

Clothing and Export Diversification:
Still a Route to Growth for Low-Income Countries?

Paul Brenton
Mombert Hoppe

The World Bank
Poverty Reduction and Economic Management Network
International Trade Department
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Abstract

Can the clothing sector be a driver of export diversification and growth for today's low-income countries as it was in the past for countries that have graduated into middle income? This paper assesses this issue taking into account key changes to the market for clothing; the emergence of India and especially China as exporting countries; the rise of global production chains; the removal of quotas from the global trading regime but the continued presence of high tariffs and substantial trade preferences; the increasing importance of large buyers in developed countries and their concerns

regarding risk and reputation; and the increasing importance of time in defining sourcing decisions. To assess the importance of the factors shaping the global clothing market, the authors estimate a gravity model to explain jointly the propensity to export clothing and the magnitude of exports from developing countries to the E U and US markets. This analysis identifies the quality of governance as an important determinant of sourcing decisions and that there appears to be a general bias against sourcing apparel from African countries, which is only partially overcome by trade preferences.

This paper—a product of the International Trade Department—is part of a larger effort in the department to improve understanding of the factors that contribute to successful export diversification and export growth. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at pbrenton@worldbank.org.

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Paul Brenton and Mombert Hoppe¹

International Trade Department
The World Bank
MSN MC2-201
1818 H Street St. NW
Washington DC 20433
Tel: (202) 473-4255, Fax: (202) 522-7551
E-mail: pbrenton@worldbank.org, mhoppe@worldbank.org

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1. Introduction

Diversification into export categories with greater value added than traditional agricultural exports remains a major objective for many low-income developing countries. The clothing sector was at the forefront of export diversification for many countries that have now achieved middle or high-income status. For the low-income countries of today, is clothing a sector that provides an opportunity for export diversification and the first steps to greater manufactured exports? On the one hand, the clothing sector remains labor intensive, technology is relatively simple, start-up costs are comparatively small, and scale economies are not important. All of these factors favor production in locations where labor costs are low.

On the other hand, there are some important changes in the nature of the global market for clothing that may condition the role that the sector can play in development relative to previous episodes of industrialization. Paramount among these are the rise of buyer-driven value chains, the shift towards just-in-time delivery and lean retailing methods and the emergence of the very large developing countries, China and India, as key clothing suppliers. It is argued that these changes have led to higher barriers to new entrants and to reduce the margins for clothing exporters that in turn have been used in the past to fuel investment in other more technologically advanced activities.

At the same time trade policy continues to shape global trade patterns. On the one hand, tariff barriers in rich countries remain high and trade preferences can potentially provide a window of opportunity for low-income countries to develop export capacities. On the other hand, many low-income countries tax heavily imports of the inputs that the clothing sector depends upon and adverse business climates substantially increase costs and effectively push low-income countries further away from global markets.

This paper considers some of the key issues that are relevant in assessing whether the clothing sector can continue to be a driver of development and the first steps away from sole reliance on agricultural products towards high-valued added activities. Our focus is on Africa and the issue of whether the clothing sector can be a driver of trade growth and development and, if so, what are the necessary conditions in Africa and in the importing countries that will facilitate such an outcome.

The paper then proceeds to an empirical analysis of the determinants of trade flows of clothing products into the US and EU markets, the main sources of demand for clothing products in the global economy. We augment a standard gravity-type model to include key features of the contemporary global clothing market: the concern of large buyers with country specific governance issues that affect risk and reputation, the importance of high quality infrastructure, and the difficulties for exporters caused when high import tariffs into their domestic market raise the cost of intermediate inputs.

2. Clothing: A key sector for diversification and growth

The clothing and footwear sectors have been the key sectors in which many countries have taken the first steps on the path to industrialization. Historically, these sectors together with textiles played a major role in the initial development of the UK, the US, Germany and Japan and have been paramount in successive waves of industrialization in Asia encompassing countries such as Hong Kong (China), Singapore, Taiwan (China), South Korea and Malaysia and more recently China, Indonesia, Sri Lanka, Thailand and Vietnam.

The clothing sector has been a major example where developing countries have been able to significantly increase and diversify exports with positive effects on incomes, employment and poverty. Kabeer and Mahmoud (2004) suggest that the production of garments for export in Bangladesh has generated 1.6 million “new” jobs most of which were captured by women. Many of these workers tend to be migrants from poorer areas. These authors also find that wage levels for garment workers were double that of other workers involved in non-tradable activities.²

The key reasons why the clothing sector has played such an important role in economic development are: (i) the sector absorbed large numbers of unskilled labor, typically drawing them from rural agricultural households to urban locations (ii) despite relatively low start-up investment costs, expansion of the sector provided a base upon which to build capital for more technologically demanding activities in other sectors (iii) growth of the sector allowed imports

² There is however, some evidence to suggest that workers in this sector are vulnerable to changing employment contracts and the increasing casualization of work (see Nadvi (2004)).

of more advanced technologies to be financed through exports (and by substituting for imports).³ Can the sector fulfill these roles for the poorest countries today? This paper discusses a number of important changes in the global market for clothing products that condition the way that low-income countries can pursue initial industrialization through the clothing sector. Before turning to these issues, we will show how the clothing sector has been of key importance to poor countries that have generated strong growth over the past 30 years enabling them to graduate from the group of low-income countries.

Figure 1 shows the performance of countries that had a per capita income of below USD 500 (in real dollars of 2000) in 1975 and distinguishes between (a) those that had graduated out of this group by 2004 and those that had not and (b) those countries that have strongly increased (by a factor of 10 or more) their nominal exports in dollar terms from 1975 to 2004 and those with slower export growth. The first group of columns in the figure shows that for all of the groups of countries the initial average share of clothing and footwear in exports was low, less than 3% in those countries that graduated and negligible in those that did not. The next group of columns shows that the export share of clothing and footwear in 2004 had soared to 30% in countries that graduated but was only around 8% in the countries that remained in the low-income group. Similarly, for countries with rapidly expanding exports, clothing and footwear accounted for more than a quarter of exports in 2004. On the other hand, for countries with slow export growth the clothing and footwear sector was much less important, accounting for less than 5% of exports in 2004.

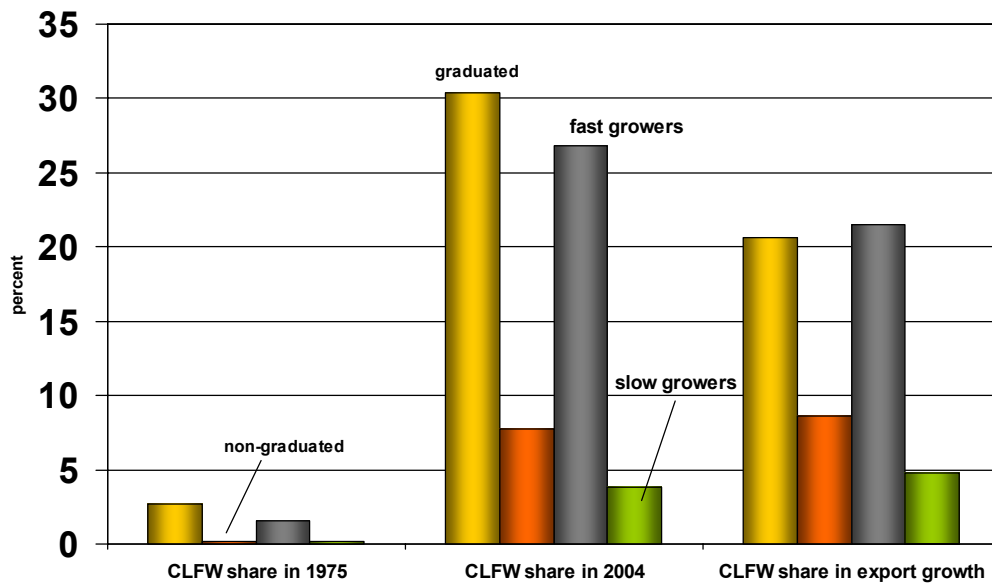
The final group of columns in Figure 1 shows the contribution of clothing and footwear to overall export growth. For graduating countries and countries with fast export growth the clothing and footwear sectors accounted for more than 20 percent of export growth whereas for non-graduating countries and countries with slow export growth, clothing and footwear contributed less than 10% of export growth. Hence, the clothing and footwear sectors have been key drivers of exports and growth that have enabled a number of countries to exit the group of lowest-income countries. Can the clothing sector continue to be a driver of export growth and diversification for the poorest countries and can the movement of resources into the

³ Palpacuer et al (2005)

sector be a trigger for economic growth and industrialization as it has been in other countries in the past? The answer to these questions is not straightforward since trade restrictions and trade preferences continue to be important in shaping global exports of these products. In addition, there have been important changes in the way the global industry is organized, especially on the demand side that now condition the climate in which firms in developing countries compete on the world market. It is to these issues that we now turn.

