# Markets, Trade and the Role of Institutions in African Development

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**Abstract**

This paper focuses on the interdependence between international trade and institutional reform and suggests that the trade barriers erected by advanced countries on the agricultural exports of poor countries, in particular sub-Saharan agriculture, serve as an impediment to economic growth and development. Drawing upon recent literature, the suggestion is that trade barriers inhibit institutional reform that is a major factor affecting economic growth. An empirical analysis of trade reform and economic growth shows that sub-Saharan economies can reciprocate potential gains from increased trade, which are larger when an integration with world markets induces institutional reform.

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## 1 Introduction

The surge in real income growth during the last three decades of the 20th century lifted more people from poverty than any previous time in world history. The $1 per day poverty rate has fallen from 20 per cent of the world's population to 5 per cent over the last twenty five years. The $2 per day rate has fallen from 44 per cent to 18 per cent. In 1998 there were between 300 and 500 million fewer poor people than there were in the 1970s (Sala-i-Martin, 2001: 16-18). Economists associate this unprecedented rise in well-being to the fundamental economic forces driving the globalisation of world markets (Sachs & Warner, 1995 and Baldwin & Martin, 2000).

Nevertheless, many regions of the world are not participating in what might be termed the gains from globalisation. About 19 per cent of the world's population live on only 1.3 per cent of the world's income (Shane, Teigen, Gehlhar & Roe, 2000: 300-2). In sub-Saharan Africa (SSA), approximately 52 per cent of the population live on $2 per day or less (expressed in terms of 1987 purchasing power parity). This population lives on roughly 12 per cent of the region's income. Countries in South Asia are the next poorest group. About 25 per cent of their population live on 5.5 per cent of the region's income.

The main features of economic growth in real per capita terms are easily identifiable. They include growth in the stock of human and physical capital, technological change, and for most countries, the transition of labour from agriculture and other primary good producing sectors into higher value added sectors like manufacturing and services. Fundamental to this transition is the micro-firm level environment that provides incentives and opportunities for productivity growth, including variety and quality of products that allow markets to remunerate resources at sustained and growing rates of return. For most countries, this environment cannot be created in isolation from the rest of the world. Countries with strong and sustained records of economic growth

engage in international transfers of physical and human capital, including the business practices and technical expertise of foreign companies and foreign expertise in services such as banking and insurance.

Macroeconomic policies like fiscal, monetary, exchange rate and trade policy are necessary but not sufficient to create the micro-firm level environment. Critical components of the micro-firm level environment necessary to encourage the adoption of new technologies and capital deepening, involve amongst others institutions granting enforceable rights to physical and intellectual property, to govern competition among firms, legal structures to adjudicate commercial disputes, development of codes of conduct to assure transparent financial institutions, and the provision of public goods for transport and education that can be sustained. But how are the necessary institutions created?

## 2
## Focus and organisation of the paper

It is likely that an interdependence exists between institutional reform and globalisation. The question then becomes: which comes first, productivity and growth from which institutions evolve, or institutions from which productivity and growth evolve? Is foreign trade a vehicle for inducing institutional change? If this is the case, then is it possible that agricultural trade barriers of advanced nations serve as an impediment to institutional reform of developing countries whose economies are relatively dependent upon agriculture? The purpose of this paper is to discuss and bring some evidence to bear light on these questions, particularly as this relates to sub-Saharan agriculture.

The paper begins with an overview of the recent literature on geography, institutions and international trade as an explanation for the differences in income levels between advanced and poor nations. This discussion suggests that the link between institutions and economic opportunities, opportunities precipitated by the same forces that are inducing the globalisation of markets, may be a driving force for institutional change.

Whether sub-Saharan countries can benefit from more trade, and hence induce institutional reform, depends on whether they can expand their trade opportunities. Since these are primary commodity exporters, of which for most this means agricultural produce, their agricultural trade patterns are briefly reviewed. This review suggests these countries tend to export commodities for which the advanced economies pursue import-substitution polices. Is it possible that these policies are more than a barrier to trade, but that they also serve as an impediment to institutional reform in many of the sub-Saharan countries? Drawing upon previous work, the importance of these barriers to trade is shown. The last subsection focuses on an analysis of SSA to show how the effects of possible increases in total factor productivity, that is linked to institutional and trade reform, can greatly raise per capita income over a forty year period. Final remarks conclude the paper.

