UK trade with Africa after Brexit

GIORGIA GIOVANNETTI, ENRICO MARVASI, FILIPPO SANTI

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Giorgia Giovannetti, Enrico Marvasi, Filippo Santi

UNIVERSITY OF FLORENCE

Abstract
We analyze current and potential trade between the UK and Sub Saharan Africa (SSA) and estimate the possible effects of UK's exit from the European Union (Brexit) on bilateral trade. Our results suggest that, despite the UK's interest and need for new markets and the recent positive economic performance of many SSA countries, Brexit is unlikely to have major effects on bilateral UK-SSA trade. It is difficult for the existing trade potential between the UK and SSA countries to fully materialize. This holds true even in the best-case scenario of full trade liberalization. On the contrary, trade with important partners as South Africa might decline in the scenario where the UK, which will be out of all the Free Trade Agreements signed as part of EU, fails to sign new agreements in a very short period. We conclude that Brexit will probably imply small changes in the trade patterns, which remain largely determined by structural variables including geographical distance, political stability and sectoral specialization. For SSA, the main gains in terms of trade creation are likely to come from deeper regional integration and from linkages with other major players at the world level, such as China and India.

1 Introduction

The economic performance of Africa over the last 20 years tells a story of success: aggregate GDP tripled surpassing $2 trillion (World Bank, 2019) and annual GDP growth averaged around 5 percent between 1999 and 2018, finally leaving behind the low average growth of the so-called "lost decades" (1980-2000).[1] Sub Saharan Africa (SSA) is trying to increase the still very low intra-regional trade, and the 2019 ratification of the African Continental Free Trade Agreement represents an important step in this direction (see Woolfrey et al, 2019). GDP growth, however, has not yet resulted in similar increases in international exchanges, leaving room for trade opportunities with several countries that may look at Africa as a new promising market (Giovannetti, 2019). Above others, China has recently increased its share of exports towards the continent, reaching ¼ of total SSA imports, and so has India (which more than tripled its exports to SSA since the year 2000). Now, for reasons linked to the UK exit from the European Union (Brexit) and to the need to substitute intra-EU trade, also the UK (and possibly the EU) looks with increased interest to SSA. The emphasis on SSA in the public discourse by both the Brexit-era Prime Ministers, Theresa May and Boris Johnson, suggests that the region is likely to play a role in the British attempt to reconfigure its economic network worldwide. The extent to which this will happen, as well as the advantages for individual SSA countries, will depend on the ability of both British and African negotiators to define in a very short period of time new UK-SSA trade agreements, since the existing EU-SSA ones will no longer apply to the UK.[2]

This chapter investigates whether and how SSA countries could benefit from Brexit in terms of increased trade. Recent studies, stressing different aspects of the complex political and economic relations, do not bring definite results, also pointing to the fact that only some countries are at the moment beneficiaries of EU preferences. Some studies argue that a slowdown of the European economy due to Brexit, given the importance of the EU and the UK for the area, might result in negative effects for SSA. For instance, a hard Brexit might reduce net agricultural SSA exports to the UK, should the pound devaluate. This is particularly relevant for those countries that rely the most on pound-labelled crops (notably cocoa). Such countries would suffer from a dump in the (real) value of their export (Hove and Wakeford, 2016, Wheatley, 2017). More in general, the possible Most Favorable Nation (MFN) tariff liberalization that could follow Brexit is likely to heavily impact UK import patterns. The risk is that lower average tariffs, together with a revision of the preferential tariffs scheme applied to some developing countries (many of which Sub-Saharan), might

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[1] Even after the recent "crises", GDP increased by 3.2 percent in 2018, and is estimated to accelerate to 3.3 percent in 2019 and projected at 3.5 in 2020 and 2021 (IMF World Economic Outlook, update, January 2020). Aggregates and averages mask a high heterogeneity; yet, most African economies, not only the resource-intensive ones, have been resilient and gaining momentum. Recent projections suggest that over the next five years twenty sub-Saharan African (SSA) countries might be amongst the world's fastest growing economies (some, Rwanda, Senegal and Ivory Coast forecast to grow at 7%). See on this point Giovannetti (2019).

[2] At the same time, the global and national response to the current Covid-19 epidemic will also be crucial for the ability of SSA countries to step up. Concerning SSA, 4 out of the 5 most harshly hit countries are members of the African Commonwealth (South Africa, Nigeria, Ghana, and Kenya). Not only these countries represent four of the largest economies in the continent, but also constitute the actors Britain is more likely to bet on after Brexit will take place. This additional source of distress shed additional uncertainty on the future impacts of Brexit on the African development (Kohnert, 2020).

displace import from those countries who are already benefiting from a lower regime (Nicita et al., 2019). On the other hand, Brexit might provide new business opportunities due to the necessary deep reconfigurations of trade agreements, and some countries might take advantage from the UK-EU diversion of trade (Mattoo et al., 2017). Brexit could also increase the bargaining power of African countries against the UK, helping them to achieve even better economic treatment than under the current Economic Partnership Agreement (EPA) in force with the EU. In such an uncertain policy framework, the freshly signed African Continental Trade Agreement partnership is likely to play in favor of African countries, making them stronger would they decide to bargain jointly.[3] On the contrary, it is very unlikely for the UK to obtain a better treatment than the one granted so far to the EU (Gaynor, 2018). African negotiators could push for a revision of the Rules of Origin, which regulate trade with the EU, as much as the limitation to agricultural trade set by the EU's Common Agricultural Policy. Also, they could press for protection for their infant industry, reducing the exposition to European competition (Westcott, 2018; Kohnert, 2018b).[4] The reconfiguration of the system of agreements regulating trade and investments between the UK, the EU, and the African Union might therefore lead a massive reconfiguration of trade patterns, with winners and loosers.

Building on the above perspectives and on recent evidence, this chapter empirically quantifies the possible impacts of Brexit on UK-SSA trade. We divide our analysis into two parts. First, we describe the UK-SSA trade relations before Brexit and assess the existence of unexploited trade opportunities (Section 2). Second, we estimate the possible impacts of Brexit under different scenarios (Section 3) and describe how UK-SSA trade might look after Brexit (Section 4). We then discuss our results and conclude (Section 5). Our analysis shows that there is a large unexploited trade potential between UK and SSA. But, although Brexit might contribute to take advantage of such trade opportunities, the increase in trade under the most likely scenarios is rather limited; furthermore, trade is likely to remain concentrated into the already more connected economies, South Africa and Nigeria. Even the full trade liberalization assumed under our best-case scenario is not enough to fully realize the trade potential of African countries which, in any case, would take time to fully unfold. Overall, our findings suggest that the opportunities Brexit could generate for and in SSA are unlikely to go in the direction of the UK. Rather, other major emerging world trade players such as China and India are likely to emerge as the major winners in the new scramble for Africa.[5]

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[3] The UK might still reinforce its Aid for Trade activism (Gaynor, 2018), using ODA to struck better deals with its African least developed partners, and might even use its position as leading investor (even though the bulk of British FDI concentrates in the energy sector) to press for privileged access to African market (Kohnert, 2018a). The recent move to put the Department for International Development under the Foreign Secretary sounds like a step in this direction, despite most of the efforts are currently being spent on continuity agreements, extending the same terms of the existing EU-EPA.