Figure 1

Clothing and Footwear have been important industries for growing countries



Source: WDI, COMTRADE, own calculations
 Sample comprises countries that had a per capita income of below USD 500 in 1975. "Graduated" are those whose per capita income exceeded USD 500 in 2004 (per capita income expressed in constant dollars of 2000). Fast growers are countries that have increased their exports more than tenfold from 1975-2004 (in nominal terms).
 CLFW (clothing and footwear) share in export growth is calculated as the increase in clothing and footwear exports divided by the total increase in exports (1975-2004)

3. Key issues framing the role of clothing in development

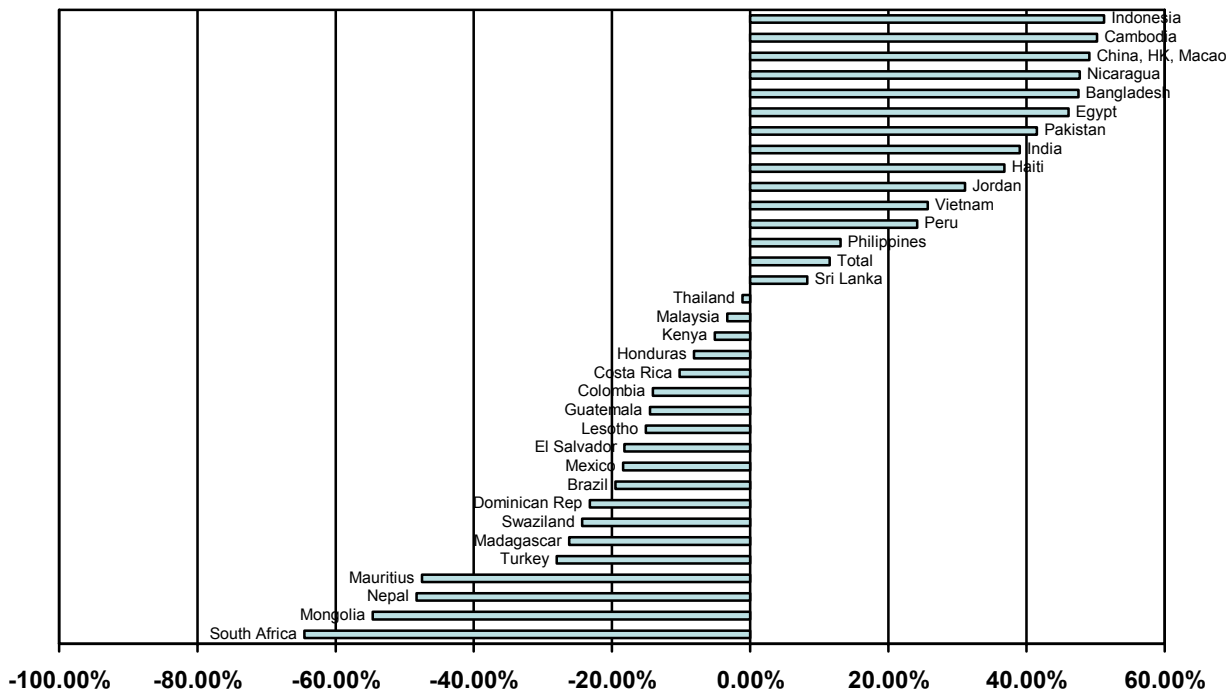
3.1 The impact of removal of quotas against China and India

The climate in which low-income countries can drive development from a base created by the clothing sector is now framed by the presence of extremely large supplying countries in the global market. In the past, developing countries' expanding clothing exports did not have to

fully contend with the supply capacities of India and China. These countries have now been largely freed from the constraints previously imposed by quotas applied in rich country markets. Many have speculated about the likely impact of these reforms, predicting that markets would become swamped by Chinese products, with adverse implications for other developing country producers that export to the developed countries. The following brief analysis of changes in clothing trade after the removal of quotas suggests that these doom-laden predictions were over done and that a more nuanced picture is emerging in which some countries are increasing their exports to the EU and the US at the same time as exports from China have surged.

Overall clothing imports into the US have surged over the past few years. Figure 2 shows how individual developing country suppliers have fared within the context of overall growing import demand by presenting the change in the value of US clothing imports between 2004 (the last year before remaining quotas were removed) and 2006 for the largest suppliers (exceeding USD 100 million). The figure suggests a wide degree of diversity across exporting countries in sales to the US over the past two years, with no obvious regional pattern. Some countries in Asia have experienced declines, such as Malaysia, while other countries, such as Indonesia, Cambodia and Bangladesh, have managed to substantially increase exports even in the face of more intense competition from China. Similarly, some exporters in Latin America have seen exports fall while others such as Nicaragua and Haiti have seen significant increases. Clothing exports of Sub-Saharan exporters have fallen strongly during both time periods driven by declines in South Africa, Mauritius and Madagascar.

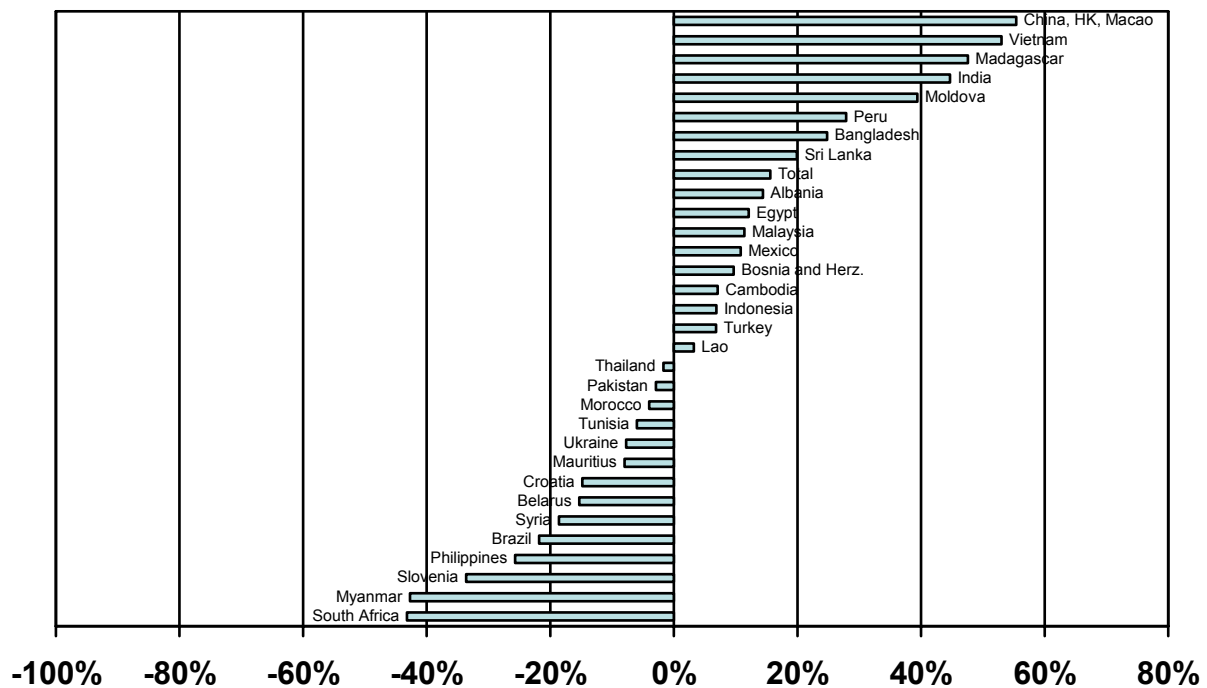
Figure 2: US clothing imports after the end of the ATC, percentage change 2004-2006



Source USITC

The European market differs from the US market in key regards. First, it is much less homogeneous, due to differences in size, tastes, language, marketing and so on. Second, overall imports of clothing products have increased more strongly than in the US over the last two years. Again, Figure 3 suggests substantial differences across countries in exports of clothing to the EU with no clear pattern of those who have been adversely affected by increased competition from China. Some countries have performed much better in the EU market than they have in the US, for example Madagascar.

