Western Michigan University

ScholarWorks at WMU

International Conference on African Development Archives

Center for African Development Policy Research

8-2001

Exports, Trade Liberalization and Economic Growth in Sub-Saharan Africa

Seid Hassan
Murray State University

Follow this and additional works at: https://scholarworks.wmich.edu/africancenter_icad_archive

Part of the African Studies Commons, and the Economics Commons

WMU ScholarWorks Citation

Hassan, Seid, "Exports, Trade Liberalization and Economic Growth in Sub-Saharan Africa" (2001). *International Conference on African Development Archives*. 21.
https://scholarworks.wmich.edu/africancenter_icad_archive/21

This Paper is brought to you for free and open access by the Center for African Development Policy Research at ScholarWorks at WMU. It has been accepted for inclusion in International Conference on African Development Archives by an authorized administrator of ScholarWorks at WMU. For more information, please contact wmu-scholarworks@wmich.edu.

Exports, Trade Liberalization and Economic Growth in Sub-Saharan Africa

Preliminary: Please Do Not Quote without Permission

Seid Hassan
Department of Economics and Finance
Murray State University
Murray, KY 42071

Exports, Trade Liberalization and Economic Growth in Sub-Saharan Africa

II. Introduction:

Despite the various efforts made to promote sustainable economic growth in Sub-Saharan Africa, there had been little achievement in terms of progress in standard of living and poverty reduction in this part of the world. Given the absence of a perfect strategy to overcome these problems, most Sub-Saharan African countries have tended to place undue emphasis on export promotion in the context of worldwide economic liberalization and globalization. Moreover, as a result of opening up their economies in the 1990s, especially in the export/import sector of these economies, it has been reported, some Sub-Saharan African countries have experienced some positive economic growth rates. A cursory examination of the literature around the quarters of the IMF and the World Bank in the late 1990s reveals this same tone (see also, Collier and Gunning, 1999). For example, one such publication states "…whereas per capita real GDP increased in 16 [Sub-Saharan) countries in 1990-94, twice as many countries registered positive growth rates during 1995-97" (Basu et al., 2000). While reforming the external sector is a good start, this strategy (targeting the external sector) may not be the vehicle for *long-term* economic growth. And, while the positive growth rates experienced by same of these countries may be undeniable, these gains, which are largely due to the lifting of trade controls and exchange rates (and usually accompanied by no substantial reforms), are unsustainable. In this paper, we show that the euphoria is premature and the gains are short-term.

II. A Simple Theoretical Caricature on the Economic Growth-Trade Nexus

It has long ago been acknowledged that trade in general, and exports in particular, contribute positively to economic growth. Attacking mercantilists successfully, Adam Smith has been cited as the one who laid out the basic grounds of trade as a means of efficient resource reallocation. Following Smith, David Ricardo proved that comparative advantage leads to trade and this in turn leads to the reallocation of resources and the improvement of the standard of living of any nation, large or small. Modern trade theory also makes the case for exports and open trade as the causes for economic expansion: They foster competition, innovation, and learning-by-doing; they bring international best practices to the attention of domestic producers, and hence spur greater efficiency; export expansion helps domestic producers to realize economies of scale when they attempt to produce for the world markets rather than for their own, limited domestic consumers. Larger markets create incentives for firms to engage in research and development, allow countries to import important production inputs and foreign capital by minimizing the foreign exchange constraints. They facilitate the transfer of technology and managerial skills. They also encourage learning-by-doing. These theories suggest that open trade and exports increase the demand for the country's output and hence contribute strongly to positive economic growth. It follows that, following the above suggestions and as has been suggested in some of the literature, exports are the causes of GDP growth. This paper evaluates these hypotheses as applied to Sub-Saharan countries.

While trade in general, and exports in particular, play an important role in economic development, we argue that the finding of a positive relationship between trade and income is incomplete for a number of reasons. To begin with, as one of the components of GDP, the external sector should, in principle, be positively related to it.[1] However, as Frankel and Romer

[1] The question, therefore, should not be about the existence of a positive correlation between the growth rate of GDP and that of trade in general, and that of exports in particular, as this should be expected to take place. In fact, if the growth rate of trade exceeds the growth rate of GDP and there is no take-off by the economy, then trade cannot be

note (Frankel and Romer 1999), the positive relationship may not even reflect the effect of trade on income, as trade may be endogenous (p.379). Moreover, an undue focus on the external sector in general, and on exports in particular, may not add to economic growth if they crowd-out the goods and services produced for domestic consumption. Given the extremely scarce resources in this region, devoting a larger proportion of the same resources to the external sector would mean that fewer and fewer resources would be available for the remaining components of the general economic activity. If, in fact, crowding-out exists, higher unemployment may take place, which ultimately may offset the gains from liberalizing the external sector of the economy. This is so because, in general, the contributions of the other components of aggregate demand (that is, consumption, investment and government spending) are higher than the external sector of the economy.

