TRADE AND GROWTH NEXUS IN ZIMBABWE: Quantifying the economic implications of joining the Tripartite Free Trade Area

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ABSTARCT

Zimbabwe, just like many other developing countries, engages and participates in various regional trade arrangements (RTAs) as one building block in a key strategy towards trade-led growth. This paper sought to analyse the medium to long-range implications of Zimbabwe joining the Tripartite Free Trade Area (TFTA) from that perspective. The empirical evidence shows that a more open trade regime under the TFTA contributes more to the country's aggregate economic growth than under the SADC and COMESA FTAs only. However, the study also notes that the level of protectionism towards third parties in the country is still very high and exceptions to free trade with regional trade partners are frequent. Moreover, joining a FTA is not an end in itself. In order to enjoy and exploit the full benefits from its regional integration efforts, Zimbabwe needs to fully utilize its existing trading arrangements under the SADC and COMESA agreements.

Key Words

Trade Policy, protectionism, productivity growth, aggregate level,

Disaggregated /sector specific level, Zimbabwe

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1.0 INTRODUCTION

International trade is portrayed in literature as a very important catalyst for economic growth. The economic development of Singapore, where the annual value of commerce always far exceeded the combined incomes of its inhabitants, provides an extreme example of trade as 'an engine of growth', (Huff, 1997). The idea of trade as an engine of growth was accentuated by theaccelerated growth of a number of developing countries particularly in East Asia using exports to promote sustained growth and industrial transformation. Today, trade is increasingly characterized by transactions within complex value chains and this global expansion of value chains is offering new opportunities for many developing countries.

International trade has played a key role in the Japanese model for industrial development where through it Japan managed to obtain energy and resources unavailable locally (Yamazawa, 1990).The recent history of rapid economic growth of some of the large developing economies (including Brazil, China, the Russian Federation, India and Turkey), although achieved in different ways depending on the country, has been, in some cases attributed to labour and capital being harnessed to fuel export-oriented manufacturing growth, while in others their growth has depended more on high global commodity prices which are, however, beyond their influence. Similarly, the Republic of Korea's export-led development strategy resulted in a generally efficient and equitable process of rapid industrialization (Pack and Westphal, 1986). Chinese Taipei turned from traditional import substitution to a strong export oriented development strategy in the 1960s resulting in the average share of exports to GNP rising from 8.8 per cent in the 1950s to 18.5 per cent in the 1960s, 42.4 per cent in the 1970s and 50.3 per cent in the 1980s (World Trade Report, 2003). Several other studies have analyzed the export-led economic growth hypothesising that exports increase factor productivity because of better utilization of capacity and economies of scale. They also argue that exports are likely to alleviate

foreign-exchange constraints and thereby facilitate importation of better technologies and production methods.

Insights from conventional economic theories suggest that the gains from trade come from better utilisation of resources resulting from specialization. According to the Ricardian theory (Ricardo, 1817), trade facilitates more efficient production of goods and services by shifting production to countries that have comparative advantage in producing them. Whereas this comparative advantage in the Ricardian model is necessitated by the differences in technological advancements between countries; in the Heckscher–Ohlin model countries are also shown to benefit from comparative advantage depending on their relative factor endowments. This is known as the 'factor proportion theory', whereby countries will export products that use their abundant and cheap factor(s) of production and import products that use the countries' scarce factor(s). An extension of this in the Stolper–Samuelson theorem explains international trade as a source of structural change whereby countries will end up exporting products in which they have comparative advantage based on factor intensity.

Whilst the Ricardian and Heckscher–Ohlin models explain trade between different countries and different goods, this is not necessarily the case with African countries wherein the technologies and factor endowments are similar and they produce similar products. The gains from similar countries trade are explained by the 'intra-industry trade theory' wherein countries are expected to benefit from access to greater varieties of goods and services as well as from 'economies of scale'. Other dynamic gains from trade are presented in literature as emanating from enhanced motivation for innovation- though the 'competition effect' and the scale effect, and technology transfer through reverse engineering, personal contacts and enhanced FDI. To the extent that greater openness engenders competition, then, corruption levels due to economic rent seeking activities may also fall.