Figure 3: EU25 clothing imports after the end of the ATC, percentage change 2004-2006*



Source: COMEXT, values for 2006 are estimated based on data for first 11 month and historical ratio (yearly imports/imports first 11 months)

China's⁴ exports of clothing to the global market have nearly doubled since 2002 from USD 54 billion to USD 93 billion in 2005. Exports to the EU and the US⁵ account for more than half of this increase, while all other regions have imported more Chinese garments. Exports of clothing to other industrial countries in East Asia have increased by 30 percent and these markets are now similar in importance to the US and the EU. While clothing exports have grown strongly, China has increased its imports of raw materials and textiles from 18.6 to 23.8 USD billion over the same time period. Imports from the EU (+USD 0.7b) and the US (+USD 1.7b) and Sub-Saharan Africa (+USD 0.6b) have increased in particular. China imports cotton that is not carded and not combed almost exclusively from Sub-Saharan Africa with Burkina Faso, Benin, Mali, and Côte d'Ivoire accounting for 66 percent of these imports. It appears, however, that

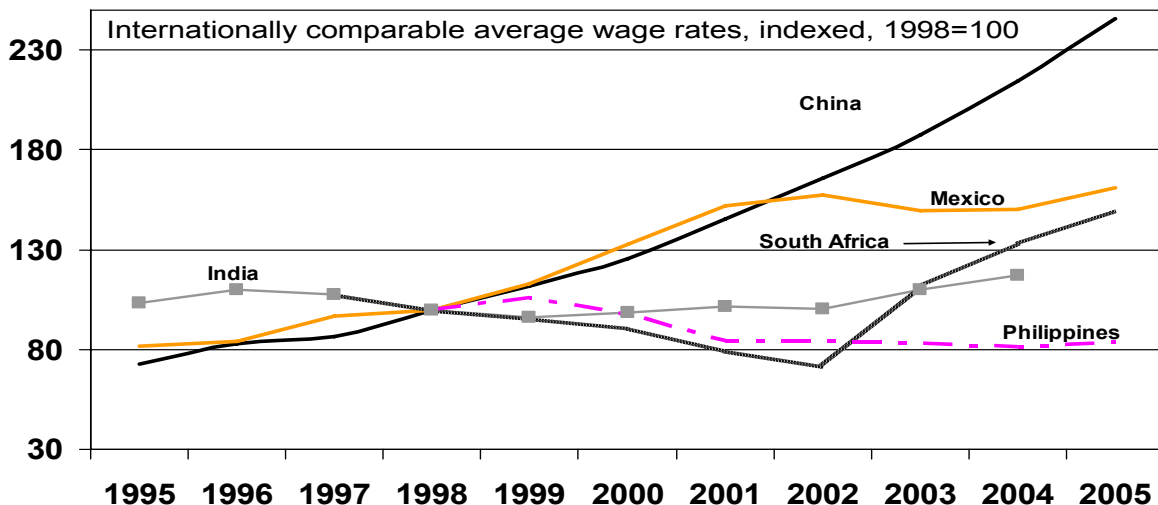
⁴ It appears very likely, that large amounts of goods have historically been transhipped between China, Macao and Hong Kong in order to pass around existing quotas. For this section our definition of China hence groups those three territories together and only takes exports towards the outside into account. Figures are based on data reported by China to COMTRADE.

⁵ While COMTRADE, for HS61-63, reports exports of China + Hong Kong + Macao of USD 13.7b (24.6b) in 2002 (2005), USITC reports imports of USD 13.8b (25.5b) from these three countries.

China is only importing a small share of its cotton consumption. According to the US Bureau of Industry and Security, China produced 25.5 million bales of the 30.4 million they used in 2003/04.⁶

In general, as the global demand for Chinese manufactured products increases, dollar-denominated wages in China will tend to increase, in response to higher wage demands from Chinese workers (especially if the rural and urban labor markets remain partially segmented) and from the inevitable additional upward pressure on the Yuan. There is evidence that this process is already underway. In 2004, real wages in China were 2.11 times the level of 1989, and the rate of wage increase accelerated in 2004–2005, especially in the coastal regions (Yusuf, Nabeshima, and Perkins 2006). In 2005 alone, according to the People’s Bank of China, average wages for Chinese workers rose by 14.8 percent (China Daily, “Worker Shortage Drives Salary Rise,” May 27, 2006). Thus China’s development should not keep the poorest countries from being able to export low-skill-intensive products, as long as these countries can manage to create and sustain a business climate that supports investment and trade.⁷

Figure 4: Average wages in China have increased stronger than in other countries



Sources: China Statistical Yearbook 2005, People’s Bank of China, ILO (Philippines, South Africa), IBGE (Brazil), Banco de Mexico, Ministry of Statistics and Programme Implementation (India), exchange rates from IMF IFS. Wages are average wages for China, the Philippines, and South Africa, average private sector wages in Brazil, and manufacturing wages for India and Mexico. 1998–2000 wages for the Philippines have been estimated using observed wages from 2001 and projecting them backwards using GDP per capita growth rates.

⁶ http://www.bis.doc.gov/news/2004/03AnnualRept/AppH_6.htm

⁷ This paragraph is based on World Bank (2006)

Hence, despite rapidly increasing exports from China to the main markets in developed countries, there appears to remain opportunities for other developing country exporters to continue and indeed expand exports of clothing. Wages in coastal China are rising and other developing countries with lower wages will be able to compete if productivity levels are sufficient; high non-factory floor costs, such as those related to security and governance can be reduced; and necessary infrastructure is in place. In addition, as we shall discuss below, demand for clothing is increasingly being defined by global buyers who are wary of the risks of concentrating their demand on suppliers in a small number of countries. At the same time the nature of consumer demand is changing offering increasing opportunities for supplying niches in the overall market. A small share of a niche in the EU or US can still entail substantial exports for small developing countries.

3.2 Trade policy for the clothing sector remains a key issue

Even after the removal of quotas under the ATC, the global clothing (and textile) market remains heavily distorted. Distortions can be found both in rich countries markets for finished goods as well as in those developing countries that produce apparel products. Tariffs on clothing products in many developing countries are high, often being greater than 20 percent. This creates a bias against exports and tolerates the survival of inefficient firms. As a result, resources remain in low productivity firms and the potential growth of high productivity export oriented firms is suppressed. In addition, with the splitting up of the production chain for clothing and footwear, producers of final goods need to import a wide range of intermediary inputs. In many developing countries these inputs are subject to high import duties, increasing the costs of production and undermining the competitiveness of actual and potential exporters of final products. Table 1a shows the price premium that producers in many countries pay on their inputs due to high tariffs that create a wedge between domestic and world prices. Even though drawback systems often exist, they are often poorly implemented, have very long reimbursement cycles and are costly for firms to adhere to.

In addition to import duties on intermediate inputs, long delays for customs clearance and complex import and export procedures put a further cost burden on firms seeking to compete with firms that operate in more friendly environments. Table 1b shows the time that is needed

to satisfy import and export procedures. The cost of these delays has been estimated to be in the region of 0.8 percent of the value of the product per day of delay (Hummels (2001)). Clothing producers that want to compete on the global market need access to their key inputs at the same price as their competitors and without incurring unnecessary costs due to inefficient customs procedures or over-bearing bureaucratic requirements for traders.

Table 1a. Applied import duties on cotton yarns, cotton fabrics and sewing needles in selected countries, 2006

Percent

	B'desh	Brazil ¹	Ethiopia	Kenya	Mexico ¹	Morocco	Nigeria	Pakistan
Cotton yarns	8.3	14.7	25	10	15	16.3	10	6.7
Cotton fabrics	25	18	34.4	26.2	15.5	23.7	18.3	20.6
Sewing needles	25	16	20	21.3	13.8	6.5	20	21.3

Source: TRAINS database on WITS. ¹ 2005

Table 1b. Average time required to satisfy import and export procedures in selected countries, 2006

Days

	B'desh	Brazil	Ethiopia	Kenya	Morocco	Nigeria	Pakistan	China	S'pore
Imports	57	24	52	45	30	45	19	22	3
Exports	35	18	45	25	18	25	24	18	6

Source: World Bank, Doing Business Database, www.doingbusiness.org.