Moreover, trade liberalization may be accompanied by a strong temptation to enhance export promotion strategies, increased industrial targeting, and unwarranted subsidies, which ultimately increase monopolistic practices (thereby stifling competition) and rent-seeking behaviors. It is also important to note that even the aforementioned benefits from trade may be realized only if a substantial proportion of the goods they trade are in manufactured goods. Unfortunately, however, Sub-Saharan trade is predominantly on primary products. Therefore, the gains from technological transfers, competition, and learning-by-doing, would be very limited. Since the terms of trade in these products have deteriorated over time, the gains from economies of scale from selling primary products are also limited.[2]

Most importantly, one should recognize that the benefits of trade liberalization are best achieved when the internal sector is liberalized as well. This is because, as Frankel and Romer noted, a country's income may be influenced not only by the amount a country's citizen trade with foreigners but also by the amount they trade among themselves (p. 380). Economic development may be impossible to achieve and nations may be unable to get any benefit from liberalizing their trade policies if internal markets are imperfect. With imperfect internal capital markets, even the highly desired foreign capital may not be obtained. Foreign capital may not be attracted without adequate infrastructure, either.

Furthermore, the use of exports an engine of economic success depend on whether or not other nations, particularly industrialized nations, could absorb the exports of Sub-Saharan nations. It also depends on whether or not the current IMF and WTO rules allow these nations to continue subsidizing their exports indefinitely. Even though the poorest of the poor are allowed to subsidize, it is unlikely that these countries would be allowed to subsidize their exporting firms indefinitely. The fact of the matter is that, less developed nations in general, and Sub-Saharan countries in particular, cannot market the goods they have comparative advantages in, mainly agricultural and textile products, since developed nations have placed stiff trade restrictions in these areas.

---

the engine of economic growth, for, if it was, it should have increased GDP and its other components in a multiplicative way. On the other hand, if the external sector is a relatively small portion of the entire economy over time, its effects would be minimal as it would be unable to push the economy to the desired level.

[2] Moreover, exports in primary products are notoriously very volatile. This is so because exports primarily depend on foreign nations' incomes, the demand for the primary products by trading partners, the policies of trading partners, the stability of exchange rates, and the political and social conditions of the exporting countries themselves. Since Sub-Saharan nations, as exporters of mainly primary products, do not have full control over these variables, the volatility of in the growth rate of the external sector could lead to the volatility in the growth rates of GDP. We have shown this to be the case in another research paper we have conducted (Hassan and Milkessa, 2000).

In short, the praise given to these countries for opening up their economies is theoretically dubious at best, disingenuous at worst, and factually false. On theoretical grounds, elevating openness and trade as an engine of growth is against the well-established economic theory of growth accounting. In the growth accounting literature, the rate of output growth is composed of the rate of growth of labor inputs, the rate of growth in capital inputs and total factor productivity (TFP), which is the rate of growth productivity due to organizational and technological advances that allows an economy too produce more output from the same amount of resources. Even though the importance of TFP cannot be ignored, empirical evidence has shown that its contribution rises during and after industrialization. This leaves labor and capital as being the major sources of economic growth and Sub-Saharan countries would have to work hard to increase both the level and productivity rates of these resources. The accumulation of physical and financial capital requires increases in domestic savings rates, as domestic investment rates are strongly correlated with domestic saving. The increase in domestic saving necessitates not only the foregoing of present consumption but also the designing of clear macroeconomic policies that could stimulate them. To enhance the productivity of labor, Sub-Saharan countries would have to design educational policies that would increase their literacy rates. This is because, without a skilled labor force that can tackle sophisticated methods of production, it would be impossible to achieve the desired results of high economic growth. Of course, this in turn may require the overhauling of the educational system. This should be the clear and consistent message that needs to be sent by the international agencies like the World Bank and the IMF. A careful review of the literature shows no clear empirical evidence suggesting selective interventions such as export promotions as clear tools to achieve desired and sustained economic growth.

The hypotheses of this paper are as follows: Even though some Sub-Saharan countries might have experienced positive gains in economic growth in the 1990s, these gains are short-term at best. Secondly, the mantra for openness cannot be a substitute for economic growth. This trend of equating of trade with economic growth and policies is very dangerous and give hollow promises: it diverts poor nations meager resources (human and non-human resources, administrative focus, health, education, the building of infrastructures, and the political and social reforms) away from important uses to unrealistic priorities. Third, not only trade and openness cannot serve as a shortcut for economic growth, they themselves require complete changes and an overhaul of the industrial, administrative, political, and social structures of each country. The emphasis on trade and openness crowds out serious thinking and efforts (Rodrick, 2001). Using data that includes the latter part of the 1990s, the empirical evidence we obtained in this paper for does not support trade being the sole engine of economic growth for Sub-Saharan Africa.