Trade is increasingly becoming important as a vehicle for development following its central role as a means to implement the post-2015 development agenda, as well as Africa's own 'Agenda 2063' (Lopes, 2015 pg. 23).Notable from the Stolpher –Samuelson theorem is the fact that trade result in some adjustment costs as a consequence of the reallocation of resources towards the relatively most efficient sectors, whereas in the intra-industry theory, trade will create very small adjustments costs especially of the income distribution type. This implies that theoretically developing countries, which generally have very minimal domestic capacity to address the adjustment costs from the reallocation effect of trade liberalisation, stand to benefit more from regional or south-south trading arrangements.

Article 24 of the General Agreement on Trade and Tariffs (GATT) allows member states to form a regional trade agreement provided they eliminate within the union trade barriers on substantially all trade and they do not raise trade barriers on goods produced outside their union[4].Regional trade agreements have become a critical trade policy tool for virtually all the member states of the World Trade Organisation (WTO), with many belonging to more than one arrangement. One of the most important changes in trade patterns in recent years has been the proliferation in regional trade arrangements (RTAs)in the recent years with anincreased share of the world trade taking place through these arrangements.The number of RTAs notified to the WTO rose from a record of 70 in the early 1990s to more than 250 by 2010, which according to the WTO is more than half of the operational RTAs in the world and a lot more are ' in the pipeline'. In Africa there are currently eight RTAs recognised by the African Union as the building blocks of the African Economic Community, (UNECA, 2010)[5].

The economic benefits of regional integration have been widely researched. Chauffour and Maur (2011) propagates that RTAs can be an important engine of trade competitiveness for both for small, very poor, landlocked

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[4]https://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_09_e.htm
[5]These are SADC, EAC, COMESA, ECCAS, UMA, IGAD, CENSAD and ECOWAS

countries and for less regionally integrated or diversified middle-income countries. Developing countries have embraced the option of trade liberalization through regional trade arrangements as a means to foster their countries' economic growth and poverty reduction. Lately, RTAs have been more popular among developing countries as a strategy to mitigate development challenges presented by the rapid growth of global supply chains. Through participation in RTAs developing countries, whose contribution to the global trade is generally skimpy, are presented with an opportunity to participate in the global trade and international value chains. Countries are highly motivated into regional agreements by the need to mitigate challenges of small domestic market size thereby attracting foreign direct investment and securing access to major markets to foster growth and development for their economies. Increased market integration reduces the importance of market size as a determinant of investment location.

According to Kuwonu (2015) governments can use regional and international trade negotiations to pursue their industrialisation agenda. Kemal (2004) noted that there are dynamic effects of regional integration where regional groupings result in specialisation (in accordance with comparative advantage and the economies of scale) leading to the reduction in costs of production. As national markets become more integrated, producers enjoy economies of scale and are exposed to more competition which stimulates production efficiencies at the industry levels. Moreover, after the Japanese, Chinese or the so dubbed 'ASEAN miracle' models, trade can be used to avail the necessary raw-materials to the industrialisation process as well as opening up markets for the manufactured goods in what Kuwon referred to as 'smart protectionism'.

Mufudza (2015) talks of this 'smart protectionism' as a way of enhancing the benefits from foreign direct investment (FDI) whereby she contended that a selective trade policy coherent with a country's development goals enhances the generation of spillover benefits from FDI to domestic firms' productivity in different sectors. Recently, it has been argued that FDI spillovers have a

circumscribed geographical dimension. As noted by Girma, (2003), Girma and Wakelin, (2001), Jordaan, (2005) and Torlak, (2004),the channels of technological diffusion from FDI are reinforced at the regional level whereby labor turnover and demonstration effects are limited in space, vertical linkages are mainly regionally confined, due to transport costs and the competition effect is stimulated at a more circumscribed scale. Thus trade integration also indirectly stimulates growth through influencing the location and internalisation of the potential gains from FDI.