## 3
## An overview of the sources of economic growth

Three lines of thought have emerged to explain the key sources of economic growth. One line centres on geography (Bloom & Sachs, 2001) as a determinant of climate, natural resource endowments, disease burden, transport costs and the extent of diffusion of technology, all of which are associated with the low income countries of SSA and South Asia. Bloom and Sachs suggest that the geographic features associated with poor economies also foster extractive forms of governance. Another line of thought centres on international trade as a driver of productivity change and income growth. Levin and Renelt (1992) were among the first to establish a strong statistical linkage between growth and trade. This linkage was later reinforced by others (e.g. Sachs & Warner (1995); and extended by Coe, Helpman &Hoffmaister (1997), who identified R&D spillovers among nations owing to the technology content embodied in imports and exports that stimulated growth).

The third line of thought focuses on institutions. Recent work in this area is that of Rodrik, Subramanian and Trebbi (2002) and MacFarlan, Edison and Spatafora (2003). Rodrik *et al.* (2002) use a composite indicator to capture the protection afforded by property rights and rule of law. These are referred to as market-creating institutions since markets either do not exist or perform poorly in their absence. This indicator over time and countries allows them to distinguish between geography, trade and institutions in explaining the gap between rich and poor countries. They conclude from their empirical analysis that the quality of institutions is the only positive and significant determinant of income levels. Once institutions are controlled for, integration (i.e. foreign trade) has no direct effect on incomes, while geography has at best weak direct effects. However, integration was also found to have a positive impact on institutional quality. This result suggests that trade can have an indirect effect on incomes by improving institutional quality. We return to this theme later.

MacFarlan *et al.* (2003) focus on the role of institutions on three dimensions of economic performance: the level of economic development, growth, and volatility of growth. They include the indicators used by Rodrik *et al.* (2002) plus indicators for quality of governance, the extent of corruption, and limitations placed on political leaders. In the case of SSA, they conclude that raising the quality of institutions (i.e. increasing the aggregate governance index) in SSA to the average level of the index for the Middle East and Turkey would cause an astonishing 80 per cent increase in real income from $800 per capita to $1,400 (MacFarlan *et al.,* 2003: 106). In terms of the economic growth, they conclude that improving institutional quality by one standard deviation (this is equivalent to moving the index for Cameroon up to the all-country average) would increase the rate of growth in the sub-Saharan region by 1.7 percentage points.

## 4
## Trade and institutional reform

Institutional reform induced by economic events can be illustrated using the case of Mexico in the 1980s. Shane (1992: 90-1) suggests that the prospect of a stagnating Mexican economy over the long-term as well as declining per capita incomes undermined confidence in the Institutional Revolutionary Party. Under the leadership of Salinas, major policy initiatives were undertaken as early as 1988 when Mexico joined the General Agreement on Tariffs and Trade (GATT). Many of the country's state-owned enterprises were liquidated and privatised, and limits on foreign ownership shares in Mexican companies were relaxed. These changes removed instruments of the state that were most prone to rent seeking on special interests, and in the process initiated major institutional reforms that, while extending rights to foreign interests in the domestic economy also extend rights to Mexican citizens. Institutional reform was initiated when the difference between the prospect of stagnation compared to the opportunities of opening the country to world markets offered sufficient potential to induce a change in policy. This trickle-down effect is still ongoing.

Rodrik (2002: 4-6) lists property rights, regulatory institutions, institutions for macroeconomic stabilisation (e.g. managing fiscal deficits) and institutions for social insurance and conflict management as critical for development. Countries that have gained significantly from reform have developed and strengthened those institutions whose services markets are used intensively, especially those markets that accommodate the decline in the cost of exchanging information. These include the establishment of low cost enforcement of physical and intellectual property rights, efficient low cost adjudication of commercial disputes, development of transparent financial institutions that are open to international competition, harmonisation of business codes for goods and services, the unbiased provision of public service to international firms, and the management of activities that restrict

competition in markets for factors of production and final goods. These reforms facilitate the entry of foreign firms, the industrial country outsourcing of component fabrication and assembly, and increase the growth of capital stock by attracting foreign savings.