III. A Brief Review of the Literature

a. Review of the Empirical Literature finding Trade as Engine of Economic Growth

There is a plethora of research done concerning the relationship between economic growth and exports. Some of the research that indicates positive linkage between exports and economic growth include: Blassa (1978); Frankel and Romer (1999), Okpolo (1994); Tyler (1981); Chow (1987); Bahmani-Oskooee, Mohtadi, & Shabsigh (1990); Bahmani-Oskooee and Alse (1990), 1993); Ram (1987); Sheehey (1993). Frankel and Romer (1999), find that, a one percent increase in trade increases per capita income between one-half and two percentage

points. They also find that within-country trade raises income per person.[3] After running a regression of GDP growth against the growth rates of capital, labor, fuel exports, non-fuel primary products, consumption and government consumption, Okpolo concludes that low-income countries in Africa can use non-fuel primary products as the major engine of economic growth. Using a cross-section data from developing countries, Tyler affirms the conventional economic theory, which suggests that export expansion and promotion are positively correlated with economic growth. He regressed the growth rate of GDP against the growth rates of manufacturing output, investment, exports, direct foreign investment, and the terms of trade. Chow conducts Granger and Sims causality tests and finds bi-directional causality between growth in exports and industrial development of the eight newly industrialized countries under his study. The procedures followed by Bahmani-Oskooee, Mohtadi, & Shabsigh is the same as Jung and Marshal (see below) and Chow's, except that they adjust for the optimal lag lengths. They find some support in favor of the export-led growth hypothesis. Their twenty country study indicates that the evidence obtained are either inconclusive in evaluating competing hypothesis (whether GDP growth causes export growth or vice versa) or in some cases, the causation from exports to GDP is negative. Bahmani-Oskooee and Alse use cointegration and error correction methods and find bi-directional causality between exports and real output for nine countries. Ram uses both cross-section and times series methods and finds evidence for the hypothesis of the export-growth linkage.

A series and most recent study was presented in a symposium in the *Journal of Economic Perspectives* at the end of 1999 by Collier and Gunning, Deaton, Ndulu and O'Connell, Schultz, and Sender on Sub-Saharan Africa. Collier and Gunning, conclude that, among other things, even though economic growth in these countries lacks predictability, Africa's slow growth has been due to policies of reduced openness. These countries began experiencing positive growth in the 1990s because of the reversal of their closed policies. Deaton (1999) argues that the roots of Africa's poor economic performance lies not on the volatility in the prices of their primary commodities but in poor investment and bad governance. Current research on Sub-Saharan Africa itself indicates that economic growth in these countries lacks predictability[4]. To begin with, Sub-Saharan Africa is plagued with intrinsic problems such as ethno-linguistic fractionalization; high population growth accompanied with high mortality rates; volatility (and also declining) terms of trade; insufficient private savings; dominance of the government sector which is unresponsive to market and economic changes; lack of political pluralism and stability; lack of adequate investment in health and education (e.g. Collier and Gunning, 1999; Ndulu and O'Connell, 1999, Schultz, 1999). To overcome these endemic problems, Sub-Saharan leaders need to take bold measures that advance political pluralism, sound economic policies and coordinated commitment to regional and sub-regional stability. International support from the well-developed nations could be critical as well[5].

b. Empirical Support for Trade as a Handmaiden Rather than as an Engine of Growth

It can be argued that export expansion may follow domestic economic growth rather than the other way round. It may be that domestic growth causes trade growth or that there may be a

---

[3] We believe this finding is very important as it proves the importance of liberalizing internal markets in addition to the external sector of the economy.

[4] See, for example, the Symposium articles presented in the **Journal of Economic Perspectives**, Summer 1999 (pp.3-114).

[5] The improved economic growth rates of some Sub-Saharan countries of the 1990s are good testimonies of the importance of democracy, economic liberalization, and international support (Ndulu and O'Connell, 1999), even though the se changes are extremely inadequate.

