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Analysis of the Impact of Trade Liberalisation on the Zimbabwean Economy: a case of the African Continental Free Trade Area (AfCFTA)

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Abstract

This paper examined the impact of trade liberalization on the Zimbabwean economy under the AfCFTA. A standard single country, static CGE (PEP-1-1) model with 2013 as the base period is presented and used to generate simulation results of removing tariffs. Given the generalization of the trade data, the results are necessarily representative of what could be the situation after liberalizing trade under the AfCFTA. The results show that trade liberalization causes import prices to decrease, with paper & paper products (-75.8%), rubber & plastic products (-14.5%), glass and glass products (-12.7%), machinery (-10.7%) and other grains (-10.6%) having notable decreases. The results also show that trade liberalization favours export-oriented sectors that use imported commodities intensively in their production. Consumers will experience low prices in the market due to the removal of tariffs on imported commodities. From the results, the products that have notable consumer price decreases are paper & paper products (-44.1%), machinery (-10.5%), and other livestock (-9.4%). The fall in prices affects domestic production and will cause the wage rates of the unskilled labour force to decrease by 1.7%, although the skilled labour force's wage rates will increase by 0.3%. This could mean that sectors laying off workers are unskilled labour intensive, leading to a drop in the corresponding wages, while sectors that are hiring are skilled labour intensive, hence the increase in the wage rate. For example, the results show that demand for labour in smallholder farms will decrease, which could be causing the demand for unskilled labour to decrease. The revenue collected by the government from import duties and other taxes will fall by 10.6%. Thus, export-oriented sectors should be promoted to compensate for the revenue losses through an increase in production which will cause a rise in labour demand and ultimately wage rate increases as sectors compete for the available workforce.

1.0 Introduction and Background

1.1 Trade Agreements

Zimbabwe considers trade liberalisation (lowering of trade tariffs and non-tariff barriers to trade) as a means of achieving rapid and sustainable socio-economic development. As a firm believer of trade openness, the country is a member of various trade agreements at the bilateral, regional and multilateral levels. In Africa, Zimbabwe is a member of the Southern African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA), Tripartite Free Trade Area[1] (TFTA) and the recently established African Continental Free Trade Area (AfCFTA). The AfCFTA Agreement encompasses at least nine pre-existing regional economic communities (RECs), including customs unions, at different stages of integration with cascading and overlapping memberships (UNCTAD, 2020)[2]. The agreement is built upon the *acquis* of the progress achieved in the RECs, including the progress made under the TFTA (COMESA-EAC-SADC).

As aforementioned that AfCFTA is built on the acquis of the progress achieved in the RECs, for Zimbabwe, it has proven to be difficult to come up with a substantive negotiating position under the TFTA and AfCFTA. Despite the commitments made with trading partners to facilitate ease of flow of goods and elimination of barriers to trade, the economic challenges (liquidity challenges, high cost of doing business and high inflation) that Zimbabwe is going through are pushing it to apply protectionist policies on imported goods coming from the region particularly under SADC, thereby undermining deeper regional integration (Chigumira, Nhara and Mudzonga, 2018). While other trading partners are progressing with the deeper integration agenda under SADC, Zimbabwe reversed its commitments to liberalisation, citing economic hardships. Several goods that are imported into Zimbabwe were removed from Open General Import License through the following

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[1] TFTA is composed of countries in three regional economic communities, i.e. East African Communities, SADC and COMESA

[2] The African Union recognises eight RECs as building blocks towards a broader African integration. These are Arab Maghreb Union (UMA); Common Market for Eastern and Southern Africa (COMESA); Community of Sahel–Saharan States (CEN–SAD); East African Community (EAC); Economic Community of Central African States (ECCAS); Economic Community of West African States (ECOWAS); Intergovernmental Authority on Development (IGAD), and Southern African Development Community (SADC). Of these, CEN-SAD and IGAD do not entail commitments on trade integration among members. Other trade-integrating sub-regional blocks include the Economic Community of Central African States (CEMAC), Southern African Customs Union (SACU), and West African Economic and Monetary Union (UEMOA).

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pieces of legislation; Statutory Instruments 6 and 126 of 2014 and Statutory Instruments 18, 19 and 20 of 2016 (*ibid*). Zimbabwe justified these measures as necessary to allow its industry to recover before fulfilling commitments under SADC, and it has been seeking derogation since 2010.

