Trade and poverty: the little we know of the effect in Africa and possibly why

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* This short paper is based on an earlier literature review work and background paper by Shimeles Abebe and Adrian Gauci in preparation of the Economic Report on Africa 2004 “Unlocking Africa’s Trade Potential” and A.Mold (2007) “Are improving Terms of Trade helping reduce poverty in Africa?” UNDP poverty Centre
Introduction

The need for sustained economic growth is necessary but not sufficient for poverty reduction. Trade is an integral part of economic growth, but similarly to the link between economic growth and poverty reduction its impact on poverty reduction is neither automatic nor straightforward. Africa in general, Sub-Saharan Africa in particular, has persistent and chronic poverty with nearly 50% of its population living on $1 a day. In addition, the moderately good economic performance since the late 90s has not resulted in significant poverty reduction. The recently released Economic Report on Africa 2007 attributes the improved economic performance to improved macroeconomic management and increased global demand for commodities (ECA 2007).

There exists a conceptual distinction between trade and poverty and trade liberalization and poverty, with a skewed theoretical and empirical research towards the latter. However, national and international policies must be rooted in a development approach to trade rather than a trade focus to development (UNCTAD 2004). A development approach to trade would be concerned with how the structure of production and trade affects different segments of the population and the labour market. In other words, it is likely to have a micro approach. On the other hand, the trade focus on development is macro in nature, and tends to leave out the details such as household welfare effects of the net between the producer and consumer surpluses as a consequence of trade policies.

Trade and Poverty

There are both direct and indirect links between trade and poverty. Conceptually, trade affects poverty directly through some or all of the following channels: cost of living, jobs and wages, and government revenue for public goods. At the same time, it indirectly affects poverty reduction through the development and utilization of productive capacities. Whilst the former are important for short-term poverty reduction, the latter is crucial for sustained economic growth and poverty reduction.

The development of productive capacities involves three basic processes: accumulation of physical and human capital, structural transformation, and technological progress. The development and utilization of productive capacities is vital for sustained poverty reduction as the dynamic gains of the interaction between higher skills, better infrastructure and the production of manufactures has a dual effect on the economy. First of all, economic diversification allows trade-induced growth volatility to be minimized and therefore poverty reduction resulting from this growth could be higher. In fact, between 1991 and 1999, the standard deviations\(^1\) for oil, mineral and agricultural exports were 4.7 per cent, 3.1 per cent and 2.3 per cent respectively, whilst manufactures had a standard deviation of only 0.9 per cent. The vulnerability of the major sources of economic growth in African LDCs to shocks, whether induced by terms of trade or weather, is a critical bottleneck to sustained growth and poverty reduction (UNCTAD 2004). Secondly and equally important, a focus on the supply side determinants of increased trade through better infrastructure and higher labour skills results in total factor productivity (TFP) gains that are imperative for sustained growth and poverty reduction\(^2\) (ECA 2007).

To illustrate this a quick schematic glance at a Sub-Saharan economy’s trade features would be useful. In a poor predominately natural resource based or agrarian economy (most of Sub-Saharan Africa), the level of trade integration is high at 51% of GDP against 43% in OECD countries (Gibbons and Ponte 2005). Furthermore, though representing only a small fraction of global trade flows, LDC economies\(^3\), representing the majority of African economies, are nonetheless highly

\(^1\) Standard deviation is used as a proxy for instability for real average annual GDP growth rate (See Gedda and Weeks 2005).
\(^2\) The economic report for Africa 2007, the Economic Commission for Africa flagship publication, presents a convincing case that diversification is pivotal to sustaining high economic growth to reduce volatility. Reduction in growth volatility is vital for poverty reduction.
\(^3\) There are 50 global LDCs including 34 Sub-Saharan African countries. The African LDCs are: Angola, Benin, Burkina Faso, Burundi, Cape Verde, Central African Republic, Chad, the Comoros, Democratic Republic of Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, the Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia,
dependent on external trade. This is reflected in the proportion of exports of goods and services as a percentage GDP, which averaged over 26 per cent of GDP in 2004 up from 24.4 per cent in 2001 (ECA 2005). It is the composition of this trade, which is the discerning characteristic of its poverty reduction effects. The short range of commodity exported from African economies results in growth volatility, but equally important creates a “trade-growth” enclave that has insignificant linkages with the majority of the population. Thus increasing trade with the outside world will not necessarily decrease poverty.