RTAs can be seen as "stepping stones" or "building blocks" to a general openness of the economy. The other blocks are trade and trade agreements with countries outside the region, especially developed countries.One intended effect of a RTA is, through the reduction and removal of tariffs, that it enables more efficient producers in a region by expanding production (and reap economies of scale and scope) to the advantage of consumers and the detriment of less competitive producers (Keane *et al*, 2010). Moreover, standards provisions in regional integration agreements are likely to have welfare enhancing effects as they focus on environmental protection, consumer safety, and animal health. Contemporary research evidence suggests that the amount of trade created from RTAs has generally largely exceeded the amount of trade diverted by the change in tariff policies demanded by such arrangements and as noted by Ngwaru*et al* (2014 pg 38) when trade creation arises from membership to a FTA, 'it must result in net national welfare gains'.

It is therefore, no coincidence that Zimbabwe, just like many other developing countries, engages and participates in various regional trade groupings as a key strategy towards export-led growth. The country's current trade regime seeks to buttress the function of trade as the engine for sustainable economic growth and development (National Trade Policy, 2012[6]).The policy stems on, as one of its fundamental principles, respecting

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[6]National Trade Policy (2012-2016), guiding the country's trading activities up to the year 2016

the role of trade integration as the cornerstone for the creation of larger markets and increasing trade flows.

Zimbabwe is a founding member of the Southern Africa Development Community (SADC) and Common Market for East and Southern Africa (COMESA) regional trading blocs and is a signatory to the FTAs of these blocks. Out of SADC's current membership of fifteen[7] , twelvecountries established a FTA in 2008, including Zimbabwe, which is a step in the path towards deeper regional integration.In COMESA currently fourteen of the membership[8] is participating in the FTA which was launched in October 2000 whilst the non-FTA member states (including Eritrea, Ethiopia, Uganda and DRC) are currently trading duty free, subject to compliance with COMESA Rules of Origin. Zimbabwe is also part to the TFTA agreement which was recently signed in June 2015 uniting the SADC, COMESA and East African Community (EAC) trading blocs into a single new zone with a total membership of 26 countries[9] comprising more than 625million people and a combined GDP of more than US$1 trillion.

Whereas, developing FTAs which create common markets for goods and services is the crust of regional integration, in reality however such treaties called FTAs make many exceptions and foresee long transition periods. According to Jacob Viner's theory, officially a free trade area means full elimination of trade barriers between partner countries otherwise it would be only a preferential trading area. Yet, most have been unable to reduce tariffs significantly on especially on sensitive products with the highest protection thus in this sense, they are "false" FTAs. Despite the proliferation of RTAs indicated above, only a relatively small part of global trade appears to have been conducted between RTA partner countries (for example in

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[7] Angola, Botswana, Lesotho, Malawi, Mauritius, Mozambique, Madagascar, Namibia, Swaziland, South Africa, Tanzania, Zambia and Zimbabwe. DRC, and Seychelles

[8]Burundi, Egypt, Eritrea, Ethiopia, DRC, Kenya, Libya, Malawi, Mauritius, Mozambique, Madagascar, Namibia, Swaziland, South Africa, Rwanda, Tanzania, Zambia, Zimbabwe and Uganda

[9]Angola, Botswana, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Lesotho, Libya, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe

2008, 16% of the trade between the G-20 countries) affirming that may be that part of the preferential trade is actually granted less preferential access than it may seem. The World Bank (2000) highlights that membership in a regional integration agreement has implications on a member country's whole economy with some sectors facing opportunities while others contract. Inge (1994), arguing that the developing countries' benefits from trade have been very dubious, also contended that the trading system is not something inherently good and should be defended in all cases. This study, therefore, sought to establish the economic rationale for Zimbabwe joining the TFTA and by so doing aid to the government's decision to enforce or ratify the TFTA agreement.

Trade liberalisation can help countries to better utilize their resources through specialization and through exploitation of economies of scale. Trade also fosters the incentive for innovation and the diffusion of technologies. This study failed to reject the null hypothesis that a more open trade regime under the TFTA contributes more to aggregate economic growth versus the alternative that more openness does not contribute significantly to growth. This is in line with the findings of Kirk *et al* (2014) who employed the TRIST model in a short-term revenue and imports impact assessment and discovered a stifled loss in revenue as well as a very minimal increase in imports resultant from joining the TFTA.