Regardless of the challenges the country has been facing, Zimbabwe made a bold decision to participate in the AfCFTA where only the commitments under COMESA match the new agreement's level of trade liberalisation. The Agreement became active on the 1st of January 2021, but Zimbabwe is one of the countries that have not yet submitted its market access offer, which could be attributed to the mismatch between tariff commitments under SADC and COMESA. This is understandable as the country could be looking at how best it can balance its national interests and harvest the fruits of trade liberalisation. As such, it becomes imperative to examine the impact of trade liberalisation on Zimbabwe's economy in the context of the AfCFTA.

1.2 Zimbabwe's Intra-Africa Trade

Zimbabwe has a strong trade relationship with African countries, particularly those in the southern part of the continent. In 2019, intra-Africa imports accounted for 48.1 % of Zimbabwe's total imports, which is a decline from 2018 accounted for 50.6% of the country's total imports[3]. Zimbabwe intra-Africa exports for 2019 were recorded to be at 61.8% of the country's total exports which is a decrease from 64.6% recorded in 2018[4]. The top 5 African countries which are major import sources for Zimbabwe are given in Table 1 as a share in the value of the country's total imports.

Table 1: Top 5 African Countries that are Import Sources for Zimbabwe

Exporters	Share in value in Zimbabwe's imports, % in 2015	Share in value in Zimbabwe's imports, % in 2016	Share in value in Zimbabwe's imports, % in 2017	Share in value in Zimbabwe's imports, % in 2018	Share in value in Zimbabwe's imports, % in 2019
Africa Aggregation	50	52.2	50.5	50.6	48.1
South Africa	38.4	40.8	40.6	39.9	38.7

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[3] International Trade Centre Trade Map Data accessed on 21/01/2021 at
https://www.trademap.org/Country_SelProductCountry_TS.aspx?nvpm=1%7c716%7c%7c%7c7%7cTOTAL%7c%7c%7c2%7c1%7c1%7c1%7c2%7c1%7c2%7c4%7c1%7c1

[4] International Trade Centre Trade Map Data accessed on 21/01/2021 at
https://www.trademap.org/Country_SelProductCountry_TS.aspx?nvpm=1%7c716%7c%7c%7c7%7cTOTAL%7c%7c%7c2%7c1%7c1%7c2%7c2%7c1%7c2%7c4%7c1%7c1

Exporters	Share in value in Zimbabwe's imports, % in 2015	Share in value in Zimbabwe's imports, % in 2016	Share in value in Zimbabwe's imports, % in 2017	Share in value in Zimbabwe's imports, % in 2018	Share in value in Zimbabwe's imports, % in 2019
Mauritius	0.8	1.5	2.1	3	2.8
Zambia	4.6	3.4	2.5	2.7	2
Mozambique	2.8	3.1	2.3	2.2	1.9
Botswana	0.9	0.7	0.6	0.8	0.7

Source: ITC Trade Map (2021)

The statistics in Table 1 show that Zimbabwe imports more from countries in the southern part of the continent, which are also trading partners under SADC and overlaps on membership under COMESA with Mauritius and Zambia. South Africa is the major import source for Zimbabwe in Africa, which could be attributed to its geographical proximity, industry competitiveness and diversification. Most of the raw materials used in production by Zimbabwean producers are sourced from South Africa and outside Africa. The top 5 export destinations for Zimbabwe in Africa are given in Table 2 as shares in the value of the country's exports.

Table 2: Top 5 African Countries that are Export Destinations for Zimbabwe

Importers	Share in value in Zimbabwe's exports, % in 2015	Share in value in Zimbabwe's exports, % in 2016	Share in value in Zimbabwe's exports, % in 2017	Share in value in Zimbabwe's exports, % in 2018	Share in value in Zimbabwe's exports, % in 2019
Africa Aggregation	91.7	79.8	76.5	64.6	61.8
South Africa	71.1	68	62.7	51.5	49.2
Mozambique	15.1	8	10.5	9.7	8.3
Zambia	3.4	2.2	1.7	1.6	1.4
Botswana	1.1	0.9	0.6	0.8	1
Kenya	0	0.3	0.5	0.5	0.8

Source: ITC Trade Map (2021)

From 2015-2019, Zimbabwe exported over 60% of its products to African countries, and South Africa is the major export destination. Similar to Zimbabwe's import sources, its major export destinations are countries located in the Southern part of the continent that are trading partners under SADC and COMESA. This shows that the country trades more with member countries in free trade areas it subscribes to. The statistics in Table 1 and 2 reflect that further liberalisation of trade under the AfCFTA can be an opportunity for new markets for the country's exports and boost industrialisation. Whether the opening of the trade to the whole continent will impact the economy

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or not is unknown, and this is the purpose of this paper to assess the impact of such a decision by Zimbabwe.