[4] This point is particularly dear to the Government of Tanzania, which long maintained a stalemate during the EPA renewal bargaining

[5] The recent bargaining of the first trade agreement between the US and a SSA country (Kenya) suggests a US renewed interest in the continent. Such interest appears to be also supported by the US cooperation strategy, with the international trade and investments targeting PROSPER program promoted by USAID. Yet, the overall trade balance between SSA and the USA indicate a slow but steady disengagement of the country from the continent (The US Census Bureau).

2 UK–SSA trade before Brexit

Let us describe the main characteristics and dynamics of the UK-SSA trade relations in the last decade. Data show that trade links between UK and SSA countries have weakened over time. A comparison with predicted trade flows from a gravity model reinforces this interpretation and stresses the existence of untapped trade potential with many SSA countries even before Brexit.

2.1 Main trade patterns and trends

SSA's exports are still highly concentrated on oil and minerals, and on a small set of specific products: textiles, clothing and footwear, and some agricultural products (cotton and vegetable oils), despite an increasing diversification and growth in the past 10-15 years. Furthermore, SSA is still not well integrated into global value chains. Its ratio of parts and components in total imports is not higher than it was in 1980. And its overall share of world trade remains small (just over 2.2 per cent).

Current SSA trade patterns are still largely shaped by its colonial experience (from which it inherited most of the existing physical and political infrastructure) and subject to different forms of agreements. Such a varied framework is reflected in a strong dominance of extra-continental trade over intra-regional exchanges. The fact that intra-African trade is regulated by a "spaghetti bowl" of regional trade agreements, where different African countries seek different things from participation in different agreements (as Byiers et al., 2019 put it: "Multiple memberships, multiple reasons") is also not surprising. In this framework, the signature of the African Continental Free Trade Agreement (ACFTA) in 2019 marked a historical result for the whole African continent, highlighting the recent efforts of the region towards a less fragmented trade network, higher economic integration and a more balanced economic structure (i.e. less concentrated on the extractive and agricultural sectors). Similarly, the trade and investment relationship with non-African countries is also regulated by a multitude of different forms of agreement, which range from general systems of preferences (GSP) and duty-free treatments for LDCs (based on bilateral negotiations), to multilateral preferential access treaties (such as the US's African Growth and Opportunity Act – AGOA – or the Economic Partnership Agreements -EPAs - with the EU).[6]

In the current situation, the UK represents one of the most important trading partners for SSA countries, which in turn have always been looking back with a favorable eye. In the recent years, the UK has also manifested its intention to strengthen the economic linkages with the region. Several UK firms have invested extensively in SSA (fDIMarket database, 2019), especially in the energy sector, and recent events and several official declarations seem to suggest an increasing interest for SSA and for the bilateral UK-SSA trade. However, these positive attitudes and announcements do not find a close match in actual data.

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[6] For instance the European "Everything but Arms" (EBA) agreement, which applies to LDCs encompassing 34 (out of 48) countries in sub-Saharan Africa, allows all imports to the EU duty free and quota free (DFQF) – i.e. completely free access except for armaments.

The ACFTA has not yet triggered new trade and SSA regional trade is still low compared to extra-SSA exchanges. Geographical and institutional conditions still remain the major limitations to maintenance of well-established commercial relationships in the region (Coulibaly and Fontagne, 2006; Storeygard, 2016).[7]

In addition, the increase in the trade share of "*new*" partners (such as China and India) coincided with a sharp decline of the trade flows from developed countries. Such a decline was particularly remarkable for the former top colonial powers in the region, France and especially the UK, whose relative importance decreased substantially over the considered period, passing from around 8% in the year 2000 to less than 3% in 2017.[8] *Figure 1* shows the evolution of the relative importance of the SSA top 10 trading partners (panel a), and the trend of SSA import share from the UK (panel b) in the period 2000-2016.

Figure 1 – UK export penetration in SSA.
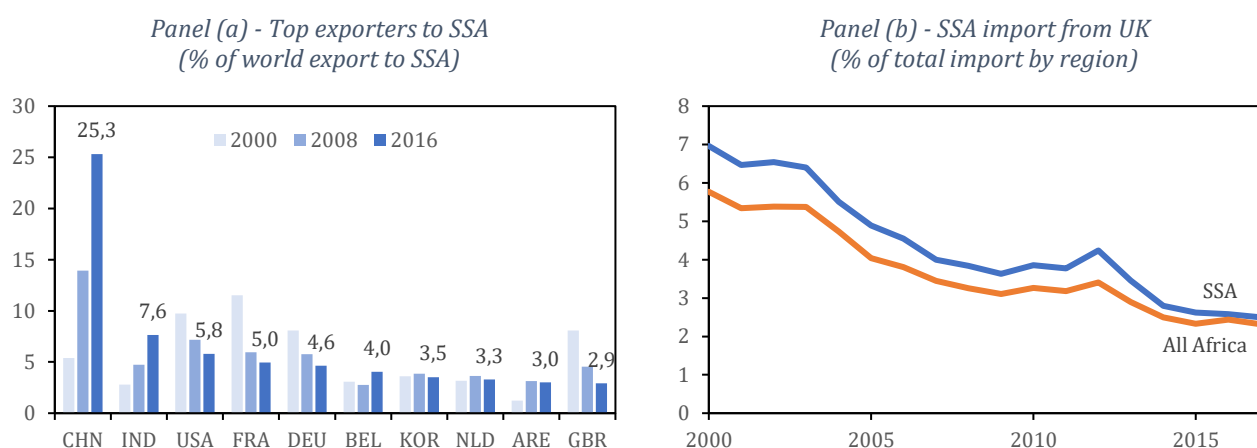
Source: author computation based on BACI dataset.

