

# **Lowering Trade Costs for Development in Africa:**

## **A Summary Overview<sup>1</sup>**

**Alberto Portugal-Perez and John S. Wilson**

**Development Research Group**

**The World Bank**

**June 17, 2008**

**-Working Draft -**

### **1. Introduction: African Trade Today and Challenges in Perspective**

World trade and investment flows have expanded over the last years, but in contrast the trade performance of Sub-Saharan African countries has been disappointing. Africa's share of world exports has dropped by nearly two thirds in three decades: from 2.9 percent in 1976 to 0.9 percent in 2006<sup>2</sup>. This implies that if Africa's share of world exports would have been kept at the same level than at the mid-seventies, its exports revenue should be approximately 10 times larger than its current value.

The high costs of trade —i.e. transporting goods and getting them across borders— are a major obstacle to African trade performance. A growing literature has gathered empirical evidence of the negative impact of trade costs on a country's trade performance. High trade costs have a negative effect on economies enduring them, making producers less competitive because of their imported inputs and the relatively high cost of final goods. Although direct evidence on border costs shows that tariff barriers are relatively low across all countries, poor infrastructure and weak institutions contribute in a larger extent to high trade costs in Sub-Saharan African (SSA) countries. Moreover, as it will be discussed in this paper, the data and evidence suggest that African countries are among those having the highest trading costs in the world, and that for several types of costs.

In addition, recent research has corroborated that exports can be a vehicle for poverty alleviation, as farmers that are able to grow high-yield export crops are, on average, less poor than those who engage in subsistence farming. High trade costs prevent the full realization of potential gains from trade and can wither the poverty reduction effect of

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<sup>1</sup>Draft paper prepared for the workshop on "Trade Costs and the Business Environment: A Focus on Africa," African Economic Research Consortium and the World Bank, Entebbe Uganda, May 31, 2008. The views expressed here are entirely those of the authors, they do not necessarily represent those of the World Bank, its Executive Directors, or the countries they represent. We thank Daniel Reyes for research assistance.

<sup>2</sup> Figures computed from COMTRADE data available through WITS.

export opportunities for African countries, such as high world prices for major export crops and commodities.

Examining the role of trade costs in the economic development of African countries requires placing this topic in perspective. Many of the slowest-growing economies in Africa are either engaged in conflict or having recently emerged from conflict. Geography has also played a major role in shaping the economic fortune of African countries and the majority of its inhabitants. A large proportion of its population lives in countries with an unfavorable geographic and economic basis for development. Fifteen African countries are landlocked<sup>3</sup> and about forty percent of Africans live in landlocked countries. Not only remoteness from major world markets increases for these countries, but they are also dependent on the political stability and the infrastructure and institutional quality of their neighboring transit countries to reach major markets.

All these conditions, combined with corruption, underdeveloped institutions, constraints on business competition, and weak governance— make international trade and investment in Africa costly. While reducing other trade barriers such as tariffs remains important, and must continue to be at the center of multilateral negotiations, we argue in this paper that many African countries will not be able to benefit from them unless other trade costs are reduced.

We review the recent literature focusing on the different sources of trade costs from the African perspective. We combine evidence from direct costs, which can be sparse and inaccurate especially for African countries, with indirect measures that are inferred from trade volumes through gravity-type models. Based on the overview of the research assessing the impact of different sources of trade costs, we review several avenues of reform and policy action aiming to lower trade costs in Africa. Our review does not intend to be comprehensive; we primarily concentrate on recent research presenting evidence of the impact of trade costs on African countries and highlight new data and on-going general research addressing the sources of trade costs.

The rest of the paper is organized as follows. Section 2 presents the definition of trade costs and discuss some orders of magnitude. In section 3, we review recent research on three dimensions of trade cost: border-related costs, transport costs, and behind-the-border costs. Section 4 discusses briefly trade facilitation measures and policy actions. Finally, section 5 concludes briefly.

## **2. A definition of trade costs and orders of magnitude**

Trade costs can be broadly defined to encompass the costs incurred in getting a final good to a final user, other than the cost of producing the good itself. In general, an

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<sup>3</sup> The landlocked African countries are: Botswana, Burkina Faso, Burundi, Central African Republic, Chad, Ethiopia, Lesotho, Malawi, Mali, Niger, Rwanda, Swaziland, Uganda, Zambia, and Zimbabwe.

exporter or importer incurs trade costs at all stages of the export or import process starting from obtaining information about market conditions in a foreign market and ending with the reception of the final payment. In the case of preferential trade agreements, preferential market access to the partners requires compliance with rules of origin, which would involve, for instance, adjustment in the intermediates mix or production processes and could entail additional costs. As these costs would not be incurred if the product is sold domestically, they can be considered as part of trade cost. The same applies to costs encountered by compliance with standards and technical regulations in foreign markets.

In an extensive review of the literature on different trade costs sources, Anderson and Van Wincoop (2004) provide a rough estimate of 170% (in terms of ad-valorem equivalent) of representative trade costs for industrialized countries. The authors breakdown this estimate into three components: a 21% ad-valorem equivalent for transportation costs, 44% for border-related trade barriers, and 55% percent for retail and wholesale distribution costs, as shown in Figure 1<sup>4</sup>. Evidently, trade costs have different magnitudes and patterns across countries and regions, as well as across goods and sectors. While approximate and subject to data limitations, the data suggest that for developed countries the costs of trading a good -including both international trade costs and domestic distribution costs- can even be larger than the cost of producing it.

**Figure 1**  
**Estimates of trade costs in industrialized countries**

Developing countries, particularly African ones, face considerably higher transport costs than developed countries. To provide some order of magnitudes of the variability of trading costs across countries, figure 2 shows the costs of shipping a standard 40-foot container from Baltimore to several cities, based on information provided by international freight forwarders, and their respective geographical distance. It costs US\$ 1500 to ship a standard container from Baltimore to Rotterdam (Netherlands). Yet, as shown in figure 1, the price of shipping the same container to the coastal city of Lima (Peru) is US\$ 4000, though the distance from Baltimore is somewhat shorter. Moreover, inland transport for African landlocked countries can inflate transport costs: although distance from Baltimore to Mbabane, the capital of landlocked Swaziland, is not much longer than distance to the port city of Durban (South Africa), shipping costs to the former city is about 5 times bigger than shipping to the later city.

**Figure 2: Comparison of Shipping Costs (2002)**

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<sup>4</sup> The costs components are expressed in ad-valorem equivalent terms:  $1.7=1.21*1.44*1.55-1$ . The first two components amount for total international trade costs that are about 74% ( $0.74=1.21*1.44-1$ ).

### **3. The impact of the different types of trade costs.**

In this section, we review recent research on selected dimensions of trade costs with a focus on Africa. We start our review with border-related costs in tariffs and non-tariff barriers summarized in trade restrictiveness indexes, technical regulations and standards, customs procedures, and rules of origin in the context of preferential trade. Then, we examine the evidence and the literature on transport costs. Finally, we provide a short summary on behind-the border issues that influence trade costs.

#### **3.1. Border-related costs**

##### **Trade Policy and Border Barriers**

As goods enter a country, they are subject to a variety of trade policy-related barriers that raise the costs of trading. Traditional trade policy barriers include tariffs (ad-valorem and specific), quotas, and a combination of both: tariff-rate quotas (TRQ). The use of a range of other less “traditional” trade policy instruments, such as antidumping, countervailing duties, and safeguard measures has been recently widespread. Assessing the impact of all these measures is not an easy task. Since trade policy can take different forms (tariffs, quotas, non-automatic licensing, antidumping duties, countervailing duties, tariff/quotas, subsidies, non-automatic licensing, etc), it is difficult to find a single measure of trade restrictiveness. Even when the impact of these measures can be approximated in ad valorem terms, there remains the difficulty of aggregating a large number of tariffs and other measures into a single data point that summarizes the overall level of restrictiveness in each country.

Addressing this issue, Kee, Olarreaga and Nicita (2006) developed theoretically grounded indexes based on the pioneering work of Anderson and Neary (1994). The Overall Trade Restrictiveness Index (OTRI) and the Tariff Trade Restrictiveness Index (TTRI) covers 91 countries (counting the EU as a single country) .They provide a summary measure of existing trade policies and allow comparison across countries and sectors. Both indexes represent the ad valorem tariff which, if applied by an importing country to all imports, would result in a total import level equivalent to that prevailing under current policy settings. The OTRI captures all policies on which information is reported by the international organizations collecting this data (ITC, UNCTAD, and WTO). These comprise ad valorem tariffs, specific duties, and non-tariff measures (NTMs) such as price control measures, quantitative restrictions, monopolistic measures, and technical regulations.