1.3 Trade liberalisation in Zimbabwe

It is widely acknowledged that governments presumably embark on trade liberalisation programmes to gain long-term benefits from competition and comparative advantage (Rattso and Torvik, 1998). Trade liberalisation is conceived to improve resource allocation as it eliminates imperfections disturbing marginal efficiency conditions in the economy. Based on the experiences of trade liberalisation in many countries, there has been an increasing concern about the response of different elements of the economy to this type of reform. The idea that governments engage in trade liberalisation programs to increase the productive capacity of their economies over time has attracted many to undertake studies that look into the effects of this particular economic reform. Many studies evaluated the impact of trade liberalisation in Zimbabwe using Computable General Equilibrium (CGE) models. Bautista, Logren and Thomas (1998) used an agriculture-focused CGE model for Zimbabwe with 1991 as the base period. This paper examined quantitatively the impact of trade liberalisation on income and equity in isolation and conjunction with potentially complementary changes in fiscal and land policies. Trade liberalisation was identified to be significantly increasing the aggregate disposable household income. The study also found that the least income gain accrued to smallholder farm households, which is about four-fifths of the poor population in Zimbabwe, thus making the equity impact unfavourable. This means that trade liberalisation in Zimbabwe significantly increased household income but failed on equity.

Rattso and Torvik (1998) employed an economy-wide CGE model for counterfactual experiments to understand short-run adjustment responses to trade liberalisation. The study found that trade liberalisation of the final goods markets contributed to deindustrialisation and contraction of the economy in Zimbabwe. Another study done by Davies, Rattsot and Torvik (1998) used an economy-wide CGE model which viewed trade liberalisation as a regime shift that required a new model closure rather than a mere decrease in trade tariffs. The analyses of this study included two expansionary channels; intermediate imports and savings response which differentiate it from other studies that evaluated the impact of trade liberalisation using CGE. The study found a

combined consumption boom, short-run contraction, and growing trade deficit to be likely due to a drop in savings and demand switching to foreign-produced goods.

Chitiga, Mabugu and Kandiero (2007) evaluated the impact of complete tariff removal on poverty in Zimbabwe using a microsimulation CGE model. The originality of this paper is that it is one of the few papers that include individual households in the CGE model as opposed to having representative households to analyse poverty comprehensively. The study finds that tariff liberalisation favours exporting sectors and reduces poverty in the economy, although inequality hardly changes. In light of the studies mentioned above, this paper will examine the impact of trade liberalisation on the Zimbabwe Economy using a single-country CGE model. The CGE model to be employed in this study is the PEP[5] Standard Computable General Equilibrium Model: single-country, static version (PEP-1-1 version 2.1) developed by the Poverty and Economic Partnership and the Zimbabwe 2013 social accounting matrix (SAM).

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[5] Partnership for Economic Policy

2.0 SOCIAL ACCOUNTING MATRIX and the MODEL

2.1 Social Accounting Matrix (SAM)

To effectively examine the impact of trade liberalisation on the Zimbabwean economy, a static CGE model is used that is benchmarked on the 2013 SAM data. The 2013 SAM for Zimbabwe has 36 sectors/activities, 48 commodities, and categorised factors of production into four: skilled labour, unskilled labour, capital, and mixed-income. There are two types of households which are grouped into urban and rural. The SAM was aggregated into 30 sectors and 46 commodities for this study.

2.1.1   Structure of Zimbabwe's Trade

From the 2013 SAM data, calculations can be done that shed light on the structure of Zimbabwe's trade (imports and exports). Table 3 gives necessary calculations that reveal the structure of trade, namely import penetration rates and export intensities. It also gives calculations of export intensity in total commodity production and the share of each commodity exports in total exports. On imports, it shows the share of each commodity imports in total absorption and the share of each commodity imports in total imports of the country. From Table 3, it can be noted that over 50% of seven commodities' (food products, textile products, chemical products, electric motors, telecom equipment & medical appliances, transport equipment, furniture & other products) supply are import-dependent. Other commodities such as (wearing apparel, rubber & plastic products, machinery and other grains) constitute a high import composition.

