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THE EAC-COMESA-SADC TRIPARTITE FREE TRADE AREA: IMPACT ON RWANDA 'S EXPORTS

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ABSTRACT

Intra-African trade, which has remained under 12 per cent in the last decade, is low compared to other major regions of the world. In January 2012, the African Union (AU) Summit of African Heads of State and Government endorsed the theme of "Boosting Intra-African trade" and called on Member States, Regional Economic Communities (RECs) and the AU Commission to promote industrial development with a view to diversify economies and moving away from heavy reliance on traditional primary commodities for export. Using disaggregate export and import statistics Harmonized System at the 6-digit level from BACI and COMTRADE data sets between 1998 and 2009, measures of export diversification (using Harfindahl-Hirshman Index) and intra-industry trade (using Grubel-Lloyd Index) are computed for Rwanda which is available from National Institute of Statistics. The paper also reviewed the works of other researchers on the impact of trade impacts on export performance in Rwanda. Secondary data was used for purposes of qualitative research. On the other hand, the researcher used ex-ante descriptive tools to review Rwanda's export situation and from there drew conclusions on the potential of the Rwanda's export performance with data coming from EAC, COMESA, SADC and FTA and other data sources for purposes of quantitative analysis.Preliminary results indicated that while both export diversification and intra-industry trade in Africa are generally low, there are exception cases. In addition, a positive correlation between export diversification and intra-industry trade is found for the sample of African countries. This has implication for policy dialogue suggesting that any future trade policy designed to favor export diversification has positive implications for intra-industry trade and vice versa. Other findings from the technical work provided two important contributions to the direction of current trade policy dialogue on boosting Intra-African trade. First, export diversification and intra-industry trade policies should not be treated in isolation. Second, we identified constraints towards export diversification and intra-industry trade in Africa crucial towards better understanding and subsequently developing effective program of actions for boosting Intra-African trade. Rwanda's economic performance in the near future depends very much on the strategic investment programmes to improve its infrastructure, the global demand for its exports, and the improved business climate and its effects on promoting private investment. In order for Rwanda to overcome infrastructure bottlenecks and other supply-side constraints, investment is needed in, inter alia, broadening access to electricity for the population by increasing household grid-connectivity; the railway line to facilitate Rwanda's import/export trade; the construction of an international airport in Bugesera; and in irrigation systems to promote agricultural productivity.

How can Rwanda, which currently has one of the lowest levels of income and exports per capita in the world, grow and diversify its economy in presence of significant constraints? Three basic commodities – coffee, tea, and tin – made up more than 80 percent of the country's exports through its history and still drive the bulk of export growth today. Given Rwanda's high population density and associated land scarcity, these traditional exports cannot create enough jobs for its growing population, or sustainably drive future growth. Rwanda needs new, scalable activities in urban areas. In this report, we identify a strategy for greater diversification of exports in Rwanda that circumvents the key constraints and is separately tailored for regional and global export destinations. Our results identified more than 100 tradable products that lie at Rwanda's knowledge frontier, are not intensive in Rwanda's scarce resources, and economize on transportation costs. Our analysis produces a vision of a more diversified Rwanda, which can be used as a guide for investment promotion decisions. Based on the reviews and analyses, it was found that the impact of the Tripartite on Rwanda export performance maybe small with regards to export performance. However, Rwanda stood to benefit greatly from the tripartite by bringing transparency in the regional trade regime and harmonization of policies. This will eventually bring about predictability in Rwanda trade agenda and help reduce trade costs. Lastly, the study drew conclusions and offers policy recommendations on future measures to be taken with the view of ensuring that Rwanda gains from the Tripartite. Given the heterogeneity of the effect of FTAs across regions in Africa, it is important to structure negotiations to be region-specific to avoid the policy overlaps of existing trade agreements within regions.

