed country policy makers to change the trade policies of rich countries which could clearly also part of the problem for Africa's economic growth;

In order to achieve a better economic performance in Africa in general and SSA in particular, individual African governments need

- To create an enabling environment for expanding investment and expanding the manufacturing sector (for higher industrial value creation);
- To increase their per capita income level, enhance their volume of trade including the exports from the manufacturing sector (Diversification);
- To improving their international competitiveness;
- To improve and further expanding the financial sector development step-by-step to support the other sectors;

Therefore, policy measures, which aim to bring economic growth through liberalization and integration, need

- To go beyond openness to international trade. Mere openness may not be a feasible strategy for low-income countries in SSA;
- To improve their human capital development (education/adult literacy etc), focusing not only on quantity but also on quality of education;
- To improve the marginal effectiveness and productivity of each sector which directly and indirectly affecting the export sector.

Therefore, policy measures, which aim to bring economic growth through liberalization and integration, need to go beyond openness to international trade. Mere openness may not be a feasible strategy for SSA. But, it is worth for SSA countries to create an enabling environment for expanding investment and expanding the manufacturing sector (for higher industrial value creation), enhance the volume of trade at the international and regional levels among themselves.

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World Development Indicators/WDI, 2004

Appendix A

Variables Definitions (See World Bank WDI for more details)

Real GDP Growth (RGDPG): Annual percentage growth rates of GDP at market prices based on constant local currency. Aggregates are based on constant 1995US$. GDP is the sum of gross value added by all resident production in the economy plus any product taxes and minus any subsidies not included in the value of the products.

Openness Index: [(Export + Import)/GDP] x 100

We consider the openness index (OPEN) without the % sign. For example, an index of 120 means that the sum of exports and imports is 120 per cent of GDP or that the ratio of openness is 1.2

Inward FDO Ratio: Foreign Direct Investment (FDI) net inflows (Percent of GDP)

Net inward FDI represents inflows of investment to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long term capital, or shown in the balance of payments (BoPs). This series shows net inflows in the reporting economy.

Educational Expenditure (per cent of GDP): Education Expenditure (EDUEXP) refers to the current operating expenditures in education, including wages and salaries and excluding capital investment in building and equipment.

Adult Literacy rate (ADL): Adult Literacy rate is the percentage of people age 15 and above who can , with understanding, read and write a short simple statement on their every day life;

Manufacturing Value Added (percent of GDP): Manufacturing Value Added (MVA) refers to Industries belonging to ISIC divisions 16-37. Value Added is the net output of a sector adding up all output and subtracting intermediate inputs;

Money and Quasi Money (M2) as per cent of GDP (M2/GDP): Money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government.

Domestic Credit provided by banking sector (per cent of GDP): Domestic credit (DOMCRD) provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available (including institutions that do not accept transferable deposit but do incur such liabilities as time and saving deposits

Appendix B

Lists of Countries

Country	Acronym
Algeria	ALG
Benin	BEN
Burkina Faso	BKF
Cameroon	CAM
Chad	CHD
Congo Dem Rep	CDR
Cong Rep	COR
Egypt Arab Rep.	EGY
Gabon	GAB
Ghana	GNA
Guinea-Bissau	GBS
Madagascar	MAD
Mali	MAL
Malawi	MAW
Mauritius	MRS
Mozambique	MOZ
Niger	NGE
Rwanda	RWD
Sierra Leon	SRL
Swaziland	SWZ
Togo	TOG
Uganda	UGN
Angola	ANG
Botswana	BOT
Burundi	BUR
C. African Rep	CAR
Cote D'Ivoir	CDI
Ethiopia	ETH
Gambia	GAM
Guinea	GUI
Kenya	KNY
Malawi	MLW
Mauritania	MRT
Mauritious	MRI
Morocco	MOR
Namibia	NAM
Nigeria	NGA
Senegal	SEN
Tanzania	TZN
Tunisia	TUN
Zambia	ZAM
Zimbabwe	ZIM

Appendix C

Panel Unit Root Test Results

(Based on using Hadri's Test)

VARIABLE	STATUS	HADRI Test	REMARK
ADL	Level	18.77**	I(O)
	First Difference	2.41*	
DOMCRD	Level	10.25**	I(0)
	First Difference	2.82**	
EDUEXP	Level	10.59**	I(1)
	First Difference	-1.39	
FDI	Level	7.001**	I(1)
	First Difference	1.96*	
M2	Level	9.699**	I(1)
	First Difference	-1.3109	
MVA	Level	14.7649**	I(1)
	First Difference	0.565	
OPEN	Level	12.63**	I(1)
	First Difference	1.76	