At the same time high tariffs remain in place in many rich countries and in the large developing countries. Table 2 compares the average weighted tariff rates for a number of products for a number of important markets. Clothing and Footwear imports are taxed heavily in all of these large markets. In the rich countries tariffs on clothing far exceed the average for manufactured products, which is typically in the region of 3%. Tariffs on certain clothing products can reach as much as 12% in the EU and more than 20% in the US. Markets in the fast growing

developing countries remain closed to poorer countries with average tariffs in excess of 20%. Total imports of clothing products by Brazil were only about 1 percent of US clothing imports in 2004.

Table 2. Applied average MFN tariffs on clothing/footwear and other products in selected countries, 2005

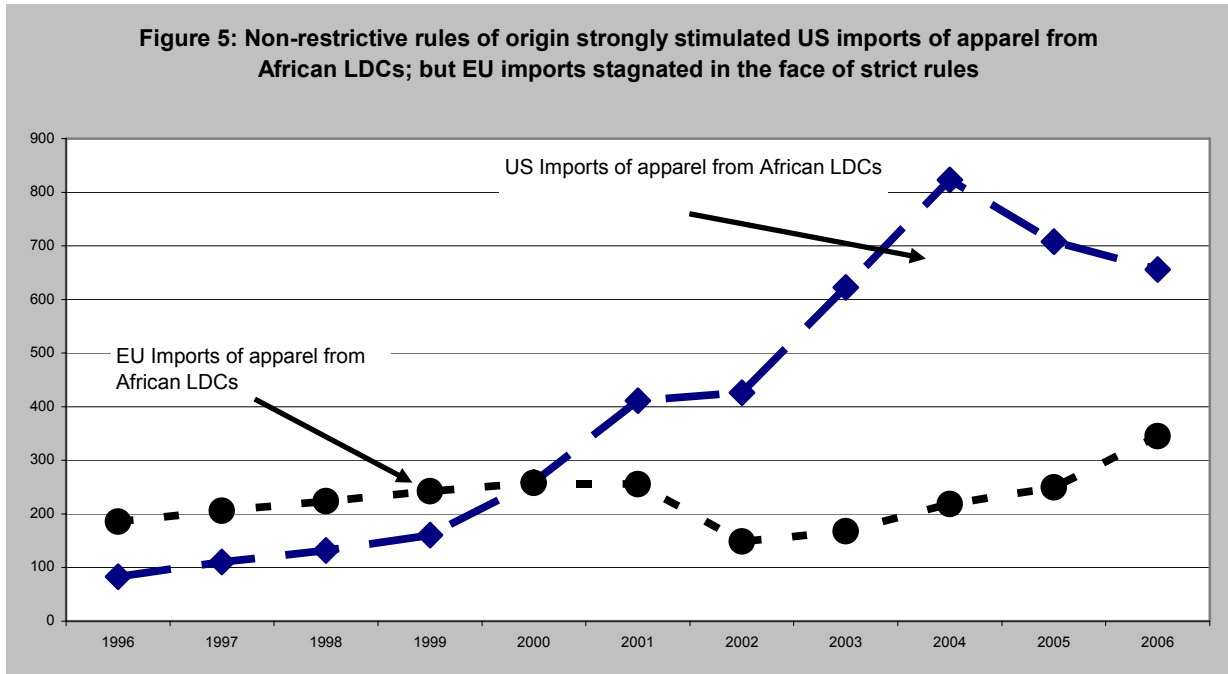
Percent	EU	USA ^a	Japan ^a	China	India ^c	Mexico ^a	Brazil	South Africa ^b
Manufacturing (other than CLFW)	3.1	3.1	2.6	8.6	27.8	13.8	10.7	5.9
Clothing and Footwear	11.0	10.8	9.9	15.9	30.0	34.5	19.9	20.8
# of lines with specific tariffs in HS61-64	0/517	0/782	25/760	0/423	115/323	0/488	0/337	303/434

Source: WTO IDB database on WITS

a=2004, b=2003, c=2002,

simple averages calculated for those lines that do not carry specific duties or mixed duties (only in the case of the US, the simple average of all ad-valorem duties (disregarding lines with ad-valorem and specific duties) raises protection to 11.7 percent))

The EU, US and Japan offer preferential access to many low-income countries, such that these margins of preference could have substantial impact of competitiveness. However, the rules of origin that are applied under these schemes are crucial. Figure 5 shows that prior to the end of the ATC, exports of apparel from African least developed countries (LDCs) to the EU stagnated despite preferences, while exports to the US under AGOA grew very strongly. Exports of apparel from African LDCs to the EU and US were almost equal in 2000, but the value of exports to the US in 2004 was almost four times greater than the value of exports to the EU.



Source: USITC and Eurostat

The key factor explaining why exports to the US grew much faster than to the EU is the rules of origin. EU rules stipulate production from yarn. This entails that a double transformation process must take place in the beneficiary with the yarn being woven into fabric and then the fabric cut and made-up into apparel. These rules prohibit the use of imported fabric, although cumulation provisions allow for the use of inputs produced in other ACP countries. To obtain preferences, apparel producers must use local, EU or ACP fabrics. They may not use fabrics from the main fabric-producing countries in Asia and still qualify for EU preferences—a binding restriction, since few countries in Africa have competitive fabric industries. The EU rules do not allow producers in African LDCs the flexibility they currently have under AGOA to source fabrics globally. It is worth remembering that the EU has granted preferences to African countries for apparel subject to these strict rules of origin for more than 20 years under the Lome and then Cotonou agreements. However, these strict rules have done little to encourage the development of an efficient fabric industry in Africa, the main justification for

their imposition,⁸ and are likely to have severely constrained the impact of preferences in stimulating the clothing industry.⁹

The third country fabric rule of AGOA has recently been extended until 2013, although the uncertainty over its extension in 2006 may have contributed to some of the fall in African LDC's exports to the US in that year. Thus, African countries will have effective preferential access to the US market during this period to provide a spur to the development of an efficient clothing sector. The EPA negotiations that the EU is holding with the ACP countries offer an opportunity for the negotiation of less restrictive and more development friendly rules of origin for all products, including clothing. Such an outcome would make EU preferences more effective in stimulating exports from Africa.

Developing countries and especially least developed countries, face much higher trade-related costs than other countries in getting their products onto international markets. Sometimes these reflect institutional problems within the countries themselves, such as inefficient and corrupt customs, which require a domestic policy response. However, they also reflect the severely weak infrastructure of many countries that is crucial to support trade activities (in particular transport, telecommunications, energy) and the lack of access of firms in these countries to standard trade facilitating measures such as insurance and trade finance. Many developing countries also possess little capacity within government and the private sector to identify key trade barriers, to define a broadly supported trade strategy and to motivate the cross government action that is needed to alleviate such barriers. All developing countries in Africa face enormous problems in providing necessary infrastructure and a supportive policy environment for trade.

The argument for trade preferences is that they can provide a temporary mechanism whereby the margin of preferences allows firms in developing countries to offset these higher costs and establish an export presence and ultimately global competitiveness in industries and activities in which the country has a comparative advantage. It is important that the window is temporary

⁸ See Brenton (2006) for a discussion of why restrictive rules of origin are inappropriate as a development tool and are more likely to reflect protectionist interests in the preference granting country.

⁹ See Brenton and Ozden (2005) for a more detailed analysis of the impact of the EBA and AGOA on apparel exports from African LDCs and the role of the rules of origin.

so that inefficient, high-cost industries with entrenched lobbies do not constrain flexibility and adjustment. Multilateral trade liberalization contributes by ensuring that preferences have a short “half-life” and in limiting the long-term trade diverting impact of preferences on other countries (which typically will be other developing countries). However, it is crucial that the key factors that raise the costs of trading in developing countries are addressed as otherwise sustainable and competitive activities will not be created. This applies to countries that benefit from preferences as well as those that do not.