Keywords: *Rwanda, Tripartite Free Trade Area, Free Trade Agreements; International Trade, Africa, COMESA and Export performance*

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INTRODUCTION

On 22 October 2008, Heads of State and Government of COMESA, EAC and SADC Member countries met in Kampala, Uganda and agreed on establishing a tripartite COMESA-EAC-SADC FTA. This is in pursuit of the broader objectives of the African Union to accelerate economic integration of the continent. It also aims at achieving economic growth, reduce poverty and attain sustainable economic development. Among the specific objectives of the tripartite FTA is to eliminate tariffs and all barriers to trade in goods, to liberalise trade in services, and to facilitate cross-border movement of goods, services and investment. It is envisaged that a tripartite FTA will create a larger market than would any of the three Regional Economic Communities (RECs) on their own thereby increasing intraregional trade by enhancing member countries' exports. According to the African Development Bank (2011), to date intra-Africa trade remains low at just 11% of total trade compared to 60% in the European Union, 52% in Asia and 40% for North America. In 2010, intraregional trade in COMESA stood at 4% of total trade while that of EAC and SADC stood at 11.38% and 9% respectively. However, the Tripartite FTA is expected to consolidate the internal markets, enhance intra-regional trade of the three RECs and facilitate duty- and quota-free trade within the common market, subject to rules of origin.

In January 2012, the African Union Summit of African Heads of State and Government endorsed the theme of Boosting Intra-African Trade', paving the way towards fast-tracking a Continental Free Trade area (CFTA) with a tentative timeframe of 2017. The January 2012 decision mandated UNECA,

AUC, AfDB and Member States to collaborate closely towards the implementation of relevant action plans at the national, regional and continental levels on boosting intra-African trade and the establishment of the CFTA. In particular, the January 2012 Summit recognized the low level of trade between African countries called upon Member States, Regional Economic Communities (RECs) and the AUC to promote industrial development policy and value addition to diversify African economies and thereby moving away from heavy reliance on traditional primary exports.

In 2007, Rwanda joined the East African Community (EAC). Rwanda is also a member of the Common Market for Eastern and Southern Africa (COMESA). Rwanda is the only nation in the region to have concluded a Bilateral Investment Treaty (BIT) with the United States. Rwanda has also concluded a Trade and Investment Framework Agreement (TIFA) with the United States. The most recent meeting under the TIFA was in October 2019. In 2009, Rwanda became the newest member of the Commonwealth and was scheduled to host the Commonwealth Heads of Government Meeting in 2020, but the meeting was postponed to June 2021 due to COVID-19 outbreak. Rwanda joined the OECD Development Center in 2019.

Africa is one of the world's most biodiverse regions,5 and many African countries have a comparative advantage in the abundance and variety of biological resources. Furthermore, a majority of the population in Africa depends directly upon biodiversity and ecosystem services for their food and livelihoods,6 whereas natural capital accounts for between 30 per cent and 50 per cent of the total wealth of most African countries. The creation of the African Continental Free Trade Area (AfCFTA) through the entry into force of the Agreement Establishing the AfCFTA (AfCFTA Agreement), on 30 May 2019, presents important opportunities for boosting intra-African trade and promoting development that is environmentally, socially and economically sustainable. The AfCFTA is central to achieving the continental integration envisioned in the Organization for African Unity's Treaty Establishing the African Economic Community (Abuja Treaty) and the African Union's Agenda 2063: The Africa We Want (Agenda 2063). It is also expected to drive the economic transformation needed to foster the sustained and inclusive growth required to help African countries to implement the 2030 Agenda for Sustainable Development (Agenda 2030) and achieve the Sustainable Development Goals (SDGs) (UNCTAD, 2016a).

Dirk(2013) estimates the welfare effect of the COMESA-SADC-EAC FTA, using a GLOBE CGE model and GTAP data base. He finds that the FTA leads to a welfare benefit of $578 million when they assume a complete tariff liberalization between the three blocs. The default GLOBE CGE model assumes full employment . Their macro-closure rules fix investment, and the current account balance. In contrast to the above study , our model closure uses the standard GTAP closure, and unemployment closure - fixed wages within the Tripartite Region – this is the way the model is used to simulate for high levels of under- and un-employment. Therefore, industries can hire as many workers as they need following an economic shock, without bidding up wages (Burfisher, 2011).

Rwanda's production and export patterns today still reflect to a large extent the circumstances of the country's history. The "land of the 1,000 hills" – a small, landlocked country with a hilly terrain and high elevation – Rwanda historically enjoyed higher rates of population growth than other countries in its region as altitude provided a natural shield against tropical diseases such as malaria and the relatively favorable climate provided good conditions for certain types of agriculture (Prunier, 1995). Traditionally Rwandans earned their living through small-scale farming and the herding of cattle. While it provided certain benefits, its landlocked location and high elevation also rendered Rwanda relatively isolated and commercial and trade linkages were underdeveloped.