Rodrik (2002: 9) notes that no country has developed successfully by turning its back on international trade and long-term capital flows. However, he suggests it is equally true that no country has developed simply by opening itself up to foreign trade and investment without engaging in fundamental institutional reform. Countries that have engaged in trade reform, without the reform of other policies and accompanying institutions, have experienced at least one economic collapse including Turkey, Indonesia and Argentina. In the case of Mexico, it may be conjectured that the collapses experienced led to a strengthening and reform of her institutions. The discussion thus far suggests that while trade reform is not sufficient to induce institutional reform, a link between the two nevertheless exists. Trade reform entails the importation of institutions from abroad; membership in the World Trade Organisation (WTO) requires the adoption of a set of institutional norms that rent-seekers find more costly to change; financial integration raises the premium for macroeconomic stability; the freer flow of information encourages civil liberties and political freedom; and government enforcement to protect the rights of foreign investors induces government to become more inclined to protect the basic human rights of its own citizens as well.

If foreign trade is an important link to institutional reform, what evidence exists that the agro-climatic endowments of SSA are conducive for an expansion of trade, and if so, with whom? Are the agricultural policies of the United States of America (US) and the European Union (EU) an impediment on agricultural exports of SSA? If trade barriers were removed and institutional change occurred that led to gains as suggested by Rodrik *et al.* (2002) and MacFarlan *et al.* (2003), what is the approximate magnitude of these gains? These questions are addressed in the remaining sections of the paper.

## 5
## Possible gains from trade for sub-Saharan Africa

The potential for countries to benefit from the lowering of agricultural trade barriers among themselves and barriers erected by advanced countries should depend, in part, on the share of agriculture in their total trade and on their agricultural trade patterns. In our previous work, Diao, Roe and Somwaru (2002: 783) show that agricultural exports accounted for more than 40 per cent of total exports in a relatively large grouping of seven developing regions, and to range from 15 to 30 per cent for a larger eleven developing country grouping. For the entire set of developing countries in the world, the share of agriculture in total trade averaged about 10 per cent. Agricultural export shares for the thirty-three sub-Saharan countries ranged from 20 to 80 per cent of total exports.

Pertaining to trade patterns, Diao *et al.* (2001: 27) show the importance of three of the largest markets in the world (Japan/Korea, North America and the EU) to agricultural exports of developing countries. Excluding intra-EU trade, developing countries account for 60 to 80 per cent of world exports of commodities that are relatively labour- and/or water-intensive, such as vegetables and fruits, cotton, sugar, and vegetable oil. Thus, developing countries' agricultural export markets are largely situated in the North.

The data also show that the EU is a far more important agricultural market for African countries than North America. Latin America and a few Asian countries export a large share of their agricultural crops, excluding grains, to North America. While Japan and Korea are known to have relatively high agricultural tariffs, their agricultural import pattern appears to be widely spread.

The tariff rate on vegetables and fruits in the EU is twice the level of that in Japan and Korea, and seven times higher than that of North America (USDA/ERS, 2001). The observed level of sub-Saharan agricultural exports to the EU, while relatively large, is almost surely biased in a downward direction by these barriers.

A global general equilibrium model was developed to assess the extent of these barriers on international agricultural trade, the details of which can be found in Diao *et al.* (2002). The analysis focuses on the three disciplines: tariffs (market access), domestic support and export subsidies. The analysis decomposes the global effects of a full reform by type of policy and by commodity. The reforms investigated are: (1) eliminating agricultural import barriers (tariff equivalents) throughout the world; (2) eliminating agricultural export subsidies throughout the world; (3) eliminating domestic support in the developed countries; and (4) combinations of these scenarios. In terms of changing production levels, the removal of all three forms of interventions (tariffs, export subsidies and domestic support) causes a production increase across almost all agricultural categories in less developed countries as a group. The effects on exports from SSA to the EU are particularly large. The results show that for twenty-seven of the thirty-five country groups in the model, 50 per cent or more of the increase in their agricultural exports is due to liberalising EU agriculture.

Clearly, these results suggest that an open EU market is in the common interest of most developing countries and particularly so for those in SSA. Is it likely that opening this market to SSA countries could induce trickle down institutional reform?

