Nigeria-Poland Bilateral Trade: Identifying New Trade Opportunities

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Abstract

This paper examines the bilateral trade relationship between Nigeria and Poland for the period 1995 to 2012. It uses the Decision Support Model (DSM) and the Growth Identification and Facilitation Framework (GIFF) to identify market for Nigerian exports in Poland.

The import and export indicators reveal low trade intensities between the two countries as well as weak complementarity between Poland's import demand and Nigeria's export supply. There is also evidence of rising growth in the demand for products in which Nigeria has actual and potential export capacity. In addition, Nigeria faces relatively lower tariffs on Poland's top imports while the cost of transportation and logistics associated with trading with Poland is lower than those of Nigeria's current major export partners such as India and Brazil.

Furthermore, the paper identifies enormous unexploited market opportunities available to Nigeria for trading with Poland and therefore recommends that, in its quest for industrialization, the Nigerian government should support its private sector to take advantage of this opportunity.

1.0 Introduction

Poland stands out as a country that successfully weathered the financial crises, and has continued to show positive signs of future economic progress. The country was alone in maintaining positive growth rates of up to 1.6 percent in 2009, while the entire EU economy contracted by 4.5 percent in the same period (Faris, 2013).

Two key events inform the economic success of Poland in the past two decades: the transition from a communist to a capitalist economy in 1989, and the entry into the EU in 2004. Prior to 1990, Poland, as well as many countries in Central and Eastern Europe were mostly closed economies. The collapse of communism came with the adoption of neoliberal policies which resulted in large-scale socio-political and economic transformation (Salihu, 2011). Market-oriented policies which promoted private ownership and increased integration with the global economy were the focus in the early nineties. This was accompanied by increasing economic relations with Western Europe, which led to their entry into the EU. The absence of barriers to trade and foreign direct investment (FDI) across countries in the EU, provided a major boost to the economy, as post-EU Poland attained its highest GDP growth in history.

Poland's trade is dominantly intra-EU; about 75 percent of its exports and 70 percent of imports are within the EU as at 2012 (Belka, 2013). However, the share of trade with the rest of the world has risen by about 5 percent since 2004, as the productivity of Polish firms increased and stimulated diversification of production and export destination (Melitz and Ottaviano, 2008; Benkovskis and Rimgailaite, 2011; Belka, 2013). The sluggish economic growth in the EU is also responsible for the recent drive to look outside Europe for investment and trade opportunities. Poland is currently embarking on a large-scale search for economic and trade opportunities outside Europe.

Africa comes as a key destination for Poland's outward-looking trade and investment strategy, owing to the remarkable economic performance witnessed in the continent in the past decade and the large size of its markets. Average GDP growth in Africa has been above 5 percent for most part of the past decade, with 6 out of 10 of the fastest growing economies emerging from the continent. Poland is therefore committed to strengthening economic relations with Africa and the continent has shown very promising

potentials even though the current level of interaction is limited (See Rostowska, 2013).

Poland has identified Nigeria as an important destination country in efforts to increase trade and investment on the continent. This may be linked to the recent strong economic growth of over 8 percent average, driven mainly by Agriculture, trade (wholesale and retail), and real estate sectors. Poland's quest to diversify trade and investment from EU fits with Nigeria's plan to diversify the economy away from oil dependence, and both cases involve in-depth exploration of new trade opportunities. This may have informed the recent visit (on 11th of April 2013) of Poland's Prime Minister, Mr Donald Tusk, to Nigeria for bilateral talks.

The talks identified several areas as having potentials for future economic alliance and these include military hardware, railway, and renewable energy. In light of the huge infrastructural and security challenges currently faced in Nigeria, Poland's comparative advantage in the aforementioned areas could stimulate increased trade and investment. In particular, Poland has shown interest in importing coal from Nigeria, as 90 percent of its power generation is from the mineral (Salihu, 2011; Esiedesa, 2013). There is an absence of analytical study that could inform policy decisions on the alliance between the two countries, especially from the Nigerian side.

This study is an attempt to provide a detailed description of Nigeria-Poland trade relationship and also identify realistic trade opportunities for Nigeria. In particular, it examines the dynamics of Poland's world import demand vis-à-vis Nigeria's actual and potential export products. Furthermore, it specifies demand and supply constraints to exporting. Two models were instrumental to the analyses in this paper: Decision Support Model (DSM) and Growth Identification Framework (GIFF). While the former provides a guide for the identification of product-specific export opportunities for Nigeria, the later identifies sectors where the country may have comparative advantage.

The rest of the paper is organized as flows: section 2 provides a descriptive analysis of the Nigeria-Poland trade relationship, while section 3 focuses on identifying export opportunities using the DSM and GIFF models. Finally, section 4 concludes with some policy recommendations

2.0 Descriptive Analysis of Nigeria-Poland Trade Relation

This section investigates the trade relationship between Nigeria and Poland from 1995 to 2012. It examines trade intensity (both import and export intensities) and complementarity of trade. Also, it analyses the profile of

goods traded and the trends in exports and imports. The aim is to gain insights into the magnitude, nature and direction of trade between Nigeria and Poland, before attempting to identify new trade opportunities.

2.1 Trade Intensity

Trade intensity is defined as the share of a country's trade with a trading partner relative to the share of world's trade with such partner. Trade in this context could be a country's exports to or imports from its trading partner. For Nigeria-Poland trade, the trade (i.e. export or import) intensity index is calculated as:

$$IN_{TJ} = \frac{X_{TJ}}{X_T} \Big/ \frac{X_{WJ}}{X_W}$$

where X_{TJ} is, Nigeria's export to Poland, X_T is Nigeria's total exports, X_{WJ} is total world exports to Poland and X_W is total world exports. The index ranges from zero to infinity. An index less than 1 implies that there are little exports while an index greater than one implies that Nigeria exports a higher share of its total exports to Poland than the world does. Therefore, the index is a reflection of the relative importance of Poland in terms of foreign demand for Nigeria's goods, or put differently, a reflection of the relative importance of Nigeria to Poland in terms of supply of its needed imports.

The import intensity index is analogous to the export index discussed above. In this case however, the index measures the proportion of Nigeria's imports from Poland relative to the proportion of the world's imports from Poland. The interpretation is the direct reverse of the export intensity.

Figures 1 and 2 show the intensities of Nigeria-Poland trade. Figure 1 presents two notable observations. First, the export intensity has remained very low (below 0.35, even at its peak in 1997). Second, despite being very low, the level of export intensity has been decreasing drastically over the period. This steady decrease is a reflection of the low share of exports to Poland in Nigeria's total exports (which has remained below 0.1% since 2000). In particular, the sharp drop between 1997 and 2000 is attributable to over 89 percent drop in cocoa exports from 1999 to 2000. Presently, Nigeria exports only US$347 thousand worth of cocoa to Poland even though other products, for example crude oil now dominate Nigeria's exports.