The TTRI is narrower in scope; it considers only ad-valorem and specific tariffs. As many NTMs are not necessarily protectionist in intent (or effect), the OTRI reflects net (overall) restrictiveness; it is not a measure of the level of protection that a government seeks to provide domestic industry. Some NTMs comprise border restrictions, such as quotas or bans, and are motivated by protectionist objectives. Others, such as standards for mercury content or fecal matter, are aimed at safeguarding human, animal, or plant health. Unfortunately the measures do not permit us to distinguish between objectives.

Thus, protection is better measured by the TTRI, although, because of its limited coverage of trade policy instruments, it is best seen as providing a lower-bound estimate of the extent of protection prevailing in a market.

**Figure 3: OTRI for agriculture and manufactures.**

Three important points, among others, arise from OTRI estimates about the pattern of trade policy restrictiveness across countries and sectors. First, it may be seriously misleading to focus just on tariffs: non-tariff barriers contribute an additional 70% on average to the level of restrictiveness resulting from tariffs alone. Second, the bulk of restrictive trade policies are concentrated on agricultural products, a key export for African countries, with OTRIs being on average around twice as high for agricultural products as for manufactured goods, as seen in Figure 3. Third, low and middle income countries are the ones that both impose and face the highest levels of protection.

**Table 1a: OTRI and TTRI (percent), by developing country region, 2006**

**Table 1b: OTRI and TTRI (percent), for the four largest traders, 2006**

Trade restrictiveness levels differ across geographic regions, as seen in table 1a. The level of trade restrictiveness on average is higher for countries in South Asia, the Middle East, and North Africa and lower for countries in East Asia, Eastern Europe, and Central Asia. Sub-Saharan Africa and Latin America have overall restrictiveness levels in between these two extremes. Table 1b reports the average value of these indexes for the four largest traders: the EU, the US, Japan, and China, which altogether account for about 60 percent of world trade. All of them have policies that are more restrictive of trade in agricultural products than manufactures, with Japan and the EU imposing significantly higher restrictions. Manufacturing trade is relatively less restricted: the TTRI is less than 5 percent in China and around 1 percent in the EU, Japan, and United States.

**Figure 4: Change in OTRI, 2000–06**

Trade barriers have fallen in many countries, resulting in lower trade restrictiveness. Reductions have mostly been the result of unilateral reforms but are also the result of trade negotiations and agreements. Between 2000 and 2006 the OTRI declined in all country groups, as seen in figure 4. Countries in East Asia and Latin America reduced overall trade restrictiveness the most during this period, while Sub-Saharan African countries experienced the least reduction. However, it should be noted that Sub-Saharan Africa's OTRI is below that of South Asia and the Middle East and North Africa. With the exception of South Asia and Sub-Saharan Africa, where policy reforms have mainly targeted trade in manufactures and the overall level of agricultural trade restrictiveness increased slightly, trade restrictiveness has fallen for both agriculture and manufacturing.

## **Customs Procedures**

In a broad context, national customs administrations are in charge of implementing a country's trade policy at the border. This implies levying tariff duties, verifying conformity of imported goods with the relevant non-tariff barriers, preventing the importation of prohibited or unsafe imports (e.g. illegal weapons or out-of-date medicines). They are expected to fulfill their mission effectively and efficiently, that is at the minimum cost.

Keeping customs procedures as simple and transparent as possible will help reduce the time needed to clear customs, thereby lowering this dimension of trade costs. For instance, Djankov, Freund and Pham (2006) find that each day of delay at customs is equivalent to a country distancing itself from its trading partners by additional 85km. Moreover, delays in customs procedures increase costs, not only in terms of opportunity costs, but also represent additional costs such as storage and wage charges.

The World Bank (2008)'s Doing Business dataset compiles procedural requirements for exporting and importing a standardized cargo of goods by ocean transport. Every official procedure for exporting and importing the goods is recorded—from the contractual agreement between the two parties to the delivery of goods. All documents required for clearance of the goods across the border are also recorded. For exporting goods, procedures range from packing the goods at the factory to their departure from the port of exit. For importing goods, procedures range from the vessel's arrival at the port of entry to the cargo's delivery at the factory warehouse. A methodology is applied to ensure comparability of data across countries. Figure 5 shows the average number of export and import procedures across regions. SSA reports the highest number of export and import procedures, with the exception of South Asia that asks on average a slightly higher number of import procedures.

### **Figure 5: Number of export and import procedures.**

Doing Business also reports the official fees levied on a 20-foot container in US dollars, associated with completing the procedures to export or import the goods, which include costs for documents, administrative fees for customs clearance and technical control, terminal handling charges, inland transport, and excluding tariffs and trade taxes. Figure 6 reports the average costs of import and export procedures across countries. Yet, SSA countries register the highest import and export costs.

### **Figure 6: Costs of Export and import procedures in USD.**

Customs and other border agencies may also levy service fees that must be paid by traders, in addition to the usual direct charges of loading and unloading merchandise at the port, which also has repercussions on trade costs. Figure 6 shows the export and import costs in USD for different regions, with SSA having the highest costs in average for both economic activities.

## Product Standards and Technical Regulations

Product standards and technical regulations can have a dual impact on trade costs. On the one hand, they can impose additional variable or fixed costs on exporters to the extent that it is necessary to alter production processes to adapt products to such standards and regulations in the importing country. Moreover, certification aiming to demonstrate compliance with this set of rules can generate additional costs for the exporter. On the other hand, product standards and technical regulations in the importing country can potentially reduce exporter's information costs if they convey valuable information as to consumer tastes or industry needs in the importing country. In absence of standards, such information would be costly for the exporting firm to collect. On this view, standardization in sectors where information costs are important could help reduce trade costs and promote trade.

The net impact of product standards on trade will depend on the magnitude of each of these effects. The empirical evidence is scant, primarily due to the difficulty in collecting reliable data<sup>5</sup> and constructing comprehensive indicators on standards in different sectors across countries. Among the papers having found evidence on the negative effect of standards on trade, Otsuki et al. (2001) examine the impact of European aflatoxin standards on African groundnut exports. They find that a 10% increase in restrictiveness is associated with an 11% drop in trade, which is consistent with a relatively strong cost impact.

Disdier et al. (2007) use data on WTO notifications of mandatory sanitary and phytosanitary measures, as well as technical regulations, to measure the impact of standards across a large number of different sectors. They generally find that standards are associated with negative trade impacts, in particular for exports from developing countries to OECD countries. On the positive net impact of standards on trade, Moenius (2004) observes that country-specific standards tend to promote trade in the manufacturing sector. However, the opposite result holds for relatively homogeneous goods, such as agricultural products. Such an outcome could be consistent with the interpretation that higher information costs in manufactures can be surmounted by standards.

One way to reduce the costs associated with standards is through international harmonization, as the need for exporters to pay multiple product adoption costs related to manifold national standards is limited. In that regard, Czubala, Shepherd and Wilson

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<sup>5</sup> Although it is difficult to directly observe the possible trade benefits of standards, we do know something more about their direct cost impacts. The World Bank Technical Barriers to Trade database (Wilson and Otsuki, 2004) provides some informative data. In Sub-Saharan Africa, firms invest on average 7.65% of sales in order to comply with foreign standards. These data also show, however, that experiences differ greatly from one firm to another: the range of investment costs reported by firms runs from 0.01% of annual sales to 124%. Part of this apparent variation is due to the metric used: for constant costs, bigger companies with higher levels of sales will tend to report lower costs as a percentage of sales. It also suggests that firms may have some leeway in terms of how they react commercially to changes in foreign standards.

(2007) study the impact of EU standards on African textiles and clothing exports. By identifying standards that are aligned with ISO standards (as a proxy for de facto international norms), the authors find evidence that non-harmonized standards reduce African exports of these products, whereas EU standards harmonized to ISO standards are less trade restricting.

Based on their results, Czubala, Wilson, and Shepherd (2007) suggest that efforts to promote African exports of manufactures may need to be complemented by measures to reduce the cost impacts of product standards, including international harmonization. In addition, efforts to harmonize national standards with international norms, including through the World Trade Organization Technical Barriers to Trade Agreement, promise concrete benefits for African exporters. Efforts should be directed at designing standards that minimize costs, while still promoting the important public policy objectives they pursue, such as consumer protection or public health and safety.

### **3.2. Transport Costs.**

Over the years technological improvements, such as the introduction of containerization in maritime transport in the 50s, have reduced dramatically transport costs. For instance, the average real port charges and ocean freight per short ton of cargo declined by approximately two thirds in the period between 1930 and 2000. Due to technical innovations in the production of airplanes and associated services, real costs for transport by air, measured as average air transport revenue per passenger mile, have declined too (Baldwin and Martin, 1999;).