SSA only marginally contributes to UK total imports, which are also highly concentrated on few (relatively) large actors. The top 10 SSA exporters to the UK accounted for roughly 95% of total UK imports from SSA in 2016 but, with the exclusion of South Africa, none of the remaining top SSA importers places itself higher than the 45th position in the overall UK importers ranking. It is worth noticing that the top five SSA countries from which the UK imports (see Table 1) are resource rich countries. This pattern is consistent with the UKs investing strategy in SSA, which focuses in the Energy and the Extractive (both Oil and especially non-Oil) sector and the idea that trade and FDI are complements. Nonetheless, the SSA share of UK imports has been increasing over the past 20 years, even if it remained substantially low (passing from less than 2% to just above 3% in 2017(BACI, 2019).

Table 1 - UK imports from top trading partners in SSA, current US$ million.

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[7] These factors exacerbated the limits of the colonial infrastructure, usually oriented toward the former colonial power rather than within the region (Bonfatti and Poelhekke, 2017).

[8] Interestingly, the trade share deterioration hides the limited increase in UK-related trade volume to the region.

Country	Aggregate Import	Rank	Manufacturing Import	Rank	Agricultural Import	Rank
			2000			
South Africa	6230.55	(14)	1353.13	(29)	296.87	(11)
Mauritius	442.03	(52)	437.61	(46)	3.26	(83)
Ghana	361.87	(57)	153.25	(59)	21.25	(52)
Kenya	276.61	(61)	34.59	(85)	241.64	(13)
Zimbabwe	163.81	(72)	112.95	(66)	48.17	(34)
			2008			
South Africa	9986.47	(15)	2116.26	(32)	525.02	(12)
Nigeria	1437.55	(44)	124.06	(74)	6.5	(86)
Angola	937.12	(56)	5.07	(130)	0	(164)
Mauritius	688.58	(64)	682.59	(46)	2.12	(98)
Kenya	548.52	(69)	72.06	(81)	474.72	(16)
			2016			
South Africa	10012.58	(16)	1301.52	(39)	631.8	(11)
Nigeria	1136.41	(46)	72.00	(71)	2.09	(105)
Cote d'Ivoire	410.55	(66)	228.15	(60)	159.78	(32)
Kenya	386.79	(67)	25.82	(98)	359.55	(16)
Angola	330.29	(69)	8.03	(117)	0	(154)

Notes: the table reports the bilateral UK import flows from its top 5 SSA trading partners, together with their relative global ranking. Bilateral Manufacture and Agricultural imports with the related ranking with respect to the rest of the world are also reported in columns (3) to (6). All values are expressed in current US$ million.

Table 2 decompose bilateral trade between SSA and the UK by the main sectors. Over the whole period, more than 80% of UK's export to SSA consists of Manufacturing products, compared to less than 20% of imports from the continent (mostly intermediate inputs). Interestingly, the slight increase in the share of UK agricultural imports from SSA, paired with a reduction in more sophisticated manufacturing products (down to slightly more than 17% in 2016 from around 30% of total SSA-to-UK exports in 2000) suggest that during the last decades, UK looked for intermediate manufacturing input suppliers elsewhere. This pattern highlights the very dissimilar sectoral composition of UK export to and imports from SSA. It is very unlikely for Brexit to reverse these trends in the short term.

Table 2 - UK Export to and Imports from SSA by Sector (%).

Sector	2000		2008		2016	
	Export	Import	Export	Import	Export	Import
Agriculture	4.0	9.2	1.3	8.7	3.9	10.6
Extractive-(Oil, Coal and energy related)	4.4	5.7	12.0	24.6	9.2	13.3
Other*	6.6	54.9	4.1	40.1	1.0	58.9
Manufacturing	84.9	30.1	82.4	26.6	85.4	17.1
of which:						
Nuclear reactors, boilers, machinery, etc	18.6	2.5	22.4	3.6	20.5	1.3
Electrical, electronic equipment	13.1	0.9	9.7	0.5	8.6	0.4
Vehicles	5.8	1.9	9.8	0.8	9.3	3.6
Optical, photo, technical, medical, etc	3.7	0.4	3.2	0.3	6.6	0.2
Printed books, newspapers, pictures etc	3.6	0.1	2.3	0.5	3.4	0.1
Pharmaceutical products	3.2	0.1	2.4	0.1	3.2	0.1
Miscellaneous chemical products	2.9	0.1	1.4	0.1	1.8	0.1

Plastics and articles thereof	2.7	0.3	1.7	0.3	2.3	0.2
Tobacco and manuf. tobacco substitutes	2.6	1.1	0.1	0.2	0.0	0.1
Articles of iron or steel	2.2	0.4	2.7	0.3	4.0	0.1
Other Manufacturing**	26.6	22.2	26.8	19.8	25.7	11.1
Total	100	100	100	100	100	100

Notes: UK total Exports and Imports shares of total trade, divided by sector. The table also lists the top 10 manufacturing export 2-digit HS categories, sorted from the largest to the lowest 2000s export volume.

* *"Other" includes* Mineral Products (HS 25-27), Natural pearls and Precious stones (HS71), Arms and Ammunition (HS 90), and Works of Art, Collectibles and Antiques (HS 97).

** *"Other Manufacturing"* includes all those manufacturing sectors other than the top 10 reported above.

2.2   A structural gravity view

The apparently reduced importance of UK in SSA raises the question of whether trade is in line with what one would predict given country's characteristics. If this is not the case, as it seems from the declining SSA UK trade, then UK and SSA structurally undertrade. Should this be the case, there might exist unexploited opportunities, also independently from Brexit. For this reason, it is informative to compare how trade was and how it is expected to be, even before any Brexit effect materialize. In this (and the next) section, we make this comparison and show that there is some "missing trade" with UK for several SSA countries. We rely on the predictions from a gravity model, to obtain potential trade flows. Gravity models constitute a popular tool to obtain reliable predictions of economic flows. In the case of trade, they allow to compute the expected flows from their "structural" trade patterns, as driven by gravity factors (such as GDP, geographical and cultural distance, and trade policy variables). This means that we are able to explore the structural effect of Brexit for SSA, as mediated by its impacts on the global trade network.