Figure 1: Nigeria-Poland Export Intensity: 1995 – 2011
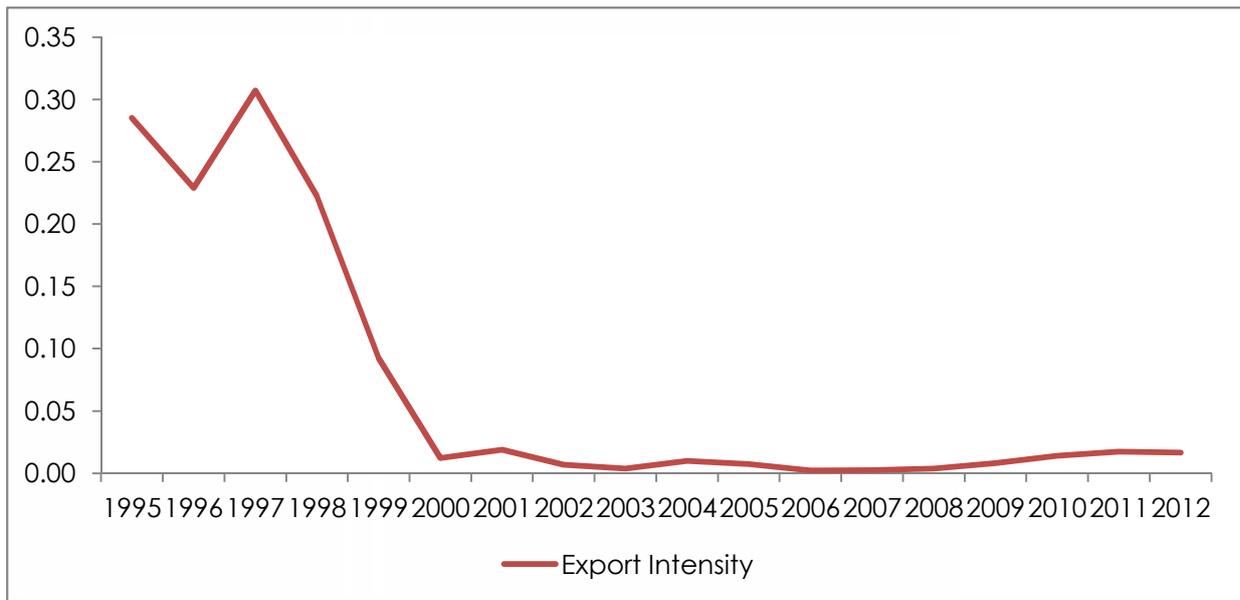
Source: Authors' Computation from UNCTAD Statistics Database, 2013

Figure 2: Nigeria-Poland Import Intensity: 1995 – 2011
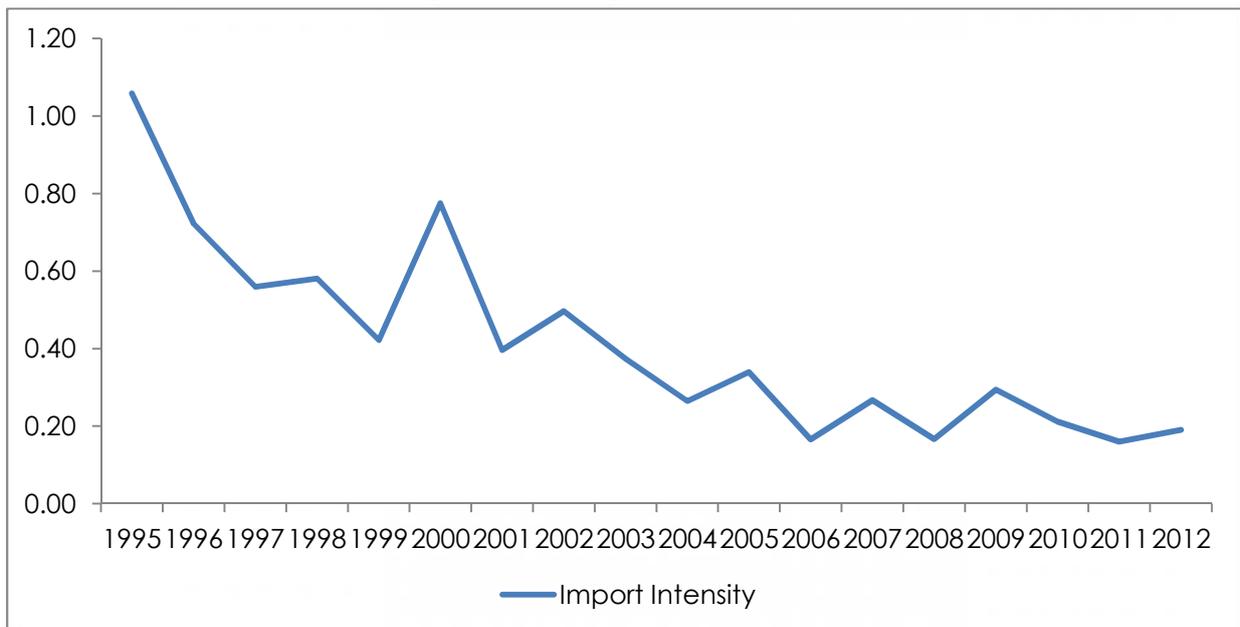
Source: Authors' Computation from UNCTAD Statistics Database, 2013

Figure 2 also depicts a steady decline in import intensity between Nigeria and Poland from over 1.0 in 1995 to about 0.2 in 2012. Further investigations show that imports from Poland into Nigeria accounts for less than 1% of Nigeria's total imports in 2012.

A number of factors could explain this low level of trade intensity. Prominent among them are the presence of barriers to trade (both tariff and non-tariff barriers), bilateral distance (among other transaction costs), and logistic problems. However, given that a high level of trade exist between Nigeria

and the European Union (an economic union of which Poland is a member), which accounts for over 30 percent of Nigeria's international trade in 2012,[i] many of the above mentioned constraints could be dismissed. After all, if these constraints have significant effects the level of trade will arguably be lower. Instead, we attribute the low level of trade between Nigeria and Poland to inadequate exploratory research to identify important trade opportunities.