bi-directional causality between export expansion and the domestic economic activity[6]. As one author aptly put it, growth is mainly a result of "favorable internal factors…" (Kravis, 1970). More recent empirical research also reveals that the link between exports (especially the link between exports in primary products) and GDP growth is rather weak (Jung and Marshal, 1985). Fosu (1990) finds no significant relationship between the growth rate of GDP and the growth rate of exports. He concludes that the primary sector exhibits little effect on GDP growth in LDCs. Using cross sectional studies, Sharma and Dhakal and (1994) and Bahmani-Oskooee et.al. (1991), find no causal links between trade and exports for many developing countries. Al-Yousif (1997) also finds no causal relationship between exports and economic growth for the Arab Gulf states. Jung and Marshal perform causality tests between exports and growth for 37 countries and doubt the validity of the export promotion hypothesis. The results obtained by most these researchers use GDP (or its growth rate) as the dependent variable. The export variables enter either as one of the independent variables in the production function or as one of the components of the GDP identities. Sheehey, 1993, argues that the results obtained by those who used the export variable in the production function are biased because of the inherent relationship between exports and GDP. He runs a regression with the non-export production components entering as independent variables and finds similar results as when the export component is the independent variable. He concludes by saying that "[p]roductivity, however, cannot be higher in both exports and non-exports" p. 157). Of course, the results obtained through co-integration and causality tests of the export and GDP variables reveal nothing other than a correlation between the two variables. Sheehey's criticism of biased regressions may fit the results obtained using cointegration methods. The results obtained these techniques are indeed ambiguous on a number competing hypothesis.

III. The Method and Framework of Analysis of this Study

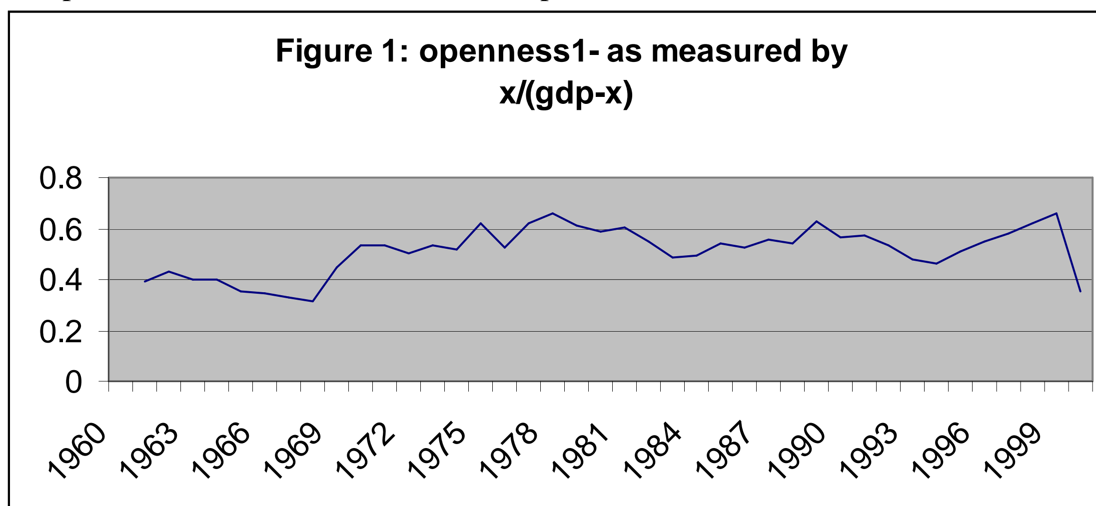
So far, we have cast doubt, if not refuted, trade in general, and openness in particular, being the engine of economic growth. We did this based on theoretical grounds and by presenting conflicting results of the empirical literature. In what follows, we attempt to show two things: that the allegedly open Sub-Saharan economies are not open at all; and that the euphoria was premature and unrealistic. In particular, we show these by using: 1) two openness indicators; 2) an average measure of foreign direct investment (FDI); 3) the weighted average of the terms of trade over time, 4) the weighted average of the growth in manufacturing exports, and 5) manufactured exports as percent of total exports. We also use pooled time series regression to show the same thing. Here, after controlling for variables such the terms of trade, foreign direct investment, inflation, budget deficits, the components of GDP, a measure of human capital, etc., we show that openness did not contribute to economic growth any differently for the periods of 1992-1998.