Given the above imports structure, one can conclude that a decrease in tariffs that leads to an increase in imports will have devastating effects in these sectors. However, four commodities are major contributors to total imports, namely chemical products (30.6%), food products (18.2%), transport equipment (13.3%) and transport and communication (10.3%). These calculations on imports reveal that it is the manufacturing sector that faces import competition, and some imported manufactured products cannot be produced in the country.

Table 3: Structure of Zimbabwe's Trade

Commodities	Share of imports in total absorption (%)	Share of imports in total imports (%)	Share of exports in total production (%)	Share of exports in total exports (%)
Tobacco	19.1	0.4	85.5	27.9
Maise	27.2	1.4	0.4	0.0
Other Grains	38.3	0.5	0.4	0.0
Sugar	0.0	0.0	50.7	2.4
Cotton	15.6	0.1	68.6	1.7
Other Industrial Crops	6.8	0.1	24.3	0.9
Horticulture and vegetables	14.3	0.3	3.7	0.2
Cattle	2.1	0.1	0.0	0.0
Poultry	0.7	0.0	1.1	0.1
Other livestock	1.7	0.0	0.2	0.0
Dairy	7.7	0.1	0.7	0.0
Forestry products	0.0	0.0	0.3	0.0
Fishery products	29.0	0.0	4.5	0.0
Coal	4.7	0.0	31.4	0.7
Diamonds	0.0	0.0	80.1	10.2
Gold	0.0	0.0	77.6	15.4
Platinum Group Metals	0.1	0.0	86.7	4.2
Other Minerals	4.2	0.1	69.1	7.2
Food products	52.2	18.2	3.0	2.2
Tobacco products	1.7	0.0	17.1	0.6
Textile products	65.5	1.0	19.9	0.8
Wearing Apparel	45.2	1.3	2.7	0.2
Leather products and Footwear	36.1	0.4	11.4	0.3
Wood Products	13.9	0.2	23.1	0.9
Paper & Paper Products	2.0	0.0	17.8	0.4
Publishing & Printing	17.9	0.3	0.2	0.0
Chemical Products	72.3	30.6	0.7	0.6
Rubber & Plastic Products	38.3	1.1	7.4	0.5
Glass and glass products	43.8	0.1	2.9	0.0
Non-metallic mineral products	26.3	0.4	23.9	0.8
Machinery	47.3	4.7	32.0	9.4
Electric motors, telecom equipment & medical appliances	87.0	8.6	1.3	0.3
Transport Equipment	71.4	13.3	2.1	0.8
furniture & other products	62.1	2.1	12.7	1.0
Electricity	18.9	1.1	2.0	0.2
Distribution, hotels, and Restaurants	16.6	3.2	13.9	6.3
Transport and Communication	22.2	10.3	3.8	3.7

Source: Computations from the SAM (2013)

In as much as Zimbabwe imports agricultural commodities, they contribute not more than 40% of the total absorption which shows that to a greater extent the country can be self-reliant. Calculated export intensities show that a greater chunk of agriculture and mining outputs are sold abroad. Zimbabwe exports more than 50% of its production in tobacco (85.5%), cotton (68.6%), sugar (50.7%), diamonds (80.1%), gold (77.6%), platinum group metals (86.7%) and other minerals (69.1). Tobacco, gold and diamonds are the top contributors to the total export earnings of the country. This implies that any shock on the international commodity prices would negatively impact the Zimbabwean economy as its exports are mainly primary products.

2.1.2 Household Incomes and Expenditure Shares

The SAM categorises households into rural and urban, which makes it easy to consider each group's earnings and expenditures. Table 4 gives the sources of households' incomes.

Table 4: Household Income Sources

Income source	Rural Households	Urban Households	Contribution to Total income for Rural Households (%)	Contribution to Total income for Urban Households (%)
Skilled labour	1,323	4,290	37.8	63.4
Unskilled labour	793	685	22.7	10.1
Mixed income	781	50	22.3	0.7
Enterprises	225	899	6.4	13.3
Rest of the World	378	842	10.8	12.4
Total	**3,500**	**6,766**	**100**	**100**

Source: Computations from the SAM (2013)

Household incomes in Zimbabwe are derived from labour (skilled and unskilled) wages, capital profits and foreign remittances. Both rural and urban households derive more income from skilled labour which contributes 37.8% and 63.4% respectively. For rural households, unskilled labour and mixed-income are the second and third highest contributing income sources while for urban households, it is income from enterprises and foreign remittances from the rest of the world.