## 6
## Sub-Saharan Africa: a case study

Sections 4 and 5 showed that countries can benefit from globalisation but the process is linked to institutional change and increased openness. The analysis of the previous section suggests substantial grains from freer agricultural trade. In this section, we take a closer look at sub-Saharan countries and consider the effect of infrastructure, and infrastructure plus institutions, on economic growth. In 2001 the average per capita GDP of the 33 countries in this region was about $567, expressed in constant 1995 US dollars. An aggregate three sector (manufacturing, agriculture, service) inter-temporal Ramsey model is calibrated to this region's data for the year 1993, based on a social accounting matrix (SAM) available in the archives at IFPRI, and the SAM appearing in Yeldan and Roe (1995). Analytical features of the model can be found in Roe (2001) and Roe *et al.* (2003: 9-13). Our purpose is to illustrate the type of gains in real per capita income that could accrue to this economically depressed region over a fifty year period. In order to suggest the magnitude of the possible increase in total factor productivity (TFP) we draw on the paper of Gopinath and Roe (1997). They found that about 0.69 per cent of the US agricultural TFP of 2.1 per cent was due to public investments in infrastructure (this includes electrification, roads, public buildings) during the period 1959-1968. Estimates of growth in SSA's factor productivity at national level is negligible at 0.02 per cent per annum. This estimate compares to 1.0 per cent per annum for the US over the period 1981 to 1995, and 1.9 per cent for the period 1996 to 1998 (Marquez, 2001). To estimate the possible increase in TFP, it is simply assumed that the 0.69 percentage points applies to SSA. The positive TFP shock simulation is thus 0.69.

The second simulation draws upon the results of MacFarlan *et al.* (2003), which suggests that bringing SSA's institutions up to the mean level index of the over 100 countries included in their sample, would increase this region's growth in GDP per capita by 1.7 percentage points. The second simulation involves a TFP shock of 2.39 per cent (0.69 + 1.7).

### 6.1 The base solution

The rate of transition growth in GDP per capita is shown in Figure 1. Also shown is the region's real rate of growth based on IBRD data for the period 1993 to 2002. Excluding the year of negative growth, the model's estimate of the growth rate during the years 1994 to 2001 appears to be a "reasonably" good fit to the data. The model's steady state (long-run) GDP growth rate per capita is 0.02 per cent per annum. Transition growth reflects the growth in capital stock due to households' forgoing present for future consumption. Growth

declines overtime owing to the diminishing returns to capital.

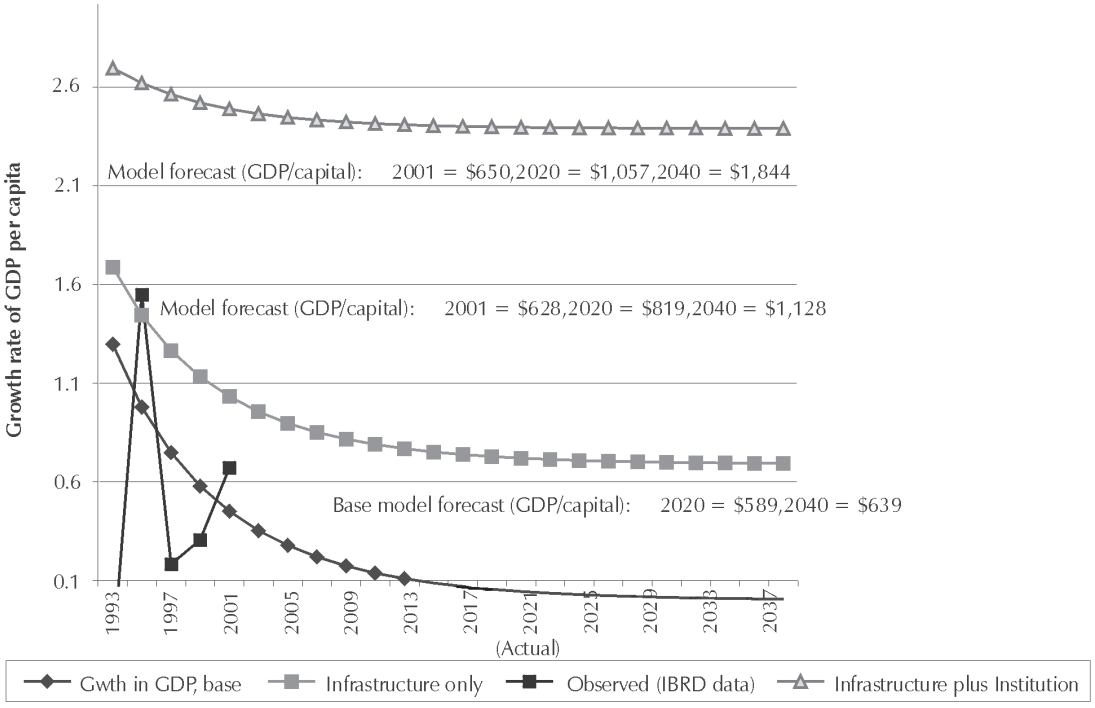
As capital accumulates, labour productivity grows and wages rise. Land productivity also grows with the accumulation of capital, which in turn causes land prices to rise over the period. Nevertheless, growth in real income is small. The model estimates that SSA's GDP per capita will rise from $567 observed in 2001 to about $589 (in constant 1995 US dollars) by the year 2020, and to about $639 per capita by the year 2040. These represent increases of only 5.7 per cent and 12.7 per cent respectively. The differences in the relative evolution of output of the three sectors is largely due to the relative capital intensity of the various sectors. As capital accumulates, the service sector benefits in comparison to the other sectors because it is capital-intensive. Viewed in relative terms, as capital accumulates in this sector, labour productivity rises which allows the service sector to bid up wages. Manufacturing is placed at a relative disadvantage because of the rise in wages and its higher labour intensity in comparison to other sectors. In the long run, the output of all sectors grows at the same rate, in this case 0.02 per cent per capita per annum.

