



Maximising domestic value-added in African exports: The role of rules of origin

Bernard Hoekman, Christian Lippitsch, Marcelo Olarreaga, Marco Sanfilippo, and Rohit Ticku

- Rules of origin (RoO) are integral to preferential trade arrangements. They ensure exports are produced in beneficiary nations by specifying a minimum level of processing. If RoO are too restrictive, they reduce the ability of exporting firms to utilise trade preferences.
- We combine a theoretical and empirical framework to estimate value-added maximising RoO for African countries.
- We find significant cross-country heterogeneity in the RoO that would maximise domestic value added in preferential exports. Estimates range from 26% for Uganda and Kenya to as much as 78% for South Africa.
- The estimates for Uganda and Kenya are below what is currently required in EU preferential trade regimes and the African Continental Free Trade Area, suggesting a need for less restrictive policies.

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Executive Summary

Rules of origin (RoO) are integral to preferential trade arrangements. In the context of nonreciprocal schemes such as the Generalised System of Preferences (GSP), RoO ensure that goods entering the preference granting economy are produced in the exporting country. In the framework of reciprocal free trade agreements such as the African Continental Free Trade Area (AfCFTA), RoO serve to prevent goods from third countries from entering into the trade bloc's market through countries with low tariffs. This policy brief sheds light on the impact of RoO on the value-added embedded in total preferential exports that originates in countries that are eligible for preferential access and estimates RoO that would maximise domestic value-added in African countries' preferential exports.

The relation between the level of restrictiveness of RoO and total value added generated in beneficiary countries that is embedded in exports is non-monotonic. RoO requiring a high share of value added to be produced in the exporting country reduce the ability of domestic firms to use the cheapest and most suitable inputs available on international markets, making them less competitive and reducing total exports and hence exported domestic value-added. Very lenient RoO, following the same logic, may increase total exports but reduce the share of domestic value-added embedded in exports. This implies that there is an intermediate level of RoO that maximises total exported domestic value-added.

Applying this logic, we analyse the relation between RoO and preferential exports from Africa to the European Union (EU) and estimate the level of restrictiveness of RoO that maximises exported domestic value-added for a sample of African countries. Our findings reveal significant heterogeneity across countries, ranging from requiring 26% regional content in Uganda and Kenya to as much as 78% in South Africa. Our findings suggest that current RoO requirements by the EU in its preferential market access schemes and in the African Continental Free Trade Area (AfCFTA) are too high for Uganda and Kenya exporters, resulting in lower domestic value-added in their exports. However, they are too low for South Africa. These findings suggest differentiated RoO across partners within the same preferential trade agreement can increase the share of regional value-added in preferential exports.

Analysis of the effects of RoO and the design of RoO that maximise regional value added requires information on the sourcing of inputs by firms and the value that is added in the production process used to create an exported good. Most of the analysis reported in this brief utilises readily available highly disaggregated trade data. These require assumptions to be made regarding the

relationship between RoO and the share of value added embedded in exports. A contribution made in the underlying working paper is to document how national administrative micro data on firm activities can be used to assess the actual domestic value-added content of exports and validate the trade-based methodology to estimate value added maximising RoO.

Introduction

In a world of global supply chains with increasing vertical specialisation, using the value of exports as a metric for how much trade benefits the exporting country can be highly misleading, particularly in small countries with a lower share of domestic value-added embedded in their exports (Johnson, 2014). Policies such as preferential market access regimes that unambiguously boost exports can hurt development if they simultaneously reduce the share of domestic value-added embedded in exports. Rules of origin (RoO) are a critical component of preferential trade arrangements, defining what is needed for a product to have been processed sufficiently in the exporting nation to confer “originating” status. In the context of nonreciprocal trade preference schemes such as the Generalised System of Preferences (GSP), RoO ensure that goods entering the preference granting economy are produced in the exporting country. In the framework of reciprocal free trade agreements such as the African Continental Free Trade Area (AfCFTA), RoO serve to prevent goods from third countries from entering the trade bloc’s market through countries with low tariffs, so-called trade deflection.