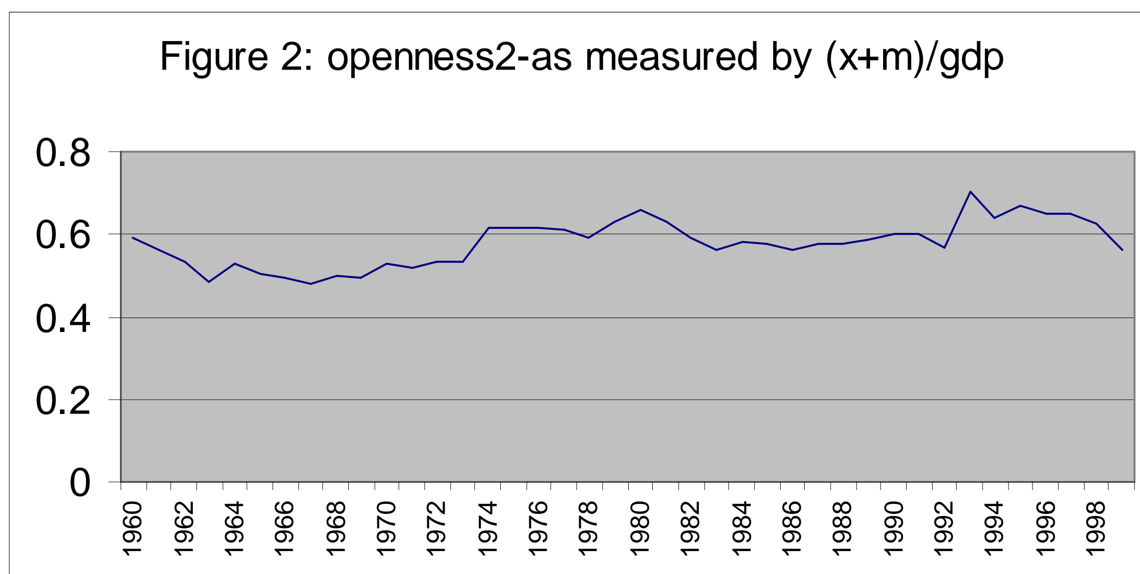
The empirical analysis presented in this paper uses the latest data available from the International Monetary Fund (IMF) and the World Bank. The sources of the data are the CD-ROM and print versions of the International Financial Statistics and the CD-ROM version of World Bank Africa Data Base, 2000. Prior to any calculations or estimations, we deflated by GDP deflator or the CPI (whichever was available), to convert them to real values.

Are these economies open at all? First, we calculated two openness indicators: x/(gdp-x) and (x+m)/gdp, all variables in real terms. We then plotted these openness indicators against time for each individual country. Except for five countries, Cote d'Ivoire, Ethiopia, Mauritius,

[6] If there is a bi-directional causality for most countries under consideration, exports and the rest of the domestic economic activity may depend on each other for creating the means (resources) for increased employment.

Seychelles, and Togo, that showed increased openness until the late 1990s, all of the remaining Sub-Saharan countries (that is, for more than 85% of them) indicated qualitatively similar results as presented in Figures 1 and 2.[7] We then calculated the weighted average of the two openness indicators for most of the Sub-Saharan countries as shown in Figures 1 and 2. Figures 1 and 2 clearly reveal that, even though the openness indicators rose in the early to mid 1990s, the indicators fell in the latter part of the same decade. In other words, these economies, as a group, are not open at all when we include the entire period.

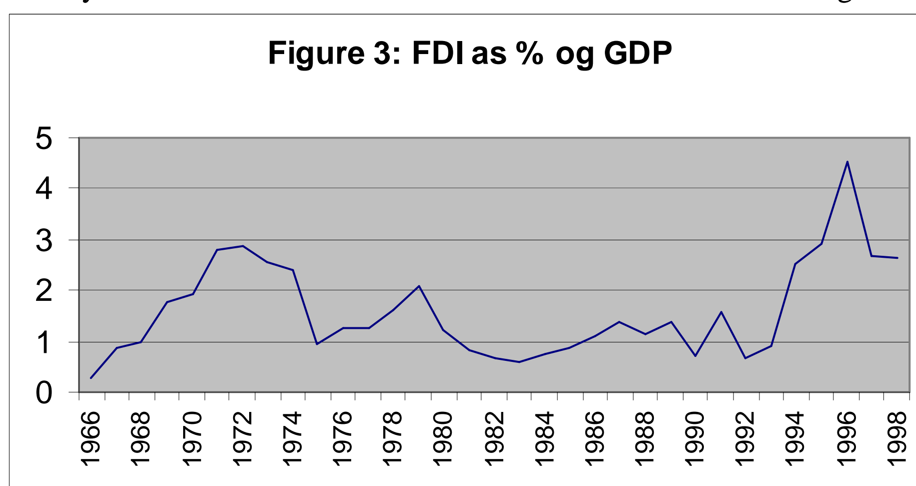




Next, we consider another openness indicator, namely the growth rate of foreign direct investment (FDI) as a percentage of GDP. Foreign direct investments are real investments in factories, capital goods, land ownership, resource extraction, services, etc. and they are there to stay for many years since they are mostly illiquid. Developing nations could enhance their productivities by supplementing (and not substituting) their own saving by borrowing from abroad. FDI allows the transfer of highly desired technology that would otherwise be

[7] See the Appendix for the list of the countries included in the calculation.