2.2 Trade Complementarity

Results from the trade intensity indices show that Nigeria and Poland have not been close trading partners relative to the world. In this analysis, the trade complementarity index shows the extent to which two countries are "natural partners", in the sense of how sectoral composition of Nigeria's exports overlaps (or correlates) with sectoral composition of Poland's imports.

The Nigeria-Poland export complementarity index is calculated as:

$$EC_{NJ} = 1 - 0.5 \sum_{k=1}^{K} |e_k^N - m_k^J|$$

where e_k^N is sector k's share of Nigeria's total exports to the world and m_k^J is the sector's share in Poland's total imports from the world. A perfect positive correlation between the two sectoral shares yields an index of one, while a perfect negative correlation yields zero.

Figure 3 shows the index for Nigeria-Poland trade. It shows that trade complementarity remains very low throughout the period although it has been increasing steadily in the last four years. This increase reflects the recent increase in Nigeria's export of crude oil and gas to Poland. The data shows that mineral fuels are becoming a major import for Poland, accounting for an average of 12 percent of total Polish imports in the last four years, and placing them as Poland's fourth major category of imports.

Figure 3: Nigeria-Poland Exports Complementarity: 1995 to 2012
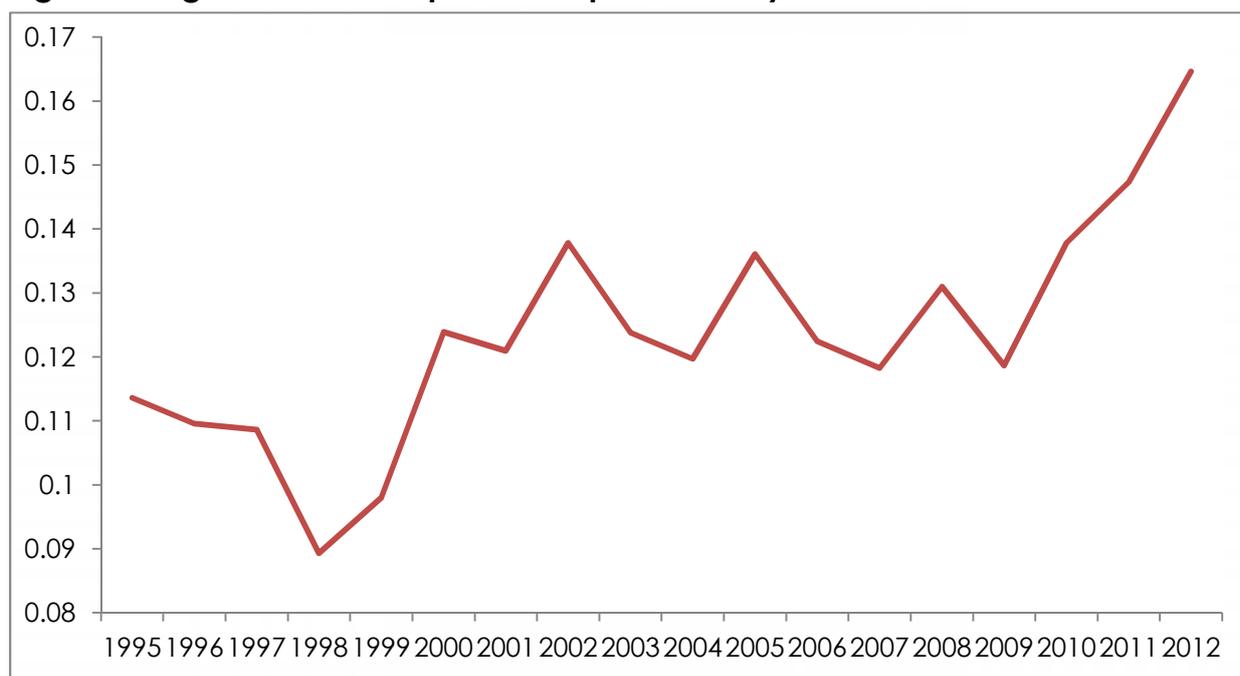
Source: Authors' Computation from UNCTAD Statistics Database, 2013

Table 1: Nigeria's major exports vs. Polish major imports, 1995 & 2012

	1995	2012
Poland's Major Imports	Machinery and Transport Equipments (29%)	Machinery and Transport Equipments (31%)
	Manufactured goods (19%)	Manufactured goods (17%)
	Miscellaneous Manufactures (12%)	Chemicals (13%)
Nigeria's Major Exports	Mineral Fuels (92%)	Mineral Fuels (95%)
	Food and Live Animals (3%)	Food and Live Animals (1%)
	Crude Materials (3%)	Crude Materials (2%)

Source: Authors' Computation from UNCTAD Statistics Database, 2013

Table 1 highlights the mismatch exposed by fig. 3. While Poland's major imports are machinery and transport equipment, manufactured goods and chemicals, Nigeria's major exports are mineral fuels.

2.3 Trends in Trade and Trade Balance

Nigeria's exports to Poland over the period of the study have not increased significantly. In fact, as Figure 4 shows, exports declined drastically in the

2000s, after reaching its peak of about US$35 million in 1997, due to drops in export of cocoa and rubber. Nigeria's exports to Poland have been dominated by cocoa, crude rubber and crude animal vegetable materials at different times between 1995 and 2012 but are dominated by petroleum products and natural gas in recent years.