Dependence on a few commodities for its exports represents a dangerous combination for Rwanda, making the country vulnerable to commodity price changes and weather shocks. Reports by World Bank 2020 shows that Rwanda's exports are to the prices of three commodities: coffee, tea, and tin. During the 1970s these benefitted from a price boom and Rwanda recorded some of its highest growth rates in GDP per capita. However in the 1980s the price of coffee plummeted. One of Rwanda's main tin mines closed. In the late 1980s a series of unusual weather patterns caused a small-scale famine in the countryside. As a result, exports of goods and services fell precariously from a high of 21 percent of GDP in 1979 to a low of 6 percent of GDP in 1990. By the early 1990s Rwanda was facing very difficult economic times. These economic hardships exacerbated the political and social tensions that existed in Rwanda which ultimately lead to conflict and the tragic events of the Rwandan genocide in 1994.

It is against this backdrop that this study attempts to contribute to the current trade policy dialogue on boosting intra-African trade in four aspects. First, the study examines patterns of export diversification for African economies. Second, a measure of Intra-Industry trade for African economies is estimated. Intra-industry trade is understood as simultaneous import and export of similar but differentiated goods. Third, the study evaluates potential linkages between export diversification and intra-industry trade in Africa. Informed by the patterns of trade in African economies, constraints towards export diversification and intra-industry trade are discussed and ways to overcoming these constraints are explored.

Growth in Rwanda has also become increasingly dependent on growth in its key trading partners.[1] Its concentrated export base and heavy dependency on foreign aid leaves the country vulnerable to sharp global downturns and/or sharp increases in commodity prices, which could affect Rwanda's economy through the following channels: slowdown in global demand for exports; reduction in FDI; slowdown in tourism receipts and inward remittances; and contraction of the foreign-aid envelope. Similarly, rising fuel prices are a threat. Export diversification and lower dependence on aid would reduce Rwanda's vulnerability over the medium to long-term.

The value of Rwandan exports increased by 3.8 percent while the volume of exports increased 40.6 percent year-on-year in 2019, reaching $1,164.5 million, according to the National Bank of Rwanda. The increase in value was attributed to good performance in non-traditional exports and re-exports, partly offsetting a fall in traditional commodity exports (coffee, tea, minerals, pyrethrum, hides and skins) largely driven by declining global prices. Commodities, particularly gold, tin, tantalum, tungsten, tea, and coffee, generated over 57 percent of Rwanda's export revenue, according to the National Institute of Statistics Rwanda (NISR). Rwanda earned $86.3 million from tea exports in 2019, a 4.6 percent decrease from 2018. Over the same period, coffee accounted for $69.2 million worth of exports, up 0.2 percent from the previous year. Major markets for coffee exports are the United States and Europe, while the Middle East and Pakistan are the main buyers of Rwandan tea. The value of Rwandan exports of mineral products decreased by 31.3 percent between 2019 and 2018. Tourism is the country's leading foreign exchange earner, with total revenues estimated at $438 million in 2017, according to the Rwanda Development Board (RDB). This is due to successes in leisure tourism as well as rapid-growth in business tourism, also known as Meetings, Incentives, Conferences and Events (MICE).

Rwanda's small industrial sector contributes around 19 percent to GDP and employs less than three percent of the population. The services sector, which includes tourism, generates almost half of GDP (48 percent) and has grown at an average

[1] IMF (2012), Staff Report, p.14.

annual rate of around eight percent in recent years. Rwanda is highly import-dependent, and the Rwandan government faces chronic and large current account deficits. In 2019, imports totaled $2.7 billion (an increase of 10.6 percent from the $2.445 billion in imports registered in 2018) due to ongoing large infrastructure projects and growing industry. Import of capital and intermediary goods increased by 17.8 percent and 16.0 percent respectively, according to the National Bank of Rwanda (BNR). In 2018, principal imports included electrical machinery and parts; electronic equipment and parts; machinery, appliances, and parts; vehicles and accessories; cereals and other foodstuffs; pharmaceutical products; cement and construction equipment including iron and steel; and energy and petroleum products. China, Europe, Kenya, India, the United Arab Emirates, and Tanzania are among Rwanda's major suppliers.

