

An econometric analysis of Botswana's sectoral export trade flows

by

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SUMMARY

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The main objectives of this thesis study were to analyze Botswana's exports from the diamond, textile, and meat and meat products sectors for the period 1999 to 2006. The objectives were three-fold. Firstly, the study examined the extent to which either intra-industry trade (IIT) or inter-industry trade (INT) dominates Botswana's sectoral exports. Secondly, the research investigated the determinants of the country's sectoral exports, with the third objective being the identification of destination markets with unrealized potential for the country's three sectoral exports. Two statistical methodologies were employed, the Grubel-Lloyd (G-L) index and panel data econometrics. The former technique was used to investigate the extent to which the sectoral exports were either IIT or INT driven, while the latter methodology was employed to analyze the determinants of sectoral exports and also for identifying destination markets with untapped export potential.

The main findings are as follows:

IIT and INT

Results for the textile, and meat and meat products sectors show that export trade for these two sectors between Botswana and its major trading partners were INT driven for the period under study. This emanates from the relative abundance of textile and meat resources in Botswana compared to its trading partners. On the other hand, Botswana's diamond trade with its major trading partners is found to be IIT driven, as evidenced by the simultaneous exports and imports of diamonds by Botswana to and from its trading partners. A further decomposition of IIT into either horizontal IIT (HIIT) or vertical IIT (VIIT) is also done. The simulated results show that HIIT, as opposed to VIIT, dominated Botswana's IIT for the period reviewed.

Determinants of exports

The following are the conclusions that emanated from the empirical evidence obtained on these three sectors.

- i. In all the three sectoral results, the respective sectoral GDPs for Botswana and the importing countries were positive and statistically significant determinants of Botswana's sectoral exports. This implies that growth in the GDP or economic activities in mining, manufacturing and agriculture enhanced Botswana's diamond, textiles, and meat and meat products, respectively.
- ii. With the exception of diamond exports, results from the sectoral gravity estimations indicate that distance retarded exports and this is expected from theory. This negative correlation implies that, as distance increase from Botswana to any of its trade partners, the country's export trade from both textiles and meat and meat products sectors declined.

- iii. Regional trade arrangements contributed positively to the country's exports in all the three sectors for the period under review. For instance, in the case of textiles, the AGOA trade preference in the form of duty-free-quota-free (DFQF) resulted in Botswana's textiles entering the USA market freely since 2000 than was the case before the arrangement was initiated. This has increased exports of textiles.
- iv. The statistically significant positive signs on the IIT trade variable in the diamond gravity equation, and INT variables in both textiles, and meat and meat products indicate that the product differential in the diamond sector; and factor endowments in the other two sectors promote sectoral exports.
- v. The relationship between exchange rate on one hand, and exports from the sectors on the other hand was found to be positive and statistically significant. This implies that currency devaluation leads to increase in exports across these three sectors.

Unrealized export potential

The analysis found a number of countries in which Botswana has unrealized trade potential in diamond; textile, and meat and meat products export sectors. The results indicate that Israel, South Africa and Switzerland are export destinations for which there is still untapped export potential for Botswana's diamond, and as such, the country should increase its diamond export to these countries. Countries such as Canada, Denmark, Ghana and Mozambique, among other countries, have unrealized export markets for textile products from Botswana, while Italy, Mauritius, Namibia and Norway are the export destinations in which Botswana should increase its export of meat and meat products, as these countries have untapped market potential for this sector.

Causes of unrealized export trade potential

i. *Stringent rules of origin (RoO)*

Although tariffs applied by most of Botswana's export partners have generally declined over the years, stringent rules of origin (RoO) continue to present challenges to the country's exports. For instance, in the case of textiles, whilst the USA's AGOA allows even for global cummulation under the "Special Rule"; the European Union (EU) only allows regional and diagonal cummulation, thereby limiting the ability of Botswana's manufacturers to source textile inputs from potentially cheaper countries. Thus, these RoO have limited Botswana's exports to the EU, especially those from the textiles sector, resulting in the actual exports being less than the predicted or simulated exports.

ii. *Non-tariff barriers (NTBs)*

Most countries, especially from the developed world, have over the years developed sophisticated NBTs which are arbitrary, difficult and costly to meet, especially for developing exporting countries. In the case of the EU, the application of Sanitary and Phyto-sanitary Standards (SPS) measures whose main objective is to safeguard damages to health, animal and plant life have become disguised trade barriers. SPS standards have affected agricultural exports including meat products not only of Botswana but also for most African, Caribbean and Pacific (ACP) countries. EU SPS measures require that for any exporter to export to the EU member states, they must be certified, and for them to be certified they must meet some 'standards' set by EU bodies. In the case of meat products, the SPS requires that the abattoirs must be certified; the animals to be slaughtered, e.g. cattle, should be traced to their origin, i.e. from which farm, area or region within any country they originated from. Meeting these requirements is costly and cumbersome and this has resulted in less meat products being exported to some developed trade partners, especially the EU.