For example, labor costs in Kenya are relatively low compared to key competitors. Information on labor cost per shirt produced suggests that costs in Kenya are below those of China and comparable with those of India (Eifert et al (2005). However, the World Bank’s Investment Climate Assessment for Kenya highlights how competitiveness is undermined by high indirect costs, with the main barriers being corruption, crime and infrastructure. The key infrastructure barriers are poor transport, the high cost and unreliability of power services and costly and poor quality fixed-line telephone services. These costs undermine the advantages that Kenya possesses in terms of low cost, relatively well-educated labor; they depress productivity and constrain investment. Eifert et al (2005) conclude that for Kenya “a long history of entrepreneurship is reflected in strong potential factory-floor productivity, but high costs and losses impede competitiveness”. The key implication of the poor business environment is lower returns to labor in production which depresses labor demand and real wages.

Although these non-reciprocal trade preferences for low-income countries may be an important aspect of competitiveness, they are granted in a context in which many other suppliers have preferential access to the key developed country markets. NAFTA has had a profound impact on the nature of sourcing in North America while in Europe trade agreements with the Mediterranean countries and Turkey and more recently Eastern Europe have had an important impact on the structure of EU clothing imports. These regional trade agreements have tended to coincide with a shift in demand in rich countries towards time sensitive products and a desire by buyers in those markets to move to lean retailing strategies both of which put a premium on proximity. We return to this issue below after we look at the growing importance of buyer-

supplier relationships in the global market for clothing products and how this affects the prospects for clothing being a driver of development in today's low-income countries.

Export Processing Zones (EPZs) have played an important role in export diversification towards clothing in many developing countries. By creating a framework for export oriented firms that corrects for many of the usual administrative, infrastructure-related, and utility-supply problems investors face, exports of clothing have surged in EPZs of many countries. In Madagascar's EPZ, for example, 124 of 180 operating firms were textile companies and the share of manufactures in exports (nearly completely clothing) grew from next to nothing to nearly 50% of total exports in 2001 (Cling et al., 2005). EPZs in other countries have also seen large investments and strong export performance in clothing over the last decades [e.g. in Bangladesh or Mauritius]. An interesting issue is whether this role of EPZs remains relevant in a global market dominated by buyer driven value chains – an issue to which we now turn.

3.3 The rise of global buyers

A key issue of relevance to discussion of the development role of the clothing sector in the modern global economy is the evolving relationship between buyers in developed country markets and suppliers in developing countries. A large literature has emerged on the rise of global value chains.¹⁰ These chains initially emerged in the clothing sector in the 1950s and 1960s as buyers in developed countries contracted out production to low-wage developing countries. Over the past four decades these chains have matured and the sourcing networks have spread over a large number of countries. Some have argued that the mature global chains of today restrict the opportunities that the clothing sector offers developing countries for diversification and growth (Palpacuer et al (2005)).

Often suppliers are not producers themselves but they have outsourced their production to other companies and act as intermediaries between retailers and producers. Some can also own their production facilities. Retailers can also own their production facilities or source directly from producers. In the apparel market, large “trading houses” function as intermediaries between retailers and producers. They obtain orders from final goods retailers, pass them on to a number

¹⁰ See, for example, Gereffi (1994)

of smaller producers and collect production from different sources. They often own factories and take the ultimate decisions of where to invest, bounded by retailers' demands regarding price, time to market, corporate responsibility, labor laws and so on.

Analysis of the clothing and footwear sectors has stressed this rise of 'buyer-driven' chains where retailers and brand name marketers entirely outsource production. Buyers, it is argued, re-engineer the division of labor within the chain so as to capture a higher share of the income generated. This is achieved by shifting a succession of typically low-profit activities and functions to suppliers within the chain. In the clothing sector the buyers increasingly require suppliers to take responsibility for fabric and input sourcing¹¹, design services, supplier-managed inventory, production flexibility, regular visits to retailer, product development and to provide invoicing on a 90 day basis.

This has two implications for our discussion of the development role of the clothing sector. First, it suggests that barriers to entry to firms seeking to become exporters on the global market maybe higher than in the past. Firms will only be able to sustain clothing exports within these global chains if, in addition to the basic manufacturing function, they can provide the range of services activities that the buyers increasingly demand. This is likely to put greater emphasis on local infrastructure services that support low cost and fast telecommunications and transport services as well as on the human capital requirements of these additional activities.

In addition, it has been argued that, since 'core' suppliers are now expected to provide an increasing variety of services, there will be significant transaction costs to the buyer if they were to shift suppliers. It is suggested therefore that buyers will now be less footloose in their relations to suppliers and therefore there will be fewer opportunities for new suppliers. These changes add up to increasing requirements on suppliers for financial and human resources to meet the increasing demands of global buyers. Second, the reorganization of the chain and the dominance of the buyers have reduced the margins that clothing production can generate and provide funds for investment into higher value-added activities. On the other hand, where firms

¹¹ although it appears that some buyers provide a preferred list of inputs suppliers that must be used – this is important in the context of the rules of origin in preferential trade agreements, since if these input suppliers are not located in a country from which inputs can be cumulated then preferential access will not be granted.

can provide these functions, there may be important spin-offs from learning and upgrading in the clothing sector that assist the development of other sectors in terms of logistics and supply base management that will facilitate investment into activities in other global chains.

There are two distinct decisions that influence sourcing patterns. First, large retailers make a general assessment of countries, including or excluding them as sourcing locations based mainly on political and economic risk considerations. In addition countries are increasingly being assessed with regard to a range of regulatory and governance issues in response to increased consumer and NGO attention to labor standards and corporate responsibility. Second, firms within countries are assessed on the basis of issues such as production costs, managerial capacities, lead times, quality and flexibility in production and availability of supporting services. There are differences in sourcing practices across markets and between buyers of different size. Although buyers in large homogeneous markets are demanding more of suppliers in developing countries, this is not the same for smaller firms in small countries. For example, Palpacuer et al (2005) find important differences between the sourcing practices of clothing buyers in the UK, France and Scandinavia. Our empirical analysis below will attempt to capture how are these changes in the nature of clothing chains and the role of global buyers have become reflected in the pattern of global clothing trade.

3.4 The importance of transport and time

The quality of transport and logistics services has become increasingly important in influencing trade costs and trade flows. Broadly, the costs of transporting the exports of developing countries to foreign markets are a greater constraint to trade than are tariffs (World Bank (2003)). Limao and Venables (1999) estimate that the elasticity of trade with regard to transport costs is high, around -2.5, which implies that halving transport costs would increase the volume of trade by a factor of five. These authors suggest that the relatively low levels of African trade can be largely explained by weak infrastructure. In addition, inefficient or corrupt customs, and long delays at borders together with poor quality port services further reduce the trading opportunities available to many developing countries. Wilson et al (2003) find that improvements in ports and customs in the Asia-Pacific region would have a substantial positive impact on trade and incomes.

High transport and border crossing costs impinge especially on poor landlocked developing countries. Even coastal developing countries may be effectively land-locked if they are not on major shipping routes and are served by inefficient and high cost coastal feeder services to main ports. Arvis et al (2007) show that exports from landlocked countries are constrained not only by the high cost of transport services, but also by the high degree of unpredictability of transportation time. In addition to physical infrastructure constraints, costs arise from widespread rent-seeking activities in the transport chain and severe flaws in the implementation of transit systems, which prevent the emergence of reliable logistics services.

Transport and logistics are particularly relevant to the clothing sector where time is now a critical element of competitiveness (see, for example, Abernethy et al (1999)). Alleviating transport and logistics constraints will be critical for low-income African countries to effectively integrate into the global market for clothing production. Weil (2006) stresses the importance of “lean retailing” and the effect this has on the competitive position of different countries. He concludes that clothing products can be categorized either as fashion goods (such as women’s dresses and seasonal products that follow a one-time order and where stocks usually not replenished afterwards) and standard goods (such as men’s jeans and t-shirts). Lean retailing is of particular importance for the latter category as with the automation of managing inventory, the costs of holding inventory have been passed on to suppliers that are situated upstream in the supply chain. This demands short lead times for (varying amounts of) replenishment and gives a proximity advantage to certain suppliers.