We confine our analysis to 2016, the year of the Brexit referendum. In this way, we reduce the possibility that our estimates capture part of, or are biased by, possible changes in the trade patterns generated by the result of the Brexit vote itself. Nonetheless, our estimates remain comparable to previous quantifications of the effect of Brexit, as obtained via structural gravity (see for instance Sudtharalingam et al., 2018; and Oberhofer and Pfeffermayr, 2018)

The model we propose performs adequately (see the Appendix A1 for details on the estimation), explaining almost 90% of the overall variability in world trade bilateral flows (i.e. R-squared = 0.896). Interestingly, most of the predicted flows from/to SSA overestimate the actual trade with the UK (a notable exception is South Africa, whose trade with UK is underestimated). We find that there is some trade that is structurally "missing", i.e. that UK and SSA countries trade less than the gravity predicts. This "missing trade" must be attributed to factors other than GDP or geographical and cultural factors, and signals an untapped trade potential between UK and several SSA countries. In Figure 2, we report the top five countries by "missing export to" and "missing imports from" the UK. According to gravity factors only, Angola's exports to the UK should be almost 1.5 times higher, and those of Ghana about 1.25 times higher. Similarly, imports of Cote d'Ivoire and Senegal from the UK should be about 2 times higher. The presence of missing trade (or export potential) can be attributed to the presence of trade barriers and other non-

structural obstacles not accounted for into our gravity model. Brexit and other policy changes may operate to shrink or widen such trade gaps.

Figure 2 - Top five SSA countries by missing export to or missing import from the UK.
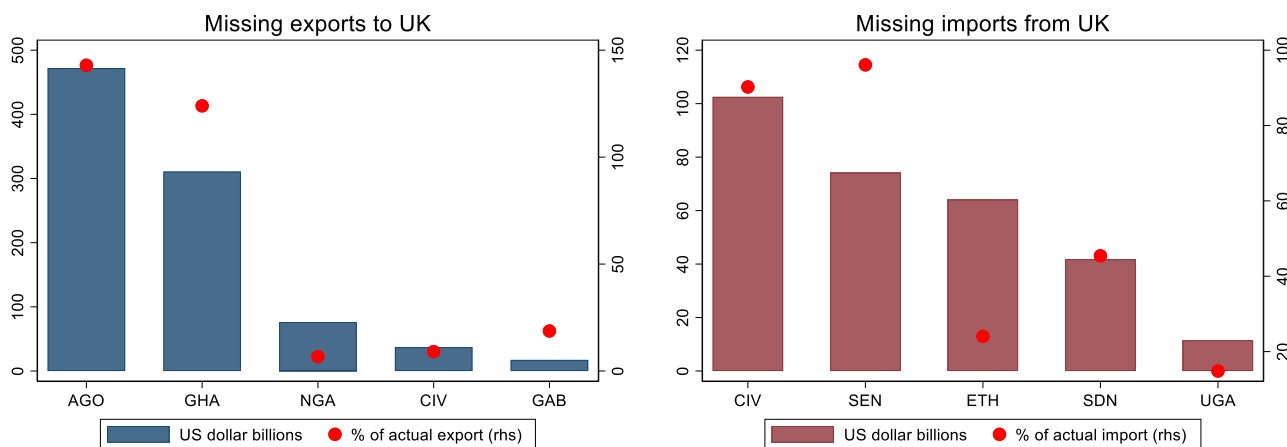

Legend: AGO = Angola; GHA = Ghana; NGA = Nigeria; CIV = Ivory Coast; GAB= Gabon; SEN= Senegal; ETH= Ethiopia, SDN= Sudan; UGA = Uganda. The solid bar represents the trade volume (exports or imports in the left and the right-hand panel respectively) expressed in billion US$ (Primary Y-scale). The red dots represent the missing share of actual exports/imports (in panel a and b respectively), expressed in percentage of the relevant flows (Secondary Y-scale). Source: authors' computation based on CEPII data.

2.3 A trade network perspective

The existence of missing trade between UK and (several) SSA countries suggests that unexploited trade opportunities exist. Looking at the network structure of UK-SSA trade helps understanding the differences between actual and predicted trade, as well as the importance of individual countries as trading partners. *Figure 3* shows the country-to-country actual trade network (panel a) vis-à-vis the gravity-predicted trade network (panel b). The figure depicts the core structure of the network and is obtained by applying a region-based threshold to exclude minor trade flows (i.e. those below 1% of the total trade of each region, namely UK to SSA; UK to EU; intra-EU; intra-SSA). Actual and predicted trade networks display important differences. First, UK trade is clearly more concentrated into few SSA countries than the gravity model would predict. According to the model, the UK network in SSA should not only be larger (i.e. involving more countries), but also stronger (that is, UK should export more to SSA countries). Nonetheless just 8 flows out of 44 potential UK-SSA connections overcome the 1% UK-trade threshold in the actual-trade network. Second, trade between SSA countries is less intense than predicted, as the gravity model estimates substantially larger intra-regional links. Furthermore, there is a high heterogeneity across countries. While South Africa, the largest UK's trading partner in SSA, is also the central hub in the region, many other countries tend to trade very little with each other. Countries like Angola, Ghana, and Mauritius trade to a significant extent with just South Africa: yet, their trade flows with the UK are sufficiently large to exceed

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the block-threshold (whose value is larger than the value of SSA regional threshold). Ethiopia, on the other hand, does not seem to trade with the rest of SSA, but has relatively large trade flows with the UK. Overall, the predicted trade flows stress the unexploited potential both between UK and SSA and within SSA itself. As a comparison, let us consider the UK-EU sub-network (in blue). The EU clearly appears well connected both in the actual and in the predicted trade networks, with minor differences between the two. A closer inspection shows that the main differences between the two sub-networks occur in the intensity of the trade links (i.e. the thickness) rather than in the structure of the networks.