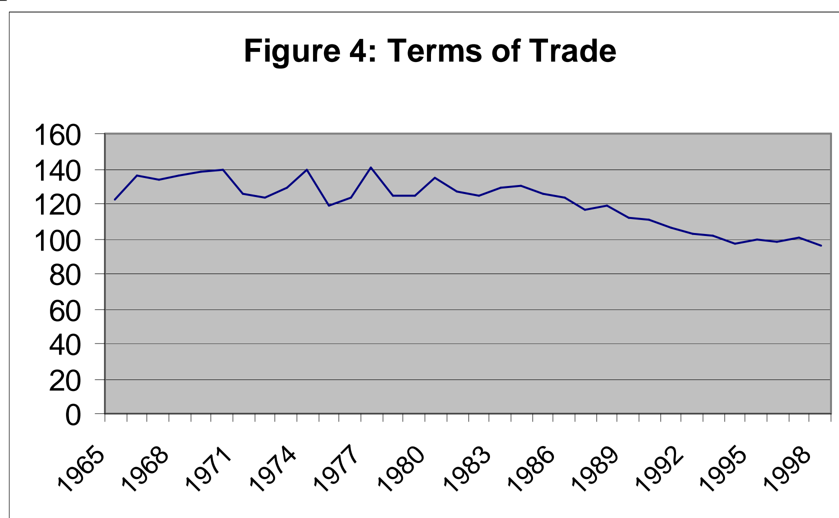
impossible to obtain domestically. To begin with, foreign capital can only be attracted if the returns to investments in Sub-Saharan countries are higher than in the countries that the FDI originates. Be that as it may, we can ask the question: Have the Sub-Saharan economies been more open in recent years than in the previous decades using FDI as a gauge? Figure 3 reveals that, even though FDI as a percentage of GDP rose relatively quickly from 1992 to 1996 for all countries as a group, it subsequently and dramatically fell from there on. In fact, the same figure shows that the level of FDI as a percent of GDP in 1997/1998 is below that of early 1970s. This result is consistent with the ones shown in Figures 1 and 2.



We now ask the question: Have Sub-Saharan countries, as a group, benefited from open trade? We attempt to answer this question by exploring three indicators over time: the terms of trade (TT), average growth rates of manufacturing exports, and percentage of exports as of total exports.

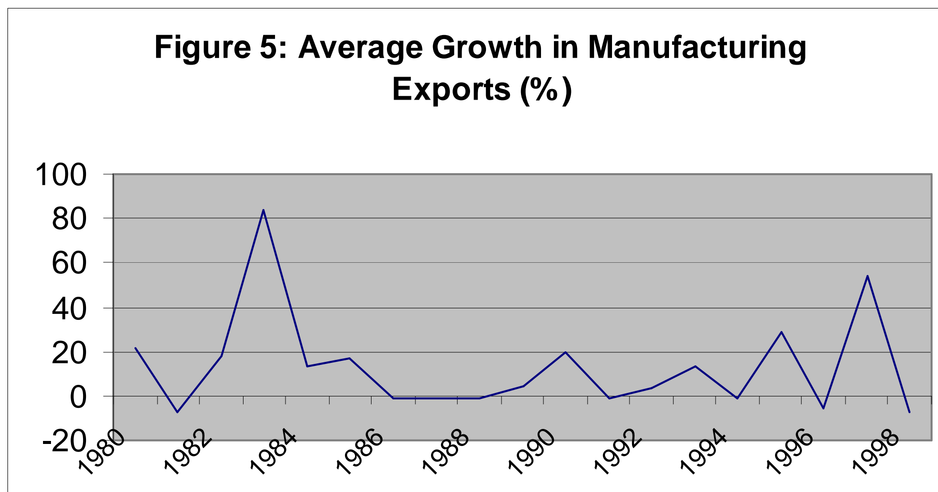
If these nations benefited from trade, their terms of trade must have improved. The terms of trade reflects the prices that a nation receives for its exports relative to the prices it pays for its imports. Here again, we gathered the terms of trade (the aggregate weighted average from the national accounts data) for 44 countries and plotted each country's TT against time. We then calculated the average for all countries as a group as shown in figure 4. Figure 4 reveals that the terms of trade (based on 1995 prices) for these countries deteriorated during the 1990s. We understand that our use of the terms of trade is limited since the number of years under consideration is very few. However, the terms of trade is one more useful indicator revealing the limited fortunes that Sub-Saharan countries could garner from their