For fashion goods, however, traditional cost factors determine the sourcing decisions and the market is characterized more by price competition. Evans and Harrigan (2003) discuss how the demand for timely delivery has shifted the sourcing of US imports to nearby countries. Thus low-income countries that are not proximate to the main importing countries will find it difficult to penetrate the part of the global market that is driven by lean retailing and the need for timely delivery, especially so if transport infrastructures are weak, customs procedures are long and cumbersome, ports are inefficient and telecommunications expensive and unreliable.

3.5 Import saturation in rich countries limits margins

In past episodes of industrialization driven by the clothing sector, profits and learning from expansion of the sector paved the way for entrepreneurs to invest in new and higher value-added activities. There are two factors that it has been suggested may undermine this evolution for today's low-income countries. First, demand in rich country markets is growing more slowly and, second, these markets are now import saturated. Thus, expansion of exports to these markets will have to be driven by substitution away from other developing country suppliers providing less scope for the more significant margins that occurred in the past when imports from Asian countries were substituted for higher cost domestic production. However, these assertions are not entirely supported by the data. Imports into the EU and the US have continued to grow, but there is also substantial dispersion among product groups suggesting fairly dynamic demand.

Consumer expenditure on clothing and footwear increased by 46 percent in the countries of the EURO-zone between 1990 and 2004 (Euromonitor, European Marketing Data and Statistics 2006), spending per capita varying widely between countries. In the US per capita spending on "apparel and services"¹² has remained rather constant. It fell by nearly 12 percent from 2000 to 2003 but increased by 10.7 percent in the following year, leaving the per capita spending on apparel and services slightly below its level in 2000 (Consumer expenditure in 2004, US Bureau of Labor Statistics), with changes in spending differing by category. This means that the share of annual expenditures spent on apparel and services has decreased from 4.9 percent in 2000 to 4.2 percent in 2004. This share has been 5.7 percent in 1990.

Overall imports of clothing articles have continued to increase, by 4.3 percent in the US in 2006 and around 8 percent for the EU25. In value terms, import penetration in the US was 74.5 percent in 2002. The situation seems to be different in the EU where external import penetration was 17.5 percent in 2004.¹³ However, import penetration at the national level is much higher. For example, data from the German association of textile and fashion industry indicate a market penetration of non-German manufactured clothing goods of about 74 percent

¹² This category includes jewelry, watches, and drycleaning.

¹³ This percentage most probably understates the true share of imported garments in final consumption as the "brand" value will most likely not be included in the import value.

in 2005. Similar numbers for Spain indicated an import penetration of non-Spanish garments of 68 percent in 2005. This shows the high level of intra-EU trade in clothing products. Hence, the market for clothing, especially in the EU, continues to offer opportunities for efficient developing country exporters. Although the market for certain standard clothing products is mature, there are many dynamic niches particularly with regard to fashion oriented products.

4. The empirical analysis

We now turn an empirical analysis of the factors that determine the global pattern of sourcing of apparel products. Ideally, we would estimate demand and supply equations in both importing countries and exporters. Unfortunately, data on prices are unavailable (unit values can be used but they are only a proxy) and it is very difficult to match data on domestic output with that on trade. As a consequence, we follow the majority of empirical studies of trade flows and utilise the gravity model, the mercilessly flogged workhorse of empirical international trade studies.¹⁴ In the standard gravity approach, exports from one country to another is pulled by the economic mass of the importer and constrained by the friction arising from the costs of trading that is captured by distance. In our application, we model separately the allocation across supplying countries of US and then EU import demand, the two major importing markets in the global economy, a comprehensive set of detailed clothing product categories.

We supplement a standard gravity model approach of the determinants of bilateral trade flows by including factors that reflect that clothing trade flows are now largely determined by the investment and allocation decisions of large international investors and buyers. These factors include the quality of governance and stability in the country, infrastructure, and the level of tariffs in the exporting country to capture the cost of importing intermediate inputs. Producers of clothing in countries with high import tariffs will have to pay above world prices for their key inputs and therefore will be less able to compete on world markets.

One implication of the attention to country characteristics is that buyers may not source from individual countries if certain thresholds regarding risk, governance, distance and economic size are not met. In fact there are a large number of zero entries in our data set of EU and US

¹⁴ The gravity model has been previously used to model clothing trade by Christerson (1994).

bilateral imports for a comprehensive set of detailed clothing product categories. Ignoring these zeros and simply estimating a gravity equation for the observed trade flows would suffer from selection bias.

To capture these features of global clothing trade we use a two-stage modeling approach in which we first estimate an equation of the probability that country i exports product k to the US (EU). In a second stage we then estimate a regression of the magnitude of the observed trade flows. Our approach follows that of more recent applications of the gravity model to bilateral trade flows such as Francois and Manchin (2007) and Helpman et al (2007). In the first stage we estimate the following probit regression that explains whether exports to the overseas market occur at all:

$$1) P(E)_{ikt} = \beta_1 GOV_{it} + \beta_2 TP_{it} + \beta_3 INF_{it} + \gamma' X_{it} + u_1$$

Where $P(E)$ is a dummy variable that takes the value of 1 if US (EU) imports from a given country in a given product category are positive, and 0 when no imports are observed. The explanatory variables are an aggregate indicator for the quality of governance GOV_{it} of country i in year t , a variable describing the overall trade regime in the exporting country TP_{it} , an index for the quality of infrastructure INF , a dummy variables for African countries, a dummy for English-speaking AGOA beneficiaries, and a dummy for trade relationships between African countries and the EU. These variables supplement the standard gravity variables in the matrix X_{it} : log of per capita income, log of per capita income squared, to allow for a non-linear impact of income per capita on trade, log of population, log of distance, log of distance squared and a measure of the share of resources in total exports to reflect that resource rich countries are less likely to have a comparative advantage in manufactured products.

The second stage of the model estimates a log-linear equation explaining the magnitude of the observed trade flows. The variables included are the same as those used to explain the propensity to export although we control for differences in total demand for each HS4 category in the EU and the US.

$$2) IMP_{ikt} = \lambda_0 + \lambda_1 GOV_{it} + \lambda_2 TP_{it} + \lambda_3 INF_{it} + \lambda_4 TotDemand_t + \gamma' X_{it} + u_2$$

4.1 Description of variables and data sources

We use US and EU imports of clothing products classified at the heading level (4 digit) of HS-chapters 61-63. Trade data are obtained from the USITC website and the EU COMEXT database. Data on the quality of governance are obtained from the Worldwide Governance Indicators (2006). As the six indicators contained in that dataset are highly correlated, including them separately inevitably leads to problems of multicollinearity. Following Francois and Manchin (2007) we use principal component analysis and retain one vector which accounts for 80% of the total observed variance. All elements of the vector are positive, making interpretation of the vector's coefficient in the regression simple. An increase in any of the measured dimensions of government quality increases our aggregate measure and hence the effect on the propensity to export a given clothing product to a given market is qualitatively similar for all the contained indicators. In general, the quality of governance is better in countries with higher per capita income. In order to isolate the relative quality of governance (per capita income is an explanatory variable in our gravity model), we regress this vector of governance on the log of per capita income and include the residuals as an independent variable in the regression.

We also use principal component analysis for indicators of infrastructure availability (main telephone lines, internet users per 1000 inhabitants, road density (relative to both inhabitants and country size)) to deal with the collinearity of the individual variables. The retained vector is again regressed on the log of per capita income and residuals are then used in the regression equation. We use the simple average of import tariffs to measure import protection in exporting countries, with the data being obtained from WITS. Data on per capita income and population as well as on the quality of infrastructure (in which extrapolation had to be used for a number of countries to achieve a complete dataset) were taken from the World Development Indicators Database, while data on distance to the market (weighted by population within the exporting country) and internal distance within countries came from datasets of CEPII. The dataset comprises 124 exporting countries and here we report results for the year 2004 but have

estimated using a panel of 1996, 1998, 2000, 2002, 2003, 2004, and 2005 and obtained very similar results.

4.2 Model results 1. The probability of exporting to the US and EU

We start by estimating the first stage separately as a probit model using data for the US, where imports of clothing under AGOA have been particularly dynamic over the last 5 years (see Table 3). The coefficients on the standard gravity variables carry the expected signs and are strongly significant in all specifications of the model. Distance to the US has a negative but weakening effect, while per capita income has a positive and decreasing effect on the propensity to export to the US.¹⁵ Large countries (in terms of population) are more likely to export a given product to the US while countries rich in resources and which therefore will tend to not have a comparative advantage in manufactured products such as clothing, are less likely to export to the US.

