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Market Access Conditions and Sub-Saharan Africa's Exports Diversification

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Summary. — Despite some progress in the last decade, Sub-Saharan Africa's participation in the global economy remains generally limited and poorly diversified. Among the various reasons behind the lack of competitiveness of Sub-Saharan Africa exports, this paper analyzes whether changes in market access conditions affect export diversification. The findings of this paper indicate that market access conditions remain important and that the presence of trade relationships depends not only on favorable market access conditions but also on how these compare relative to foreign competitors. These results imply that freer trade within Sub-Saharan African countries could provide significant incentive to intra-regional trade.

Key words — trade policy, extensive margins, export diversification, tariffs, Sub-Saharan Africa

1. INTRODUCTION

Despite some progress in the last decade, Sub-Saharan Africa's participation in the global economy remains marginal. In terms of value, Sub-Saharan African exports as a whole still represent only about 3% of world trade. In terms of export diversification, Sub-Saharan African countries remain dependent on a very limited number of products, largely commodities, exported to a limited number of destinations, mainly developed European countries. The poor and volatile integration of Sub-Saharan African economies into international markets poses particular concern for the developmental perspective of the region, especially because trade integration is regarded as the most promising route to economic growth. Although geography and history certainly play a role in explaining why many Sub-Saharan African countries remain marginalized in global markets, part of the problem relates to policy determinants.

The literature has pointed to several policy constraints that affect export competitiveness, many of which are found to be more severe for countries in Sub-Saharan Africa (Cadot, Carrère, & Strauss-Kahn, 2011; Rodrik, 1998). Factors affecting Sub-Saharan Africa's competitiveness include high costs of starting and conducting cross-border transactions (Djankov, Freund, & Pham, 2010), weak trade-related institutions (Francois & Manchin, 2013), inadequate infrastructures and the lack of regional growth poles (Venables, 2010), the poor implementation of trade facilitation mechanisms (Iwanow & Kirkpatrick, 2009; Portugal-Perez & Wilson, 2012), the lack of supply capacity (Mayer & Fajarnes, 2008), and unfavorable trade-related policies (Collier & Venables, 2007; Shepherd, 2010).

This paper focuses on a determinant of competitiveness that often plays in favor of Sub-Saharan African exports: market access and in particular the system of tariff preferences. Although tariffs faced by Sub-Saharan African countries are often low because of favorable preferential schemes, Sub-Saharan Africa's products still face high tariffs when exported to many developing countries, even regionally. Moreover, the proliferation of regional trade agreements among third countries has in many cases worked against Sub-Saharan African countries' export competitiveness. In the analysis of this paper, we take these issues into account by considering both direct market access (the tariff faced by Sub-Saharan African exports) and relative market access conditions (the preferential margin of exports relative to that of other foreign competitors). In doing so, we use the notion of relative market access, formalized in the relative preferential margin index (RPM) (Fugazza & Nicita, 2013; Hoekman & Nicita, 2011).

The inclusion of preferential access as determinant of export diversification is not new in the literature, but the way it is proxied for varies across papers. It is often introduced in the form of a dummy variable (i.e., a Preferential Trade Agreement dummy), of direct tariffs (Buono & Lalanne, 2012; Debaere & Mostashari, 2010), or both (Scoppola, Raimondi, & Olper, 2013), but less frequently as a preference margin (Cipollina & Salvatici, 2010 and Cipollina & Salvatici, 2011). This analysis makes use of a probabilistic model to explore the impact of the changes in market access conditions on export diversification, and then differentiate between the probability of exports related to new trade flows and the survival of preexisting trade flows, the latter being essential for sustained diversification (Besedes & Prusa, 2011). The overall results indicate that changes in market access conditions brought by the changes in the system of preferences have had significant implications for Sub-Saharan African exports diversification. In more general terms, these results also imply that a hypothetical free trade area among Sub-Saharan African countries would considerably enhance regional trade opportunities.

The remainder of this paper is organized as follows. Section 2 presents the data and provides some descriptive statistics for Sub-Saharan Africa's exports and market access.

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Section 3 presents the estimating framework, assessing the extent to which market access affects Sub-Saharan Africa's probability of exports. Section 4 discusses the results and Section 5 concludes.

2. DATA AND DESCRIPTIVE STATISTICS

To assess the impact of market access conditions on Sub-Saharan African exports, this paper utilizes detailed bilateral data at the six-digit level of the Harmonized System (HS88) classification comprising 28 Sub-Saharan African exporting countries [1] and 94 importing countries (33 of which are in Sub-Saharan Africa). The trade data are from the UNSD COMTRADE database, and the tariff data are from the UNCTAD TRAINS database. [2] The data utilized for the construction of the exchange rate variable originate from UNCTAD Globstat. Trade agreements' data originate from the NSF-Kellogg Institute Database on Economic Integration Agreements (EIA). [3].