A clear illustration (Chart 1) is during 1996-2001. UNCTAD estimates of trade volumes (as opposed to trade values) show that some African LDCs achieved a very respectable increase in exports. Yet in many cases this expansion of exports was not accompanied by significant poverty reduction, and in some cases have actually coincided with a rise in poverty levels. For example, Madagascar and the Central African Republic expanded their exports by nearly 70% and 121% respectively over this period, yet their dollar-a-day poverty headcount increased by 12% and 2%. In Burundi, a 236% increase in export volumes resulted in a 3% increase in the poverty headcount.

**Chart 1: Trade Expansion and Poverty Reduction, 1996-2001 for selected African LDCs**

This happens as agricultural commodities (or ‘soft commodities’), the mainstay of African economies, have not generally benefited from commodity increase on the international markets (Mold 2007). Indeed, while the increase in fuel and mineral prices has had a favourable impact on some African countries, it is causing a cleavage between those countries that are exporters of hard and soft commodities.

Although country specificity is important in unraveling the link between trade and poverty, some common traits for African countries do emerge. African economies are integrated in the world economy. The type of trade from African countries creates a form of “enclave” that even if efficient and on the increase would not have the desired effects on poverty. Trade as a driver of growth must be couched in development, if poverty reduction is the desired outcome.

Source: Elaborated from Chen and Ravaillon, 2004 and UNCTAD Handbook of Statistics 2005

Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, the Sudan, Tanzania, Togo, Uganda and Zambia
Trade and Liberalization: The Researchers’ Conceptions

At the heart of the debate today on trade policies in Africa is the static and dynamic welfare gains attributed to trade liberalization in the form of removal of tariff and non-tariff barriers. Particularly most African countries are interested to know whether greater liberalization can lead to rapid and sustained poverty reduction and how the mechanics works. The argument is that trade liberalization would open up economies and increase international transactions and hence economic growth (see Deardoff and Stern, 2000). On the domestic front open economy enterprises are forced to bring down prices through market-enforced discipline (Kappel 2003). Thus trade liberalization increases economic efficiency in developing countries through their greater ability to absorb technological advances and has positive effects on output and wages (see Edwards 1997 and Agenor 2000). However, the effect of trade liberalization at the household level, both in theory and on the basis of available empirical evidence is ambiguous. The poverty reduction effects of trade liberalization have been difficult to estimate and somewhat inconclusive.

The moderate economic performance of African economies has also been explained by how high income inequality and poverty levels hamper growth (Easterly 2002). Trade liberalization has been put forward as a necessary step in increasing economic growth in Africa by pushing the economies to higher levels of productivity (Edwards 1997)). There are a number of important issues that arise with regard to the welfare implications of trade liberalization in Africa. Given the difficulty of estimating direct effects of trade on poverty, the analysis has tended to be in the closely correlated areas. The questions that are analysed have therefore revolved around the following:

- Whether trade liberalization affects income distribution in Africa.
- Whether trade liberalization is or can be pro-poor and which are the transmissions channels.

These and related questions have been a focus of active research in the development literature in the last several years. The linkages that do exist between trade policies and poverty work through several and complex channels. Winters (2002, 2000) provide a comprehensive list of the transmission channels from trade policies to household welfare. Accordingly, trade policies can affect household welfare and overall economic performance by inducing changes in the following variables:

- Prices of consumption goods
- Factor prices, income and employment
- Government revenue
- The incentives for investment and innovation, which affect long-run economic growth
- Short-run risk and adjustment costs.

The effects of trade policies on prices of consumption goods and factors of production are the most researched and documented transmission channels between trade policies and poverty in developing countries, including Africa (Winters 2002). The reason, among other things, is that these channels have a direct bearing on the state of income growth, wealth creation and thus income distribution in the economy and thus capture the welfare effect on poverty. Some studies, particularly those based on economy-wide models also address the fiscal impact of trade policies and analyse the effects on household welfare through changes in public expenditure patterns (Levin 2003). The effects of trade policies on incentives for investment and the short-run adjustment costs are rarely investigated, not because they are not important, but because the data requirements are demanding.

The findings of the empirical literature on the effects of trade policies on income distribution and poverty are mixed due as much to the diversity of country experiences, a point this paper will return to
later, as well as the approaches used to analyse the linkages. The most common approaches used in the literature are cross-country comparisons, general-equilibrium, and partial equilibrium frameworks, each with its own merits and limitations. Notwithstanding their analytical differences, all of these approaches are inspired by the well-known result of Stolper and Samuelson (1941) that simply states that trade liberalization will benefit a country’s relatively abundant factor and hence reallocate resources in a more efficient manner.