On the expenditure side, both rural and urban households spend more income on food products - 24.7% and 19.8% respectively. For rural households, other products with considerable high

expenditures are chemical products (14.2%), transport and communication (13%) and real estate (10.2%). Urban households also spend more on the same products as follows; transport and communication (18.3%), chemical products (13.4%) and real estate (9%). Given these expenditure contributions, it can be concluded that both households spend more on manufactured products and the services sector. These high shares of manufacturing products and services expenditures may be surprising because it is expected that since rural households are poor, their spending should be more inclined to food and agriculture supporting products. Both households spend less on agricultural products save for maise which has a 6.1% contribution to rural households spending. Table 5 summarises the commodities' contribution to total expenditures of both rural and urban households.

Table 5: Household Expenditures

Commodities	Share Contribution of a Commodity to Rural Household Expenditure (%)	Share Contribution of a Commodity to Urban Household's Expenditure (%)
Maise	6.1	0.0
Other Grains	0.2	0.0
Horticulture and vegetables	1.5	1.2
Forestry products	2.0	0.4
Coal	0.0	0.0
Food products	24.7	19.8
Tobacco products	0.7	0.7
Textile products	0.8	0.5
Wearing Apparel	1.7	1.4
Leather products and Footwear	0.7	0.5
Paper & Paper Products	0.0	0.0
Publishing & Printing	0.6	0.6
Chemical Products	14.2	13.4
Rubber & Plastic Products	0.4	0.2
Glass and glass products	0.1	0.1
Machinery	1.5	0.7

Commodities	Share Contribution of a Commodity to Rural Household Expenditure (%)	Share Contribution of a Commodity to Urban Household's Expenditure (%)
Electric motors, telecom equipment & medical appliances	3.7	5.5
Transport Equipment	1.9	1.2
furniture & other products	2.5	3.1
Electricity	1.5	3.9
Water	0.2	3.4
Construction	0.2	0.2
Finance and Insurance services	3.0	4.6
Real Estate	10.2	9.0
Distribution, hotels and restaurants	0.1	0.5
Transport and communication	13.0	18.3
Public administration	0.0	0.2
Education	1.6	2.3
Health	0.7	0.7
Domestic services	0.3	0.5
Other Services	1.2	2.1
Income Tax	4.7	4.9
Rest of the world	0.0	0.2

Source: Computations from the SAM (2013)

2.2 Model Description

The study of the impact of trade liberalisation on the Zimbabwean economy under AfCFTA is undertaken using the PEP-1-1 (one period – one country) model developed by Decaluwé *et al.*, (2013). The PEP-1-1 model is a standard single country, static CGE model that is designed to capture inter-industry effects while tracking differences in trade patterns. This model is well suited in assessing the effects of trade reforms on the economy's different elements, such as prices, production, and incomes. The model is calibrated on a 2013 SAM and modified to remain with 30 sectors and 46 commodities. The model has four factors of production, namely skilled labour,

unskilled labour, capital and mixed-income. Households are categorised into two, i.e. rural and urban.

In this model, firms are assumed to operate in a perfectly competitive environment, which means that markets for goods, factors, and foreign exchange are assumed to respond to changing demand and supply conditions, which in turn are affected by government policies, the external environment, and other exogenous influences (Bautista, Lofgren and Thomas, 1998). Thus each industry's representative firm maximises profits subject to its production technology, while it considers the prices of goods and services and factors as given (price-taking behaviour) (Decaluwé *et al.*, 2013). The production technology is represented by a set of nested constant elasticity of substitution (CES) and Leontief functions. Following a Leontief production function, the two aggregate inputs (value-added and total intermediate consumption) are strictly complementary, without any possibility of substitution. Thus intermediate demand by sectors is also modelled as a Leontief production function.

Like in the model used by Chitiga, Mabugu and Kandiero (2007), the produced commodities are all sold through the market, and the factors of production are modelled as a CES function between capital and labour. Since firms seek to maximise profits, they employ labour and capital to the point where the marginal value product of each is equal to its price. The model treats the exchange rate as a numeraire with government expenditure and current account balance fixed. Some variables in the model are considered exogenous and are sometimes routinely fixed. A good example is capital as a factor of production can be mobile within industries or is not mobile where in both cases it is referred to as fixed.