Figure 4: Nigeria's Exports to Poland (in US$ thousands) from 1995 to 2012
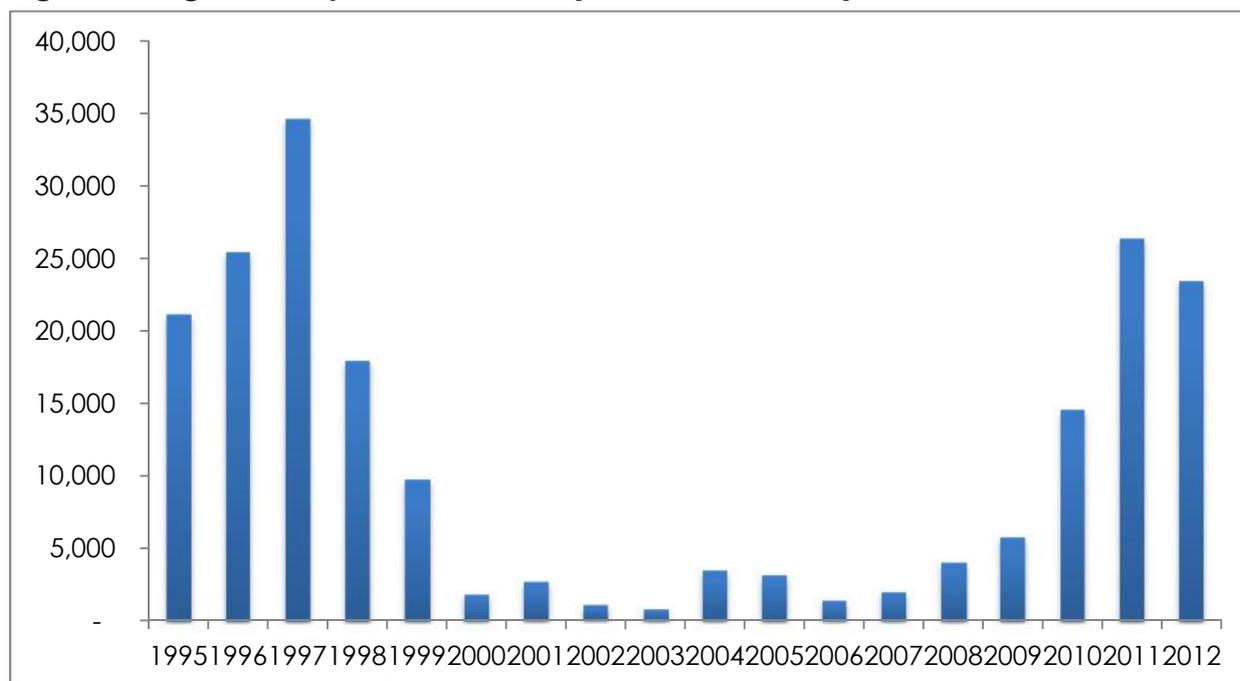
Source: Authors' Computation from UNCTAD Statistics Database, 2013

Figure 5: Nigeria's Imports from Poland (in US$ thousands) from 1995 to 2012
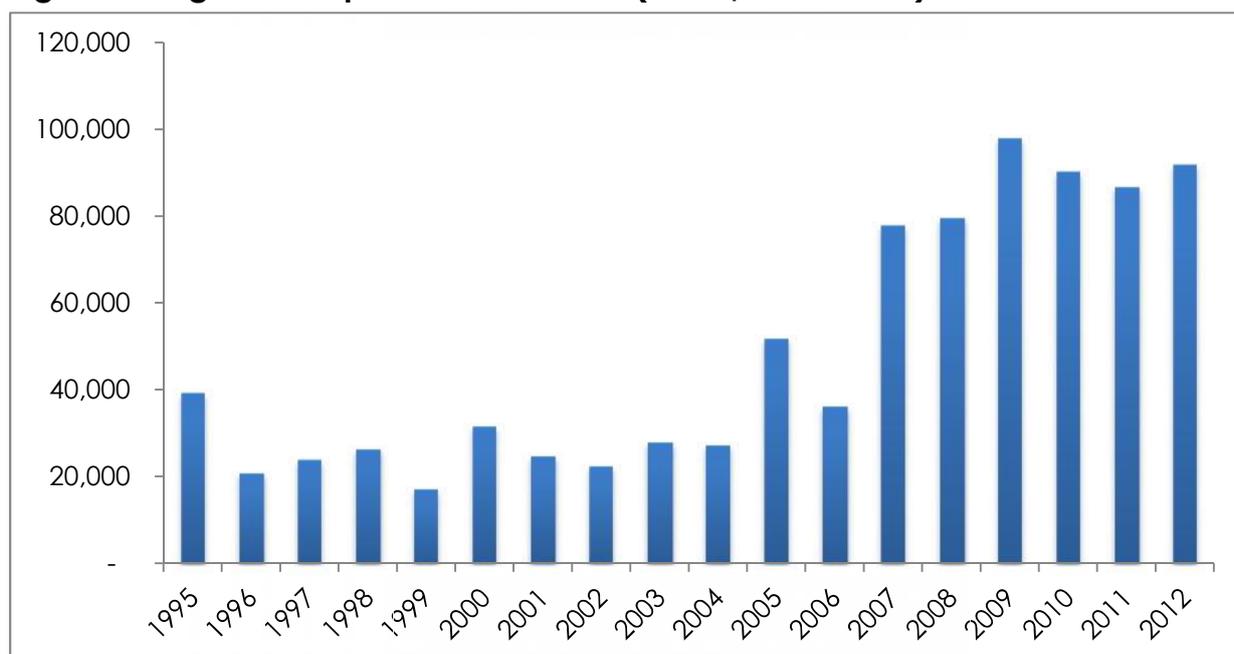
Source: Authors' Computation from UNCTAD Statistics Database, 2013

Unlike Nigeria's exports to Poland, Nigeria's imports of Polish products have been increasing in the past two decades. Figure 5 shows that the value of imports more than doubled as it increased from about US$39 million in 1995 to about US$91 million in 2012. Yet, this 2012 value is less than a tenth of Nigeria's imports from Spain in 1995.

3.0 Identifying Realistic Export Opportunities

Having examined the trade relation between Nigeria and Poland in the previous section, we move to identify realistic export opportunities for Nigeria in Poland. In the context of the present study, a *realistic export opportunity* is one that meets both the demand and supply side requirements while the major constraints to export are identified and are seen to be surmountable.

In carrying out the identification, we adapt the tenets of the Decision Support Model (DSM, henceforth), developed by Cuyvers *et al.* (1995) and applied by Cuyvers (2004).[1] One major advantage of using the model for identifying export opportunities is that its procedures are very systematic. However, because of the dynamism of global economy, the DSM cannot guarantee that an identified export opportunity will remain viable over the long run.

Deviating from other studies, for example, Cuyvers, 2004; Steenkamp *et al.*, 2009; Viviers *et al.*, 2010 and Jacobs, 2012), that have used DSM to explore exports opportunities for a country in many other countries or in a particular region, we look at a one country to one country trade relation. In other words, we explore realistic exports opportunities for Nigeria in Poland only and thus the procedures outlined by the DSM will not be followed thoroughly. This does not take away the key building blocks of the DSM. In what follows, we attempt to provide answers to the following questions.

1. What products do the Polish demand from the world (or imports) and what has been the trend of such demand?
2. Which of the outlined products can Nigeria provide or has the potentials to provide?
3. What are the demand side constraints that Nigeria might face in supplying these products to Poland and are they surmountable?
4. Given questions 1 to 3 above, can Nigeria actually supply these products? If not, what are the constraints and how could they be addressed?

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[1] The model has subsequently gained wide acceptance. For example, Steenkamp *et al.* (2009) reviewed the international market selection literature to find a best suited model for identifying potential market opportunities for South Africa. Out of the models reviewed, the DSM was found to be the more holistic and relevant for identifying product specific export opportunities.