U.S.-Rwanda bilateral trade has grown rapidly in recent years. After Rwanda implemented new higher tariffs on imports of secondhand clothing and footwear in 2016, the U.S. government partially suspended African Growth and Opportunities Act (AGOA) benefits for apparel products from Rwanda, effective May 2018. Many other Rwandan exports to the United States are still eligible for trade preferences under the Generalized System of Preferences and AGOA. Rwandan exports to the United States have grown significantly over the last 10 years. U.S.-Rwanda bilateral trade in 2019 totaled $64.5 million ($18.9 million in exports to Rwanda, $45.6 million in imports from Rwanda) as compared to $92.7 million ($25.3 million in exports to Rwanda and $67.4 million in imports from Rwanda) the year before; the decline was mostly due to fewer aircraft parts exports to Rwanda. Top U.S. exports to Rwanda include aircraft and parts; mechanical and electrical machinery and related parts; and medical, pharmaceutical, and scientific equipment and products.

Less than four percent of Rwanda's total exports of goods went to the United States in 2019. In 2018, $3.86 million in total Rwandan exports to the United States came under AGOA, up from $2.16 million in 2017, 1.22 million in 2016 and $435,000 in 2015. Rwandan exports covered by AGOA primarily consisted of apparel, travel goods, handbags, and arts and crafts).

Rwanda is a member of the Northern Corridor initiative, which includes Kenya, Uganda, South Sudan, and Ethiopia as core members and the Democratic Republic of the Congo (DRC), Burundi, and Tanzania as observers. Rwanda is also at the forefront of the Central Corridor initiative, which also includes Burundi, DRC, Tanzania, and Uganda. Unlocking some of the larger infrastructure projects, such as rail transportation, envisioned under these initiatives could help to reduce the cost of conducting business and transporting goods across the region.

Rwanda benefits from low violent crime rates; its strong police and military provide a security umbrella that minimizes potential criminal activity and political conflicts.

Problem Statement

Rwanda is a developing country and geographically landlocked country and also is considered the fastest growing economy in East African Community with a GDP of 9.80 billion (2018) compared to 9.137 billion USD (2017), thus the per capita GDP is 826.30 USD per year, and after that was 780.80 USD last year, an increase over the previous reporting 4.2 percent (Planning, 2018-2019). In 2018 Rwanda's total trade amounted to US$1,090.34 million, an increase of 9.16 percent over the fourth quarter of 2017, Exports totaled US$ 169.91 million, Imports totaled US$ 841.92 million and Re-exports were valued at US$ 78.5 million (NISR, 2018).

Exports guarantee higher revenues and profits, on the other side. Alternatively, they reduce dependency on local markets since; the market base will grow, leading only to a decrease of local clients, in the case of growth in overseas markets (Dickey D. &., 1979). If it is not, export are able to minimize the effect of the market volatility, business become more captive to financial change,

altering client requirements and seasonal fluctuations in local economy (Dickey D. W., 1981). Finally, and with regard to the advantages of exports, it can be summarized that an increase in export leads to an increase in the access to the currencies, which increases the national income, the turnover and surpluses of the state (Khan, 2012). This lead to the improvement in the standard of living. Despite these export advantages, they sometimes do not produce profitable outcomes that do not add to the country's greater development, for several reasons, including: the existence of competition is greater than expected, the products is unpopular or popular in the markets other, instability in the target country as a result of wars or civil conflicts, weak media publicity and definition exported product or other similar reasons (Engle, 1987).

As far as imports are concerned, the weakness of the country in meeting its own requirements is usually expressed and made dependent and at the expense of foreign nations (Karamanaj, 2014). Imports lead, contrary to exports, to a local currency departure and weaken the equilibrium of trade so that economic growth will weaken (Serhat Yuksel, 2016). However, and in some cases it is considered the import source of economic growth, especially if it includes hardware and electronic equipment to help and contribute to the increase and improvement of the investment, or include products that require a production value of more than imported (Hatem Hatef Abdulkadhim Altaee, February 2016). Due to these reasons, the export and import remains a controversial topic their ability to influence the social and economic growth of the countries.