In Africa, compared to the global economy, the abundant factor is unskilled labour and thus trade liberalization is expected to reduce income inequality by shifting the gains of trade in favour of the unskilled. Yet the empirical evidence documented provides mixed results on the prediction of the Stolper-Samuelson correlation. The predictions of the Stolper-Samuelson theorem were not evidenced in a study carried out in 10 countries (Krueger 1978, Bhagwati 1978). In a later study by the World Bank on 19 countries the results were the same (Choksi 1991).

There are other frameworks that try to explain the long-term and short-term effects of trade liberalization on income distribution (e.g. Fischer, 2000) which generally allow for the constancy of some factors of production, such as land or capital. In this regard, empirical evidence suggests that countries abundant with natural resources, such as land tend to experience a rise in income inequality following trade liberalization. (e.g. Bourguignon and Morrison, 1990 and Fischer, 2000). The explanation being that countries that are abundant in natural resources, or land are both capital and labour poor and hence raise the return to their ownership. Since these factors are owned inequitably in Africa (see Deninger and Squire, 2000), then, inequality rises. In general, the cross-country evidence so far supports these linkages between factor endowments and inequality. Thus, trade reform interacted with land abundance can lead to higher income inequality and vice versa.

Figure 1 provides a crude picture for Africa where a measure of income inequality is correlated with a measure of land abundance. Interestingly, the correlation is negative and statistically significant, corroborating the above argument. In general, land abundant economies tend to have high level of income inequality.

![Figure 1: Endowment of Land and Income Inequality](image)

In addition, most cross-country regressions have found that openness, defined in different ways, is negatively correlated with income inequality (e.g. see Spilimbergo et al. 1999, Fischer, 2000 and

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4 See e.g. Reimer, 2002 for a comprehensive review of the approaches.
5 Deardoff and Stern (1994) provide an excellent review of the vast literature inspired by the Stolper-Samuelson Theorem.
6 These are better known as Specific Factor Models in the trade literature.
Easterly, 2002\(^7\). Again as Figure 2 depicts, the correlation between a measure of openness and income inequality is positive and significant for selected countries of Africa. Apart from the trade theoretic explanations for this evidence, there is a political economy side of the story as argued by Easterly (2002), who states that resource rich countries, mainly those that depend on a few products for their exports, tend to have institutions and political frameworks that favour the persistence of income inequality. That is, more open economies in Africa tend to depend on one or two major items (mineral, oil or primary commodity), which are characterized by high initial inequality to begin with. In fact virtuous trade effects on poverty are more likely to occur if domestic demand expansion is a major component of economic growth (UNCTAD 2004).

![Figure 2: Openness and Income Inequality in Africa in the 1990s](image)

*Source: ECA computations*

A better scenario is provided by an economy-wide model that looks at the whole economic system and traces the effects of particular trade policies on household welfare, government budget, and the overall economy on a counterfactual basis (e.g. Bourguignon and Suwa, 1991). In general empirical studies point to at least three channels through which trade liberalization affects household welfare and thus income distribution:

- Changes in factor income following trade liberalization affect functional distribution of income (which is different from size distribution of income). This occurs through the labour market where changes in the prices of tradable goods (exportable and importable) are transmitted into changes in demand for labour, and thus employment.

- Changes in relative prices affect consumption expenditure thus welfare. Depending on the pattern of consumption of households belonging to different groups changes in the prices of tradable and non-tradable cause changes in welfare through the income and substitution effects.

- Capital gains affect the distribution of household wealth creation (Bourguignon, 1991). The return on capital is affected directly by trade liberalization.

\(^7\)Some disagree on the assertion that trade reform worsens income inequality on grounds that the causation is weak (e.g. Srinivasan and Wallack, 2003). An influential work also by Dollar and Kraay (2001) takes the view that greater openness is neutral with respect to income distribution.
In a simple general equilibrium framework, the impact of trade policies such as reducing tariffs work primarily through the price mechanism that affect consumption and production decisions at the household and firm levels.