iii. *Animal diseases*

Botswana's meat and meat export products have been limited due to a plethora of diseases, chief among them being the foot and mouth. With outbreak of the foot and mouth disease, all meat exports are abruptly brought to a halt until health officials are fully satisfied that the disease has come under control or been eradicated. Owing to the lengthy procedure involved in arriving at the conclusion that the disease has been brought under control, the country ended up exporting less than its potential meat products in the years where such a disease occurred.

iv. *Unrecorded informal trade*

Another possible cause of unrealized export trade potential is the fact that informal trade exports figures were not recorded. A case in point, as an illustration, is the fact that more than 80% of Zimbabweans have been importing their groceries from their neighbouring countries including Botswana (South Africa, Zambia and Mozambique) for nearly a decade. Given that these imports were mostly done in small amounts or informally, i.e. groceries of around US\$150 per month per individual, both Botswana customs and Zimbabwean customs were not officially recording these 'small figures'. However, if these small figures are aggregated, they run into millions of US dollars. Thus, the existence of untapped trade potential may also be significantly influenced by the fact that informal trade figures were not recorded, resulting in the actual recorded trade figures being less than the predicted potential figures.

v. *Inadequate international marketing*

Effective trade, especially with international consumers is underpinned by rigorous marketing of the products on offer. Botswana's National Export Strategy

(NES) alludes to the fact that the country's exports have not been vigorously marketed at international fora. Whilst it may be difficult to single out the effect of marketing on a country's exports, the fact remains that marketing contributes positively towards exports, especially given the continued growth in competition from other countries in most products offered on the international market by Botswana.

vi. *Relatively low quality*

Low quality, especially in the textiles sector has contributed towards reduced exports of Botswana's products from this sector. In particular, the study noted that although the rules of origin (RoO) for yarn under the AGOA have been enhanced, the sector has not adequately taken advantage of that gesture by ensuring that it procures the better quality fabric required by regional garment manufacturers producing for the USA market. As a result, relatively low quality fabric has been used in manufacturing resulting in relatively low quality garments which faced fierce competition on the international market on quality terms.

Policy suggestions

IIT and INT

Botswana's engagements in trade liberalization will result in changes in trade, i.e. increase and/or decrease in exports, and increased and/or decreased imports. These changes in exports and imports will involve shifts in resources between sectors. Given that two of the three sectors analyzed, i.e. textile, and meat and meat products, are INT driven, any increase in imports of competing or similar goods, especially from the developed countries, will hurt these sectors, and may result in closure of some companies in these sectors. This possible sectoral negative impact stems from the fact that imports from developed countries will be of high quality, due to these countries having advanced

and better production technologies, as well as being relatively cheaper, given that producers from developed countries have economies of scale and do mass production. In addition they are given both production and export subsidies by their governments for agricultural production. The increase in imports will thus result in loss of employment, due to structural changes brought about by increased competition emanating from trade liberalization, and re-allocation of capital to other surviving sectors. For labour, it may mean that those formally employed in the closing sectors will have to find jobs in other industries where their experiences may not match the job requirements and this may involve re-training, normally at a cost. At the same time, relocated capital, especially specialized machinery and equipment may end up being redundant.

Since some of these trade liberalization arrangements in which Botswana has (is) engaged itself are still to be implemented, e.g., the EPA with EU and WTO liberalization arrangements, the country needs to formulate and implement policies to deal with these possible negative impacts of trade liberalization on the meat and meat products and textile sectors. Possible defensive strategies would be product differentiation within the same sectors with more emphasis on value addition production. For instance, rather than concentrating on production and exportation of raw meat, the country can improve and value-add meat production in the form of canned meat. The same applies to the textiles, value addition can entail shift into production of shirts, t-shirts, jeans, as opposed to production and exportation of rolls of cloth or un-knitted garments.