## 6.2 The dynamic effects of infrastructure

The rate of transition and long-run growth in GDP per capita is shown in Figure 1. Long-run growth converges to about 0.71 per cent per capita per annum, which exceeds the 1993 to 2001 average of 0.53 per cent. This rate is modest compared to the rates implied by the analysis of Rodrik *et al.* (2002) and MacFarlan *et al.* (2003). In this case, if factor productivity growth could have occurred in the base year 1993 (owing to better infrastructure), per capita income would have been about $627.6 per capita in 2001, $819.2 in 2020, and about $1128.2 in 2040 (expressed in constant 1995 US dollars). These increases are generated by the base solution (the status quo) of about 11 per cent for 2001, 39 per cent for 2020 and about 76 per cent for 2040. Nevertheless, these values are modest compared to the average per capita income reported by the World Bank for the Middle East and North Africa of $1 905 for 2001.

The manufacturing sector expands relative to agriculture, and agriculture expands modestly faster than services over the transition to long-run growth. This transition pattern results largely from the fact that the accumulation of capital causes an expansion of the services sector, but in spite of the growth in real disposable income, this growth is not sufficient to consume the increase in service production at "old" prices. Consequently, the price of services, and, by implication, the real exchange rate, falls. This has the effect of releasing labour to manufacturing and to agriculture. Since manufacturing is marginally more labour-intensive than agriculture, it tends to benefit slightly more than agriculture. In the long-run equilibrium, the share of services, manufacturing and agriculture in GDP are roughly 52 per cent, 40 per cent and 8 per cent, respectively.

**Figure 1**
Sub-Saharan Africa: Base solution and simulations




This analysis, while only illustrative, suggests that infrastructure, while related to institutional structure, is in itself unlikely to raise the per capita income of sub-Saharan countries as a group to an appreciable level. We next focus on the effect of institutions in addition to the improvement in infrastructure.

## 6.3 The dynamic effects of institutions

In this case, we draw upon the results of MacFarlan *et al.* (2003) and add an additional 1.7 percentage points to the country's rate of growth in factor productivity. The effect on growth in real income per capita is shown in Figure 1. Initially, growth in per capita GDP begins at about 2.7 per cent, and declines slowly as capital accumulates to about 2.4 per cent per annum. Notice that this path exhibits much less of a decline compared to the other two paths. This occurs because the relatively high rate of factor productivity growth significantly dampens the decline in the marginal physical product of capital. The region is effectively able to maintain a slower decline in the growth rate over the same interval of time compared to the other simulations.

