Markets, Trade and the Role of Institutions in African Development

By

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Abstract

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

1. Introduction

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

Nevertheless, many regions of the world are not participating in what might be termed the gains from globalization. About 19 percent of the world's population live on only 1.3 percent of the world's income (Shane, Teigen, Gehlhar, and Roe, 2000: 300-302). In sub-Saharan Africa (SSA), approximately 52 percent of the population live on two 1987 purchasing power parity dollars per day or less. This population lives on roughly 12 percent of the region's income. Countries in South Asia are the next poorest group. About 25 percent of their population live on 5.5 percent of the region's income.

The main features of economic growth in real per capita incomes are easily identified. They include growth in the stock of human and physical capital, technological change, and for most countries, the transition of labor out of agriculture and other primary good producing sectors of the economy, and into higher value added sectors of 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 the 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 such as fiscal, monetary, exchange rate and trade policy are necessary but not sufficient to create this micro-firm level environment. 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 by what the polity considers to be within the realm of the social good, are critical components of the micro-firm level environment necessary to encourage the adoption of new technologies and capital deepening. The daunting question is how to create the necessary institutions?

2. Focus and organization of the paper

It is likely that institutional reform is interdependent with globalization. Then the question is: which comes first, productivity and growth from which evolve institutions, or institutions from which evolve productivity and growth? Is foreign trade a vehicle for inducing institutional change? But if this is the case, then is it possible that the agricultural trade barriers of the advanced nations are a barrier to institutional reform of low income countries whose economies are relatively dependent upon agriculture? The purpose of this paper is to discuss and bring some evidence to bear 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 an poor nations. This discussion suggests the link between institutions and the economic opportunitie s, opportunities

precipitated by the same forces that are inducing the globalization of markets, may be a deriving 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 agriculture products, 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 are also a barrier to institutional reform in many of sub-Saharan countries? Drawing upon previous work, the importance of these barriers to trade are shown. The last subsection focus on an analysis of sub-Saharan Africa 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. Overview of sources of economic growth

Three lines of thought have emerged to explain the key sources of economic growth. One line centers on geography (Bloom and 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 sub-Saharan Africa 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 centers on international trade as a driver of productivity change and income growth. Levin, R and D. Renelt (1992) were among the first to establish a strong statistical evidence for a positive growth to trade linkage. This linkage was later reinforced by others (e.g., Sachs and Warner (1995)), and further developed by Coe, Helpman, and Hoffmaister (1997) who identified R&D spillovers among nations due 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 to property rights and the strength of the 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, extent of corruption, and limits placed on political leaders. In the case of sub-Saharan Africa, they conclude that raising the quality of institutions (i.e., increasing the aggregate governance index) in sub-Saharan Africa to the average level of the index for the Middle East and Turkey would cause an astonishing 80 percent increase in real income from $800 per capita to $1,400, (MacFarlan et al. (2003): 106). In terms of the rate of 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 of sub-Saharan region by 1.7 percentage points.

4. Linking trade and institutional reform

Institutional reform induced by economic events can be illustrated using the case of Mexico in the 1980s. Shane, 1992: 90-91 suggests that the prospect of long term stagnation of the Mexican economy, and declining per capita incomes undermined confidence in the Institutional Revolutionary Party. Under the leadership of Salinas, major policy initiatives were made as early as 1988 when Mexico joined the GATT. Many of the country's state owned enterprises were liquidated and privatized, 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 the part of 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 and limited the power of elite special interest groups. 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 institutional change is still on-going.

Rodrik (2002: 4-6) lists property rights, regulatory institutions, institutions for macroeconomic stabilization (e.g., managing fiscal deficits), institutions

for social insurance, and institutions for conflict management as critical for development. Countries that have gained much from reform have developed and strengthened those institutions whose services markets use relatively intensively, especially those markets that accommodate the decline in 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, harmonization of business codes for goods and services, the unbiased provision of public service to international firms, and the management of activity that restricts competition in markets for final goods and factors of production. These reforms facilitate the entry of foreign firms, the industrial country out-sourcing of component fabrication and assembly, and increase the growth in 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, Argentina. In the case of Mexico, it may be conjectured that the

collapses experienced led to a strengthening and reform of her institutions.