3.1 Poland's Import Demand

To ascertain the products Poland imports from the world and the trend in such imports, data from UNCTAD Statistics database for the period 2003 to 2012 (SITC Revision 3) are used. Import shares of the major product categories and the growth rate of all import products were computed. The average short-term growth rates (of imports from 2009 to 2012) and the average long-term growth rates (of imports from 2003 to 2012) were computed for all the import products to ascertain the trend in importation of these products by Poland. Also, the average import shares of the major product categories (from 2010 to 2012) were calculated to reveal the categories which consistently dominated Poland imports.

Table 2: Average Growth Rates and Import Shares of Poland's Import Categories

Product Category	Average Long-term Growth Rate (2003 to 2012)	Average Short-term Growth Rate (2010 to 2012)	Average Share of Imports (2010 to 2012)
Total Imports	**17.4**	**12.4**	
Food and Live Animals	20.7	13.6	9.9
Beverages and Tobacco	37.2	24.4	1.7
Crude Materials	18.5	26.8	2.5
Mineral Fuels	18.8	33.4	4.4
Animals and Vegetable Oil	47.0	5.2	0.2
Chemicals and related products	21.7	16.9	8.8
Manufactured goods	15.7	15.5	20.3
Machinery and Transport Equipment	17.9	9.3	36.5
Miscellaneous manufactured articles	11.6	9.7	11.6
Commodities and Transactions	87.7	3.1	3.9

Source: Authors' Computation from UNCTAD Statistics Database, 2013

Two main conclusions can be drawn from Table 2. First, there has been impressive growth in all the import categories both in the short term and the

long term, indicating that Poland's import demand has grown significantly in the past decade. However, in terms of short-term growth (which coincides with the post-financial crisis of), mineral fuels have recorded the highest growth followed by crude materials imports, importation of animal & vegetable oils and commodities & transactions recorded the least growth. Second, Poland's major imports in the last four years were machinery & transport equipment, manufactured goods and food & live animals. On the other hand, its lowest imports were animals and vegetable oils, crude materials and beverages & tobacco.[ii]

Regarding the first question, it is obvious that Poland has been importing a wide range of products and its import of most of these products has been increasing over the years. It is also clear that Nigeria does not have the capacity to meet all of Poland's import demand. In this case, we proceed to match Poland's imports with Nigeria's actual and potential export capacity. We will further explore this issue in the following section.

3.2 Nigeria's Export Supply

To answer question 2, we first identify sectors in which Nigeria has the capacity to produce goods for exports. Export capacity in this case is not limited to Nigeria's actual exports but also entails the country's unexplored potentials in terms of the production and exportation of new products. While the identification of such sectors is indeed a laborious task, given Nigeria's abundant natural and human resource endowments, this study relies on a recent work by Lin and Treichel (2011). Lin and Treichel applied the Growth Identification and Facilitation Framework (GIFF, henceforth), developed by Lin and Monga (2010) to Nigeria.

The GIFF is a structural model for identifying sectors where a country may have comparative advantage (both latent and revealed) and for identifying binding constraints to private firms in such sectors while ensuring the growth of the existing ones. One important feature of the GIFF and a major justification for adopting the framework in this study is that it is built on the notion that the optimal industrialization strategy for a developing country is one which takes the country's endowment structure into account. In particular, apart from identifying potential sectors, the framework also considers the value addition potential of each sector.

Lin and Treichel used a six step approach in their study on Nigeria. However, this paper will focus on the first three steps which are of direct relevance to its objectives. In the first step, tradable products that have been growing in the past 20 years in fast growing economies with similar endowment structure as

Nigeria (i.e. comparators such as Indonesia, Vietnam, India and China) are identified. The assumption here is that, all things being equal, the similarity in Nigeria's endowment structure with these countries and their fast-diminishing cost advantage will give Nigeria the opportunity to compete favourably in export markets. Second, they identify Nigeria's labour-intensive import products that require only small investments, though with limited economies of scale, that can be produced domestically. Third, they identify sectors with evidence of successful self-discoveries and increasingly active private sector participation.

The list of sectors and products identified by Lin and Treichel (2011) are taken to be the set of products that Nigeria has actual and potential capacity to produce and export. In order to align these products with Polish imports demand, Table 3 displays the products identified and their categories, the average value (from 2010 to 2012) and the long-term and short-term growth rates of Poland's imports of the products from the world.

Table 3: Nigeria's Potential and Actual Export Products to Poland

Nigeria's Potential and Actual Export Products	Product Category	Poland's Average Long-term Growth Rate	Poland's Average Short-term Growth Rate	Poland's Average Import Value for 2010 to 2012 (US$'000)
Leather and Footwear				
Hides, skins and furskins, raw*	Crude materials	26.3	40.8	300,644
Leather, leather manufactures and dressed furskins*	Manufactured Goods	7.9	25.5	252,973
Travel goods, handbags, etc.	Miscellaneous Manufactures	21.4	18.4	81,717
Footwear*	Miscellaneous Manufactures	8.5	22.2	411,243
Textiles and Apparels				
Textile yarn and related products	Manufactured Goods	9.7	10.5	1,841,339
Textiles fibres and their wastes	Crude materials	14.3	18.6	139,580

Articles of apparel & clothing accessories*	Miscellaneous Manufactures	0.6	3.1	2,055,294
Rubber				
Crude rubber (including synthetic and reclaimed)*	Crude materials	36.1	56.8	577,968
Rubber manufactures	Manufactured Goods	19.7	18.0	3,866,333
Fish, Vegetables and Oil Seeds				
Fish, crustaceans, molluscs and preparations thereof*	Food and Live Animals	21.4	9.4	1,355,863
Vegetable and fruits	Food and Live Animals	14.1	11.5	3,180,974
Oil seeds and oleaginous fruits*	Crude materials	173.8	20.3	162,902
Fertilizers				
Crude fertilizers	Crude materials	15.6	23.2	212,126
Fertilizers	Chemicals	26.5	32.7	736,425
Furniture and Paper				
Furniture and parts thereof*	Miscellaneous Manufactures	11.7	7.4	8,126,777
Pulp and waste paper	Crude materials	33.6	62.1	147,129
Paper and paper manufactures*	Manufactured Goods	13.0	10.9	4,326,764
Cork and wood manufactures (excluding furniture)	Manufactured Goods	9.2	6.0	2,355,638
Plastic and Chemicals				
Organic chemicals	Chemicals	20.2	32.3	1,751,955
Plastics in primary forms	Chemicals	24.4	19.6	1,973,493
Plastics in non-primary forms	Chemicals	22.4	16.0	1,707,908
Office machines and automatic data processing machines	Machinery and Transport Equip.	63.6	2.0	3,932,018