**** Significant at 1% ; ** Significant at 5%; *Weakly I(0). Critical Values of the Standard Normal Test (Z-test): 1% = 2.57; 5% = 1.96*

Appendix D: Panel Co-integration Test Results *(Based on Larsson et al (2001) Test)*

Country by Country tests P=5: RGDPG, OPEN, M2, FDI, EDUEXP

Country	$LR_i(H(r)/H(5))$				
H_0	r<==0	r<=1	r<=2	r<=3	r<=4
Benin	80.9585	43.89112	21.61863	7.457146	0.514609
Botswana	59.95501	36.14089	18.90668	8.307912	0.280693
Burkina Faso	88.16522	43.92064	21.41538	3.975018	0.158366
Burundi	124.5858	69.61453	35.10489	10.98926	0.071625
Cameroon	78.50084	47.43417	26.03561	10.47743	3.750573
Cent Afr. Rep	80.25726	38.9763	20.04513	8.945701	3.441778
Chad	60.01426	36.50754	18.90567	4.20411	0.321712
Congo R	77.15677	47.15237	27.73476	13.73785	6.135446
Cote d'voir	60.99831	38.03607	21.94479	7.817683	1.874218
Ethiopia	131.3774	58.53102	23.22816	12.34161	4.418203
Gabon	47.48727	24.96524	13.32012	7.655214	3.166381
Gambia	124.3703	71.50157	27.92544	11.09779	1.511662
Ghana	79.90338	41.55542	18.41059	8.828636	2.322377
Kenya	78.02916	48.23944	29.37553	16.95796	6.451448
Madagascar	69.9481	33.58919	15.78012	5.335904	0.914749
Malawi	116.4547	69.55322	33.37381	5.589904	0.078298
Mali	59.09588	35.16475	18.00329	7.849221	2.046841
Mauritania	67.73119	34.08311	16.96118	6.976476	2.731054
Mauritious	112.4034	57.56527	32.24037	8.157299	2.392401
Niger	72.78955	44.77165	26.14066	11.46735	1.608255
Nigeria	99.43908	57.95017	27.121	13.50944	2.246325
Rwanda	72.37316	45.50181	20.53224	8.411757	0.003104
Senegal	81.94912	35.36838	14.49469	6.723818	0.965069
Sierra Lion	123.2668	46.23448	20.45302	8.571527	3.518605
Swaziland	79.85261	49.47824	26.80667	11.98968	1.314013
Togo	57.02587	34.01912	16.58638	8.565904	2.148601
Zambia	92.31727	48.59942	27.61687	13.50598	0.062622
Zimbabwe	119.6162	76.59131	41.27895	13.27999	0.208092
LR-bar	85.57223	46.96202	23.62002	9.383128	1.95204
k = p-r	5	4	3	2	1
Rank=p-1: 5-1: **4**					
E(Zk) ♠	44.392	27.729	14.955	6.086	1.137
Var(Zk) ♠	71.284	45.264	24.733	10.535	2.217
$\gamma_{\overline{LR}}(H(r)/H(4))$	25.8090	15.12690	9.219607	5.37534	2.899
N=28					
Critical Value at 1%	2.57	2.57	2.57	2.57	2.57
Critical Value at 5%	1.96	1.96	1.96	1.96	1.96
All Estimated values are greater >CV implying there is no LR Equilibrium: use OLS just to show the r/s and no need to use ECM					

p = Total number of variables; r = number of rank, ♠Tabulated in Table 1 of Larsson et al (2001) for different values of k . Others as defined in the body text. ** Significant at 1% level, * Significant at 5% Level. CV for the S. Normal Distribution (two tailed Z-test), 1% = 2.57; 5% = 1.96.

Declaration

I, the undersigned, declare that thus thesis is my own work and has never been presented in any other university. All source of materials used for this thesis have been duly acknowledged.

Declared by:

Name: Addis Kassahun

Signature:

Date: July 5, 2005

Confirmed by Advisor:

Name: Girma Estiphanos

Signature:

Date: July 7/2005

Place and date of submission: Addis Ababa, June 2005