This discussion 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 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, 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

suggests that the agro-climatic endowments of sub-Saharan Africa are

conducive for an expansion of trade, and if so, with whom? Are the

agricultural policies of the U.S. and the E.U. a barrier to increasing

agricultural exports from sub-Saharan Africa? If these barriers were

removed, and institutional change occurred that led to gains 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. Do sub-Saharan agricultural trade patterns suggest possible gains from trade?

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 pattern. In our previous work, Diao, Roe and
Somwaru (2002: 783), we show that agricultural exports accounted for more
than 40 percent of total exports for a relatively large grouping of seven
developing country regions, and to range from 15 to 30 percent 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 percent. Agricultural export shares for the thirty-three sub-Saharan
countries ranged from 20 to 80 percent of total exports.

Pertaining to trade patterns, Diao, Somwaru and Roe, (2001: 27) show the
importance of three of the largest markets in the world, (Japan and Korea,
North America, and the EU), to the exports of agriculture from developing
countries. Excluding intra-EU trade, developing countries account for 60 to

80 percent of world exports of commodities that are relatively labor and/or water intensive, such as vegetables and fruits, cotton, sugar, and vegetable oil. Thus, developing country export markets for agriculture are largely in the North.

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

The tariff rate on vegetables and fruits in the EU is twice the level as that in Japan and Korea, and seven times higher than that in North America (USDA/ERS, 2001). The observed level of sub-Saharan agricultural exports to the EU, while relatively large, is almost surely biased downward 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 changes in production levels, the removal of all three forms of interventions (tariffs, export subsidies, and domestic support) causes production increase across almost all agricultural categories in the 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 percent or more of the increase in their agricultural exports is due to liberalizing 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. The case of sub-Saharan Africa

Sections 4 and 5 showed that countries can benefit from globalization, 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. The average per capita GDP in 2001 of the 33 countries in this region was about $567 in 1995 US dollars (IBRD). An aggregate three sector (manufacturers, agriculture, service) inter-temporal Ramsey model is calibrated to this region's data for the year 1993, based in 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 TFP, we draw on the paper by Gopinath and Roe (1997). They found that about 0.69 percentage points of U.S. agriculture's total factor productivity of about 2.1 percent was due to public investments in infrastructure (this includes electrification, roads, public buildings) during 1959 - 1968 period. Estimates of growth in sub-Saharan Africa's factor productivity at the national level is very small, about 0.02 percent per annum. This estimate compares to 1.0 percent per annum for the U.S. over the period 1981-1995,

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and 1.9% for the period 1996-1998 (Marquez, 2001). To estimate the possible increase in TFP, it is simply assumed that the 0.69 percentage points applies to sub-Saharan Africa. The positive TFP shock simulated is thus 0.69% percentage points.

The second simulation draws upon the results of MacFarlan et al. (2003), which suggests that bringing sub-Saharan Africa's institutions up to the mean level index of the over 100 countries included in their sample, would increase this regions growth in GDP per capita by 1.7 percentage points. The second simulation considers at TFP shock of 2.39 percent (0.69 + 1.7).

6.1. The base solution

The rate of transition growth in GDP per capita is shown in figure 7. Also show is the region's actual 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 rate of growth during the years 1994-2001 appears to be a "reasonably" good fit to the data. The model's steady state (long-run) rate of growth GDP is 0.02 % per annum per capita. Transition growth reflects the growth in capital stock due to household's foregoing present for future consumption. Growth declines overtime due to the diminishing returns to capital.

As capital accumulates, labor productivity grows, 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 sub-Saharan Africa's GDP per capita will rise from $567 observed in 2001 to about $589 (in 1995 dollars) by the year 2020, and to about $639. per capita by the year 2040. These are increase of only 5.7 percent and 12.7 percent, respectively.

The differences in the relative evolution of output of the three sectors is due largely to the relative capital intensity of the various sectors. As capital accumulates, the service sector benefits relative to the other sectors because it is relatively capital intensive. As capital accumulates in this sector, labor productivity rises which allows the service sector to bid up wages. The sector placed at a relative disadvantage from the rise in labor wage is manufacturing because it employs labor more intensively than do the other sectors. In the long run, the output of all sectors grow at the same rate of 0.02 percent per capita per year.