Meat and meat preparation	Food and Live Animals	29.8	18.9	3,693,023
Iron and Steel	Manufactured Goods	22.6	21.3	4,723,852
Telecommunication and sound recording apparatus*	Machinery and Transport Equip.	18.6	7.0	7,217,754
Coffee, tea, cocoa, spices, and manufactures thereof*	Food and Live Animals	23.2	20.5	1,579,043

Source: Lin and Treichel (2011); Authors' Computation from UNCTAD Statistics Database, 2013

Note: * denotes products that Nigeria is currently exporting to Poland or actual exports. Others are potential exports

For clarification, columns 1 and 2 of Table 3 provide Nigeria's potential and actual exports to Poland and their product categories, respectively. Columns 3, 4 and 5 provide the long-term and short-term growth rates, and the 3-year average value (from 2010 to 2012) of Poland's imports of the products from the world, respectively. This gives an indication of the size of the potential market for these products in Poland.

Three main conclusions emerge from Table 3. First, 26 specific products have been identified under the 12 broad product types (see column 1), as those which Nigeria has the potential to export to Poland. Out of these 26, Nigeria presently exports only 11 to Poland while it has unexplored potentials for the remaining 15. The Table also shows that these potential and actual exports cut across all the products categories with manufactured goods and miscellaneous manufactures dominating. The mineral fuels category was left out of the exercise since it already dominates Nigeria's exports to Poland.

Second, based on the growth rate of Poland's imports of these products from the world in the past decade (see columns 3 and 4), almost all the products have experienced high demand. The exceptions (i.e. products with short-term or long-term growth rates of less than 5%) are articles of apparel & clothing and office machines & automatic data processing machines.

Third, as expected, the values of Poland's total imports of light manufactures and machineries are the highest. In fact, its top six imports from the world are: Furniture and parts thereof; Telecommunication and sound recording apparatus; Iron and Steel; Paper Manufactures; Office machines and data processing machines and Rubber Manufactures. Although Nigeria presently exports some of these products to Poland, its share in Poland's import of the

products remains negligible. For example, Nigeria's share in Poland's imports of leather manufactures and crude rubber in 2010 were 1.8% and 2.2%, respectively.

The foregoing suggests that there is no gainsaying that the Nigerian government needs to make concerted efforts in promoting private sector participation in the production and exportation of the identified products. Therefore, the next two sections are devoted to examining Nigeria's access to Poland markets and how constraints to private firms in producing these goods could be removed, respectively.

3.3 Barriers to Nigeria's Trade with Poland

Nigeria's access to the Polish market depends on a number of factors ranging from the presence of official trade restrictions (in form of tariffs and non-tariff measures) to logistic problems that limit the extent of trade. Here, we examine three of the major barriers to trade: tariffs imposed on imports[iii], transportation cost & procedures, and logistics.

3.3.1 Tariffs on Nigeria's Potential Exports

Data on total ad valorem equivalent tariff imposed on Nigeria's actual and potential exports as at 2013 were obtained from Market Access Map Database. An attempt was made to compare the rates with those faced by the top three exporters of each product to Poland. This comparison is expected to provide an idea of the extent to which the current tariff structure may be a burden to Nigerian exporters relative to their competitors. The details are provided in Table 4.

Table 4: Nigeria's Potential Exports to Poland and Imposed Tariff

Product Group	Total Ad Valorem Equivalent Tariff on Nigeria's Exports (2013)	Top Exporters to Poland in 2011 in order of their contributions and the Total Ad Valorem Equivalent Tariff
Leather and Footwear		
Hides, skins and furskins, raw	1.25%*	Italy (0%), Germany (0%), Czech (0%)
Leather, leather manufactures and dressed furskins	0%	Finland (0%), Germany (0%); Canada (1.2%)
Travel goods, handbags, etc.	0.91%	China (4.74%), India (0.91%), Italy (0%)
Footwear,	6.67%	China (10.72%); Italy (0%), Germany (0%)

Textiles and Apparels		
Textile yarn and related products	n.a	n.a
Textiles fibers and their wastes	5.69%	Germany (0%), Turkey (0%), China (7.27%)
Articles of apparel & clothing accessories	9.45%	China (11.8%), Bangladesh (0%), Turkey (0%) - 2011
Rubber		
Crude rubber (including synthetic and reclaimed)	n.a	n.a
Rubber manufactures	0.06%	Germany (0%), France (0%), Italy (0%)
Fish, Vegetables and Oil Seeds		
Fish, crustaceans, molluscs and preparations thereof	5.60%	Norway (5.02%), China (5.57%), Germany (0%)
Vegetable and fruits	18.24%	Germany (0%), Turkey (6.08%) China (18.28%)
Oil seeds and oleaginous fruits	0.20%	Ukraine (0.18%); Germany (0%), Netherlands (0%)
Fertilizers		
Crude fertilizers	n.a	n.a
Fertilizers	3.03%	Belarus (4.15%), Russia (3.14%), Germany (0%)
Furniture and Paper		
Furniture and parts thereof	0.06%	China (1.47%), Germany (0%), Korea. Rep. (0%)
Pulp and waste paper	0%	Sweden, U.S.A, Russia (0%)
Paper and paper manufactures	0%	Germany (0%), Finland (0%), Sweden (0%)
Cork and wood manufactures (excluding furniture)	0.51%	Portugal (0%), Germany (0%), Spain (0%)
Plastic and Chemicals		
Organic chemicals	1.17%	Germany (0%), Netherlands (0%), Czech Rep. (0%)
Plastics in primary forms		
Plastics in non-primary forms	1.30%	Germany (0%), Belgium (0%), France, (0%)
Office machines and automatic data processing machines	0%	Germany (0%), China (1.62%), Hungary (0%)

Meat and meat preparation	47.52%	Germany (0%), Belgium (0%), UK (0%)
Iron and Steel	0.03%	Germany (0%), Ukraine (0.06%), Italy (0%)
Telecommunication and sound recording apparatus	0.67%	China (1.98%), Germany (0%), Korea (0.53%)
Coffee, tea, cocoa, spices, and manufactures thereof	0.72%	Germany (0%), Viet Nam (0.72%), Brazil (0.72%)

Source: Market Access Map (2013)

Three important points can be drawn from Table 4. First, a combination of Poland's total import of the products (i.e. Nigeria's potential market in Table 3) and the tariff Nigerian exporters face in those markets (as in Table 4) reveals that Nigeria faces a relatively lower tariff on the products with the largest market potentials. The average tariff charged on Nigeria's exports of the top six products imported by Poland (as in Table 3) is lower than 1%.