Rwanda's major economic challenges and constraints in trade of both goods and services are largely manifested in the supply-side constraints and less in the demand side and on market constraints, in particular in regards to goods trade. These constraints mainly comprise "the productive resources, entrepreneurial capacities and production linkages which together determine the capacity of a country to produce goods and services. These productive capacities develop through capital accumulation, technological progress, and structural change."14 Trade liberalization alone, as past experience has shown especially for LDCs, is not enough to help trade and economic growth. Accumulation of resources, including labour, human capital, physical capital, land and natural resources; improvements in the technologies for converting those resources into goods and services; investments in effi cient public infrastructure; and the innovation of new goods and services15 are extremely important complementary economic development factors that need to be coherently developed in order to make trade an effective engine for economic development and poverty reduction. The fundamentals for long-term growth are human resources, physical infrastructure, macroeconomic measures and the rule of law. The role of trade policy in economic growth is largely auxiliary and of an enabling nature: extremes of export taxation and import restrictions can surely suffocate nascent economic activity, but an open trade regime will not on its own set an economy on a sustained growth path. Too much focus on "outward orientation" and "openness" can even be counterproductive if it diverts policymakers' attention away from the fundamentals listed above and treats trade rather than per capita income as a yardstick of success. This requires a focus on a development-driven trade policy approach, as opposed to an export-led, trade-led or demand-led strategy. Such an approach is proposed for Rwanda.

LITERATURE REVIEW

Trade creation and trade diversion

According to UNECA (2006), trade creation refers to the increased level of trade that results from the abolition of trade barriers within the FTA. According to the assumptions of trade creation, the pattern of trade heavily reflects the differences in comparative advantage among member countries. Trade is said to have been created when countries give up on the production of goods and services that they produce

less efficiently in exchange for the same goods and services produced more efficiently by a partner country. Thus regional and global welfare is said to have been enhanced when the changes introduced by the FTA produce a shift in consumption from a higher-cost domestic product to a lower-cost partner-country product.

For trade creation to occur, certain conditions must hold in the FTA. Robson (1984) states that trade creation is more likely to occur when the economic area of integration and the number of member countries is large; tariffs and NTBs have been reduced or eliminated as a result of the FTA; and the economies of the integrated countries are competitive, having comparable levels of development and a complementary resource base.

Narayan et al. (2008) forecasted Fiji's exports and imports using ARIMA models with a data set ranging over the period 1975 to 2002 and found out that Fiji's imports will outperform exports over the period 2003 – 2020 and current account deficits will escalate to approximately $934.4 million on average over the 2003 – 2020 period. Khan (2011) analyzed total imports of Bangladesh using SARIMA, Holt-Winters' and VAR models with a data set ranging over the period July 1998 to July 2009 and concluded that the VAR model outperforms other models in forecasting total imports of Bangladesh. Farooqi (2014) analyzed imports and exports of Pakistan using the ARIMA approach with a data set ranging over the period 1947 to 2013 and found out that the ARIMA (2, 2, 2) and ARIMA (1, 2, 2) models were suitable to forecast annual imports and exports of Pakistan respectively. Lu (2015) forecasted US total textiles and apparel export to the world using Regression and ARIMA models with a data set ranging over the period 1989 to 2014 and found out that both Regression and ARIMA models give nearly the same results but however suggested that further research ought to explore the ANNs technique since it has a better forecast ability. Baxter and Srisaeng (2018) used the ANN approach to predict Australia's export air cargo demand, employing a data set ranging over the period 1993 to 2016 and concluded that the ANN model is an efficient tool for predicting Australia's annual export air cargo demand. Alam (2019) forecasted exports and imports using ANNs and ARIMA techniques, employing a data set ranging over the period 1968 to 2017 and found out that the ANN and ARIMA (1, 1, 2) and ARIMA (0, 1, 1) models are suitable for predicting the total annual exports and imports of the Kingdom of Saudi Arabia.

Determinants of Export Performance

An investigation conducted by UNCTAD (2005) on the determinants of export performance of developed and developed countries amplifies that, export performance is determined by both foreign market access (demand side) and supply side factors. The study further explains that enhanced market access can induce a supply response. An important step in improving market access requires the further lowering of trade barriers which actions include tackling high tariffs and non-tariff barriers. Supply-side capacity is strongly related to domestic market structure and the institutional framework with the main components being transport costs and factors affecting cost of production. The supply-side factors are domestic infrastructure which includes availability of physical infrastructure, ranging from roads and ports to energy and telecommunications, macroeconomic environment, foreign direct investment and institutions.

According to Fugazza (2004), determinants of export performance can be split into internal and external components. External factors relate to market access conditions and other factors which affect import demand. Other than trade barriers and competition factors, foreign market access is also determined by transportation costs, which include geography and physical infrastructures. On the other hand, internal factors refer to supply-side conditions. Supply capacity is also affected by locationrelated elements, which may for example, affect access to raw materials and other resources. It also depends upon factor costs such as labour and capital. Beside resource endowment, factor costs are essentially the outcome of economic policy and

the institutional environment. Access to technology is also likely to affect the productivity of the external sector, and can therefore be an important determinant for export performance.