Figure 3 – Pre-Brexit Scenario: UK-EU-SSA 2016 trade network

Panel (a) – Actual trade network   *Panel (b) – Predicted trade network*
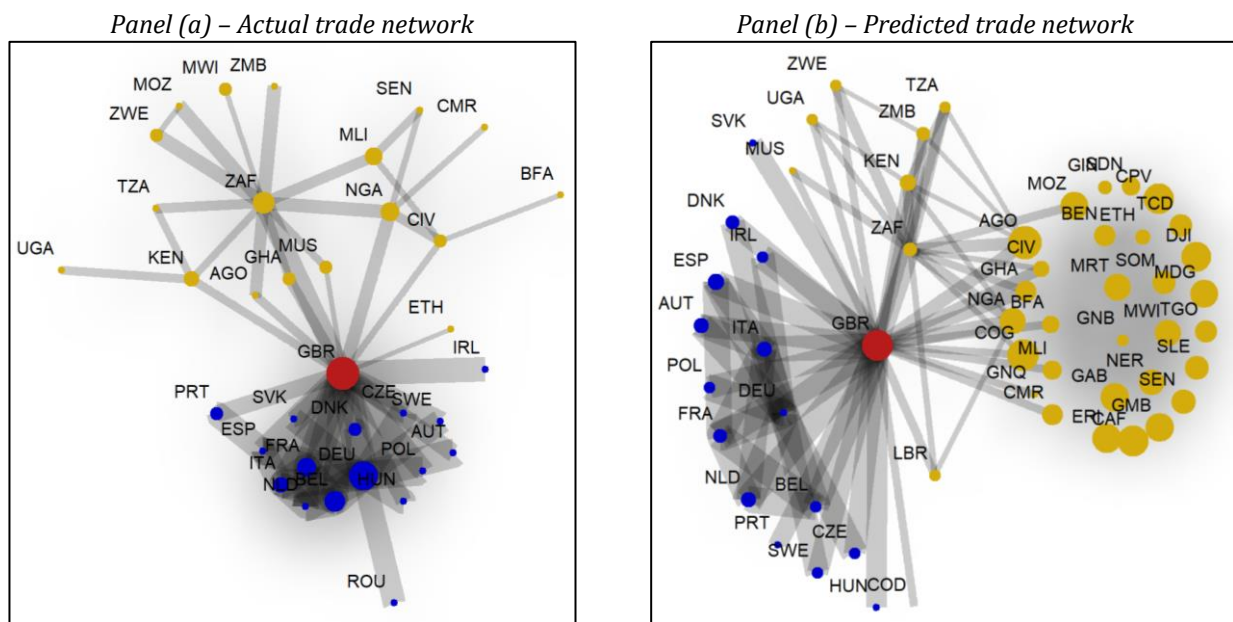
Notes: network representation of the UK-centered trade network in the EU (in blue) and SSA (in yellow). Each graph only reports those flows that are larger than a 1% threshold of the respective total regional trade. Country-node size is proportional to the number of export trade flows shown.[9]
Source: authors' computation based on CEPII data.

3   A counterfactual scenario-based approach

To assess the impacts of Brexit on trade between UK and SSA countries, we proceed in three steps. First, based on the above structural gravity model, we compute the trade elasticities to trade policy variables (namely free trade agreements and tariffs) and employ them to quantify the variation in trade flows under counterfactual changes in trade costs and trade policy variables. Second, we devise four possible counterfactual changes in the UK's trade policy, in order to quantify a range of potential Brexit-induced trade effects for SSA. We focus on two main scenarios that for simplicity we name: i) Soft Brexit and ii) Hard Brexit. To give a measure of how large the interval of the possible effects might be, we also add a feasibility interval ranging from the best- to the worst-case scenario. For convenience, we refer to them as: iii) Free

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[9] The networks are constructed using the statistical software R and the visualizations are performed according the Kamada-Kawaii algorithm.

Trade Brexit (best-case) and iv) Protectionist Brexit (worst case). We describe our scenario building in detail below. As third step, we calculate counterfactual trade flows under the different scenarios. This simple exercise allows us to identify which countries are more likely to lose or gain more from Brexit.

We complement the analysis with a graphical comparison of the intermediate counterfactual scenarios, to investigate whether and to what extent Brexit affects the underlying structure of the UK-SSA-EU trade network. Our approach simplifies Anderson et al. (2018) estimates of the trade diversion effect of borders, and is close to Kohl (2019), who adopts a similar approach to estimate the effects of the Belt and Road Initiative.

3.1 Scenario building

The four scenarios, which we rank from the more optimistic (best case) to the more pessimistic, capture a range of possible consequences of Brexit on trade through trade policy changes, and differ (a) in the presence/absence of free trade agreements (the FTA dummy); and (b) in the level of the average bilateral tariff (the $tariff$ variable).[10] By construction, our methodology leaves out all other factors not explicitly included in the analysis, as well as all the possible indirect general equilibrium effects.

i.   **Free Trade Brexit** represents the (unrealistic) best-case scenario. UK, which because of Brexit can no longer be part of existing FTA/EPA signed as part of the EU, is able to sign without any negotiation or delay a FTA with all SSA countries and all bilateral tariffs are removed.

ii. **Soft Brexit:** UK remains into the previously signed FTA/EPA (or equivalent agreements are signed) and existing bilateral tariffs toward SSA are reduced by 30%.

iii. **Hard Brexit:** UK is no longer part of the previously signed FTA/EPA but the existing bilateral tariff scheme remain unchanged.

iv. **Protectionist Brexit** represents the (unrealistic) worst-case scenario. UK is no longer part of the existing FTA/EPA and increases bilateral tariffs by 20%.

All scenarios also imply the introduction of a tariff between the "exiting" UK and the rest of the EU, which for the analysis we set equal to the one granted to the USA.[11] In terms of the above gravity model, we construct four counterfactual vectors of the trade policy variables, one for each counterfactual scenario, and we compute the variation in bilateral trade due to the assumed changes in trade policy.

4   UK-SSA trade after Brexit

On aggregate, trade flows between the UK and SSA do not show substantial changes in response to Brexit. However, results are heterogenous, largely depending on the degree of integration of each individual

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[10] As noted above, the two extreme cases, while highly unrealistic, remain useful as a feasibility interval for the trade effects.

[11] An alternative could have been to equal the after-Brexit tariff scheme to the one granted (reciprocally) to Norway. However, the special treatment accorded to Norway does not seem possible for the UK, given that all goods shipped to the country need to undergo the exact same rules they should if they were part of the EU. As the EU laws constitute one of the main arguments supporting Brexit, we considered such scenario unlikely.

country in the trade network and, in particular, with the UK. The effects of Brexit may entail either small increases in trade with many countries, provided that new trade agreements replace the existing ones (signed by the EU and that therefore no longer apply to the UK) or, in a more pessimistic case, large reductions in trade for some countries, namely South Africa and Ivory Coast if the UK and SSA countries do not sign new agreements. In any case, the post-Brexit estimated trade networks tend to maintain their core structure under the different scenarios, suggesting that Brexit alone is unlikely to significantly alter the trade patterns, at least in the short run. Our analysis suggests that large gains occur only in the unlikely case that new zero-tariff free trade agreements are immediately signed with several SSA countries.