Yet transport costs can be considerably higher in African than in other regions. For instance, Amjadi and Yeats (1995) find that nominal freight rates on African exports are considerably higher than those on similar goods shipped from outside the region. They also conclude that transport costs represent a more important obstacle in Africa than import tariffs and trade restrictions. Recent research identify poor infrastructure as significant deterrents to trade expansion. Transport costs can also be determined by relatively poor transport infrastructure compared with their Northern partners (e.g. Limao and Venables, 2001).

To access overseas markets, landlocked countries rely not only on the physical infrastructure and logistic capacity of transit countries, but also on their administrative practices and political stability. As for African landlocked countries, dependence on a transit country implies high transaction costs. Figure 7 shows the costs associated with completing export procedures for a comparable container as reported by Doing Business in 2008 for several African countries. The associated fees include the costs for documents, administrative fees for customs clearance and technical control, terminal handling charges and inland transport and exclude tariffs or trade taxes. Not surprisingly, most landlocked countries are in the highest range of export cost.

**Figure 7: Costs associated with completing export procedures in USD.**

Limao and Venables (2001, p. 463) estimate that the median landlocked country transport costs are 46% higher than the median coastal economy. They also find that distance explains only 10% of the change in the transport costs. Poor road infrastructures represent 40% of the transport costs predicted for coastal countries and 60% for landlocked countries, which is especially relevant for African countries where transport costs seem to be particularly high, even for a given distance, because of location and poor infrastructure. Faze, McArthur, Sachs and Snow (2004) present a detailed appendix with regional overviews outlining key challenges facing the landlocked countries in each region of Africa

Buys, Deichmann, and Wheeler (2006) investigate the potential trade benefits of investing in upgrading and maintaining a trans-African highway network. The proposed network links 83 major cities at a length of about 100,000 km, and the estimated benefits are found to be significant. Buys, Deichmann, and Wheeler find that intra-African trade as a whole can be expected to increase from 10 billion to about 30 billion USD per year, while initial investments and annual maintenance costs would be relatively moderate over the course of the investment cycle. For instance, an upgrade of the road from Bangui in the Central African Republic to Kisangani in Congo DR is expected to increase the volume of trade by 7.93 percent

International transport in SSA suffers from low competition, reflecting the regulations of African governments intended to promote national shipping companies and airlines. For instance, as described by Amjadi and Yeats (1996) or Collier and Gunning (1999), many African governments (especially West African countries) have adopted “cargo reservation schemes” which allow privileged liner operators to set inflated freight rates considerably above those that would prevail in a competitive environment and to extend inferior-quality services.

A review of the main international corridors in Africa carried by the World Bank (2008) reveals that the cost of transport to transport service providers are not excessively high in Africa, which is contrary to what most literature have presented. Nevertheless, the transport prices charged to final end users in Africa are relatively high compared to prices in developed countries and most developing countries. This assertion is paradoxical given the low level of wages in Africa (see table 2 for wages comparison), as transport costs and prices should be much lower and potentially the lowest in the world because trucking industry is an activity intensive in labor. Indeed, the main sources of high transport costs are not only physical constraints but widespread rent activities and severe rent flaws in the implementation of the transit services.

**Table 2: Median monthly wages for truckers (in USD)**

A survey of international freight forwarders allows constructing a single indicator known as the Logistics Perception Index (LPI)<sup>6</sup>, which summarizes several areas of a country's logistics environment. Figure 8 shows that SSA and South Asia are the regions that are lagging in terms of logistic quality.

**Figure 8 : Logistic Performance Index by regions.**

Compared to other countries, such as France and the USA, transport prices in Africa are more expensive and provided at a lower quality, as measured by the LPI (see Figure 9). Moreover, an inverse relationship between transport quality and transport price as the greater the LPI, the better the transport quality. The US has an LPI of 3.84 while West Africa's is 2.54. The LPI in Africa ranges between 2.54 and 3.11. The Central African region is an extreme case of high prices associated with low quality.

**Figure 9  
Transport services in Africa: quality and cost**

Within individual markets it can be expected that higher quality services command higher prices, since they normally cost more. Yet, as noted above, the comparison of the African transport market with other countries shows that transport services in Africa are both more expensive (in most cases) and significantly lower in quality.

***Logistics service reform: regulation and competition.***

Large investments in hard infrastructure projects aiming to improve infrastructure quality and lower transport costs are not necessarily conducive to lower transport prices. The lack of competition along the different segments in the trade logistics chain using this infrastructure can result in high markups favoring logistic services providers and keeping high transport prices for end-users. The large gap between the transport cost incurred by

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<sup>6</sup> The LPI is a set of indicators that measure perceptions of the logistics environment of 140 countries and allows comparison across countries and regions.

The survey uses an anonymous, web-based questionnaire which asks professionals in several logistics service companies worldwide to evaluate their country of residence, as well as eight countries they are dealing with, on seven logistics dimensions:

1. Efficiency of the clearance process by customs and other border agencies.
2. Quality of transport and information technology infrastructure for logistics.
3. Ease and affordability of arranging international shipments.
4. Competence of the local logistics industry.
5. Ability to track and trace international shipments.
6. Domestic logistics costs.
7. Timeliness of shipments in reaching destination.

Country performance in these areas was evaluated using a 5-point scale (1 for the lowest score, 5 for the highest). The Logistic Performance index is a weighted average of these measures constructed using the Principal Component Analysis technique in order to improve the confidence intervals.

the service providers and the cost to the end-users users of transport services signals the existence of a distorted transport market with a cartel, that is, a formal or informal consortium of transport companies controlling the markets and achieving high profits. Under such circumstances new operators would be expected to aggressively enter the market. Yet, this may not happen because of existing regulation that could create barriers for new entrants, and keep market power for incumbent firms. Indeed, trade logistics is a fertile ground for rent-seeking activities. Interest groups lobbying and potential corruption can lead to regulation (such as market access restrictions, technical regulations, and customs regulations) aiming to protect inefficient logistics services, and discouraging the entry of more modern logistics operators with lower operational costs.

A study of international corridors in Africa carried out by the World Bank (2008)<sup>7</sup> finds that the trucking market structure and environment in West and Central Africa are characterized by a strong market regulation offering low transport quality, while in East Africa the trucking environment is more competitive and the market more mature. Major corridors in Southern Africa are the most advanced of all corridors included in the study in terms of prices and efficiency of services; mainly because of an unregulated transport market. The study argues that, trucking operators from landlocked countries, especially in West and Central Africa, have benefited from strong formal and informal protection for decades. The result was to be expected: high transport prices and lower quality of services. Trucking surveys also indicate that a large mark-up or profit margin by transport providers, made possible by the current regulatory regime leading to high transport prices along some international corridors, such as those in West and Central Africa.

Regulation reform aiming to dismantle cartels and enhance competition along different segments of the logistic chain is primordial to lowering costs. In a more competitive environment, measures to improve physical infrastructure are likely to yield more significant results.

### **3.3. Behind the Border issues and other sources of costs**

#### ***Corruption, governance, transparency and the business environment***

Recent research has focused on the different channels institutions can play a role on trade. Anderson and Marcouiller (2002) find that weak institutions act as significant barriers to international trade: import/export transactions are inherently risky due to, for example, imperfect contract enforceability, and such factors are in effect given free rein under weak institutional regimes. They use World Economic Forum data to construct an

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<sup>7</sup> The study focuses on four corridors covering all four Africa's sub-regions and including 13 countries. These corridors carry over 70 percent of the international trade of the selected landlocked countries. The thirteen countries served by the corridors are:

West Africa:	Ghana, Niger, Burkina Faso, Togo.
Central Africa:	Cameroon, Chad, CAR.
East Africa:	Kenya, Uganda, Rwanda.
Southern Africa:	South Africa, Zimbabwe, Zambia.

index of the strength of institutions that support trade, focusing on contract enforcement and the existence of impartial and transparent government policies.

Weak institutions can manifest themselves through widespread corruption at various points in the supply chain, which can increase the trade costs faced by exporters and importers. The empirical evidence largely supports the view that trade costs are an important determinant of extortion and evasion behaviors. Gatti (1999) uses data on corruption perceptions and trade policy to show that higher trade costs—in this case, tariff rates—are indeed associated with a higher level of corruption. Focusing on the evasion mechanism, Fisman and Wei (2004) measure the difference between declared export and import values on bilateral trade between Hong Kong and the Chinese mainland. They find that higher tariff rates are associated with larger differences in declared values, which is highly suggestive of an important evasion effect.