A common type of RoO requires a minimum share of a good’s value to be produced in the exporting country. This may be defined in terms of a minimum domestic or regional value-added share or a maximum share of inputs (materials) sourced from countries that are not part of a trade preference scheme or trade agreement. Very restrictive RoO reduce the scope for domestic firms to use of cheap and high-quality international imported inputs, making exports less competitive, which eventually reduces total preferential exports and hence exported domestic value-added. Very lenient RoO, following the same logic, increase total preferential exports but reduce the share of domestic value-added embedded in exports, implying that there is an intermediate level of RoO that maximises exported domestic value-added. For African countries, which often have less diversified economies and rely heavily on imported inputs for their exports, restrictive RoO can be particularly challenging and erode the ability of firms to utilise trade preferences. A key policy issue is to find a balance between RoO that are strict enough to prevent

trade deflection and flexible enough to allow countries to participate in global value chains and maximise their exported domestic value-added.¹

This policy brief draws from our research to provide actionable recommendations for policymakers to enhance the role of RoO in increasing domestic value-added in African preferential exports. We combine a theoretical framework with data on preferential exports to estimate the relationship between RoO and exported domestic value-added and the RoO that maximises domestic value-added in African exports.

Research Methodology

To determine the level of RoO that maximises exported domestic value-added, we apply the methodology used in previous research by Kniahin and Olarreaga (2023), based on Head et al. (2024), to African countries' preferential exports to the EU. The methodology is based on a mathematical representation that describes a non-monotonic relationship between the level of RoO and exported domestic value-added. This relationship is described by an inverted U-curve. A similar relationship was first described in the context of the relation between changes in the tax rate and the total amount of tax income – subsequently referred to as the Laffer curve. Head et al. (2024) first describe this relationship in the context of a RoO Laffer curve.

FIGURE 1: Non-monotonic relationship between regional content requirement and regional value addition

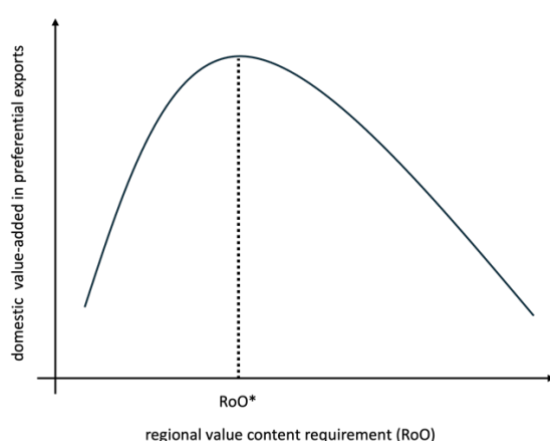


Figure 1 displays *one* possible relationship between the regional value content requirement and exported domestic value-added. The domestic value-added

¹ For simplicity, in this brief, we refer to domestic value-added to be maximised. The preferential trade arrangement between the EU and African nations is designed such that RoO apply to the content of accumulated value-added amongst the group to which the preferential trade regime applies – in this case, the group of African nations. Such “cumulation” is also a feature of the AfCFTA and similar reciprocal trade agreements. In our related research paper, we therefore refer to beneficiaries’ value-added in preferential exports.

maximising RoO will depend on various determinants related to the country's level of development and industrial organisation, further discussed below. For expositional clarity, the following defines BVA:

$$\text{Exported domestic VA} \equiv \text{Share of beneficiaries' VA} \times \text{total preferential exports}^1$$

Repeating the above-described logic, while the share of beneficiaries' value-added increases with the level of RoO, the total value of preferential exports is assumed to diminish with the level of RoO. The inverted U-shape relation between RoO and exported domestic value-added stems from the assumption that for low levels of RoO, any increase has a stronger positive effect on the share of beneficiaries' value-added than decreasing total preferential exports. At some point, this turns around. This point describes the level of RoO that maximises exported domestic value-added.