4.1   Changes in trade flows of SSA countries

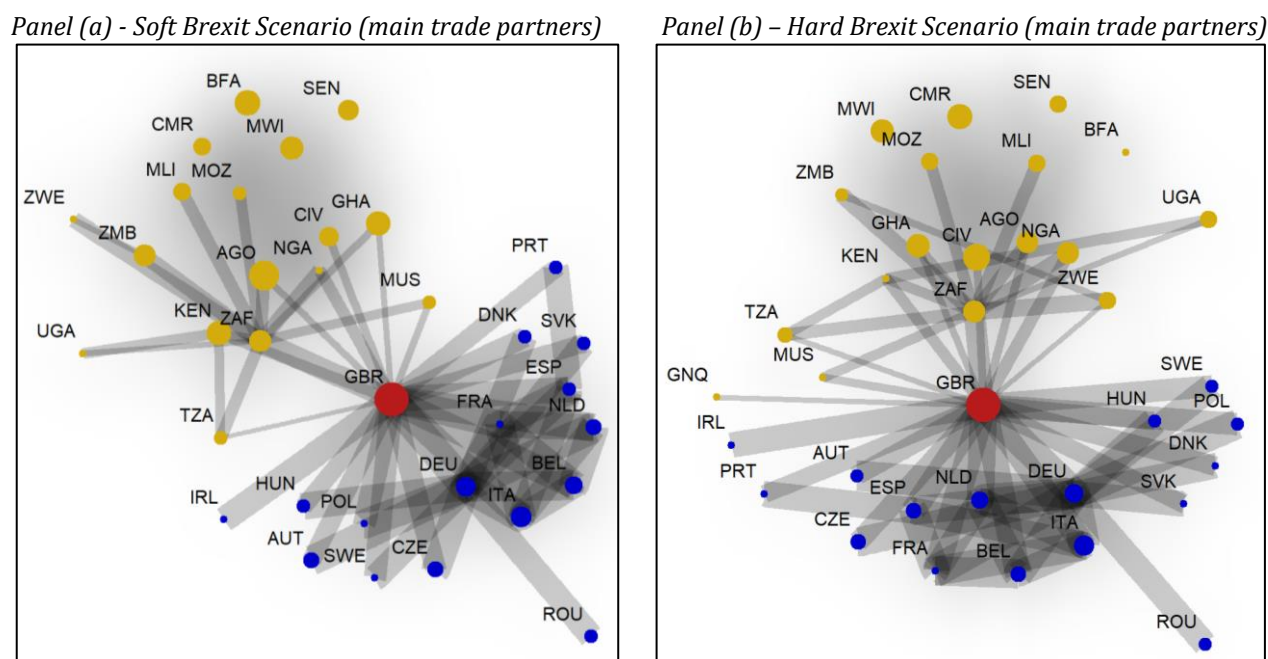*Figure 4- Export to and import from the UK under different scenarios.*
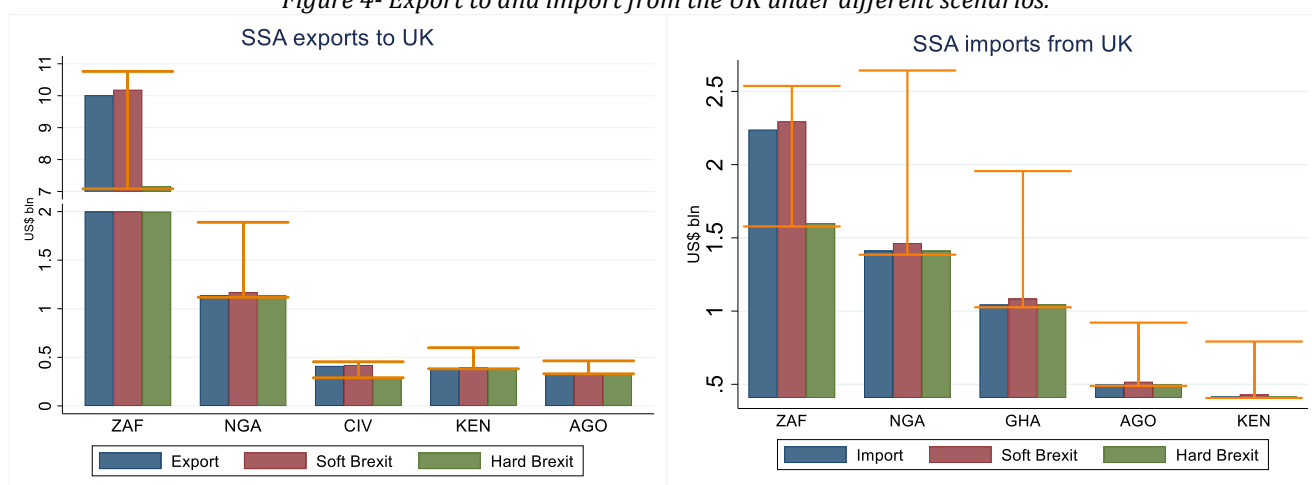
Legend: ZAF = South Africa; NGA = Nigeria; CIV = Ivory Coast; KEN = Kenya; AGO = Angola; GHA = Ghana.
Source: authors' computation based on CEPII data.

Figure 4 reports the 2016 UK's top 5 SSA trading partners according to our gravity prediction in the two more realistic scenarios (in red and green respectively in the graphs) against the predicted actual exports (reported in blue). The two "extreme" scenarios are represented as whiskers, as that they indicate the limits of the range of possible outcomes. Interestingly, trade patterns do not change substantially in either (realistic) scenario. The figure shows that all SSA countries may obtain small trade increases in case of Soft Brexit (+0.6% on average, with a span of 0.1-3.4%, for export; +3.6% on average, with a span of 2.25-3.84%, for imports), while South Africa (which would lose the preferential rates accorded by the EU to the Southern African Development Community – SADC) and Ivory Coast might incur into substantial losses in case of hard Brexit (about -28.5% for export and import).[12]

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[12] As a matter of facts, the UK is currently part of the EU-SSA EPA, which explains why the countries involved are also the only ones who would loose substantially from a no deal Brexit.

4.2 Changes in the trade network configurations

Figure 5– Counterfactual Scenarios

Panel (a) - Soft Brexit Scenario (main trade partners)   *Panel (b) – Hard Brexit Scenario (main trade partners)*

Notes: predicted top flows in the two intermediate Brexit Scenario. The central red dot represents the UK. Node size refers to the number of significant trade flows in each region. The size of the fans and the intensity of the cloud surrounding SSA indicate the predicted trade volume from the gravity model.
Source: authors' computation based on CEPII data.