A recent working paper by Dutt and Traca (2007) provides some preliminary evidence on the empirical importance of extortion and evasion in terms of their ultimate impact on bilateral trade flows. Using a gravity model, they first show that the trade inhibiting effect of corruption depends on the level of trade costs: the negative impact is relatively stronger in low tariff environments. Thus, the extortion effect dominates when tariffs are low, but becomes less important as they increase. Second, the data also appear to support the proposition that the trade impeding effects of tariffs are lower in more corrupt countries. This finding is consistent with the existence of an evasion mechanism: as tariff rates increase, firms in corrupt countries manage to limit their impact by making side payments to customs officials.

Francois and Manchin (2007) measure institutional quality through the lens of economic freedom, focusing on aspects such as the size of government, freedom of trade, protection of property rights, and business regulation. They find that strong institutions in this sense are associated with increased trade at both the intensive and extensive margins.

Helble, Shepherd and Wilson (2007) conduct an empirical investigation of the role of transparency in trade, focusing on the Asia-Pacific region. They use a combination of “objective” and perceptions-based indicators to produce composite measures of importer and exporter transparency. Their measures cover two fundamental dimensions of transparency: predictability and simplification. To capture the former, they consider data such as administrative favoritism, dispersion of tariff rates, extent of tariff bindings, and uncertainty surrounding import times.

Simplification of a country’s trade regime is analyzed using variables including the time taken to import, the number of agencies an importer must deal with, the extent of trade barriers other than published tariffs, and the prevalence of trade-related corruption. It turns out that transparency, particularly as it relates to the import regime, can be a significant factor in promoting bilateral trade. Indeed, Helble et al. (2007) find that improving import transparency in APEC member economies to the regional average could have a larger impact than reducing tariffs or NTBs to the same level. As expected, the gains from reform accrue primarily to the reformers themselves. Two main

touchstones for trade facilitation and transparency reform in Asia Pacific Economic Cooperation's Bogor Goals can be stressed: predictability and simplification. Making trade policy more predictable reduces uncertainty, and therefore costs, for business. Possible reforms include: (1) Binding tariff rates through the WTO; (2) Moving towards "flatter" tariff structures; (3) Making import and export delays less variable; (4) Lowering uncertainty surrounding unofficial payments; and (5) Reducing favoritism in administrative decision making.

Using data from World Bank's investment climate surveys, Balchin and Edwards (2008)<sup>8</sup> examine the relationship between the business climate, manufacturing productivity and export performance in eight African countries: Egypt, Kenya, Madagascar, Mauritius, Morocco, South Africa, Tanzania and Zambia. Based on principal components analysis, they construct several indices summarizing different aspects of the business climate, and find that indices representing micro-level supply constraints, macroeconomic conditions and the legal environment are all significant determinants of the probability of exporting. At the country level, the quality of the business climate is found to matter most for export participation in Mauritius and Zambia. The study also finds that individual firm characteristics — such as size, age, ownership, use of information technology and managerial education levels — are important determinants of the decision to enter foreign markets. Indeed, larger and younger firms are more likely to export, as well as firms with a larger share of foreign-owned firms. Moreover, a higher propensity to export is found for firms whose top manager has some form of tertiary education, and for those having access to internet.

### *Information and Communication Costs*

Border costs associated with information barriers are potentially important. Recent empirical work reflects this fact, in assigning importance to modern information and communications technologies as determinants of international trade costs. Limao and Venables (2001), for instance, include a measure of telecommunications development (the number of mainlines) in their indices of infrastructure quality. Francois and Manchin (2007) take a broader approach, including in addition data on mobile telephone usage. Consistent with the view that communications costs are an important component of trade costs, both papers find an overall positive impact of infrastructure quality, including communications infrastructure quality, on bilateral trade.

In line with these arguments, it seems plausible that the internet could have lowered the costs of trading internationally. It is now much easier—and cheaper—than ever before to obtain information on foreign market conditions, product standards, and consumer preferences. This should lower the costs of entering foreign markets, and promote trade at the margin. Freund and Weinhold (2004) provide the first empirical evidence in support of this sort of dynamic. They find that a 10% increase in the number of a country's web

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<sup>8</sup> Balchin and Edwards, 2008, "Trade-Related Business Climate And Manufacturing Export Performance In Africa: A Firm Level Analysis", mimeo

hosts is associated with an export gain of around 0.2%. Although this effect is statistically significant, it is relatively small in economic terms—perhaps surprisingly so. Moreover, they find that development of the internet does not seem to have brought about any significant changes in the impact of distance on trade. This outcome could be consistent with a scenario in which the internet significantly reduces the fixed costs of market entry, such as obtaining information on product requirements or preferences, but does not significantly alter the variable costs of international trade as captured by distance.

### *Non-market institutions*

Other non-market institutions, such as exporters' clubs, can have an impact on trade costs. For instance, Negri and Porto (2008) assess the benefits of Burley tobacco clubs in Malawi. Tobacco clubs are formed by about 10 to 30 farmers that grow tobacco collectively and are designed to promote smallholder tobacco production. One of the major services provided by these tobacco clubs is the access to selling floors, where tobacco is commercialized in Malawi. In addition, club members jointly acquire inputs under group lending (that is, under a common loan that is repaid at the time of sales in the auction floors) and perform collective actions in monitoring debt repayment and input use (preventing side selling of fertilizer, for instance) and in procuring higher input quality as well as lower input prices (via bulk purchases).

Moreover, tobacco clubs contribute to the realization of economies of scale, particularly in transportation services to the selling floors. Finally, the clubs are instrumental in the development of supporting networks by encouraging the interchange of farming advice and the provision of labour assistance. Negri and Porto find that the burley clubs are indeed an active local institution for exports. Tobacco club members are much more productive than non-members: the tobacco club premium in yields (per acre) ranges from 40-74 percent. Members also earn between 45 and 89 percent more (per acre) than non-members via sales. This implies average income gains from burley membership of between 20 to 37 percent. The authors affirm that these gains would be equivalent to increases in tobacco prices, for instance due to improved market access abroad, lower transportation costs, or better infrastructure, of between 37 to 54 percent.

In another paper exploring the role of export costs in poverty reduction in rural Africa, Balat, Brambilla and Porto (2008) claim that the marketing costs emerging when the commercialization of export crops requires intermediaries can lead to lower participation into export cropping and, thus, to higher poverty. The study use data from the Uganda National Household Survey and have three major results: i) farmers living in villages with fewer outlets for sales of agricultural exports are likely to be poorer than farmers residing in market-endowed villages; ii) market availability leads to increased household participation in export cropping (coffee, tea, cotton, fruits); iii) households engaged in export cropping are less likely to be poor than subsistence-based households. The authors conclude that the availability of markets for agricultural export crops help realize the gains from trade. This result uncovers the role of complementary factors that provide

market access and reduce marketing costs as key building blocks in the link between the gains from export opportunities and the poor.

### **3.4. Costs Related to Preferential Trade: Rules of Origin**

An important proportion of African exports to developed countries is shipped on a preferential basis. In order to benefit from enhanced market through a lower preferential tariff, producers must comply with rules of origin, which are the set of rules a product must undergo to get originating status. The primary role of rules of origin in such preferential agreements is to prevent trade deflection, which may happen if a beneficiary country with an MFN tariff lower than the one of a country providing the preferences imports a certain product and re-exports it at a profit. Nevertheless, well organized-interest groups in any of the partner countries can influence origin so that they raise costs and restrict trade beyond what is necessary to prevent trade deflection in a way similar to tariffs.

Cadot, de Melo, and Portugal-Perez (2007) applied revealed-preference arguments to estimate upper and lower bounds of compliance costs of RoO. Applying a non-parametric method they obtain trade-weighted ad valorem estimates of compliances costs of rules of origin of 4.7- 8.2 percent for PANEURO preferences that include Sub-Saharan African countries.

Among African goods eligible for trade preferences to the US and to the EU, the textile sector is a key one as from all stages in the production of clothing, apparel assembly is the one that is the most intensive in low-skilled labor. A group of low-income African countries benefit simultaneously of preferential market access for their apparel to the US and to the EU. Although the extent of preferential access for apparel to the US market provided by AGOA is similar to the one provided by EU's preferential regimes, these agreements differ in their RoO. While the EU under the Everything But Arms initiative and the Cotonou agreement require yarn to be woven into fabric and then made-up into apparel in the same country or in a country qualifying for cumulation, AGOA grants a "Special Rule" (SR) to "lesser developed countries" allowing them the use of fabric from any origin and still meet the criteria for preferences.