This study, therefore, concluded that the decision to join the TFTA will bring more benefits to the country. The minimal loss in revenue due to tariff reduction can be offset by the tax revenues from the wider tax base created by the boost in economic activities stemming fromthe creation of more trade. As for the fear of 'import flooding' due to elimination of tariffs and the associated current account problems, this study recommends support for export-production processes in a 'sector-neutral' export promotion strategy such as the one adopted by the Korean government in the 1960s wherein the government subsidized any industry that could export (Perkins, 2006), and on the infant industry argument this study urges the adoption of

measures that reduce the costs of doing business for the local industries in order to improve competitiveness.

Zimbabwe's industrialisation thrust envisioned in the ZIMASSET (2013-2018) stands to be highly leveraged by the intensified regional integration. Nevertheless, evidence reveal that the level of protectionism in the country is still very high regardless of its membership to the COMESA and SADC FTAs. This study also recommends that the country needs to fully implement its existing trade agreements so as to maximize the benefits from regional integration.

This study is very original and forms part of the numerous other studies that seek to evaluate the country's membership to different RTAs. It is envisaged that this paper, by providing a quantitative analysis of the costs and benefits of joining the TFTA, will aid in the decision making process by the government of Zimbabwe as the country advances in the regional integration agenda towards an export-led growth.

1.1 The structure of the study

The remainder of the paper proceeds as follows; Section 2 presents the tools for the analysis, Section 3 presents an analysis of the findings and Section 4 concludes.

2.0 MODEL

Traditionally, economists have evaluated regional integration agreements based on their welfare implications on both producers and consumers through the oft-cited notion of trade creation and trade diversion'. According to Viner (1950)[10], trade is created when cheaper products from other member states are allowed to substitute for more expensive domestic

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[10]http://www.academia.edu/4845633/Perspectives_of_Regional_Integration_in_the_East_African_Community

production. This results in consumer welfare gain as consumers can now buy goods at cheaper prices hence an increase in their real income. On the other hand trade is diverted by substituting intra-bloc imports for imports from outside the group that were cheaper when both faced equal tariffs (Schiff and Winters, 2003). Thus there is welfare loss when trade is diverted as consumers will be buying more expensive goods from less efficient and high cost producers, further the government will experience a reduction in tariff revenue. However, this argument according to Bacchetta *et al* (2012 pg 64) is awkward "because it is essentially static and static gains from trade opening are of an order of magnitude of less than 5 percent of GDP spread over a ten-year adjustment period".

This study chooses to focus on the link between trade reform and growth and not on trade reform and 'static welfare', theorising that trade creation enhances the streamlining of production capacities to most efficient production processes and methods thereby eventually impacting on output levels for the country. Hence, the econometric estimation employed in this study measures the responsiveness of output to changes in the trade regime by modifying the Cobb- Douglas production function to include proxy for trade liberalisation.

The study quantifies the benefits (or losses) to Zimbabwe from the decision to join the TFTA by measuring the responsiveness of the country's GDP to open trade with the TFTA member countries that have not been participating in the SADC and COMESA FTAs using data from the UNCTAD Statistics and the Zimbabwe Revenue Authority (ZIMRA) for the period 2009 to 2012.These countries are Angola, DRC, Eritrea, Ethiopia, Libya and Uganda. The estimation technique controls for other growth ancillary variables[11](which has always been omitted by other researchers) to ensure that the coefficient of the observed variable, in this case trade, is not exaggerated and therefore plausible inferences can be made about the variable's effect on growth.