In the short run, TFP accounts for about 30 per cent of the region's growth in per capita GDP, with capital accounting for about 48 per cent and labour the remaining 22 per cent. In the case of agriculture, the percentages are similar, with TFP accounting for 27 per cent, 40 per cent and 33 per cent respectively. In the long run, as the effect of transition capital on growth declines, capital's contribution falls to 40 per cent, labour rises to 25 per cent and TFP accounts for 35 per cent. This pattern is in contrast to the base solution where diminishing returns to capital occur faster. In that case, capital's contribution to growth in GDP in the short run is 60 per cent, declining to about 45 per cent in the longer run. Since TFP is relatively small, its contribution is only 10 per cent in the short run, rising to 12 per cent in the long run.

If, in 1993, this region had experienced an increase in the quality of its institutions to a level equal to the average of the index of

institutional quality of the mean of the over 100 countries in the MacFarlan *et al.* study, this analysis suggests that it would have enjoyed an income per capita of about $650 in the 2001, $1 057 in 2020 and about $1 844 in the 2040 (1995 dollars). These increases correspond to percentage increases of 10, 70 and 188 of the corresponding base period path. Nevertheless, the 2040 income is less than the 2001 average for the Middle East and North Africa ($1 905). The comparison of this path with the base is shown in Figure 1.

Relative to the base path, the results show that manufacturing expands relative to agriculture, and agriculture relative to the service sector for the same reasons as mentioned in the previous experiment. Not shown is the growth in trade relative to GDP. The relative decline in the price of services releases resources to the other two sectors, the outputs of which are traded in international markets. Trade as a percentage of GDP therefore tends to grow throughout the transition to long-run growth. If barriers were erected by other countries on this region's exports, growth would be slowed. In the extreme case where the region's exports are held to the initial levels, the region's growth pattern resembles that of the first experiment.

This analysis suggests that modest increase in TFP has relatively large long-run effects but these effects take time to be absorbed in the economy. Time is required for capital deepening, especially when it comes from domestic savings alone. The simple model here presumes that the only source of savings is from domestic households. If the country's domestic capital markets are sufficiently well-developed and diversified to allow an immediate inflow of foreign capital equal to approximately 18.5 per cent of the base period capital stock, then the economy's transition to long-run growth would have allowed it to obtain the 50 year targets more quickly. An economy open to foreign goods and capital, with well-developed institutions should help to speed up the transition to long-run growth.

## 7 Conclusions

The growth experience of countries during the last half of the 20th century suggests that "accidents" of geography and the precedents of history are not a poverty trap. The evidence is also clear that institutions matter. Institutional reform as Rodrik (2002) mentions, does not travel well, i.e. it is difficult for one country's institution to modify and transplant that of another. Institutional reform induced by better economic opportunities that increase openness, is sure to trickle down. Although these opportunities help create the conditions for institutional reform, they are not sufficient.

Institutional reform is generally difficult to institute. If the agricultural policies of advanced countries cause not only a waste of resources in themselves, but also become barriers to helping induce reform, then they should be pressured even more to make use of first-best (i.e., non-market distorting) policy instruments. Sub-Saharan countries have a major vested interest in the Doha round of trade negotiations that should be motivated by more than just getting prices right. They should also have a vested interest in fostering regional trade among themselves with prospects of bringing about institutional reform.

A way to measure welfare gains from trade reform for advanced economies would be to observe the reduction of deadweight losses. For countries that experience an induced institutional reform, such gains are likely to be far larger. This may cause the indirect feedback effects on welfare in advanced countries caused by trade expansion, to be significant.

We conclude that (1) initial conditions matter, but they are becoming easier to overcome for many of the same reasons that have driven the second wave of world globalisation; (2) institutional change is induced by the potential for economic gain, and thus the incentive for change follows the emergence of economic opportunities; (3) however, there is no compelling reason to conclude that societies will naturally gravitate towards good institutions, all else remaining

constant (i.e., bad institutions could persist indefinitely in static or worsening economic conditions – this is the main reason for the trickle-down feature of trade induced institutional reform); and (4) while a democratic form of governance that allows for relatively free entry and competition among political entrepreneurs provides a means of fostering institutional change (Mohtadi & Roe, 2003), change can be brought about by non-democratic means of governance.

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