The network structure in the two intermediate (and realistic) scenarios reproduce very similar patterns to the ones discussed for the actual and predicted trade patterns (Figure 3). On the one hand, the ties with the EU do not fade away, though they weaken in response to the increase in the tariff rates. This is consistent with both the limited impact Brexit is expected to have on EU-UK trade (relative to the size of the trade flow.) and the empirical regularities of gravity. Figure 5 compares the structure of the predicted trade network in case of a Soft and a Hard Brexit scenario (Panel a and b respectively). It seems to suggest that the increase in tariffs is likely to affect the welfare of both UK and EU citizens, without altering substantially the trade relationship between the two, a fact confirmed by recent studies (Sudtharalingam et al, 2018; Estrin et al., 2018). [13] Interestingly, also the UK-SSA network remains largely unchanged in its structure, with respect to the real predicted trade scenario (cf. Panel b in Figure 3). The most notable difference

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[13] Despite the EU will remain the partner who will lose more from Brexit in absolute terms (as suggested by recent UNCTAD projection. See Coke-Hamilton, 2019), its welfare loss are expected to be negligible. Thanks to both the size and the structure of the internal common market, the EU will be able absorb much of the shock. Concerning the UK, Oberhofer and Pfeffermayr (2018) estimate the loss in terms of export towards the EU to be bound between 7.2% and 45% of the pre-brexit level (at front of an initial loss of 5.9%-38.2% in terms of imports from the EU-27). The decrease of Export toward the EU is unlikely to even up with an equivalent increase of exports toward the SSA countries, and the effects on welfare are likely to be substantial. Both results are consistent with and offers an interpretation to the predictions of our model, which does not suggest a massive diversion of UK exports toward SSA. The most notable changes in this respect regard the shift in the European network itself, with Germany, Italy and the Netherlands stepping in the rooms left vacant by the UK, with a massive diversion of EU trade away from the UK toward the common EU market.

involves the relative position of each country in the related regional network, as proxied by the size of the respective dot. For instance, Zimbabwe (ZMB) gets closer to the UK and farther away from the center of the SSA network. On the other hand, Kenia (KEN) and Burkina Faso (BFA) appear more connected to the rest of SSA countries in the Soft Brexit scenario, compared to the baseline gravity scenario. Nigeria (NGA), on the other hand, becomes more central in the Hard Brexit scenario, probably for the structure of its trade, very concentrated on mineral products (93% in 2017).

5   Concluding comments

After several years of playing a largely marginal role in the globalization process, Sub-Saharan Africa recently started integrating more in the world economy and showed the intention to increase intra-African trade. The higher-than-average rates of growth, the large availability of natural resources, its young and increasing population and its enormous potential market attracted the attention of many economic actors. Among them, the UK, which especially after Brexit, is looking for trade opportunities outside Europe. We inquired whether and to what extent the UK-SSA trade is going to be impacted by Brexit.

We compute the potential trade flows between UK and SSA countries and, to gauge whether this potential can be exploited, we investigate four alternative post-Brexit scenarios, ranging from free trade with zero tariff to a pure protectionist policy, where the existing trade agreements are not renegotiated and tariffs are increased. Our findings suggest that the direct effects of Brexit are not likely to benefit SSA as much as the Brexit narrative has recently suggested, even without considering the severe impacts the recent Covid-19 pandemic had globally. From our scenario-based counterfactual analysis, we conclude that the increase in trade between the UK and SSA economies due to Brexit is likely to be, if any, very limited (see, for instance, Figure 4). The most likely outcomes entail either small gains for several SSA countries (e.g. a Soft Brexit would entail increases of less than 1% export and about 3.5% for imports on average), or significant losses in those cases in which the existing trade agreements with the EU are not immediately replaced after Brexit (e.g. South Africa and Ivory Coast trade with the UK might decline by more than 28%). Brexit does not help filling the gap between potential and actual trade (the so-called missing trade) in most cases (see Figure 3), with these figures likely to worsen in response to the deterioration of the international trade resulting from the pandemic and the China-US disputes. The EU-UK trade possibly lost after Brexit - a reduction estimated in the order of 30+ billion US$ by Coke and Hamilton (2019) - is not likely to be diverted towards SSA. Considering geographical factors as well as the different sectoral specialization of SSA and the EU, this conclusion is not surprising. Overall, the short run Brexit effect is unlikely to be large enough to overcome the structural gravity forces or existing comparative advantages.

According to our analysis, SSA may obtain large gains in terms of trade volumes only in the unlikely case in which a free-trade-no-tariff scenario is realized in the very short run; a possibility that implies not only the continuation of existing agreements, but also the immediate implementation of completely new ones. While this might constitute an interesting long-run policy objective, it does not seem to be likely in the current situation. The overall impact of Brexit on SSA will depend on the terms of the withdrawal agreement

with the EU. The next months will be crucial to lift the veil of uncertainty surrounding the type of Brexit that will materialize after 2020. SSA should do its best to raise its bargaining power toward the EU and the UK, standing together and pushing forward toward regional integration. The African Continental Free Trade Area (AfCFTA) was an important step towards the longstanding goal of African economic integration, but there still is a long way to go before an integrated continental market exists (see Woolfrey et al, 2019). Whatever the impact of Brexit, SSA countries can aim at enhancing the intra-African trade or strengthen their linkages with other regions, namely emerging countries in Asia. Against this background, projects as the Chinese the Belt and Road initiative are likely to trigger interesting developments.

References

Peer Reviewed articles

Anderson, J. E. (1979). A theoretical foundation for the gravity equation. American Economic Review, 69(1), 106–116.

Anderson, J. E., & van Wincoop, E. (2003). Gravity with Gravitas: A Solution to the Border Puzzle. American Economic Review, 93(1), 170–192.

Anderson, J. E., Larch, M., & Yotov, Y. V. (2018). GEPPML: General equilibrium analysis with PPML. The World Economy, 41(10), 2750–2782.

Beckett, C., & Kyrke-Smith, L. (2007). Development, Governance and the media: The role of the media in Building African Society.

Bonfatti, R., & Poelhekke, S. (2017). From mine to coast: Transport infrastructure and the direction of trade in developing countries. Journal of Development Economics, 127, 91-108.

Coulibaly, S., & Fontagné, L. (2006). South–South trade: geography matters. Journal of African Economies, 15(2), 313-341.

Byiers, B., Woolfrey, S., Medinilla, A., and Vanheukelom, J. (2019) The political economy of Africa's regional 'spaghetti bowl', ECPDM Synthesis Report, May 2019.

Estrin, S., Cote, C., & Shapiro, D. (2018). Can Brexit defy gravity? It is still much cheaper to trade with neighbouring countries. LSE Brexit.

Gaynor, N. (2018). What are the Likely Implications of Brexit for Africa. Dublin City University Brexit Institute News.

Giovannetti G. (2019) Africa: the next Eldorado or a troubled continent? EUI RSCAS PP, 2019/04, Special Edition for the EP Elections 2019, [European Governance and Politics Programme], EUI, San Domenico di Fiesole, Italy

Hove, S., & Wakeford, J. (2016). Potential implications of Brexit for African economies. Quantum Global Research Lab, QGRL Opinion Paper, (2016/02).