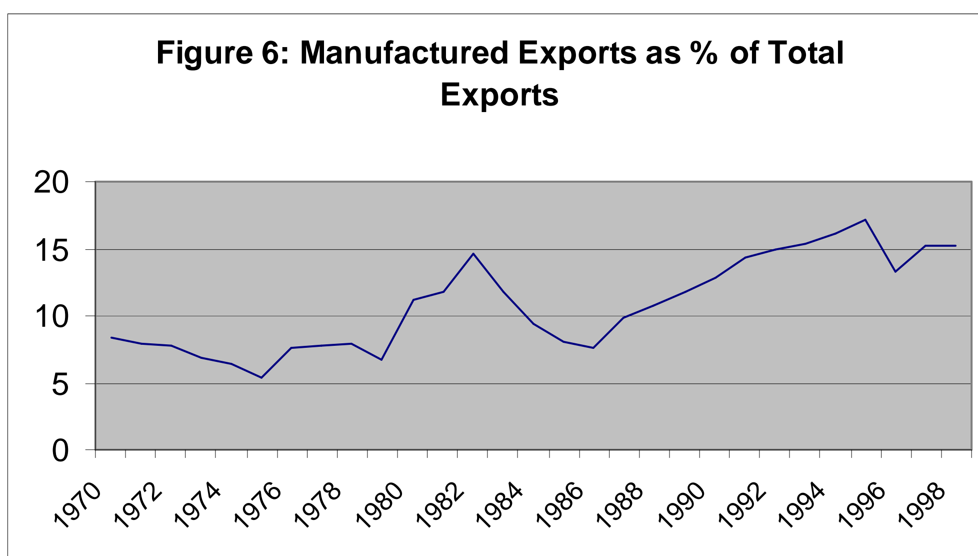
promotion of trade and their use of world markets.



The growth-trade or growth-exports nexus we laid out in the beginning of this paper is mainly applicable, not from the benefits that may accrue from exporting primary products, but on their ability to sell manufactured goods in the world market. The dynamics of learning-by-doing, enhanced competition, and the application of international best practices of doing business are mainly attributable to the exchange of manufactured goods. On this light, we can ask the question: Have Sub-Saharan manufactured exports as a ratio of GDP improved during the decade of the 1990s? To shed some light on this question, we plotted the average growth rates of manufacturing exports as well as manufactured exports as percent of total exports. These plots are shown, respectively, in figures 5 and 6. Figure 5 reveals that there was a sharp rise in the average growth rates of manufacturing exports. However, this rise in growth rate of manufacturing exports was only for a very brief period. It also dropped to its original level by the end of 1998.

Looking at Figure 6, manufactured exports as percentage of total exports rose consistently from mid 1980s to mid 1990s. Not only manufactured exports as percentage of total exports dropped by mid 1990s, but the level remained below the previous periods also. Since manufactured exports as percentage of total exports consistently rose since mid 1980s and fell around mid 1990s, one may not attribute their rise in the early 1990s to increased openness. At best, Figure 6 reveals the same conclusion we have made before: targeting a specific industry like exports in particular, and the external sector in general, would bring no miracle to attain the desired and sustained economic growth.





Summary, conclusions and observations

In this paper, we have attempted to garner evidence about the contribution of exports on economic growth both on theoretical and empirical grounds. We have rejected, again both on theoretical and empirical grounds, the strong tendency and practice by Sub-Saharan countries, and the implicit or explicit advise given to them for using exports as a panacea for the declining (and some times negative) economic growth rates as well as using it as a miraculous engine for the take-off their economies. We believe that Sub-Saharan African countries may be well advised to follow dualistic policies which must be geared towards not only in the free trade of tradable goods vs. foreign nations but also in the free trade of goods and services among the citizens themselves and the free movement of resources within each country itself. Emphasis on export-led growth may lead to the neglect of their internal sectors (domestic consumption and investment, and government spending), which are the *major sources* of the supply capabilities of their economies. These export led growth strategies not only disregard internally existing market

distortions (misrepresentations) but also exacerbate the problems by creating more distortions between the external and the internal sectors of the national economies. Simple dismantling of old trade barriers and investment, without an overall development strategy, cannot do the trick for economic development because attaining sustained economic development requires comprehensive institutional reforms.

Furthermore, the constraints peculiar to this region put extra limitations to how much exports could be used as catalysts of economic growth. For example, some of these countries are landlocked and access to the sea is paramount to economic development. Most of these countries are ridden with corruption and there is the great potential for exports to be used as a means of looting the resources of these countries. We also believe that the recommendations put forth by the IMF and the World Bank are still valid and on sound economic basis: Free trade could positively impact any economy. However, it cannot do the trick by itself. The impact of trade on economic growth depends on, in large part, of the following conditions: conducting structural and institutional reforms such as the elimination of government regulations; the elimination of the rigidities in the labor and financial markets; the respect of the law and designing well-defined property rights; the creation of laws for (and enforcement of the existing ones) to enhance competition; a decontrol of the wholesale and retail trade; a creation of an efficient infrastructure; designing an educational system that enhances productivity; creation of a well functioning democracy and full participation of all citizens; and passing land reform laws. Reducing inequality may also be necessary for it creates a stake for every citizen to have the chance of sharing the wealth of the nation.