Figure 10 shows a substantial increase in the value of apparel exports with AGOA's entry into force in 2000. Thus, unlike AGOA's special regime (SR) neither Cotonou nor Everything But Arms appeared to have offered a preference mix (tariff preferences and rules of origin) conducive to export growth. Comparing African apparel exports to the European Union and the United States provides a quasi-experimental situation to analyze the effects of rules of origin on the uptake of trade preferences. By taking advantage of this natural experiment, Portugal-Perez (2007) finds econometric evidence that relaxing RoO by allowing the use of fabric from any origin increased significantly exports of apparel by about 300% for the top seven beneficiaries of AGOA's SR, while broadening the varieties of apparel exported by these countries.

### **Figure 10: Apparel exports of 22 countries benefiting from AGOA-SR by 2004**

As for the policy debate, strict RoO have often been justified as a means to support more processing in developing countries by encouraging integrated production within a country, or within groups of countries through cumulation schemes. However, at least in the case of T &A, RoO have a perverse effect as they discourage developing exports at the intensive margin as well as at the extensive margin through product diversification which contributes to reducing volatility. In sum, development-friendly policies would benefit from relaxing the stringency of RoO requirements.

With multilateral trade negotiations stalled into indefinite future, African countries can see their preferential market access to their developed partners eroded as in previous rounds of multilateral negotiations or as at the end of the Agreement on Textile and Clothing that imposed quotas on large Asian producers, such as China and India.

Recent research provides evidence that the current system of trade preferences granted by developed countries to African countries is undermined by the current RoO. (see Cadot and de Melo 2007 for a review). Although RoO have a legitimate justification in preventing trade deflection by insuring sufficient processing, the accumulated evidence indicates that they have largely been captured by protectionist interest groups and that they hinder the integration of preference-receiving developing countries in the world economy. RoO matters and a first step in any reform should aim to simplify them and unify them to reduce compliance costs. Several policy reforms avenues could be considered. For instance, all the different combinations of RoO that can exist for a single good in certain PTAs could be abandoned for a single value content, which could also be uniformized across goods, as in the case of AFTA RoO regime. The WTO organization could play a role of forum in which harmonization of RoO across preferential trade agreements could take place.

#### **4. Trade facilitation in Africa .**

Ongoing research suggests that important gains can be achieved in Africa through trade facilitation intervention. Although no standard definition of trade facilitation has been set in the public policy discourse, trade facilitation -in a general sense- is associated to the harmonization and simplification of trading procedures aiming to diminish the complexity of transactions and lowering the costs.<sup>9</sup>

Building on the methodology used by Wilson et al (2003), Njinkeu, Wilson, and Powo-Fosso (2008). analyze the impact of reform in four different categories of trade facilitation efforts: port efficiency, customs environment, regulatory environment, services infrastructure. Using a gravity model, they find that the ports and services

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<sup>9</sup> The WTO has traditionally used a quite narrow definition, suggesting that trade facilitation is “the simplification and harmonization of international trade procedures.

infrastructures are the main trade facilitation indicators that affect positively intra-African trade.

Trade facilitation has been expanded to cover less traditional aspects such as harmonization of standards or standardization of trading procedures, as well as behind-the-border such as governance, institutions, the business environment, and the investment climate. All these aspects can be seen as part of two components: “hard” or physical infrastructure and “soft” infrastructure. A particular interest of this distinction resides on the comparison of the benefits improvements in both types of infrastructure, as well as the costs. What does research say about where the bigger reform payoffs are likely to be between “hard” and “soft” infrastructure?

Francois and Manchin (2006) provide some empirical evidence on the benefits of these two options. They estimate a gravity model of international trade that includes two aggregate indices of institutional performance, and two indices of infrastructure quality. Their results provide confirmation for the view that both hard and soft infrastructure matter for trade performance—indeed; they appear to explain more of the observed variation in North-South trade flows than do tariffs. For low income exporting countries, the authors find that in terms of upgrading hard infrastructure, it is transport that is the most important area. However, as income increases, communications infrastructure becomes more and more important. For low income countries, openness and protection of property rights are relatively more important than in higher income countries, while the negative impact of larger government and regulatory density is more strongly felt in high income countries than in low income ones.

Trade facilitation measures should also be implemented at the regional level. As in other areas of the world, preferential trade agreements have proliferated across Africa. To improve the effectiveness of preferential trade agreements, it is critical that intraregional trade is able to move without hindrance. Avoiding rent-seeking behavior in cross-border points through the rationalization and harmonization of customs procedures in existing bilateral or multilateral trade agreements is fundamental to keep trade costs lower and to reduce transit delays. To provide an example of important measures carried out at the regional level, Raballand et al. (2008) affirm that the Common Market for Eastern and Southern Africa (COMESA) and the South African Development Community (SADC) have focused on liberalizing the market access in respect of carriage of international road freight, and harmonizing rules to ensure interoperability within sub-regions.

## **5. Conclusion: Looking ahead.**

Trade costs have been recognized as major obstacles having a negative impact on Sub-Saharan African (SSA) economies. High trade costs –through high transport and border-related costs- reduce the competitiveness of SSA producers both because the imported inputs they use and the final goods they produce are relatively high. While reducing other trade barriers such as tariffs remains important, and must continue to be at the center of

multilateral negotiations, many African countries will not be able to benefit from them unless other trade costs are reduced

Physical infrastructure is found to be persistently important to African countries. Although past research has shown that poor infrastructure explains at an important extent the underperformance of African trade, further research should aim to evaluate the costs and benefits of projects and investment in “physical” infrastructure. Future research should also explore the differences between investing in hard and soft infrastructure. For a given level of benefits in terms of trade or welfare, investment in hard infrastructure may be more expensive than reform aiming to improve soft infrastructure. However, there may be vested interest strongly opposing the latter and blocking reforms. Estimating the magnitudes of rents involved is challenging and important, so that potential compensation to losers from the reform may be envisaged in a few selected cases. Lack of direct sea-access represents an additional difficulty for landlocked developing countries. Identifying sequentially bottlenecks to trade flows, in terms of regulatory, administrative and infrastructural constraints to transport and transit is important in order to ensure that interventions aimed at reducing costs are carried out in a sequentially efficient way.

Trade costs prevent the full realization of the gains from trade and can weaken the poverty alleviation role of export opportunities for African countries. In addition, some of the costs associated with exports, and thus the impacts of trade on incomes and poverty, depend to a large extent on complementary domestic factors like improved infrastructure, adequate competition policies and, especially in Africa, enhanced access to credit, better education and health, and low marketing or intermediation costs. Recent research focusing on case studies of several export crops in Africa shows that exports are crucial for poverty reduction.

Farmers that are able to adopt high-yield export crops are on average less poor than farmers more oriented towards subsistence activities, as shown by Porto (2008). Moreover, high trade costs prevent farmers from adopting major export crops. Policies aiming to reduce trade costs and encourage marketing activities in rural areas may be useful to facilitate exports and reduce poverty. Examples include roads, marketing information, and measures that promote the development of market arrangements such as FDI or growers schemes. To boost these potential benefits, these measures should be accompanied by enhanced access to international markets.

Despite unfavorable circumstances in the African region, there are some good prospects for growth. Apart the oil producing nations, there are some countries experiencing strong growth, in part, with global price increases in other primary export commodities. This worldwide rise of commodity prices has been engendered in large part by the rapid growth of Asian developing countries, especially China and India. Their demand for these commodities is likely to grow, or at least not change from current levels, over the short to medium term. A number of countries in Africa are diversifying their exports, no longer relying solely on exports of a few raw commodities. Exports are increasingly composed of light manufactured goods, processed foods, and services such as tourism,

and call centers. Some countries -such as Nigeria and South Africa- have been increasing their shares of exports in technology-based products, as noticed by Broadman (2007). Lowering trading costs to take advantage of future opportunities is part of the context in which African trade and development prospects can strengthen.