International Monetary Fund (2020). World Economic Outlook (Update report): Tentative Stabilization, Sluggish Recovery?

Kohl, T. (2019). The Belt and Road Initiative's effect on supply-chain trade: Evidence from structural gravity equations. Cambridge Journal of Regions, Economy and Society, 12(1), 77–104.

Kohnert, D. (2018a). Britain and Africa: heading for the Brexit rocks. Africa Spectrum, 53(2).

Kohnert, D. (2018b). More Equitable Britain-Africa Relations Post-Brexit: Doomed to Fail?. Africa Spectrum, 53(2), 119-130.

Kohnert, D. (2019). The impact of Brexit on francophone Africa. Review of African Political Economy, 1-13.

Kohnert, D. (2020). The impact of Brexit on Africa in Times of the Corona Crisis. Researchgate, Berlin (Working Paper)

Mattoo, A., Mulabdic, A., Ruta, M. (2017). Trade Creation and Trade Diversion in Deep Agreements. World Bank Policy Research Working Paper 8206.

Nicita, A., Koloskova, K., Saygili, M. (2019). Brexit. Implications for Developing Countries. UNCTAD Research Paper No. 31

Oberhofer, H., Pfeffermayr, M. (2018). Estimating the Trade and Welfare Effects of Brexit: a Panel Data Structural Gravity Model. FIW Working Paper Series.

Santos Silva, J. M. C., & Tenreyro, S. (2006). The log of gravity. The Review of Economics and Statistics, 88(4)(November), 641–658.

Santos Silva, J. M. C., & Tenreyro, S. (2011). Further simulation evidence on the performance of the Poisson pseudo-maximum likelihood estimator. Economics Letters, 112(2), 220–222.

Storeygard, A. (2016). Farther on down the road: transport costs, trade and urban growth in sub-Saharan Africa. The Review of economic studies, 83(3), 1263-1295.

Sudtharalingam, S., Barnes, D., Jelani, A., A., Armstrong, D., (2018). Sustainable Prosperity and Growth for All. PWC International Development Conference 2017. Prince Waterhouse Coopers (Report).

Westcott, N. (2018). Breaking away? The developing world and the future of multilateralism. Africa, Europe and Britain after Brexit. Thematic focus: Beyond Brexit. Great Insights, 7 (2018). 3: 11, 13.

Wheatley, Jonathan (2017): Ivorian prime minister warns of Brexit fallout. UK's vote to leave EU could have unintended effect on cocoa farms in West Africa. London: Financial Times, September 20, 2017

ONLINE resources

Abrahams, Jessica (2020). DFID could remain a stand-alone department but lose its secretary of state. Devex news. https://www.devex.com/news/dfid-could-remain-a-stand-alone-department-but-lose-its-secretary-of-state-96342

Coke-Hamilton, P(2019). What could a no-deal Brexit mean for developing countries? https://www.weforum.org/agenda/2019/04/no-deal-brexit-developing-countries/ - World Economic Forum.

Estrin, S., Cote, C., Shapiro, D. (2018) "Can Brexit defy gravity? It is still much cheaper to trade with neighbouring countries". LSE Department of Management Blog. November, 9. Available at https://blogs.lse.ac.uk/management/

 fDIMarket (2019). https://www.fdimarkets.com

Gonzàlez, A. (2020). US-Kenya trade negotiations: A Chance to Get it Right. PIIE Trade and Investment Policy Watch blog. https://www.piie.com/blogs/trade-and-investment-policy-watch/us-kenya-trade-negotiations-chance-get-it-right

Paduano, Stephen (2020). Boris Johnson's New Scamble for Africa. Foreign Policy news. https://foreignpolicy.com/2020/01/29/boris-johnsons-new-scramble-for-africa/

UK Government Foreign Office (2018). PM Visit to Africa - https://www.gov.uk/government/collections/pm-visit-to-africa

UK Government Foreign Office (2019). https://www.gov.uk/government/publications/international-agreements-if-the-uk-leaves-the-eu-without-a-deal/international-agreements-if-the-uk-leaves-the-eu-without-a-deal#international-agreements-if-the-uk-leaves-the-eu-without-a-deal

Woolfrey S, Apiko P. and Pharatlhatlhe K. (2019) Nigeria and South Africa: shaping prospects for the African Continental Free Trade Area, ECPDM DP 242, February, Maastricht

The US Census Bureau (2020) – Trade in Goods with Affrica - https://www.census.gov/foreign-trade/balance/c0013.html

Appendix

A1. Gravity model estimation

We estimate a simplified gravity model of trade (Anderson, 1979; Anderson & van Wincoop, 2003) through Poisson-Pseudo Maximum Likelihood (PPML Santos-Silva & Tenreyro, 2006; 2011). Using the notation by Anderson et al. (2018), the model can be compactly written as:

$$X_{ij} = exp\,(T_{ij}\beta + \pi_i + \chi_j) \times \epsilon_{ij}$$

where X_{ij} denotes the value of exports from country i to country j, T_{ij} represents the vector of trade cost variables whose coefficients are in the vector β. The term π_i is an exporter fixed effect capturing the outward multilateral resistances and sales/outputs, χ_j is an importer fixed effect capturing the inward multilateral resistances and expenditures. Finally, ϵ_{ij} represents the error term.

Our empirical specification takes the form:

$$export_{ij} = \beta_1 distance_{ij} + \beta_2 contiguity_{ij} + \beta_3 FTA_{ij} + \beta_4 tariff_{ij} + \pi_i + \chi_j + \varepsilon_{ij}$$

$$0.999^{***} \qquad 0.123^{**} \qquad 0.765^{***} \qquad 0.789^{***}$$
$$(0.011) \qquad (0.012) \qquad (0.001) \qquad (0.012)$$

where $distance$ is the natural log of population weighted geodesic distance, $contiguity$ is a dummy indicating whether two countries share the border with each other, FTA is a free trade agreement dummy and $tariff$ is the average tariff applied by a country to a trading partner. Where no preferential treatment is applied, the average MFN tariff is used. The model is used to estimate the coefficients vector β, which represents the trade elasticity with respect the related trade cost variable considered, and allows to obtain the predicted trade flows, given the variables considered. Trade and gravity data come from the BACI dataset, maintained by the CEPII. Simply Averaged Tariffs are taken from the World Development Indicators (World Bank) and from the WITS-TRAIN databases. The numbers below the equation represent the estimated coefficients, their standard errors (in parentheses) and the significance level (p-values: $^{*}\,p < 0.1$, $^{**}\,p < 0.05$, $^{***}\,p < 0.01$).