6.2. Experiment: 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 percent per capita per

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annum, which exceeds the 1993 - 2001 average of 0.53 percent. 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 due to better infrastructure could have occurred in the base year 1993, per capita income, according to the analysis, would have been about $627.6 per capita in 2001, $819.2 in 2020, and about $1128.2 in 2040, all expressed in constant 1995 U.S. dollars. These are increases over the path generated by the base solution (i.e., the status quo) of about 11 percent for 2001, 39 percent for the year 2020, and about 76 percent for the year 2040. Nevertheless, these values are modest compare to the average per capita income reported by the World Bank for the Middle East and North Africa of $1,905 for the year 2001, in constant 1995 U.S. dollars.

The manufacturing sector expands relative to agriculture, and agriculture expands modestly faster over the transition to long-run growth than services. 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 labor to manufacturing and to agriculture. Since manufacturing

is marginally more labor 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 percent, 40 percent, and 8 percent, respectively.
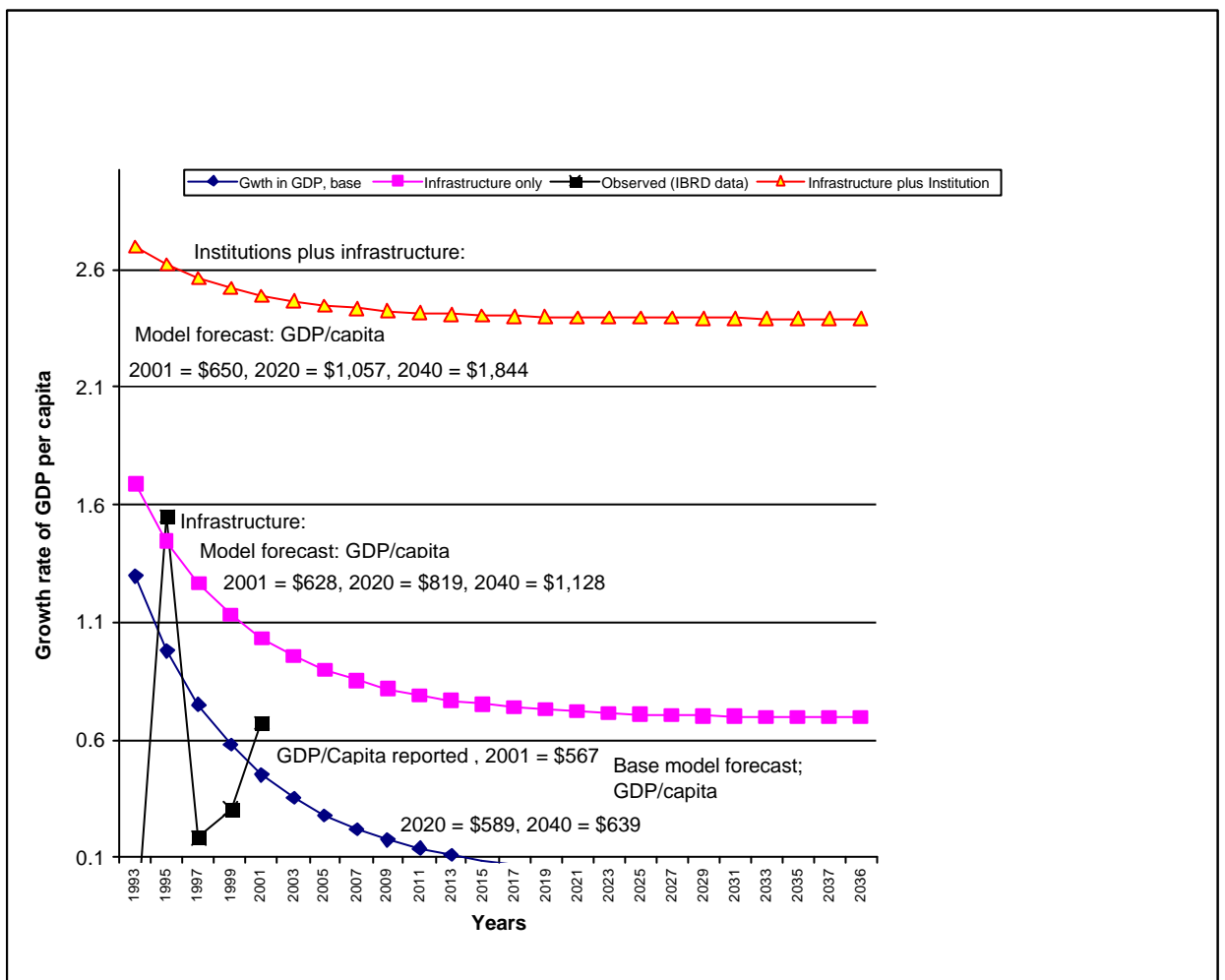