Using the small-country assumption, domestic prices of imports and exports are expressed in terms of the exchange rate and their foreign prices and the trade tax and marketing margin rates (Bautista, Logren and Thomas, 1998). The local price of domestic products is made up of the producer price plus indirect tax. Thus the removal of trade tariffs is expected to have an impact on the composite price. Export price is affected by output price, which is determined by input prices. The goods produced in the model are either consumed in the domestic market or exported. It is, therefore, assumed that production directed to one market is somewhat different from a production directed to another market. This imperfect substitutability is represented in the PEP-1-1 model through a

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constant elasticity of transformation (CET) aggregator function that describes how readily production can be redirected from one market to another (Decaluwé *et al.*, 2013).

The model assumes that households have Stone-Geary utility functions from which the Linear Expenditure System (LES) is derived. A distinct characteristic of these utility functions from others is that there is always a minimum level of consumption for each commodity and this can be zero for some commodities. Contrary to Cobb-Douglas utility functions, often used in the literature, this specification imposes neither zero cross-price elasticities between all pairs of goods nor unit income-elasticities for all goods (ibid). Consistent with the SAM data, the model also considers that agriculture is split into two subsectors; large scale farmers and smallholder farmers in the production of all agricultural commodities.

Besides households, other institutions in the model are government, enterprises, and the rest of the world. Government receives taxes from institutions, commodities and activities and its expenditures are on commodities and transfers to other institutions. Since government expenditure is fixed, the removal of import duties will have serious consequences on its income. To compensate for the lost income, the government will have to adjust direct taxes on household and enterprise incomes. Enterprises receive income from capital and transfers from other institutions, pay taxes to the government, and transfer to other institutions. Finally, the model reflects a Walrasian economy in that it determines only relative prices and other endogenous variables.

3.0 Simulation Results

To analyse the impact of trade liberalisation on the Zimbabwean economy under the AfCFTA, provisional market access was used to select commodities to liberalise. Under the AfCFTA, 90% of non-sensitive products are going to be liberalised first (after 5-10 years) and then another 7% are categorised as sensitive products that will be opened up at a later stage (after 10-15 years). For Zimbabwe, all the products that fall under 97% (non-sensitive plus sensitive products) were used to come with commodities that are to be subjected to the tariff removal shocks in the model. The remaining 3% of products fall under the exclusion list, they are not part of the negotiations. In this regard, the number of commodities that were subject to the trade liberalisation shock is 31 out of 46. It is important to note that the model results exaggerate the effects of removing tariffs a bit since we did not isolate African trade data from the rest of the world. Be as it may, the simulation results will also represent what is going to happen, given that over 50% of Zimbabwe's trade is with African countries.

Trade liberalisation in the model is represented in the policy experiment as the total removal of trade tariffs on imports. As such, the simulation results will be analysed in three steps; (1) examining the impact of trade liberalisation on import prices and consumer prices (2) impact of trade liberalisation on quantities of imports, quantities demanded, domestic production and total aggregate output of each industry and (3) impact on government's revenue, income, savings and the total investment of the removal of tariffs.

3.1 The impact of trade liberalisation on import prices and consumer prices.

As expected, imported products will become cheap when tariffs are removed; this is the case with the simulation results. Import prices for all commodities that were affected by the shock of tariff removal are decreasing. The simulation results show that import prices will fall as a result of the removal of tariffs, with paper & paper products (-75.8%), rubber & plastic products (-14.5%), glass and glass products (-12.7%), machinery (-10.7%) and other grains (-10.6%) having notable decreases. All other commodities have import prices decreasing in the range of 0-9%. Due to linkages in the economy, this decrease in import prices will affect other prices. Consumers will experience low prices in the market due to the removal of tariffs on imported commodities. From

the results, the products that have notable consumer price decreases are paper & paper products (-44.1%), machinery (-10.5%), other livestock (-9.4%) and the rest fall in the range of 0.1% to 8%.

The removal of tariffs is likely to be experienced more with the previously protected sectors such as agriculture and some in the manufacturing sectors. The impact of decreasing import prices will cause producers of the same commodities to reduce their prices to match those of imports. This move is likely to result in domestic producers switching to export production as their product prices decrease. At the same time, consumers are likely to switch their demand towards imported commodities, negatively affecting domestic production. The change in production structure will cause the incomes of the institutions to change as well. The simulation results show that the following commodities to be the most affected among others; paper and paper products (-34.3%), other livestock (-9.5%) and machinery (-8.2%). All other domestically produced commodities have price decreases in the range of 0.1% to 7.1%.