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[11] Such as the government size (measured by government expenditure), official development assistance, terms of trade, the rate of inflation (*as a* proxy for macroeconomic instability) and institutional quality (representing political and institutional stability)

A major caveat in literature that analysed the contribution of trade on growth is that they assessed the econometric influence of 'openness' on GDP per capita. According to Bacchetta *et al* (2012 pg 17), any relationship observed from such an expression will suffer from an 'endogeneity bias' due to reverse causality or omitted variables. In order to correct for bias and reverse causality in quantifying the trade policy, 'instrumental variables' that correlate with and do not influence income, except through openness (such as the NRP[12] and ERP[13]) are ideal for this study. This study, however, chooses to use ERP as the proxy for openness due to unavailability of data on the tariff equivalence of non-tariff measures which is important in NRP estimations.

2.1 Aggregate analysis;

At aggregate output levels, the study tests the null hypothesis that a more open trade regime contributes more to aggregate economic growth versus the alternative that more openness under the TFTA does not contribute significantly to growth

Model 1

As the first step the study measures the impact of the decision to stay out of the TFTA on output growth. The impact of the existing levels of protectionism on aggregate output is estimated using the ERP for the overall membership of the TFTA countries, as a benchmark.

The following regression equation is used for estimation purposes:

$$\log\text{GDP}_t = \beta_0 + \beta_1\log\text{ERP}_t + \beta_2\log\Omega_t + \varepsilon_t \qquad (1)$$

Where:

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[12] The nominal rate of protection of a commodity is defined as the percentage excess of domestic price over world market prices resulting from protective measures. If tariff are the only sources of protection, then *NRP* is the tariff itself. The present study calculates both the published tariff rate taking into account exemptions, and the collection rate.

[13] The *ERP* measures uses input as well as output tariff, so the *ERP* estimates would be a better indicator to reflect the trade policy regime across Zimbabwean sectors. Tariffs are the major instruments used to influence the country's development path in productivity.

t - indexes the time variable (represented by year) and; **GDP** = total output (current prices); **ERP** = the effective rate of protection used to proxy the level of openness to trade (measured as the sum of customs duty, excise duty, surtax, and VAT); Ω = the control variable for other growth ancillary variables; ε = error term and β_1 represents the effect of degree of restriction on output growth caused by the level of protectionism.

A significantly negativeβ_1 statistic will reveal that the rate of output growth is highly crippled by the level of protectionismin the economy.

Model 2

At the second stage, the study assumes that the country is already fully implementing the SADC and COMESA FTAs, and focuses on the effect of the elimination of tariffs (protectionism) in trade with the six originally non-FTA members following the signing of the TFTA. It estimates equation 2 below to establish the magnitude of change in output as a result of the change/ reduction in the level of protectionism.

$$\log GDP_t = \eta_0 + \eta_1 \log ERP^*_t + \eta_2 \log \Omega_t + \varepsilon_t \tag{2}$$

> Where **ERP*** in this case represents the level of protection Zimbabwe applies to the Tripartite region net of the duties originally charged to the six non-FTA member states.

The difference between η_1 in equation 2 and β_1 in equation 1will be used to measure the responsiveness of output to changes in the level of protectionism following the change in trade regime. For a positive contribution from the new trade regime (the TFTA) η_1 should be negative and significantly higher than β_1.

A significantly high η_1 in equation 2 will also mean that there is great potential for a boost in productivity in the country from honoring its liberalisation commitments under the SADC and COMESA FTAs, *ceteris paribus*.

2.2 Sectoral analysis;

Model 3

Upon establishment of the importance of trade liberalization at national level, the study tests the hypothesis that more openness to trade under the TFTA result in higher productivity at sector level by disaggregating the assessment to impact to sector-specific[14] level by estimating equations **3** and **4** below, for $_I$ sectors and $_t$ years.

$$\log Y_{it} = \beta_0 + \beta_1 \log ERP_{it} + \beta_2 \log \Omega_{it} + \alpha_{it} + \varepsilon_{it} \quad (3)$$

$$\log GDP_{it} = \eta_0 + \eta_1 \log ERP^*_{it} + \eta_2 \log \Omega_{it} + \alpha_{it} + \varepsilon_{it} \quad (4)$$

Where, the output level **Y** in the current year, at sector level depends on the level of protection instituted by the trade regime and other sector specific variables such as employment and capacity utilisation, among others.