An important lesson to learn is that improving market access through initiatives like FTAs without simultaneously paying attention to supply conditions is likely to be unproductive in terms of export performance. The UNCTAD (2005) reports that improved supply capacity has been the driving force behind the export performance of successful Asian countries. However, supply capacity appears to have limited the export performance in most African, Middle Eastern and Latin American countries.

Tariffs

Tariffs pose a significant obstacle to intra-African trade. Reducing them could have a range of positive and negative effects for different actors in different countries. For example, reducing tariffs will increase market access for producers in exporting countries. It will also expose producers in importing countries to more competition (Stilwell, 2005, p.55). Negotiations are ongoing on schedules of tariff concessions,30 with members yet to submit the initial tariff offers. Discussions about exemptions for 'sensitive products' are taking on a prominent role. The agreed tariff negotiating modalities define general liberalization of 90 per cent of products over 5 years for developing countries and 10 years for least developed countries (LDCs). Sensitive products are subject to longer transition periods (10 years for developing countries, 13 years for LDCs) making up to 7 per cent of tariff lines, with the exclusion list products making up to 3 per cent (and not exceeding 10 per cent of import value). Only exclusion list products are exempt from liberalization, so the liberalization coverage is 97 per cent (including sensitive products) (Ito, 2020, p.44). The high threshold level was chosen out of concern over the concentration of intra-African trade on a limited number of products (Ito, 2020, p.44).

It should be noted that the lists of non-sensitive, sensitive, or excluded products are determined by country, except for the members of the East African Community (EAC), the Economic Community of Central African States (ECCAS), the Economic Community of West African States (ECOWAS) and the Southern African Customs Union (SACU). A common list is determined for the members of each of the latter four regional groupings (UNECA, 2018). The list of 'sensitive products' may contain certain natural resources and agricultural commodities. While the probability that BioTrade HS codes are included in the 'sensitive products' list is quite low, sensitive products may need to be analysed on a case-by-case basis to check if any potential BioTrade product is covered. The preparation of initial tariff offers will require substantial work, including technical analysis, and UNCTAD BioTrade Initiative's work on biodiversitybased HS codes may help shine some light on the most important biodiversity-based international trade flows and related tariff lines. AfCFTA members should reflect on how to enable BioTrade and the creation of regional and continental biodiversity-based value chains through targeted tariff reductions.

Theoretical Underpinnings of Export Diversification and IntraIndustry Trade

According to White (2011), the underlying economic theory of an FTA is that of comparative advantage. Simply put, the theory postulates that in an FTA, each country will ultimately specialize in that activity where it has comparative advantage.

Trade Theories and Literature on Service Exports

Trade theories that explain services are incipient because of their nature of non-storability and largely invisibility. In the meantime, goods-specific trade agreements can be applied albeit with adjustments (Hindley and Smith, 1984; Deardorff, 1985). Therefore, traditional trade theories such as absolute advantage, comparative advantage, Heckscher-Ohlin, New Trade Theories and New Trade Theories (see Geda (2012) for explanation of each agreement) are relevant.

Empirically, various studies have applied the gravity model to study bilateral trade in services. Nordås and Rouzet, (2017) draw on the gravity model, PPML regressions to estimate the effect of services trade restrictiveness on bilateral exports and imports in 12 sectors. The Services Trade Restrictiveness Index (STRI) from the OECD database ranges from 0 to 1 where 0 is the absence of a restriction and 1 is complete restriction. It covers five policy realms: restrictions on the movement of natural persons; restrictions on foreign establishment; regulatory transparency; competition barriers and other discriminatory measures. Other explanatory variables have been include such as GDP from WDI, gravity data sets from CEP11, RTAs from WTO RTA database

and intra-EEA (European Economic Area that are deeper integrations compared to RTAs) transactions. Findings reveal that service exports rather than service imports are more sensitive to restrictions. Lower exports and higher STRI scores were more pronounced in telecommunications, insurance, maritime transport, courier services and legal services.