Second, out of the 26 products outlined above, only six are charged with a tariff of above 5 percent with the highest being 47.52% and 18.24% on meat & meat preparations and vegetable & fruits, respectively. This is not surprising since these crude products require high levels of sanitary and hygiene standards, thus their imports from developing countries are often discouraged through high tariffs. The other four products in this category bear tariff of less than 10%. Again, this re-enforces the first point. Finally, Poland's imports market is dominated by Germany, Czech Republic and China. Apart from Germany and Czech Republic whose exports to Poland face zero tariffs, as a result of their membership of the EU, the tariffs imposed on Nigerian exporters are often lower than those faced by the Chinese. However, it is important to emphasize that apart from China, most of Nigeria's competitors for the Polish imports market are EU countries that face zero tariffs.

Summarily, the tariffs applicable in 24 out of the 26 product markets identified appear to be very favourable to Nigerian exporters. In essence, the number of potential export markets for Nigerian exports to Poland is as high as 24.

3.3.2 Transportation Costs and Procedures

On the cost of exporting goods to Poland and other related requirements, data on import fees and charges per container, the number of days it takes to import goods and the number of documents required to import goods were obtained from Poland's Doing Business Reports, 2014. Similar data were obtained for Nigeria's top three trading partners outside the EU (namely, USA,

Brazil and India) in order to make comparison with those of Poland. The rationale behind this exercise is that if these costs and other factors are more favourable in Nigeria-Poland trade than in the case of Nigeria's major export destinations, one would expect Nigerian businessmen to increase trade with Poland.

Another important factor in international trade is bilateral distance. However, the channel through which bilateral distance affects trade is usually the transportation cost. Therefore, attempt is also made to compare the cost of shipping a 20 feet full container load (FCL) of exports from one of Nigeria's major ports (Port of Apapa) to major ports in Poland and ports in Nigeria's major exports destinations. Data used for this purpose were obtained from a shipping line's database.[iv]Table 5 provides a comparison of all the relevant costs and requirements.

Table 5: Costs of Exporting to Poland and Nigeria's Major Export Partners

	Poland	USA	Brazil	India
Charges on Export per container (in US$)	1,025	1,315	2,275	1,250
Time taken to Export	14 days	5 days	17 days	20 days
No of Documents required to Export	4	5	8	11
Cost of shipping a 20FT FCL	To Port of Gdansk in Poland	To Port of Houston in USA	To Port of Santos in Brazil	To Port of Visakhapatnam in India
From Port of Apapa (in US$)	1,875 - 2,072	3,217 - 3,556	1,590 - 1,758	3,010 - 3,327

Source: Doing Business Report, 2014 (for Poland, USA, Brazil and India) and World Freight Rate Tonnage

The information displayed in Table 5 shows that Poland compares favourably with the major destinations of Nigeria's exports. In fact, it appears to be less costly and easier to export to Poland than to India and Brazil (except that the shipping cost to Brazil's Port of Santos is lower). Therefore, in relative terms, transportation cost and distance are not barriers to Nigeria's exports to Poland.

3.3.3 Logistics

Apart from tariff and transportation cost, logistics constitute another important barrier to trade. These include a range of important activities starting from transportation, warehousing, cargo consolidation, border clearance, country distribution and payment systems (Jacob, 2012). The World Bank Logistic Performance Index (LPI) is a multi-dimensional approach to assessing logistic performance and efficiency across countries in the world. The index assesses and ranks countries based on six major components namely: efficiency of custom process, quality of trade and transport related infrastructure, ease of international shipments, logistic competency, ability to track and trace consignments and timeliness of consignments. An index of 1 represents the worst logistic performance while an index of 5 represents the best.

As in section 3.3.2, we compare the LPI for Poland with those of Nigeria's top exports destination in order to ascertain the extent to which logistics might be a problem in exporting to Poland. The results are presented in Table 6.

Table 6: Logistic Performance for Poland and Nigeria's Major Export Partners

Country	LPI Rank	LPI Scores
Poland	30th	3.43
USA	9th	3.93
Brazil	45th	3.13
India	46th	3.08

Source: World Bank LPI Index, 2012. Retrieved from www.worldbank.org/lpi

It is clear that Poland outperforms Brazil and India in terms of logistics. While it is important to acknowledge that Brazil and India are far larger markets compared to Poland, the aim of the comparisons is to demonstrate that the barriers to Nigeria-Poland trade are not specific to Poland. Indeed the analysis reveals that, all other things being equal, the Poland market seems more accessible for Nigerian exporters.

### 3.4 Nigeria's Export Supply Constraints

At Present, Nigeria exports only 11 out of the 24 products identified (see Table 3) and the volume of these exports are very small. Therefore, we ought to examine the supply side of the markets.

To begin with, we draw on previous sector-wide and sector-specific studies on Nigeria conducted by. Table 7 presents these details.

Table 7: Some selected sectors and their inhibiting factors to export performance

Sector/Industry	Status	General Problems	Recommendations
Textiles	Nigerian textile industry has been failing in the past one decade. However, there are some signs of a possible revival in recent times	▪ Smuggling, dumping and counterfeiting of textiles ▪ Infrastructural Challenges (especially power) ▪ lack of government credibility and commitment to policies ▪ Absence of long-term and low interest funds	▪ Strong commitment of government to curb smuggling, dumping and counterfeiting ▪ Allocation of Black Oil and LPFO (popular fuels used to produce alternative power) to textile firms by PPMC at reasonable prices ▪ Upgrade and upscale of the present Cotton and Textile Garment (CTG) Revival Scheme with opportunity for longer term and lower interest rates ▪ Full and effective implementation of the current power sector reforms, giving preferences to the manufacturing sector especially industrial clusters.