α_i is the sector-specific error component and ε_{it} is the basic error component.

3.0 RESEARCH FINGINGS

Detailed results from the STATA estimations of the models 1, 2 and 3 are presented in the appendices.

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[14] Three sector categories of primary, secondary (manufacturing) and services sectors (defined according to the ISIC Rev 3 Classifications)

3.1   Model 1: Impact of the staying out of the TFTA on GDP (considering the ERP with respect to 25 tripartite countries)

The coefficient of the proxy for Zimbabwe's openness to products from the tripartite region (ERPtfta) was negative and statistically significant at 5% level of significance.TheR-squared of 0.0026 was also very low implying that plausible inferences could be made from this statistic. This agrees with literature that postulates an inverse relationship between economic growth and protectionism. The results show a -0.133% growth elasticity of protectionentailing that a percentage drop in tariff charges in the TFTA region will result in an increase in output growth of more than 0.1%.

3. 2   Model 2:Impact of joining the TFTA on GDP (deducting the ERP of the 6 originally non-FTA)

After running the regression model 2, which excludes the contribution of the six non-FTA countries to the level of protectionism, the level of the elasticity of growth improves significantly from 0.0133% to 2.233%. The study could not reject the null hypothesis that a more open trade regime contributes more to aggregate economic growth in the case of Zimbabwe.

Zimbabwe's trade with the six countries eliminated in model 2 above has been generally low. Kirk *et al*(2014) discovered a marginal increase in imports resultant of enhanced trade liberalisation under the TFTA and in this study we also notice that the revenue losses will be very minimal. The country has maintained a huge list of sensitive products in the other FTAs, thus the preferential tariff access this decision will provide to the new trading partners is generally not that great. A further review in this direction, using revenue statistics from ZIMRA, reveals that the inclusion of the six countries under the tripartite group results in an average revenue loss of 21.2%over the four year period from 2009 to 2012.This is very minute compared to the resultant increase in the output elasticity realized in this study which is over 100% (from 0.0133% to 2.233%). Therefore, the study concludes that the revenue loss from joining the TFTA will be more

than compensated for by the revenues generated from the taxes resulting from more jobs and more business created as output increases pursuant to implementation of the TFTA. What the government should then do is to adopt a simplified tax system which is easily understood by the people to enhance the collection of such other taxes as the income tax. Such a sytem will be less prone to evasion and is easier to control.

This notwithstanding, the statistically significant[η1] coefficient of -.0223292 observed from model 2 shows that the effective rate of protection remains high even with the TFTA in place. This figure represents the prevailing level of protectionism with the SADC and COMESA FTAs in place. This implies that with a growth elasticity of over 2%, Zimbabwe will benefit more from full implementation of the SADC and COMESA FTAs other than simply negotiating additional preferences with the other six countries making up the TFTA. The major policy inference from this result is that joining the TFTA is not an end in itself for Zimbabwe but efforts should be made to fully implement the commitments under the SADC and COMESA FTAs in order to maximize the country's benefits.

3.3 Model 3: Impact of the trade regime on productivity at sector level[15]

(i) Agricultural Sector

Considering the possible sectoral effects of the trade regime on the Agriculture sector, the regression results also show a negative relationship between protectionism and the rate of productivity growth of the sector from estimation of model 3. The growth elasticity of protection at -0.25% with respect to all tripartite countries in equation 3 and -1.1% with the implementation of the TFTA in equation 4implies that the implementation of the TFTA agreement under the *Acquisprinciple[16]* on its own will have a positive but dampened effect on growth of the sector. Complete removal of

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[15]Considering the three key sectors classified according to ISIC Revision 3
[16]Draft Report Establishing the Tripartite Free Trade Area, 2009
Roadmap for Negotiating and Establishing the COMESA-SADC-EAC Tripartite Free Trade Area (2011)

tariffs in full implementation of both the SADC and COMESA FTAs will benefit the sector more.