From a given equilibrium level, suppose an economy is disturbed say by a reduction in tariffs on all imports. The immediate impact of this is to reduce the price of imports leading to an increase in demand for imported goods. As consumers substitute domestically produced goods for imports, the import-competing sectors suffer a decline in demand leading to a decline in production. If we assume that the current account should remain fixed\(^8\), then, additional imports are possible only through an increase in exports, which can be made possible by a shift in resources away from import-competing industries to the export sector. Why producers move to the export sector is explainable by the fact that relative prices of exports are now higher than before the reduction in import tariffs. In other words, the real exchange rate depreciates and encourages export producers. In this set up producers of exports gain from tariff reductions, while producers of non-tradable lose. The direct effect on poverty is slightly more complex given the composition and contribution of poor proportions of the population engaged in importables and exportables and their consumption basket of importables and exportables. In a nutshell the decline or otherwise of poverty depends on the relative contribution of gainers and losers to the initial level of poverty.

In general, the link between trade policies and poverty in a general equilibrium framework depends on few key assumptions about the workings of the economy. One is the consumption pattern by households. If the degree of substitution between imports and domestically produced goods is low for reasons of say consumption behaviour, then, the impact of tariff reduction on import-competing sector will be low. Secondly, if the structure of the economy is such that resources cannot move adequately to adjust to the new price conditions, then, reduction of tariffs may not be able to stimulate exports sufficiently to trigger rapid reduction in poverty. Particularly, inability by domestic firms to compete with producers of imported products, coupled with labor market rigidities could reduce employment and cause an increase in poverty in the short-term.

Alternatively, partial-equilibrium analysis provides a great deal of insight into the welfare effects of some measures of trade liberalization in developing countries, including Africa since it relies on extensive analysis of the behaviors of households, producers and markets.

There are a number of approaches used in a partial equilibrium setting to analyze the impact of trade policies on the welfare of a typical household. But, in a broad sense most studies either treat consumption effects alone, or earnings effects, or both. In the latter case, the framework more or less resembles Figure 3. The whole idea is to capture the welfare effects of a typical household as a result of a trade policy that changes prices of goods and wages or labor income. Naturally, to work out the welfare effect of a policy on a typical household, the starting point is the composition of the budget of the household both the income as well as expenditure sides. In a simplified framework\(^9\), one can think of a household income to comprise of labor income, capital income, transfers and other exogenous income not affected by liberalization. In a small open economy, the price of traded goods\(^10\) is determined by international market and level of tariff. For a constant international price, traded goods can be affected only by a trade policy such as reduction of tariffs. These in turn affect the wages in the traded goods sector and prices of non-traded goods, leading to changes in income and expenditure of a typical household.

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\(^8\) This is one of the standard assumptions used in a general equilibrium framework to abstract from issues of capital flows, etc..

\(^9\) Adopted from Porto (2003)

\(^10\) Classifying goods into traded and non-traded is a difficult exercise in this context. While there are several definitions, we can consider a broader one where traded goods include Food and beverages, clothing, house equipment and maintenance goods and other. For non-traded goods, we can consider housing, transport and communications, health and education and leisure related goods (theater, etc..)
Partial equilibrium approach is also useful to study the impact of a particular trade reform on welfare and efficiency by looking at trade reforms and market structures. Along similar lines, some also studied the supply response following trade reform for the key export goods, and the scale of price pass-through, particularly for producers, who are usually poor farmers. In the context of primary products, e.g. coffee, it is reported that the supply response is rather weak and the price gains for producers quite small (e.g. Geda, 2003), suggesting a small welfare gain to the poor. Some of the major reasons for weak supply response are the lag effect in production in case of such cash crops as coffee and the structure of the market for exports.

In most African countries, the market structure of agricultural exports is oligopolistic, principally dominated by middlemen with substantial power in the determination of farm gate prices. As a result, they are the primary beneficiaries of any increase in the price of exports. Thus, the pro-poor capacity of a typical trade policy in Africa depends on how the market structure functions, and the comparative role poor farmers have in price determination.

Figure (3): Illustration of Impact of Trade Reform on Household Welfare

The net effect on household welfare depends on the budget shares spent on traded goods by households, the budget share spent on non-traded goods interacted with the extent to which prices of non-tradable goods respond to changes in the prices of tradable, and by the degree to which earnings are affected by a change in the price of tradable goods.