The effectiveness of trade also depends on how the trade revenues are used. They should not be used to acquire military weapons, which are ultimately used to protect the interests of the privileged very few and dictators who expropriate meager resources to send them abroad. International institutions such as the IMF and the World Bank must make these issues loud and clear. They should also practice what they preach.

In summary, we have shown there to be no consensus, in the economics literature, either on empirical or theoretical grounds, for an existence of clear evidence suggesting that sustained economic growth could be achieved by selective interventions such as export promotions and liberalizing only the external sector of any economy.

Bibliography

Ahmed, Shaghil, December 1999. "Sources of Economic Fluctuations in Latin America and Implications for Choice of Exchange Regimes,", Board of governors of the Federal Reserve System, International Finance discussion Papers, Number 656.

Bamani-Oskooee, Mohsen, Homid Mohtadi and Ghiath Shabsigh, 1991. "Exports, Growth and Causality in LDCs: A Re-examination," *Journal of Development Economics*, 36, 405-415.
___, and Jardhanan Alse, 1993. *The Journal of Developing Areas*, 27 (July), 535-542.

Balassa, Bela, 1978. "Exports and Economic Growth-Further Evidence," Journal of Development Economics, 5, 181-89.

Calamitisis, Evangelos, and Anupam Basu, and Dhaneshwar Ghura, 1999. "Adjustment and Growth in Sub-Saharan Africa." IMF working paper 99/51: available at http://www.imf.org.

Collier, Paul, and Willem Gunning, 1999. "Why has Africa Grown Slowly," *Journal of Economic Perspectives,* 13 (3) 3-22.

Chow, Peter C.Y., 1987. "Causality Between Export Growth and Industrial Development: Empirical Evidence from LDCs," *Journal of Development Economics*, 26, 55-63.

Deaton, Angus, 1999. "Commodity Prices and Growth in Africa," *Journal of Economic Perspectives*, 13 (3), 23-40.

Esterly, William, and Ross Levine, 1997. "Africa's Growth Tragedy: Policies and Ethnic Divisions," *Quarterly Journal of Economics*, 112 (4) 1-22.

Frankel, Jeffrey A., and David Romer,1999. "Does Trade Cause Growth?" American Economic Review, (June) 89 (3), 379-99.

Fosu, Augustin K., 1990. "Export Composition and the Impact of Exports on Economic Growth of Developing Economies," *Economic Letters*, 67, 67-71.

Hassan, Seid and Feyera Milkessa, 2000. "The Impact of Real Export Instability on Economic Growth in Sub-Saharan Africa". Working Paper 2000-1.

Jung, Woo S. and Peyton J Marshal. 1985, "Exports, Growth and Causality in Developing Countries." *Journal of Development Economics*, 18, 1-12.

Kravis, Irving. B. 1970. "Trade as a Handmaiden for Growth-Similarities Between the 19th and 20th Centuries," *Economic Journal*, pp. 850-72.

Mankiw, N. Gregory, David Romer, and David N. Weil, 1992, (A contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics,* 107 (May), 407-37.

Ndulu, J. Benno and Stephen A. O'Connell, 1999,"Governance and Growth in Sub-Saharan Africa. *"Journal of Economic Perspectives,* 13 (3), 41-66.

Ram, Rati, 1987. "Exports and Economic Growth in Developing Countries: Evidence from the Time Series and Cross-section Data," *Economic Development and Cultural Change*, 35, 51-72.

Rodrik, Dani, March/April 2001. "Trading in Illusions." Foreign Policy: Global Politics, Economics, and Ideas, 55-62.

Schultz, T. Paul, 1990, "Health and Schooling Investments in Africa." *Journal of Economic Perspectives*, 13 (3), 67-88.

Sheehey, Edmund J., 1993. "Exports as a Factor of production: A Consistency Test." *World Development,* 21 (1), 155-160.

Tyler, William, G., 1981. "Growth and Export Expansion in Developing Countries." *Journal of Development Economics*, 9, 121-130.

Ukpolo, Victor, 1994, "Export composition and Growth of Selected Low-Income African Countries: Evidence from Time Series Data," *Applied Economics*, 26, 445-449.

Appendix: The data were generated using the following countries			
Benin	Cote d'Ivoire	Mauritania	Sudan
Botswana	Equatorial Guinea	Mauritius	Swaziland
Burkina Faso	Ethiopia	Mozambique	Tanzania
Burundi	Gabon	Namibia	Togo
Cameroon	Gambia, The	Niger	Uganda
Cape Verde	Ghana	Nigeria	Zambia
Central African	Guinea-Bissau	Rwanda	Zimbabwe
Republic	Kenya	Sao Tome and	
Chad	Lesotho	Principe	
Comoros	Madagascar	Senegal	
Congo, Dem. Rep.	Malawi	Sierra Leone	
Congo, Rep.	Mali	South Africa	