(ii) Services sector

Although trade in services is mainly affected by measures other than tariffs, the regression results in this model helps to quantify the magnitude of the effect of duties charged on the key enablers to the expansion of the sector. It was also notable that the sector will benefit significantly from the removal of tariffs, based on the *Acquis principle*, in the TFTA. The realized coefficient of ERP -.0213049 is statistically significant.

iii)Manufacturing sector

With a coefficient of -.0306915 which is significant at 5% level, growth in the manufacturing sector is the most sensitive of the three sectors to changes in the trade regime. This implies that with the successful implementation of the industrialization thrust under the Value Addition and Beneficiation Cluster of the ZIMASSET, this sector will benefit significantly from the country's membership to the TFTA.

6.0 CONCLUSION

This study sought to establish the magnitude of the economic impact on Zimbabwe of joining the proposed TFTA using quantitative techniques. The econometric analysis indicates that the elasticity of productivity with respect to trade liberalisation following the establishment of the TFTA exceeds that of prior arrangements, that is, the SADC and COMESA FTAs only, which implies that the TFTA is important to Zimbabwe regardless of the country being a member of other regional FTAs already.We conclude that, by joining the TFTA, Zimbabwe will benefit from increased trade and trade related

cooperation. This includes enhanced market access and the harmonisation of trade related policies (including customs procedures, standards, SPS, intellectual property rights and competition policy) which play a key role in facilitating trade. The sectoral analysis which reveal a significantly positive reaction of productivity to reduction of protectionism in the key sectors of the economy shows that the trade policy is an important catalyst to achieving the industrialization thrust under ZIMASSET.

Every trade reform affects prices and an analysis of how this impacts households, especially, the poor is very critical. An imposition of import tariffs, in a protectionist policy, can be motivated by a political economy or such economic arguments as the infant industries argument or the need to generate fiscal revenues. However, this has a tendency of increasing prices resulting in deadweight loss and the general loss in consumer surpluses. Instead, to support the industry, the government (from first generation economics) may consider giving subsidies which will have a double effect of increasing production and reducing imports by the same magnitude with the equivalent tariff rate. This, however, is difficult to implement in the case of Zimbabwe because it is necessary that the subsidy be sufficiently large to actually deter the foreign firms from entering the domestic market. This is a very costly measure and might not be sustainable given that the country is currently faced with budget constraints. A more feasible intervention would, therefore, be to reduce the cost of doing business for domestic firms so that they can be able to produce high quality products at low costs. An industry might not be able to grow simply because it has not yet learned how to produce competitively at world prices, in this case they will need time to learn and make their marginal costs of production low enough to compete with international products.

This study postulates that policies that encourage transfer of technology and the learning of new production techniques by our industries, as well as addressing the costs of inputs into the production processes by the domestic industry will be very essential to leverage the decision to join the TFTA.

Access to a skilled labour force will make it easier for firms to enter new markets abroad, to integrate into global supply chains, to survive and thrive in the domestic market and to adjust to changing conditions in global markets. Concomitantly, the country also need to engage in an export-push strategy focusing mainly on reducing trade costs in order to increase and diversify its export basket into the new markets. Institutions can be a good source of comparative advantage, and trade and institutions strongly influence each other. Improvements in institutional quality, especially in relation to contract enforcement, trade finance facilitation, ensuring a well-functioning credit market or credit guarantee schemes, a well-functioning labour market, elimination of export taxes and other levies on export, administrative barriers such as cumbersome customs procedures, roadblocks and multiple documentationare all measures that can reduce the costs of trade and ensure sustainable trade-led development through export competitiveness.Advances in transport and in information and communication technologies (ICT) also reduce trade costs and hence facilitate participation in the global production networks.

In conclusion, we also note that in many countries the simplification of the tax and tariff systems has led to an increase in the overall fiscal revenue, even when accompanied by a reduction in the average tariff rate. In fact, fiscal revenue can increase with liberalization if the percentage increase in imports is higher than the percentage reduction in tariffs, so the possible increase in imports from this trade regime (which Kirk *et al,* 2014, noted to be very insignificant) should not be any cause for alarm to the country. Policies on innovation, education, training, social safety nets and infrastructures can play an important role in ensuring trade leads to more and better jobs.