Petrochemicals and Fertilizers	The industry is growing and has been attracting new entrants.	▪ Poor state of Nigerian refineries limits the availability of feedstock such as crude oil and natural gas. ▪ Inadequate capital and appropriate technology. ▪ Infrastructural challenges especially transportation.	▪ The present Gas Revolution Agenda should be made valuable for the provision of much needed feedstock especially from natural gas. ▪ Government should promote technology acquisition and research and development ▪ Targeted provision of transport infrastructure to convey raw materials to the industries. ▪ Restoration of existing refineries to full capacity
Leather and related products	The industry is in place and operating with some momentum, especially in Kano	▪ Infrastructural challenges especially power and water ▪ Distortionary trade policies and poor border controls ▪ Shortage of skilled labor and lack of vocational training ▪ Laborious process to access to government incentives like the Export Expansion Grants (EEG) ▪ Poor environmental practices and lack of regulatory enforcement of products standards	▪ Import bans could be replaced with tariff while ensuring proper enforcement by customs authority. ▪ Capacity building to strengthen regulatory agencies to monitor and enforce standards ▪ Establish new and strengthen existing vocational institution to train unskilled labor adequately. ▪ Provide technical assistance on the processes
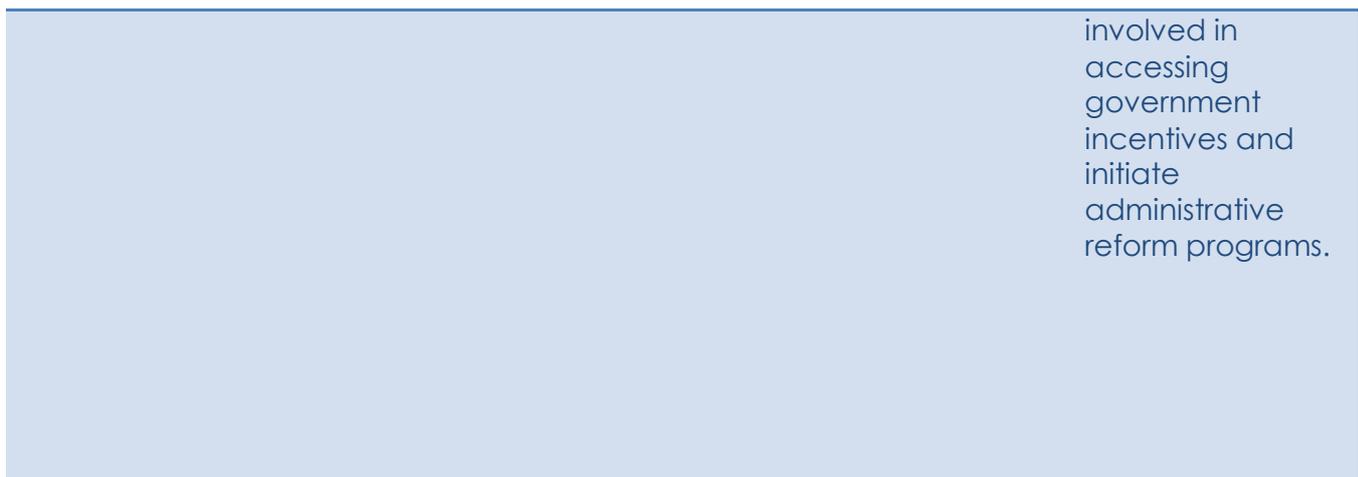
			involved in accessing government incentives and initiate administrative reform programs.
Light Manufacturing (metal, wood, furniture, etcetera)	The industry is active and has potentials to grow rapidly. However, the metal industry is too small and scattered	- Competition from imported goods - Custom administration setbacks like delay in clearance of imported raw materials - Inadequate access to finance - Infrastructural challenges especially power and water	- Power need of industrial clusters and export processing zones around the country should be priority. - Vocational training centers (sector-specific centers) should be established to complement the private sectors' employment needs. - Optimal trade reforms (i.e. export promoting) should be implemented - Increased access to finance through programs like the current Bank of Industry (BOI)/ CBN special intervention funds should be up-scaled without promoting inefficiencies in the private sector

Source: Treichel (2010); Lin and Treichel (2011); Ijevu et al, 2013.

As noted by Lin and Treichel (2011), the top five binding constraints to growth in many of the value chains considered are;

1. Inadequate physical infrastructure, especially power and roads.
2. The unfriendly business environment (as in cumbersome procedures)
3. Lack of access to finance
4. Lack of technical and vocational education that corresponds to the needs of the market
5. Restrictive trade policies.

As shown in Table 7, many of the potential export sectors identified have specific problems that require concerted efforts from government to tackle, in addition to the general problems.

4.0 Conclusion and Policy Recommendations

This study has provided a detailed examination of Nigeria-Poland trade relationship. It shows that trade relations between Nigeria and Poland have not been very impressive, as trade intensities and complementarities are low for most part of 1995-2012. Import and export intensities have been declining, while trade complementarities have risen marginally over the period. Nigeria's main exports to Poland during the period of analysis are cocoa, crude rubber, and vegetable materials, but petroleum products and natural gas dominates in more recent period. Descriptively, there is a mismatch between Poland's major imports and Nigeria's major exports, as Machines and Transport equipment, manufactured goods, and Chemicals are the top imports of the former, while Mineral fuels, Food and live animals, and Crude materials are the main exports of the latter.

The DSM and GIFF frameworks show more insightful results. First, Nigeria has actual and potential export capacities in Poland's import categories that have experienced impressive short-term and long-term growth. Out of 26 sub-products identified, Nigeria currently exports only 11 in negligible magnitude, while unexploited potentials exist in the remaining 15 product categories. Second, Nigeria faces lower tariffs (an average rate of lower than 1 percent) on the top six products imported by Poland. Third, it is indeed cheaper, in terms of transportation and logistics, to export to Poland than to some of Nigeria's major export partners such as India and Brazil. Put simply, there are enormous unexploited opportunities for Nigeria to trade with Poland and indeed there are no serious barriers to bilateral trade between them.

Three salient policy recommendations evolve from the analysis.

1. Given Poland rapidly growing imports demand across almost all products and the fact that Nigeria faces relatively lower tariff on the products with the largest market potentials in Poland, the Nigerian government should to put concerted efforts in promoting the private sector to produce and export the identified products.
2. In terms of the scope of bilateral relations, the Nigerian government should seek to develop stronger bilateral relations with Poland, especially because Poland's import demands can potentially stimulate the industrialization agenda.
3. Nigerian Ministries, Departments and Agencies whose mandates include identifying export markets and promotion of exports should consider adopting empirical methods of identifying markets for Nigerian businesses. These methods, as exemplified by this study, are more holistic and informative than using mere discretions or anecdotes.

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Notes

i EU (2013). European Union, Trade in goods with Nigeria. Directorate-General for Trade.

ii Although the result is not presented in Table 2 for the sake of clarity, it was noticed in the computations that virtually all the 65 individual items of import have grown impressively over the period of the analysis.The 65 individual products here refer to the products categories under the 10 main categories in Table 2.

iii We also intend to examine the non-tariff measures but the idea was shelved as we lack adequate data on measures imposed by Poland on many of the potential and actual exports of Nigeria.

iv Costs of shipping from Apapa to other Ports were retrieved from www.worldfreightratetonnage.com/en/freight.