Given the above results, it is evident that the sectors that will gain from the policy reform are the export-oriented ones that use the imported commodities intensively in their production. However, the sectors that will be substituted by imports are likely to reduce production, which will negatively impact the factors used intensively and their owners. Thus the decrease in the prices of commodities has far-reaching effects on the economy, as it will affect the incomes of enterprises and production as well. This will in turn, affect employment in the country. In this regard, it is important to analyse the impact on quantities of the removal of tariffs.

3.2 Impact of trade liberalisation on quantities of imports, quantities demanded, domestic production and total aggregate output of each industry.

Due to import price decreases induced by the removal of import tariffs, quantities for almost all commodities imported are increasing at an average of 15.3%. This is in line with the theory of demand, where price decrease will increase quantity demanded. Three commodities have shown to be decreasing in quantities imported despite import and domestic prices falling; cotton (-1.3%), other livestock (-21.8) and transport equipment (-19.8%) which is contrary to what is expected. The demand for cotton and other livestock produced locally are decreasing but less than what is happening with imports which could be attributed to the fact that local prices are decreasing at a

rate more than that of import prices[6]. On the other hand, the decrease in imported quantities could be a reallocation of resources by sectors producing these goods as they switch to focus on exports which are showing an increase post this simulation. However, for transport and equipment, the decrease in exports could mean that it is used as an intermediate good, and its final users may reduce its demand post liberalisation. In this model, the current account balance is fixed, which means the increase in imports will be offset by an increase in exports. To increase exports to the levels required to balance the current account, Zimbabwe has to be price competitive, thus reducing prices of domestically produced goods.

Demand for commodities produced in Zimbabwe has mixed results post-simulation as some experience an increase and others decreases. But, overall demand for the commodities is increasing, particularly for agricultural commodities though other sectors have decreasing demand. Other sectors will witness an increase in total aggregate output, while others will be negatively impacted. For example, trade liberalisation under agriculture benefits the largescale farmers, whose output will increase by 5.3% while smallholder farmers' output will decrease by 2%. Among manufacturing sectors that will be negatively impacted; publishing & printing (-156%), rubber & plastic products (-34.2%), glass and glass products (-19.6%) and machinery and non-electrical equipment (-10.2%) are going to experience more output loss. However, mining and almost all service sectors show an increase after introducing the trade policy reform. Table 6 gives a clear picture of how trade liberalisation will impact the production of all sectors.

Table 6: Impact of Trade Liberalisation on the Production of Sectors

Sectors	Change in Output (%)
Large scale farming	5.3
Smallholder farming	-2.0
Forestry	1.5
Mining	0.5
Manufacture of food	1.3
Manufacture of tobacco products	1.8
Manufacture of textiles	-6.3
Manufacture of Wearing Apparel	-61.2

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[6] Prices for domestically produced cotton and other livestock are falling by -0.5% and -9.3%, respectively, While import prices for the same commodities are decreasing by -0.015% and -4.9%.

Sectors	Change in Output (%)
Manufacture of Leather products and Footwear	2.2
Manufacture of Wood Products	-0.6
Manufacture of Paper & Paper Products	143.5
Publishing & Printing	-156.0
Manufacture of Chemical Products	-3.6
Manufacture of Rubber & Plastic Products	-34.2
Manufacture of glass and glass products	-19.6
Manufacture of iron, steel, structural metal and non-metallic mineral products.	-5.6
Manufacture of Machinery and Non-Electrical Equipment	10.2
Manufacture of Electric Motors, Telecom Equipment & Medical Appliances	4.7
Manufacture of Transport Equipment	-8.5
Manufacture of furniture & other products	-2.2
Electricity & Water	0.6
Construction	-11.7
Finance and Insurance	2.1
Real Estate	0.7
Distribution, hotels, and Restaurants	1.4
Transport and communication	3.4
Public administration	0.1
Education	0.0
Health	0.7
Other Services	1.6

Source: Simulation Results

3.3 Trade liberalisation impacts households' and government's income, savings and total investment.

From the analysis of the simulation results above, it has been observed that producers would need to export more to cover up the effects of imports on the economy. If producers do not increase exports, both households and the government's incomes will be lost. The simulation results show that the wage rates of the unskilled labour force will decrease by 1.7% while the skilled labour

force is going to increase by 0.3%. This could mean that sectors that are laying off workers are unskilled labour intensive, leading to a drop in the corresponding wages while sectors that are hiring are skilled labour intensive, hence the increase in the wage rate. For example, the simulation results show that demand for labour in smallholder farms will decrease, which is likely to be the reason why the demand for unskilled labour is decreasing. Manufacturing sectors contain both huge increases and decreases in demand for labour with changes post simulations of more than 50%.