We determine the domestic value-added maximising RoO in two steps. First, we pin down the theoretical optimal RoO - before contrasting the results with any data. To formally describe the relationship in Equation 1, we need to make assumptions on the mathematical relationship between the level of RoO and exported domestic value-added. This is because we need to overcome the fact that when using trade data, we do not observe domestic value-added in preferential exports nor its share in preferential exports – we only observe preferential exports. The exact relationship is not obvious, ex-ante. The companion paper discusses different specifications.

In the second step, we use the gravity equation of international trade to explain the value of preferential exports. The gravity equation explains bilateral trade with measures of bilateral trade costs and the economic size of trading countries. Crucially, the gravity equation allows us to estimate the impact of RoO on the value of preferential exports of different countries in our sample. We then use these estimates as input to our derived theoretical value of optimal RoO to calculate the domestic value-added maximising RoO by country.

To understand how changing RoO affect the value of preferential exports for different levels of content requirement and for different countries, we need to see differences of RoO in the data varying across years, countries, and different products. This variation is found in preferential trade in the context of the EU's Generalized Scheme of Preferences (GSP), as used by Kniahin and Olarreaga (2023). The EU is a major donor in terms of preferential market access and has implemented significant RoO reforms in recent years.² Moreover, the EU's GSP preferences have three sub-regimes: the standard GSP, the GSP+, and the

² The average rule of origin requirement in the first year of our sample was 58%. In the last year of the sample, the average rule of origin requirement was 34%.

Everything But Arms (EBA) regime granted to LDCs. This provides variation in the level of RoO that can be used for our estimation.

Data

Our analysis utilises a comprehensive dataset covering various aspects of trade between African countries and the EU. The primary data sources include:

1. **Rules-of-Origin Data** from the International Trade Centre (ITC)-World Customs Organization (WCO)-WTO's ROO Facilitator database. This data provides detailed information on the value-added criteria required for preferential market access.
2. **Tariff Data** from the International Trade Centre's Market Access Map. This data includes information on EU's Most Favoured Nation (MFN) tariffs and GSP preferential tariffs to calculate preference margins.
3. **Export Data** from the WTO's Integrated Data Base's Tariff Analysis Online facility and EUROSTAT. This data includes detailed records of preferential and non-preferential exports.
4. **Firm-Level Data:** In Uganda. We utilise firm-level customs and value-added tax data to calculate the domestic value-added content of exports.

The data provides the necessary variation in RoO across countries, products and years required for our estimation.

Key Findings

We obtain estimates of i) the impact of changes of RoO on preferential exports to the EU; and ii) the level RoO that maximises exported domestic value-added – differing by country or group of countries, including the full GSP sample and the sub-sample of African exporters. Below, we describe the key findings from this exercise.

Non-monotonic relationship

The estimated relationship between domestic value-added in preferential exports and RoO restrictiveness is indeed non-monotonic. Initially, increasing RoO restrictiveness boosts exported domestic value-added as more production processes are localised. However, beyond a certain point, further increases in restrictiveness reduce exported domestic value-added because the higher production costs make exports less competitive, leading to a decline in export volumes. So, whether countries should invest their negotiating capital in pushing for more lenient or restrictive rules of origin is country- and case-specific.

Domestic value-added maximising RoO

Our estimates confirm the economic intuition that domestic value-added maximising RoO will be affected by differences in economic size, production diversification, and integration into global value chains. Our estimates point to a substantially lower value-added threshold for African countries than for the full sample. It is 57% for the full sample, but only 38% for all African countries. These point estimates clearly suggest that to maximise the regional content of African exporters under the EU GSP, a much lower regional content requirement is needed than the one required for the full sample of GSP exporters.

These differences in estimates across samples are not surprising, as African economies tend, on average, to be smaller and less diversified than economies in the rest of the GSP sample. Their capacity to incorporate domestic value-added in exports is lower than that of larger and more diversified economies.

Our research further identifies significant heterogeneity in the estimates of regional value-added maximising RoO across African countries. As reported in Table A1 in the Appendix, these range from 26% for Uganda and Kenya to 78% for South Africa. These estimates confirm our prior expectations. South Africa has a larger and more diversified economy and could benefit more from more restrictive ROO. These tensions are apparent in the AfCFTA RoO negotiations.