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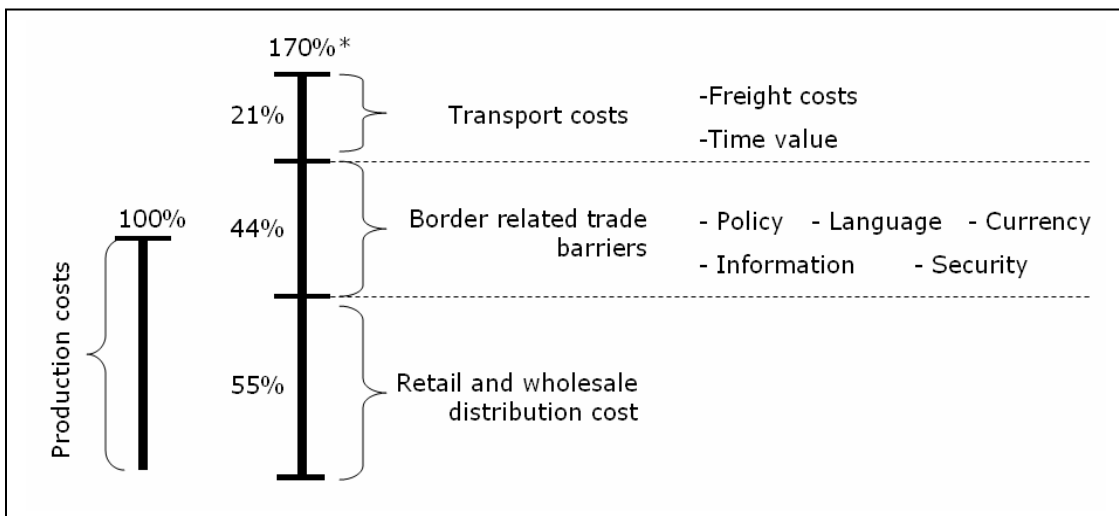
**Lowering Trade Costs for Development in Africa:**  
**An Overview of Key Issues**

**Alberto Portugal-Perez**  
**John S. Wilson**

**The World Bank**

**Tables and Figures**

**Figure 1**  
**Estimates of trade costs in industrialized countries**

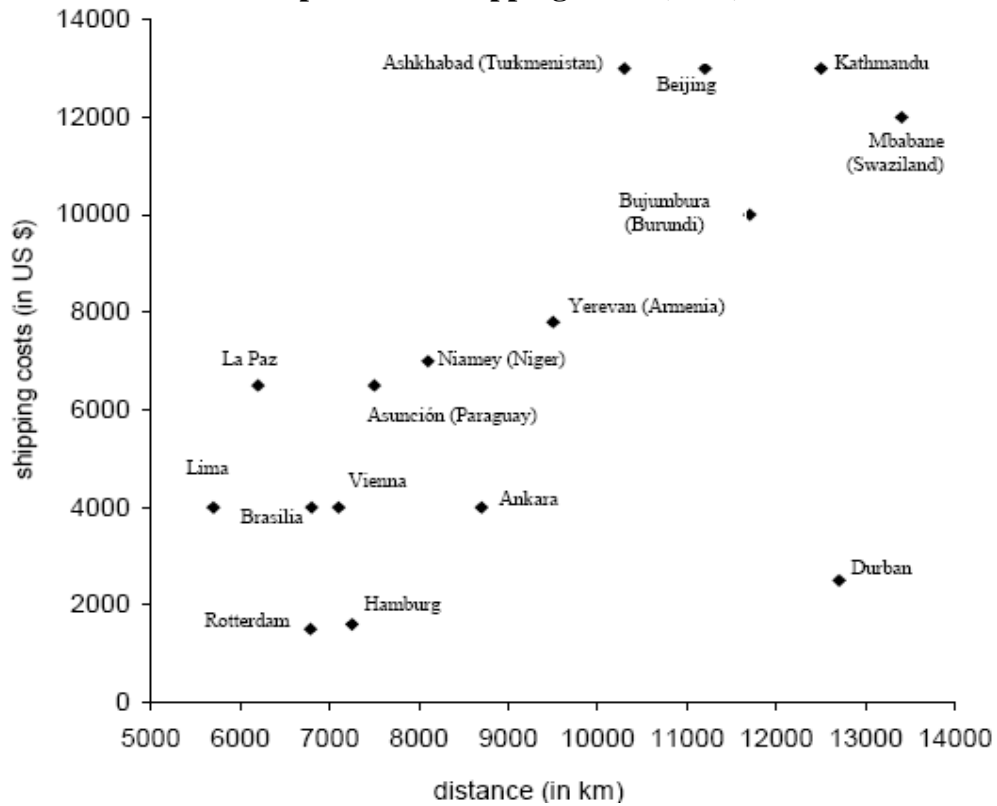


Notes:

Estimates drawn from Anderson and Van Wincoop (2004)

\* Breakdown of costs is expressed in ad-valorem equivalent terms:  $1.7 = 1.21 * 1.44 * 1.55 - 1$ .

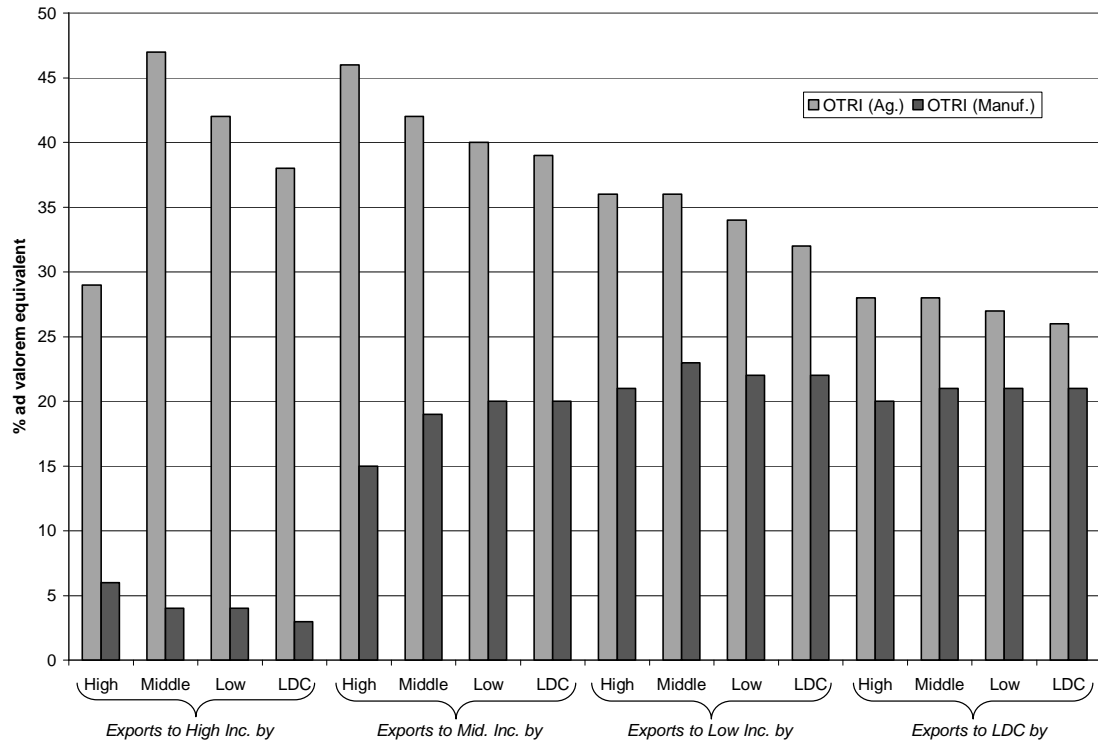
**Figure 2**  
**Comparison of Shipping Costs (2002)**



**Source: Busse (2003), Figure 7 .**

Notes: The data refers to the cost of shipping a 40-foot container from Baltimore (United States) to each considered destination. Figures correspond to an updated version of the dataset employed by Limao and Venables (2001) dataset. The numbers have been updated and complemented in October 2002 with price quotes of MAERSK, an international freight forwarder. Shipments refer to loosely packed freight and do not include insurance costs.

**Figure 3**  
**OTRI for agriculture and manufactures.**



(Source: Kee et al., 2006.)