Moving onto the estimates of the coefficients on the other variables included to explain the propensity to export we find a positive impact of the relative quality of governance. This is strongly significant and robust across the different specifications of the model.¹⁶ The level of tariff protection against imports in the domestic economy of the exporter has a statistically significant and negative effect on the propensity to export apparel goods to the US, although there is some variation in the degree of significance across all the different specifications. Finally, the coefficient of the infrastructure index is positive and significant in the first specification of the model, but is not robust across the other specifications, when an Africa dummy is included. This suggests that much of the explanatory power in the infrastructure variable comes from the observations for Africa.¹⁷

¹⁵ The distance variable is not normally distributed in either of the two datasets. Many trading partners of the US lie in relative proximity (Caribbean and Central America) while another group of countries are farther away with few countries at an intermediate distance from the US. The distribution is double-peaked. Distance of trading partners to the European Union is relatively uniformly distributed. For these reasons we include the squared distance term on the right hand side.

¹⁶ In addition to our approach of using principal components, we also include each of the government indicators independently on the right hand side (and drop our combined indicator of governance). Each of the six indicators had a positive and statistically significant coefficient (which differed only slightly for each of the six indicators). Comparing the resulting coefficients on each of the six indicators, it appears that the propensity to export is most sensitive to the rule of law, government effectiveness, and control of corruption.

¹⁷ Other studies, such as Francois and Manchin (2007) and Habiaryemye and Ziesemer (2006) find a strong impact of infrastructure on aggregate exports. We are concerned that the data we have available for measuring

Table 3: Propensity to export clothing products to the US (2004)

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>
Quality of governance	0.07	0.09	0.05	0.05	0.05	0.05
	[0.016]**	[0.016]**	[0.014]**	[0.013]**	[0.013]**	[0.013]**
Distance	-6.81	-7.75	-6.32	-4.83	-5.78	-3.92
	[1.931]**	[1.877]**	[1.534]**	[1.563]**	[1.596]**	[1.631]**
Distance^2	0.38	0.44	0.36	0.27	0.33	0.23
	[0.110]**	[0.107]**	[0.088]**	[0.089]**	[0.091]**	[0.092]**
Per capita income	1.01	0.68	0.61	0.53	0.58	0.48
	[0.237]**	[0.240]**	[0.231]**	[0.232]**	[0.229]**	[0.226]**
Per capita income^2	-0.06	-0.04	-0.03	-0.03	-0.03	-0.02
	[0.016]**	[0.016]**	[0.016]**	[0.016]**	[0.016]**	[0.016]**
Population size	0.20	0.19	0.20	0.20	0.20	0.19
	[0.015]**	[0.016]**	[0.014]**	[0.014]**	[0.014]**	[0.013]**
Average import tariffs	-0.12	-0.09	-0.11	-0.12	-0.11	-0.11
	[0.048]**	[0.048]**	[0.044]**	[0.044]**	[0.044]**	[0.043]**
Infrastructure measure	0.04	0.02	-0.01	-0.01	-0.01	-0.01
	[0.019]**	[0.017]**	[0.019]**	[0.018]**	[0.019]**	[0.019]**
Resource share in exports			-0.51	-0.52	-0.51	-0.52
			[0.102]**	[0.099]**	[0.101]**	[0.097]**
Africa-dummy		-0.28	-0.25	-0.33	-0.28	-0.32
		[0.069]**	[0.061]**	[0.056]**	[0.060]**	[0.056]**
AGOA_apparel					0.09	
					[0.072]**	
AGOA				0.18		0.17
				[0.069]**		[0.068]**
Other US preferences						0.17
						[0.065]**
Observations	5412	5412	5412	5412	5412	5412

Robust standard errors in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Note: AGOA is a dummy variable that takes a value of 1 if the exporter is an English-speaking AGOA beneficiary and is 0 otherwise. AGOA_apparel is similar but only identifies those relationships that fall under the special apparel provisions of AGOA

African countries have a consistently lower propensity to export than other countries as indicated by the negative and significant coefficient on an Africa dummy that is robust across the different specification (we also re-estimated the model including a range of other regional dummies but in contrary to the other dummies, the Africa dummy remains consistently negative and significant). A dummy for English-speaking AGOA beneficiaries is statistically significant, suggesting that AGOA has partially mitigated the lower propensity of African

infrastructure (number of main telephone lines, internet users per 1000 inhabitants, and road density) are not the most appropriate for exports of clothing. To address this we experimented with the Habiyaemye and Ziesmer measure of infrastructure but found this too to be insignificant. Thus our results seem to be robust to the indicator of infrastructure that is used.

countries to export apparel products to the US, although the positive effect of AGOA cannot fully compensate. AGOA helps in overcoming the two of the main constraints to exports that we identify. On the one hand, it increases awareness of trade opportunities with African countries, reduces the costs of sourcing from Africa and hence reduces the general bias against importing from Africa. At the same time, it signals a certain level of quality of governance since good governance is one of the criteria used in determining whether a country qualifies for AGOA benefits. Finally, a dummy variable for other countries that have preferential access to the US (Caribbean and those with whom the US has signed an FTA) is positive and significant.

These results demonstrate, in addition to economic size, wealth, natural resource base and distance, the importance of the quality of governance, the nature of domestic trade policy and access to US preferences in influencing the propensity of a country to export clothing to the US. Further, the analysis suggests that, even after allowing for these additional governance and trade policy factors that are important in explaining the sourcing decisions of large buyers, African countries are less likely than other countries to export apparel products to the US.

Chisik (2003) has shown how a poor country-of-origin reputation can be self-fulfilling and can determine the average quality of a country's exports as well as the types of products in which it specializes. Countries may be unable to exploit normal comparative advantages due to a lack of reputation and domestic firms will under invest in raising their own quality. Chisik suggests that subsidies to R&D or human capital accumulation at the national level lower the costs of firms in raising quality and do not require firm specific knowledge or payments that limit the effectiveness of policies such as export licences or quality stamps. Our analysis suggests there may be a problem of reputation for Africa as a whole. This means that firms in particular African countries may not only be constrained in raising quality and reputation by their own domestic policies and national reputation but might additionally be encumbered by the reputation of Africa as a whole.

Estimation results for the EU as an importer are similar but show some significant differences with regard to the size of the coefficients (see Table 4). The coefficients on the gravity variables have the expected signs and are statistically significant. The governance indicator is

positive and strongly significant. The coefficient on the simple average tariff of the exporting country, however, is not significant, while resource rich countries have a significantly lower probability of exporting to the EU. The coefficient for the Africa dummy is negative and statistically significant but only at the 10 percent level once the resource share is included. Again, the infrastructure variable does not have a significant impact on the propensity to export to the EU once the Africa dummy and the resource intensity are included

Table 4: Propensity to export clothing products to the EU (2004)

	<i>I</i>	<i>II</i>	<i>III</i>
Quality of governance	0.06	0.07	0.04
	[0.016]**	[0.016]**	[0.015]**
Distance	-5.21	-4.46	-3.14
	[1.567]**	[1.568]**	[1.362]*
Distance^2	0.30	0.26	0.18
	[0.093]**	[0.093]**	[0.081]*
Per capita income	0.88	0.71	0.65
	[0.233]**	[0.241]**	[0.268]*
Per capita income^2	-0.05	-0.04	-0.03
	[0.017]**	[0.017]*	[0.019]+
Population size	0.21	0.20	0.21
	[0.016]**	[0.017]**	[0.015]**
Average import tariffs	-0.02	0.01	0.01
	[0.059]	[0.061]	[0.056]
Infrastructure measure	0.07	0.04	0.01
	[0.027]*	[0.027]+	[0.028]
Africa-dummy		-0.16	-0.13
		[0.077]*	[0.069]+
Resource share in exports			-0.46
			[0.085]**
Observations	5104	5104	5104

Robust standard errors in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

We estimated the model separately for the EU and the US due to the apparent idiosyncrasies of these two markets. Nevertheless, we investigated a pooled dataset that confirmed the broad results discussed above. We obtained significant estimates of the expected sign on the standard gravity variables of income, distance and size. The quality of governance is a positive and significant determinant of the probability of exporting clothing to these key markets. The simple average tariff has a negative sign but the impact is not robust across different specifications of the model. Similarly, for the infrastructure variable there is little evidence of a strong and robust impact on the propensity to export. The dummy for African exports is

strongly significant and negative under all specifications of the pooled model. The coefficients on separate dummy variables for trade relationships between African and European countries and between English speaking African AGOA beneficiary countries and the US are both positive and statistically significant. However, an overall bias against importing from Africa remains as the negative coefficient of the Africa-dummy is larger than both the coefficient on the EU dummy and the AGOA-related coefficient. The negative impact on the propensity to export to the EU of being an African country is less than that for the US.