Detailed household survey data can be used to analyze the net impact of several types of trade reforms on overall income distribution. It is also possible to look at the pro-poorness of a trade policy using this approach. With the availability of rich household survey data sets in most African countries, it is easy to work out how household welfare and overall income distribution is affected by trade policy. This set up is attractive in that it is possible to trace the welfare impacts of commodity specific tariff reforms. Tariff reduction on commodities frequently consumed by the poor (such as food) can have substantial welfare gains and improve income distribution. In a related application, Case (1998) found that in South Africa the consumption effect alone of trade reform could improve the welfare of both black and white households as measured by the cost of reaching initial level of utility, the effect for black households being larger than white households. This is more or less consistent with the findings based on general equilibrium approach by Deverajan and Mensbrugghe (2000).

In a typical agrarian economy, the impact of trade policies, such as removal of tariffs, export subsidies, or export taxes affect household welfare in more than one way since such a typical household is a producer as well as consumer (e.g. Winters, 2002). The gains on consumption could
easily be offset by the losses in production if the concerned household is a net producer of non-
tradable or vice versa. Thus, understanding the mechanisms by which commodity prices interact with
the characteristics of a typical farm household provide rich information on welfare implication of
trade reforms.

Trade and Poverty: Still very little to say in Africa

It is a well-documented fact that integration of economies and societies through trade, investment,
finance, information and labor flows is more or less an inescapable feature of the world today. In
many ways, African economies are not exceptions to this. The issue for African countries is whether
trade reform is congruent with the overarching objective of reducing poverty rapidly and
permanently? How do trade policies interact with state of income distribution and the nature of
poverty prevailing in Africa? What are the risks involved to the poor and other social groups with
regard to trade policies intended for greater trade integration given the attendant benefits in terms of
overall growth and social progress?

The linkages between trade policies, income distribution and poverty in Africa are growing areas of
research. Though very little is known so far how trade policies interact with state of income
distribution and poverty in Africa, one can draw preliminary policy lessons from the analytical
constructs discussed in the literature (e.g. Winters, 2002, Bhagwati and Srinivasan, 2002, Srinivasan
and Wallack, 2003, Agenor, 2003) and some of the empirical evidence surveyed in the preceding
section.

There are a number of areas that require further investigation on the relationship between trade and
poverty. As pointed out in the introduction, trade and poverty is conceptually and operationally
distinct from trade liberalization and poverty. This is one of the areas where more investigation is
required in African context. Looking at the evidence on the trade-poverty relationship, Ravallion
(2006) observes that there is a serious mismatch between macro-level and micro-household data, and
that considerable heterogeneity exists in the welfare impacts of trade reforms, with both winners and
losers among the poor. Some country studies that build scenarios of winners and losers in the trade
liberalization reforms could elicit common traits, wherein welfare gains are optimized. Further study,
using micro level data and trade patterns in selected African countries could contribute to the link
between trade and poverty at the household level. Although country specificity has been a common
trait of the effects of trade and poverty, clustering according to commodities and trade patterns could
elicit commonalities and policy responses.

Another area is in relation to trade patterns and poverty reduction. This is an area that has witnessed
very limited analysis. Fortunately, is now recognized that the Poverty Reduction Strategies (PRSs)
provide fora for such analysis, particularly given the focus on second generation PRSs. In the first
generation PRSs there was an acknowledgement that trade was loosely tied to public priority areas
and supply side constraints. The second generation PRSs recognizing the accumulation of human
capital as one of the pillars of the development of utilization of productive capacities is a step in a
more developmental aspect of trade. However, the analytical framework needs to be supported by
more empirical work on mainstreaming trade in PRSs.

Finally, integrating poverty diagnostics with trade policies can minimize the effect of trade policies
on the poor. Poverty mapping, such as where the poor live, how it is affected by agro-climatic
conditions, its correlates with household demographic characteristics, earning attributes (wages, net
producers of tradable and non-tradable) etc., assists in devising trade reforms that benefit the poor, or
minimize the welfare loss on the poor. Poverty decomposition along sectoral lines also provides
analytical tool to evaluate who benefits from trade liberalization and helps to devise intervention
strategies to mitigate the welfare losses (Kanbur, 1988).
In conclusion

Evidently, while a lot of work has been done on trade liberalisation and poverty, very little is known on trade and poverty in the case of Africa. But there is anecdotal evidence that can be drawn from empirical works, and this evidence indicate that to understand the poverty outcomes in relation to trade, micro-level analysis is critical. This is because income distribution and dispersion are a most crucial factor to the ability of households to derive gains from trade. By extension, it is difficult to understand the relationship between trade and poverty unless the demographic characteristics, assets ownership among other attributes are taken into account.

References


Mold A (2007) “Are improving Terms of Trade helping reduce poverty in Africa?” UNDP poverty Centre