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Appendices

Appendix 1:Impact of the trade regime on GDP without the TFTA (25 countries' tariff charges)

(i) Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
lGy	3	8.908373	.1842763	8.721478	9.089914
ERPtfta	4	68.19448	7.996274	57.32948	76.60223

(ii) Regression output

```
. reg lGy ERPtfta

      Source |       SS       df       MS              Number of obs =       3
-------------+------------------------------           F(  1,     1) =    0.00
       Model | .000174355      1  .000174355           Prob > F      =  0.9677
    Residual | .067741128      1  .067741128           R-squared     =  0.0026
-------------+------------------------------           Adj R-squared = -0.9949
       Total | .067915483      2  .033957742           Root MSE      = .26027


         lGy |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     ERPtfta | -.0013368   .0263496    -0.05   0.968    -.3361399    .3334663
       _cons |  8.995789   1.729589     5.20   0.121    -12.98072    30.9723
```

Appendix 2: Impact of the trade regime on GDP with the TFTA (19 countries' tariff charges)

(i) Summary statistics

```
Variable |    Obs      Mean   Std. Dev.    Min       Max

-------------+-----------------------------------------------------

lGy  |      3   8.908373   .1842763   8.721478   9.089914

     ERP |      4   64.84616   7.970567    57.2612   73.55696
```

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(ii) Regression output

```
. reg lGy ERP
```

Source	SS	df	MS		Number of obs =	3
					F(1, 1) =	1.91
Model	.044583925	1	.044583925		Prob > F =	0.3987
Residual	.023331558	1	.023331558		R-squared =	0.6565
					Adj R-squared =	0.3129
Total	.067915483	2	.033957742		Root MSE =	.15275

lGy	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ERP	-.0223292	.0161531	-1.38	0.399	-.2275742	.1829157
_cons	10.2915	1.004445	10.25	0.062	-2.47118	23.05419

Appendix 3: Potential effects of the TFTA at sector level

(i) Regression output for Agriculture

```
. reg lAgric ERP
```

Source	SS	df	MS		Number of obs =	3
					F(1, 1) =	4.01
Model	.011007987	1	.011007987		Prob > F =	0.2947
Residual	.002742438	1	.002742438		R-squared =	0.8006
					Adj R-squared =	0.6011
Total	.013750425	2	.006875213		Root MSE =	.05237

lAgric	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ERP	-.0110953	.005538	-2.00	0.295	-.0814623	.0592717
_cons	7.723079	.3443679	22.43	0.028	3.34747	12.09869

(ii) Regression output for Services

```
. reg lServices ERP

      Source |       SS       df       MS              Number of obs =       3
-------------+------------------------------           F(  1,     1) =    1.32
       Model |  .040587151     1  .040587151           Prob > F      =  0.4563
    Residual |  .030810526     1  .030810526           R-squared     =  0.5685
-------------+------------------------------           Adj R-squared =  0.1369
       Total |  .071397677     2  .035698839           Root MSE      =  .17553

-------------------------------------------------------------------------------
   lServices |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+-----------------------------------------------------------------
         ERP |  -.0213049   .0185624    -1.15   0.456    -.2571626    .2145529
       _cons |   9.370742    1.15426     8.12   0.078    -5.295528    24.03701
-------------------------------------------------------------------------------
```

(iii) Regression output for the industrial sector

```
. reg lIndustry ERP

      Source |       SS       df       MS              Number of obs =       3
-------------+------------------------------           F(  1,     1) =    2.44
       Model |  .085331379     1  .085331379           Prob > F      =  0.3627
    Residual |  .035017266     1  .035017266           R-squared     =  0.7090
-------------+------------------------------           Adj R-squared =  0.4181
       Total |  .120348645     2  .060174322           Root MSE      =  .18713

-------------------------------------------------------------------------------
   lIndustry |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+-----------------------------------------------------------------
         ERP |  -.0308915   .0197891    -1.56   0.363    -.2823357    .2205527
       _cons |   9.629476   1.230539     7.83   0.081    -6.006005    25.26496
-------------------------------------------------------------------------------
```