4.3 Model Results 2. The value of exports to the EU and US

We now turn to the second stage of our regression, which seeks to explain the magnitude of the trade flows that are observed. Excluding the observations with zero trade will lead to a model that suffers from selection bias. In addition, the propensity-to-export equation and the second-stage equation are not independent and their error terms are likely to be correlated. We hence estimate the second-stage equation using a Heckman-model that corrects for these problems. Table 5 reports regression results for the US and the EU datasets in 2004 separately, in each case the results from the full model (I), and a preferred specification (II) are presented. We include the results for the jointly estimated first stage which are broadly similar to those reported above.¹⁸

In all specifications, quality of governance has a positive and significant influence on the volume of trade. Distance has a negative but decreasing effect while income per capita has a positive but declining effect on the volume of trade. Larger countries in terms of population tend to export greater amounts of clothing. The size of overall imports for the particular product has a significant impact and a roughly unitary elasticity and resource intensive countries very strongly tend to export less clothing products. All of these variables are statistically highly significant with the exception of per capita income in the case of the EU.

¹⁸ The coefficients from the first stage of the joint regression are the simple coefficients from the probit regression and are not directly comparable with the coefficients presented earlier in Tables 3 and 4 which are marginal-effects coefficients. What is important is that the statistical significance of the coefficients is broadly the same in the two sets of estimates and that the relative magnitude of the coefficients remains similar.

Table 5: Second stage Heckman-regressions for US and EU datasets (2004)								
	US (I)		US (II)		EU (I)		EU (II)	
	Value X	Prob X	Value X	Prob X	Value X	Prob X	Value X	Prob X
Quality of governance	0.32	0.11	0.31	0.10	0.44	0.10	0.44	0.08
	[0.016]*	[0.001]**	[0.005]**	[0.003]**	[0.030]*	[0.008]**	[0.018]*	[0.018]*
Distance	-101.21	-9.82	-102.28	-8.94	-27.40	-7.53	-22.31	-6.59
	[0.000]**	[0.018]*	[0.000]**	[0.023]*	[0.009]**	[0.029]*	[0.010]**	[0.005]**
Distance^2	5.80	0.57	5.87	0.52	1.56	0.43	1.24	0.37
	[0.000]**	[0.016]*	[0.000]**	[0.020]*	[0.015]*	[0.038]*	[0.017]*	[0.009]**
Per capita income	7.91	1.21	8.00	0.41	5.08	1.77	4.21	0.47
	[0.000]**	[0.035]*	[0.000]**	[0.000]**	[0.097]+	[0.011]*	[0.088]+	[0.000]**
Per capita income^2	-0.53	-0.06	-0.54		-0.33	-0.09	-0.27	
	[0.000]**	[0.169]	[0.000]**		[0.124]	[0.063]+	[0.123]	
Population size	0.86	0.48	0.80	0.49	1.22	0.54	1.33	0.52
	[0.000]**	[0.000]**	[0.000]**	[0.000]**	[0.000]**	[0.000]**	[0.000]**	[0.000]**
Average import tariffs	-0.25	-0.28		-0.29	0.90	0.03		
	[0.300]	[0.011]*		[0.004]**	[0.096]+	[0.837]		
Resource share	-2.27	-1.31	-2.05	-1.28	-3.74	-1.18	-3.83	-1.20
	[0.027]*	[0.000]**	[0.045]*	[0.000]**	[0.001]**	[0.000]**	[0.000]**	[0.000]**
Infrastructure	-0.04	-0.01			0.14	0.03		
	[0.781]	[0.789]			[0.589]	[0.644]		
Other US preferences	1.02	0.43	1.02	0.46				
	[0.093]+	[0.014]*	[0.109]	[0.010]**				
AGOA-dummy	1.08	0.42	0.91	0.46				
	[0.081]+	[0.018]*	[0.140]	[0.011]*				
Africa-dummy	-3.19	-0.82	-3.04	-0.85	-1.87	-0.33	-1.70	-0.32
	[0.000]**	[0.000]**	[0.000]**	[0.000]**	[0.017]*	[0.062]+	[0.032]*	[0.050]+
Total imports	1.16		1.16		0.99		0.97	
	[0.000]**		[0.000]**		[0.000]**		[0.000]**	
Constant	385.76	29.93	390.82	28.81	70.65	17.28	54.11	18.70
	[0.000]**	[0.098]+	[0.000]**	[0.096]+	[0.107]	[0.249]	[0.145]	[0.058]+
Observations	5412	5412	5456	5456	5104	5104	5720	5720

Robust p values in brackets
+ significant at 10%; * significant at 5%; ** significant at 1%

As in the first stage estimates, infrastructure does not contribute to explaining the magnitude of clothing exports to the US or EU. The average level of tariff protection in the exporting country does not contribute to the explanation of the volume of exports, and indeed is of the wrong sign in the case of the EU equation. The Africa dummy is statistically significant and negative, such that a country in Africa that actually manage to export to the EU and the US will tend to export less than a country in another region that has the same basic economic characteristics in terms of income per capita, population, distance and resource intensity. AGOA helps to offset this tendency in the case of the US, but the impact on the volume of exports, in contrast to the propensity to export, is at best only weakly significant.

Thus, the results from the second stage of our model which seeks to explain the amount of exports of clothing from those countries that actually export to the US stresses the importance of governance not just for influencing the decisions of buyers of where to source but also how much to source from different countries. Lack of infrastructure does not appear to be a constraint on countries increasing the amount of exports of clothing to the EU and the US, even though we were not able to test for the impact of essential infrastructure components such as cost and reliability of electricity supply and telecommunications due to the lack of data. Finally, exporters in Africa appear to face particular challenges in increasing the amount of their exports of clothing beyond that of other countries.

5. Conclusions

The clothing sector still provides an opportunity for export diversification and the expansion of manufactured exports for low-wage countries. This is so even though China and India have been unfettered from quotas in the main consuming markets in the world economy. There are substantial export possibilities for countries that can effectively exploit their labor cost advantages and which can fill emerging niches. At the same time, the global market for clothing continues to change with an increasing role for large buyers and for speed and flexibility in delivering products to the market.

First, our empirical analysis of exports of clothing to the EU and the US suggests that in the modern market, where global buyers are seeking to minimize both economic and reputational risks, issues concerning governance are a significant determinant of the probability that exports of clothing will take place and, if they do, of their magnitude. This implies that assistance to clothing firms will only have a limited impact on exports in countries that have poor governance. On the other hand, it suggests that countries that improve their governance will reap not only the direct benefits of such actions, but will also increase the propensity for local clothing firms to export to the EU and the US and the potential size of those exports.

Second, our empirical evidence does not provide strong evidence that quality of infrastructure is a strong determinant of the propensity to export clothing products. Hence, clothing may be a

product into which countries can diversify without the large scale investments in infrastructure that may be required to export other more transport intensive products. This is however, a very tentative conclusion since we are concerned that our infrastructure variable adequately reflects the key infrastructure services required to export clothing products, in particular, because our measure does not include information on the cost and reliability of electricity supply, an important input in the manufacturing of clothing, nor on telecommunication costs, which are increasingly important for effective access to overseas markets.

Finally, we find a strong bias against sourcing clothing products from Africa, beyond that which can be explained by governance and country characteristics such as income, size and distance from the market. Trade preferences appear to offset but not to overcome this problem for African countries. This suggests that potential exporters of clothing in Africa face particular problems in exporting clothing products to the main markets in the EU and the US and that some form of concerted action is necessary to reduce the negative image of sourcing from Africa and to encourage firms in Africa to invest in higher quality.

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