Households' income and savings are decreasing at the same rate of 0.1%, resulting from the decreasing wage rates. Both rural and urban households' real consumption is increasing at the same rate of 102.2%. This shows that in as much as nominal incomes and savings of households falling prices are falling at a higher rate, real incomes and savings are increasing, hence increased real consumption. Based on real consumption results, it shows that households are well-off despite the decrease in nominal incomes and savings. The decrease in the incomes of households and enterprises affects government income as well since the revenues collected from the taxes will be reduced. Trade liberalisation directly impacts the government's income as it reduces revenue collected from import duties. Total government revenue from import duties is decreasing by 91.2% after simulation. This shows that even if Zimbabwe's government wants to offset this drastic loss of revenue by widening the income tax base, it will not be feasible as incomes for households and enterprises are decreasing.

As a result of the loss in revenue coming from import duties and other taxes, total government income is reduced by 10.6%. This is also negatively impacting government savings and total investments in the country. Table 7 shows the impact of trade liberalisation on the government's import revenue, income, savings and total investments.

Table 7: Tariff removal impact on government's revenue, income, savings and investment

Institution	Import revenue changes (%)	Change in Income (%)	Change in Savings (%)
Government	-91.2	-10.6	-120.6

Source: Simulation Results

The statistics in Table 7 show that the government's income decreases by 10.6% and saving by 120.6%. Due to a decrease in government savings, the total investment is also decreasing by 26.8%. From simulation results, it is evident that trade liberalisation will have adverse effects on households' incomes and savings, which in turn affects the government's income and savings and total investment in the economy. However, other sectors are going to benefit from the trade policy reform through increased exports. Thus there is a need to strike a balance for the trade liberalisation to work for the country.

4.0 Conclusion

This paper examined the impact of trade liberalisation on the economy of Zimbabwe under the AfCFTA. A standard single country, static CGE (PEP-1-1) model with 2013 as the base period is presented and used to generate simulation results of the removal of tariffs. Given the generalisation of the trade data, it should be known that the simulation results are necessarily representative of what could be the situation after liberalising trade under the AfCFTA. The simulation results show that trade liberalisation favours export-oriented sectors that use imported commodities intensively in their production. Complete removal of tariffs causes import prices to decrease, and due to the interlinkages in the economy, all other prices will fall. The fall in prices affects domestic production and will cause wage rates to decrease. Though trade liberalisation is causing households' nominal income and savings to fall, households are made better off by the decrease in the prices, which is more than that of incomes and savings, making real consumption to increase.

Most sectors, particularly manufacturing, is shrinking, leading to a significant fall in demand for labour. For the agricultural sector, which is the backbone of Zimbabwe's industry, only large-scale farmers benefit from the policy reform while smallholder farmers are losing. This affects the remuneration of the factors of production and consumption expenditure also falls in the economy. The results show that most unskilled labour intensive sectors are negatively affected by the policy reform, which is likely to be the reason for the decreasing corresponding wage rate. Skilled-labour intensive sectors seem to be hiring more labour, causing the corresponding wage rate to increase.

The revenue collected by the government from imports is falling which also causes income to fall as well. The fall in the government's income causes its savings and investment levels to decrease, affecting the economy's overall performance. The consequences of the falling government income resulting from trade liberalisation will be new direct taxes to be bone by households and enterprises through the taxes will not be able to cover the income gap that would have been created. Thus, it is encouraged that export-oriented sectors should be promoted to export more upon implementing this trade liberalisation under the AfCFTA. Export sectors can compensate for the losses caused by the removal of import tariffs through an increase in production which will cause a rise in labour demand. The increase in labour demand will increase the wage rate as sectors will be competing

for the available workforce. The increase in wage rate implies that government revenue collected through direct taxes will also increase.

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