Figure 1: Sub-Saharan Africa: growth in GDP per capita, base solution plus two simulations

This analysis, while only illustrative, suggests that infrastructure while related to institutional structure, is by 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. Experiment: the dynamic effect of institutions

In this case, we draw upon the results MacFarlan et al. (2003) and add an additional 1.7 percentage points the country's rate of growth in factor productivity. The effect on growth in real income per capita is shown in figure 7. Initially, growth in per capita GDP begins at about 2.7 percent, and declines slowly as capital accumulates to about 2.4 percent per year. 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 greatly dampens the decline in the marginal physical product of capital. Effectively, the region is 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 percent of the regions growth in per capita GDP, with capital accounting for about 48 percent and labor the

remaining 22 percent. In the case of agriculture, the percentages are similar, with TFP, capital and labor accounting for 27 percent, 40 percent and 33 percent respectively. In the long run, as the effect of transition capital on growth declines, capital's contribution falls to 40 percent, labor rises to 25 percent and TFP accounts for 35 percent. This pattern is in contrast to the base case where diminishing returns to capital occur more quickly. In that case, capital's contribution to growth in GDP in the short run is 60 percent, declining to about 45 percent in the longer run. Since TFP is relatively small, its contribution is only 10 percent in the short run, rising to 12 percent 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 year 2001, $1057 in the year 2020, and about $1,844 dollars in the year 2040 (in 1995 dollars). These increase correspond to percent increase 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 over the period releases resources to the other two sectors, the outputs of which are traded in international markets. Thus, trade as a percentage of GDP tends to grow throughout the transition to long run growth. If barriers were erected by other countries to this regions exports, growth would be slowed. In the extreme case where the regions exports are held to the initial levels, as a percent of GDP, the regions 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 work through 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 percent 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 20 century suggests that "accidents" of geography and the presidents of history are not a poverty trap. The evidence is also clear that institutions matter. Institutional reform as Rodrik mentions (2002), does not travel well, i.e., another country's institution is difficult to modify and transplant to a second country. Institutional reform induced by better economic opportunities that increased openness to the world economy is surely "trickle" down reform. These opportunities help create the conditions for institutional reform, but surely they are not sufficient.

Nevertheless, since institutional reform is difficult, it seems that it is also the case that if the agricultural policies of advanced countries not only cause a waste of resources in themselves, but also become barriers to helping induce reform, then even more pressures should be brought to bear that encourage their use of first-best (i.e., non-market distorting) policy instruments. Surely the sub-Saharan countries have a major vested interest in the Doha round of trade negotiations that should be induced by more than

just getting prices right. They also should have a vested interest in fostering regional trade among themselves with prospects for fostering institutional reform.

Thus measures of the welfare gains from trade reform for advanced economies may largely entail the typical decline in deadweight losses. For countries that experience an induced institutional reform, the gains are likely to be far larger. This may cause the indirect feed-back effects on welfare in advanced countries caused by trade expansion to likewise be significant.

We conclude that (1) initial conditions matter, but they are becoming easier to overcome for many of the same reasons that has driven the second wave of world globalization, (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 reasons to think that societies will naturally gravitate toward good institutions, all else 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 is one means of fostering

institutional change, Mohtadi and Roe (2003), change can well be brought about by non-democratic means of governance.

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