**Table 1a**  
**OTRI and TTRI (percent), by developing country region, 2006**

	Total trade	Agriculture	Manufacturing
East Asia & Pacific	<b>11.3</b> 5.0	<b>26.6</b> 8.7	<b>10.4</b> 4.8
Europe & Central Asia	<b>10.1</b> 4.5	<b>25.9</b> 10.3	<b>9.0</b> 4.0
Latin America & the Caribbean	<b>15.0</b> 5.4	<b>28.1</b> 6.6	<b>13.8</b> 5.3
Middle East & North Africa	<b>21.6</b> 11.9	<b>32.3</b> 12.1	<b>19.4</b> 11.8
South Asia	<b>19.5</b> 14.0	<b>46.4</b> 31.4	<b>18.2</b> 13.2
Sub-Saharan Africa	<b>14.4</b> 8.4	<b>24.9</b> 13.8	<b>12.9</b> 7.6

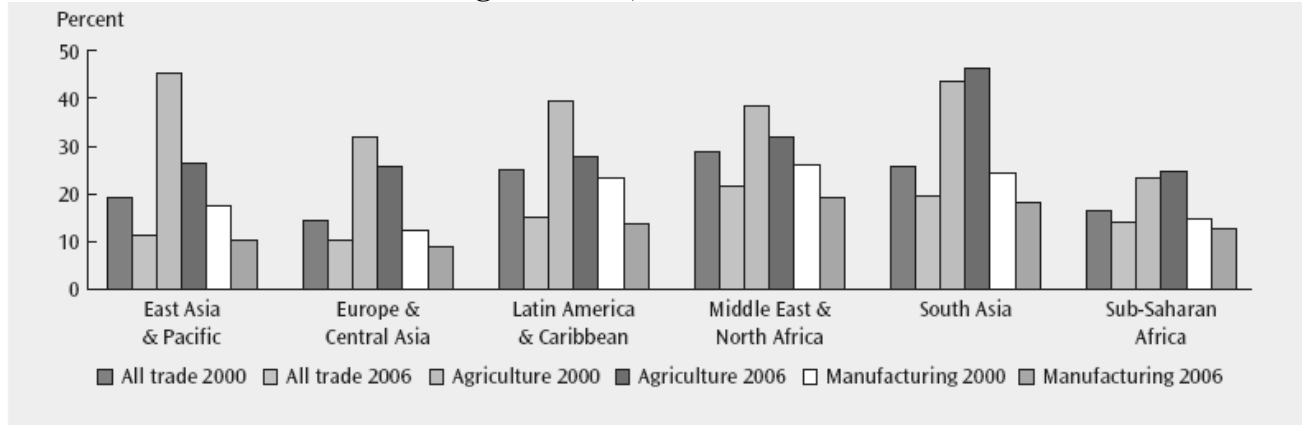
Source: Global Monitorig Report (2008)

**Table 1b**  
**OTRI and TTRI (percent), for the four largest traders, 2006**

	All trade	Agriculture	Manufacturing
United States	<b>6.4</b> 1.6	<b>18.4</b> 3.8	<b>5.7</b> 1.5
European Union	<b>6.6</b> 1.4	<b>48.7</b> 5.9	<b>2.9</b> 1.1
Japan	<b>11.4</b> 4.5	<b>55.8</b> 31.1	<b>5.7</b> 1.1
China	<b>9.9</b> 5.1	<b>17.1</b> 8.8	<b>9.5</b> 4.9

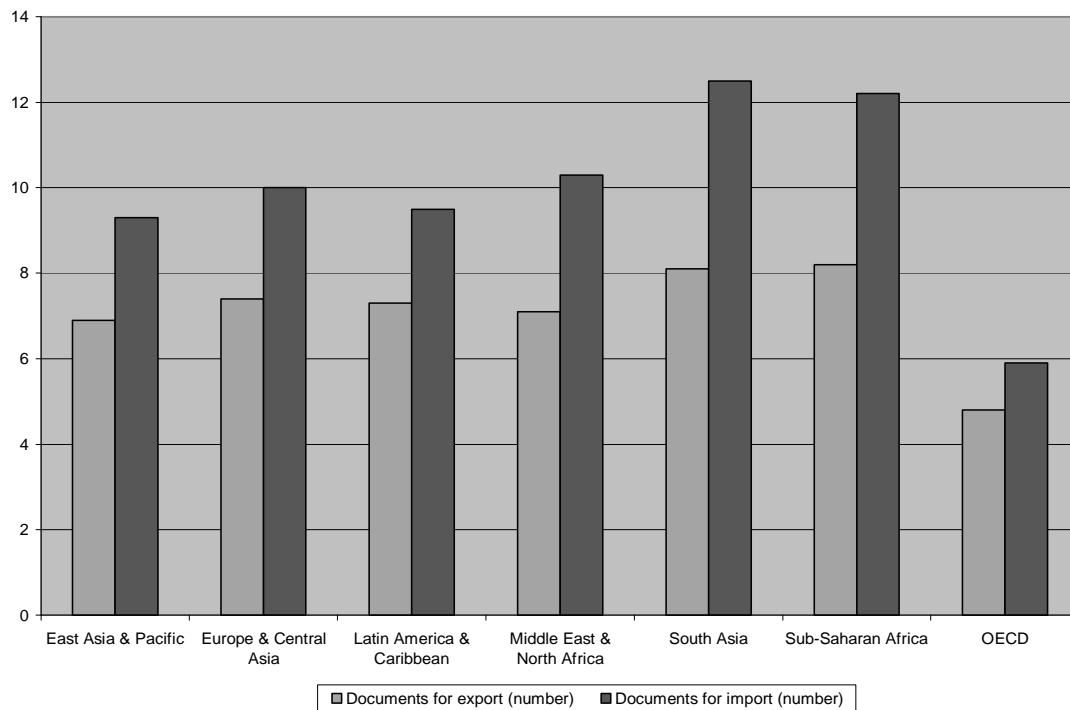
Source: Global Monitorig Report (2008)