Uganda case study: Using tax data to estimate domestic value-addition in exports

Using administrative tax and customs data from Uganda's Revenue Authority (URA), we calculate the domestic value addition embedded in Ugandan firms' exports. Two findings emerge.

First, using these micro data generates the same estimate as was previously obtained using trade data and the preferred functional form for the relationship between RoO and value added in exports. The estimates suggest that the domestic value-added maximising RoO for Uganda is 26%, which is lower than the median of 30% faced by exports to the EU. Notably, the most restrictive RoO faced by Uganda in the EU reaches 60%, which is too restrictive if the objective is to maximise Ugandan value-added in preferential exports.

Second, to assess the level of restrictiveness of RoO negotiated in AfCFTA, we compare it to the current share of domestic value-added embedded in Ugandan EU exports. The median RoO requirement is 40% when calculated over the 2610 HS 6-digit tariff lines on which a regional value-added requirement has been agreed. The mean and minimum RoO is also 40% with only 36 HS 6-digit tariff lines with value added requirements above 40%, but that can be as high

as 85% for fabric and yarn. This contrasts with a share of domestic value-added embedded in exports of Ugandan firms to Africa at 18%. The AfCFTA rules of origin are too restrictive for current Ugandan exporters to embed the maximum level of domestic value-added in their preferential exports.

Policy Recommendations

Based on our findings, we draw out three implications for policy:

Adapt RoO to the needs of less industrialised economies

African countries are diverse and differ in their industrial development and integration into global value chains. This is reflected in substantial variation in our country-specific estimates of domestic value-added maximising RoO. A conclusion from our research paper is that implementing RoO that are differentiated to better reflect national economic capacities may help states to benefit more from preferential trade arrangements. Attempting to operationalise this in the context of the AfCFTA is likely to be administratively burdensome and undercut trade facilitation objectives. Adopting RoO that reflect prevailing domestic value-added ratios in less industrialised member countries is a more appropriate approach from a development perspective.

Reduce RoO Requirements

Current RoO requirements in both the EU and AfCFTA schemes are higher than the estimated for domestic value-added maximising criteria. For instance, Uganda faces a median RoO requirement of 30% in the EU and 40% within AfCFTA, compared to the estimated regional value-added maximising level of 26%. Reducing the RoO requirements could increase exported domestic value-added and enhance export competitiveness while supporting sustainable economic development in beneficiary countries. Particularly important is to lower the 'peak' RoO that apply to products such as textiles and where preferential tariff margins are higher—and thus more valuable. Policymakers should aim to strike a balance between preventing trade deflection and promoting local value addition without imposing excessive burdens on exporters.

Use micro data to assess the effects of RoO

A final policy implication of our analysis concerns the importance of evaluating the impacts of RoO given the heterogeneity across countries that benefit from preferential trade arrangements. Most extant analysis of RoO uses trade data and assesses variables such as the extent to which preferences are utilised. From a developmental perspective, policymakers must understand whether preferential trade arrangements foster productive upgrading reflected in a

greater share of domestic value embodied in preferential exports. To do this, governments can use firm-level transaction data from the value added tax system and combine this with transactions-level Customs clearance data.

Concluding Remarks

Our research underscores the importance of understanding the impacts of RoO on the domestic or regional value-added content of exports to large preference-granting trade partners like the EU and, more importantly, for African nations seeking to establish a continental free trade area within the AfCFTA. Our analysis also illustrates that one size does not fit all and that a RoO appropriate for more advanced economies will not serve countries with less well-developed industrial sectors. On balance, our findings suggest AfCFTA members should consider adopting less restrictive RoO to boost local industries and promote sustainable development.

References

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Appendix

TABLE A1: Country estimates for domestic value-added maximising RoO that maximise BVA

Country	Point Estimator	Standard Error
Congo	0.39	0.14
Gambia	0.48	0.16
Guinea	0.31	0.17
Kenya	0.26	0.07
Madagascar	0.38	0.20
Mauritius	0.20	0.08
Malawi	0.29	0.24
South Africa	0.72	0.65
Uganda	0.26	0.06