Determinants of exports

- i. Given that higher GDPs for importing partners promote Botswana's export trade, the country needs to continue its engagement especially with those partners with higher GDPs. This can be easily achieved if the country remains committed in such trade arrangements as the envisioned Economic Partnership Agreement (EPA) with the EU, and the AGOA trade arrangements with the USA. Continued engagement with high income countries can also be enhanced if the country implements the various agreed trade liberalizations promulgated by the WTO so

- that it can get reciprocal treatment and trade preferences from some of the high income and developed WTO members
- ii. The fact that distance retards exports especially in textiles, and meat and meat products means that the country should increase its trade with proximity countries as much as possible. Botswana, besides being a full member of the already advanced and highly integrated Southern African Customs Union (SACU), should also move together with other member states of the Southern African Development Community (SADC) in their endeavour to move from the current Free Trade Area (FTA) to higher stages of regional integration such as the Customs Union (CU), Common Market (CM), Monetary Union (MU) and Economic Union (EU). These higher stages of integration, especially with geographically close countries will also mean enlarged markets for Botswana's exports, among other benefits.
 - iii. To continue increasing its exports, the country needs to remain in its current trade arrangements, ranging from bilateral, regional (for instance with SACU and SADC), inter-regional (with EU) and multilateral (at WTO level). The country can also consider entering into new preferential trade arrangements not only with the current rich countries, but also with emerging and fast growing economies such as China, India and Brazil, among others, as they provide huge future potential in terms of markets for Botswana's exports.

Unrealized export potential

- i. *Analyze export barriers*

Botswana policy analysts need to do an investigation of the factors that hinder the country's sectoral export to countries with untapped export potential. Such an investigation will help to identify hindrances to the export of sectoral products to

these countries. With that information policy makers will be in a better position to design relevant policies to capitalize on those unrealized export markets and export more.

ii. *Increase export promotion activities*

Effective trade, especially with international consumers is underpinned by rigorous marketing of the products on offer. Botswana's National Export Strategy (NES) (Republic of Botswana, 2008) alludes to the fact that the country's exports have not been vigorously marketed at international fora. The country should therefore increase trade promotional activities of its foreign services and consulates, especially in countries where there is untapped export potential. These consulate offices abroad can provide more information on how one can import from Botswana as well as what products can be imported. If possible, the country can put new consulate offices in a trade partner country where there were no such services before. Setting up of new consulate services which also provides trade information, among other services, may encourage imports from Botswana. According to Rose (2005), *ceteris paribus*, "each additional consulate placed abroad is associated with a rise of bilateral exports of between 6% and 10%".

iii. *Negotiate for better trade preferences*

Given that the Botswana is still in the process of negotiating a number of free trade arrangements, for instance with EU countries and also with WTO member countries, the country can try to ensure that it gets the most in terms of liberal trade preferences and better market access for its sectoral exports, especially with countries from these two groups with which it has untapped sectoral trade potential.

iv. *Seek technical assistance to meet NTBs*

The country needs to work closely and in collaboration with its developed trade partners, especially in the EU, with the aim of getting technical assistance in meeting some of the SPS and RoO requirements. Meeting and satisfaction of these measures will positively enhance the country's sectoral exports to its EU trade partners, hence exhausting any currently existing untapped potential within these markets.

v. *Enhance diseases monitoring mechanisms*

The success of Botswana's meat and meat products, among other agricultural products, is underpinned by the country's ability to eradicate perennial diseases such as the foot and mouth timely and effectively. Whilst the country is highly endowed with a larger head of cattle, failure to control diseases means the country will not be able to maximize its exports from this sector. Thus, the country should consider enhancing disease monitoring mechanisms to ensure that should there be an outbreak of any animal disease; the country will be able to swiftly put it under control or totally eradicate it.

vi. *Improve product quality*

It is important to note that importers, and hence consumers, do not simply consider price when importing any product, but also consider other issues, among them being the quality of the product. Most importers, especially from the developed world are particular on the quality of the products they purchase and they generally prefer products of high quality. Thus, Botswana's manufacturers can enhance the possibility of increasing their exports, especially those from the textiles sector if they use high quality yarn and fabric in their manufacturing processes.

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LIST OF ACRONYMS

ACP	African, Caribbean and Pacific (group of countries)
AGOA	African Growth Opportunities Act (of USA)
CU	Customs Union
DFQF	Duty-Free-Quota-Free
EPA	Economic Partnership Agreement
FTA	Free Trade Area
G-L	Grubel-Llyod Index
H-O	Heckscher-Ohlin
IIT	Intra-industry trade
INT	Inter-industry trade
NTB	Non tariff barriers
PTA	Preferential Trade Arrangement
RCAI	Revealed comparative advantage index
RoO	Rules of Origin
SACU	Southern African Customs Union
SADC	Southern African Development Community
SPS	Sanitary and Phyto-sanitary Standards
UK	United Kingdom
USA (US)	United States of America
WTO	World Trade Organization