For the purpose of this paper, we organize the data in several ways. First, as the analysis relies on changes in trade and trade policy, we measure those changes at two points in time. To define these points we focus on two-year periods (2000–01 and 2010–11) [4]. This minimizes omissions and gaps in the data, which are not uncommon for the statistics on Sub-Saharan African countries. [5] We also omit any trade flow of little magnitude (less than 10 thousand US dollars). The analysis differentiates according to three broad product groups: primary goods, comprised of about 330 HS six-digit products; intermediate goods, comprised of almost 2,500 products; and consumer goods, almost 1,200 products. [6] This split allows us to investigate the possible differences in the effects of the covariates of interest on products where Sub-Saharan African countries have different export performances and preference access. Finally, we further reduce the dataset by not including HS six-digit products which do not have enough within-product variance (products that are not exported at all or are exported only by one country in our sample). [7]

Before presenting some descriptive statistics, we briefly illustrate the two variables capturing market access conditions. The direct effect of the system of preferences on market access conditions is captured by the tariff faced by exports, while the effect relative to other competitors is captured by the relative preferential margin. Both measures are calculated for each HS six-digit product at the bilateral level. The first measure, *direct* market access, is simply the bilateral applied tariff at the HS six-digit level. The *relative* market access condition is measured by the relative preferential margin (RPM). The RPM takes into account that preferential rates granted to a given country, although lower than most-favored nation (MFN), could still penalize the given country relative to other countries that benefit from even lower preferential tariffs. The RPM is calculated as the difference, in tariff percentage points, that a given good faces when exported from a given country relative to being exported from any other. [8] In formal terms the RPM is calculated as follows:

$$RPM_{g,jk} = \frac{\sum_v tv_{g,vk}\tau_{g,vk}}{\sum_v tv_{g,vk}} - \tau_{g,jk}, \quad v \neq j \tag{1}$$

where the subscript j denotes the exporter, k denotes the importer, v denotes countries competing with country j in exporting to country k, and g denotes the HS six-digit product; tv is export value and where τ denotes the applied bilateral tariff. In other words, the RPM for product g exported from country j to country k is the difference between the average (trade-weighed) tariff applied by country k to imports originating from each country v and the direct tariff applied by country k to country j.

(a) *Export performance and market access*

Sub-Saharan Africa's exports are concentrated in a limited number of products, largely minerals and agricultural commodities. For the 28 countries in our sample, in 2011 primary products accounted for almost two-thirds of Sub-Saharan Africa's total exports value, or about 105 billion USD. In terms of geographic diversification, Sub-Saharan Africa's exports are largely bound to developed countries' markets (mainly the EU). However, non-regional developing countries, especially in Asia, represent an increasingly important export market. Sub-Saharan African intra-regional trade is very limited and accounts only for 5% of primary goods, and about 17% of intermediate exports. Consumer products are exported relatively more within the Sub-Saharan African region (31%), but these represent in value only about five billion USD. Sub-Saharan Africa's exports greatly increased in the last decade. Most of the growth in exports has been in primary products. Exports of intermediate and consumer products have also grown but at a slower pace. Table 1 reports some statistics on the increase in Sub-Saharan Africa's exports.

One important feature of Sub-Saharan Africa's export growth is that export diversification has been largely absent. The increase in exports has been mostly due to the intensive margins (the increased value and/or volume of preexisting product–destination flows). Trade growth at the extensive margin (the increase in value due to new product-destination flows) has been much more modest. In 2011, more than three-quarters of Sub-Saharan Africa's exports growth was in products and destinations that were already exported in 2001.

The lack of diversification is generally observed also at the level of single exporters. Table 2 reports the number of product-destination flows for each country in 2011. Most countries export only a very limited number of products to a very limited number of destinations. The median number of export flows is 157 product-destination flows for primary, 320 for intermediate, and 312 for consumer products. Diversification is largely related to the degree of economic development, with low income countries generally less diversified than middle-income and larger countries.

Sub-Saharan Africa stands out as a region where also performance at the intensive margin has been poor (Besedes & Prusa, 2011; Brenton, Saborowkski, & Von Uexkull, 2010). Indeed, although some diversification takes place (as shown by the relatively large number of new trade flows), it is not sustained in the long term (as shown by the large number of disappearing flows). This suggests that to better understand the poor diversification in Sub-Saharan Africa's exports it is important not only to examine what determines the occurrence of new flows, but also what determines the survival of preexisting export flows.

Table 1. *Sub-Saharan Africa's export growth (2001–11)*

	Primary (%)	Intermediate (%)	Consumer (%)
Growth in trade value	185	136	93
At the intensive margin	152	98	66
At the extensive margin	34	38	27
Growth in the number of trade flows	22	27	24