**Figure 4**  
**Change in OTRI, 2000–06**



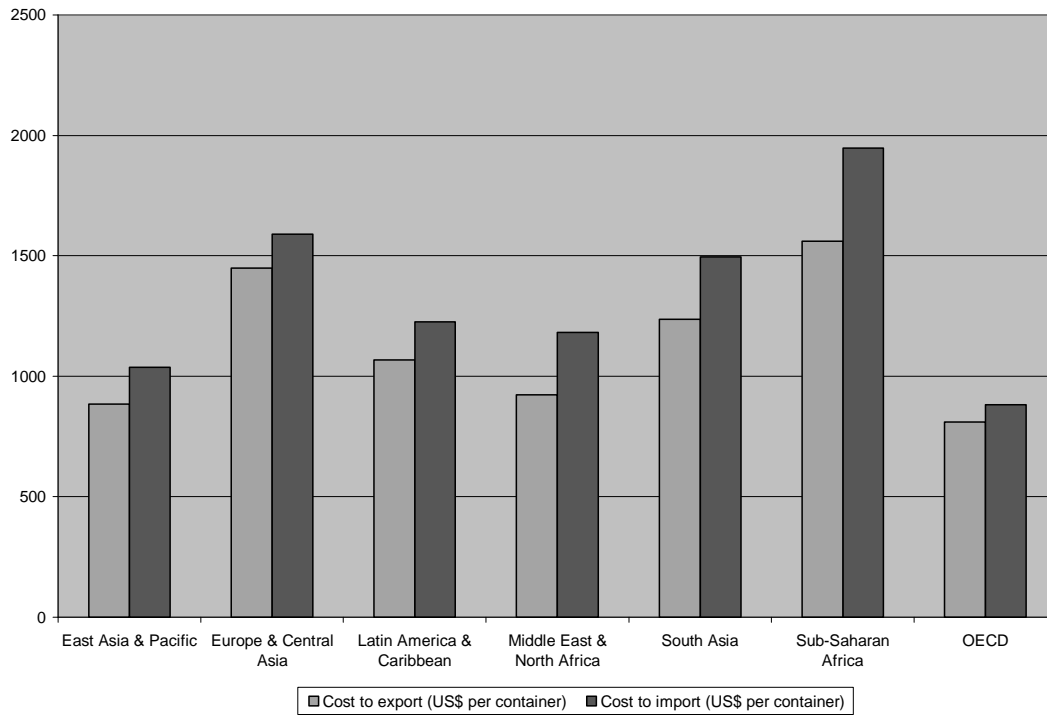
Source: Global Monitoring Report 2008

**Figure 5**  
**Number of export and import procedures.**



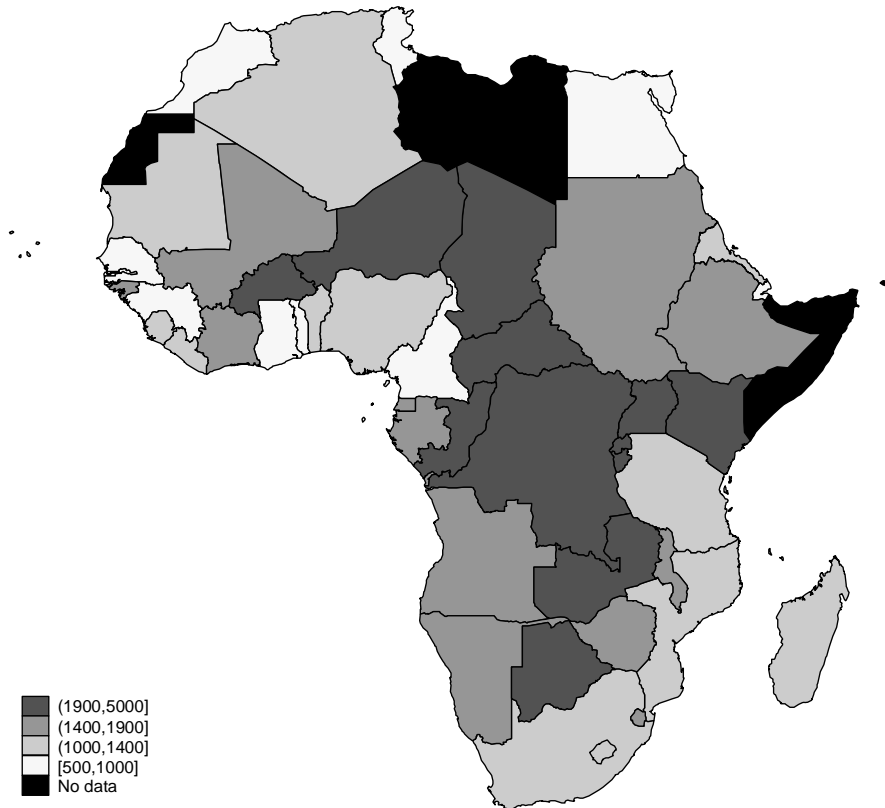
Source: Doing Business

**Figure 6**  
**Costs of Export and import procedures in USD.**



Source: Doing Business

**Figure 7**  
**Costs associated with completing export procedures in USD.**



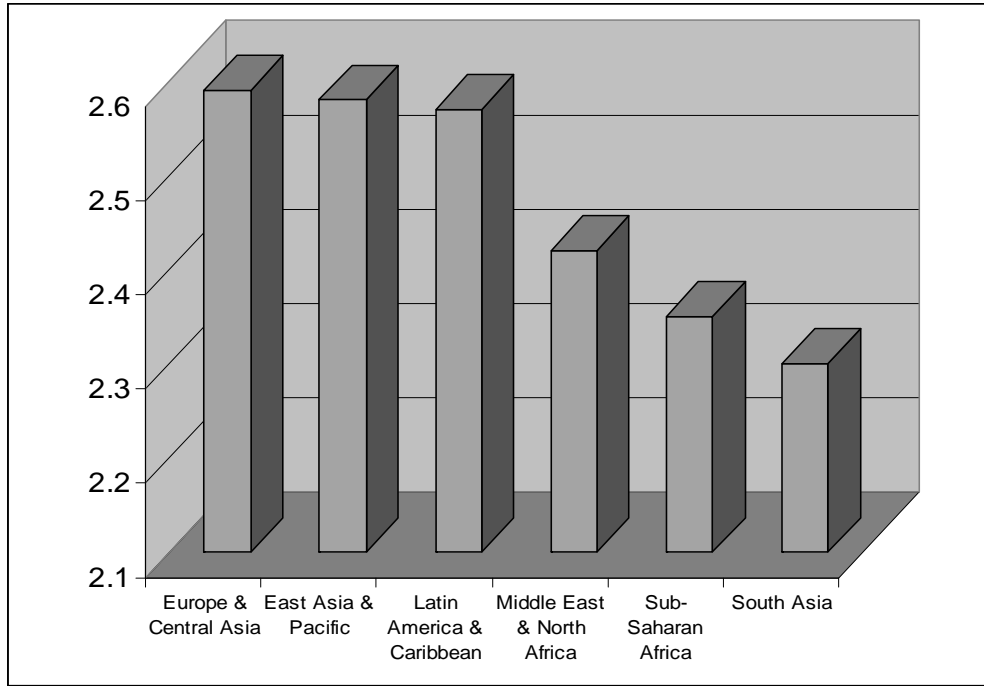
Source: Graph constructed with data from Doing Business.

**Table 2**  
**Median monthly wages for truckers (in USD)**

<b>Country</b>	<b>Median monthly wages</b>
<b>France</b>	3,129
<b>Germany</b>	3,937
<b>Chad</b>	189
<b>Kenya</b>	269
<b>Zambia</b>	160

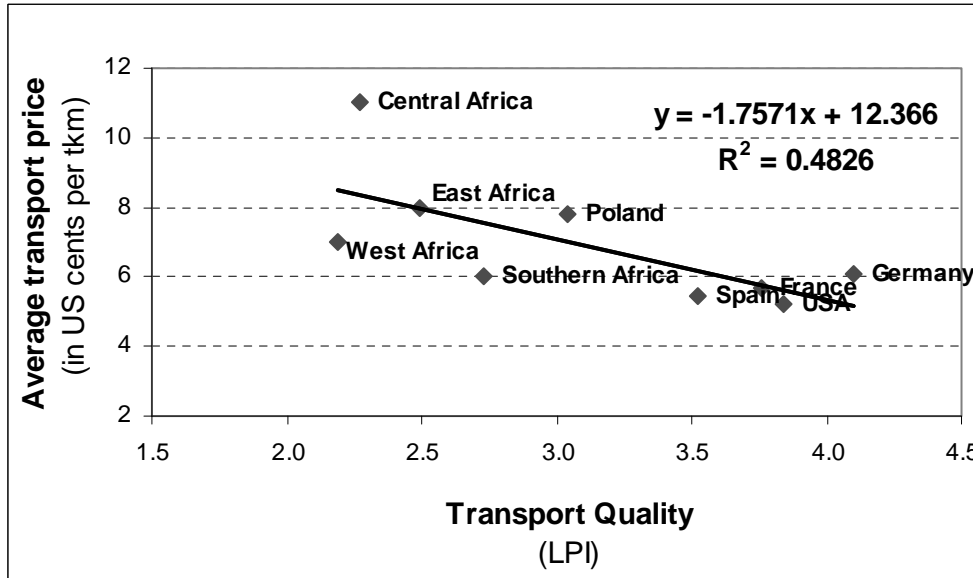
Source: World Bank 2008

**Figure 8**  
**Logistic Performance Index by regions.**



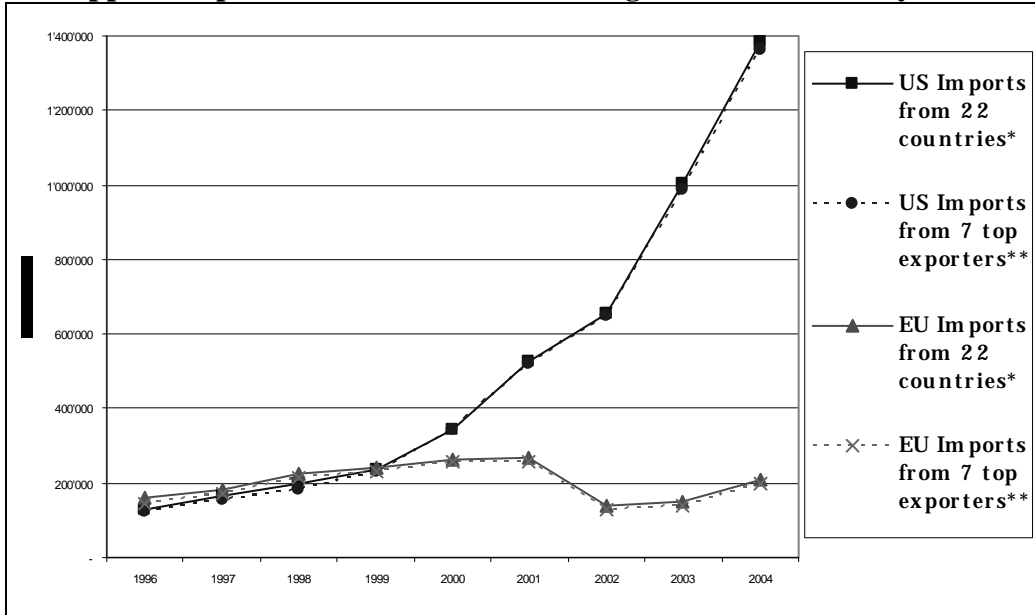
Source: World Bank, Logistic performance index

**Figure 9**  
**Transport services in Africa: expensive and low quality**



Source: Logistic Performance Index 2008.

**Figure 10**  
**Apparel exports of 22 countries benefiting from AGOA-SR by 2004**



Notes:

\*The 22 Sub Saharan countries benefiting from AGOA-SR by 2004 as well as ACP are: Benin, Botswana, Cameroon, Cape Verde, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Swaziland, Tanzania, Uganda, and Zambia.

\*\*The top 7 exporters are : Botswana, Cameroon, Ghana, Kenya, Lesotho, Madagascar, Namibia, Nigeria, and Swaziland. Source: Portugal-Perez (2007)