More so, heterogeneous regulatory policies among trading partners escalated trade barriers while reduction of trade barriers had larger positive marginal impacts on exports for trading partners with similar regulations. It was also evident that in many service sectors there were less restrictions of cross-border trade compared to natural movement of people and foreign establishment where restrictions were numerous. Heterogeneous non-tariff barriers across countries have made it difficult to estimate the effect of services trade regulations in a comparable manner. Past studies either observe trade in services patterns against a free trade benchmark or rely on a measure services trade restrictivenes covering few services sectors hence inadequately estimating the extent of restrictive service trade policies. In most cases, such techniques apply for OECD countries unlike in developing countries where disintegrated services trade restrictive index and regulatory policy data is unavailable (Borchert et.al, 2017). Therefore, trade liberalization is an essential pro- competitive policy tool in services trade.

Using the gravity model and running fixed effects and OLS regressions, Kimura and Lee (2006) examine the implications of different factors on bilateral trade in services commensurate to bilateral trade in goods between 10 OECD countries and other 47 trade partners (OECD and non- OECD countries) in 1999 and 2000. The study considers bilateral service and goods trade (imports and exports) as dependent variables while GDPs, distance, remoteness, adjacency, regional trade agreements, Economic Freedom index and language have been included as explanatory variables. Results of higher values of adjusted R2 for services trade compared to goods trade ascertain that gravity models are more suitable with trade in services unlike trade in goods. Further, variability was eminent in relation to the elasticities of the independent variables between goods and services trade. While the impact of geographical distance and economic freedom was much stronger services trade, the common border common variable had a higher positive significant impact on goods trade. However, common membership to regional integrations had significant effects on both services and goods trade. Lastly, regressed residuals of service exports and good imports showcased a complementary relationship between service imports and good exports.

Van der Marel and Shepherd, (2013) investigate the magnitude to which regional agreements and regulations in services drive bilateral trade in services with a key focus on sectoral level regulations and impacts on sector-specific trade in services using mirror data from the Trade in Services Database, CEPII, World Bank STRB data and De Sousa's (2012) RTA data for the period 2005-2010. R2 values of over 80 percent from the gravity model (Poisson quasi-maximum likelihood estimator) with fixed effects reinforce the gravity model's significant power in explain services trade. Results reveal the nexus between restrictive

regulations and lower trade (except for mode 3 services) though the nexus strength is highly dependent on particular sectors.

However, foreign establishments (mode 3) services restrictions led to stronger trade flows originating from substitution effects with cross-border trade (mode 1). While the regional integration dummy had positive significant effects on business services, financial services and total trade, the coefficient was insignificant for transport, insurance and wholesale/retail trade services. Delving deeper to access the additional thrust effect of advanced trade agreements, the EU dummy was added to complement the RTA dummy variable. The effect of the RTA dummy was not significant indicating that the RTA effect was largely dependent on EU's services trade promoting role. Therefore the study sheds light on the essence of sector-specific regulatory measures to compliment general services regulatory issues in trade negotiations in addition the crucial role played by different depths and scopes of regional agreements.

Hellmanzik and Schmitz, (2016) access the determinants of bilateral services trade for total services trade as well as its subgroups like travel, transport and computer services. The gravity model constitutes independent variables such as time zone differences, distance, contiguity, common law indicators, common religion, common language, migrants stock and most importantly, the key variable of interest, virtual proximity obtained from Chung's (2011) data on bilateral hyperlinks. Virtual proximate countries manifest if say Polish or Swedish internet users create links from the United States e.g. The Economist homepage. When the Polish hyperlink indicator is higher than for Sweden, ceteris paribus, Poland is considered to be virtually proximate to the United States. Other control variables such as RTA, colonial legacy, cultural distance and common currency have been included in the PPML and Instrumental Variable (IV) robustness checks. The datasets are obtained from various sources including OECD Statistics on International Trade in Services, Eurostat, UN Services Trade, CEPII, CIA Factbook and World Bank. Findings reveal that aggregate services trade is considerably higher for virtually-proximate nations in

addition to most of the subsets of services trade. Virtual proximity effects are more pronounced in information sensitive services like communication, IT, audiovisual services, insurance and financial services. As such, the results amplify the role of technology and internet in overshadowing the proximity burden of information, transport and transaction costs in services trade. Further, other explanatory variables had heterogeneous effects on the various subsector categories. With regards to the EU membership, only travel services saw significant positive outcomes that are associated with the depth of EU policies in institutional integration in addition to the elimination of travel restrictive procedures.

Guillin, (2013) examines the impact of trade agreements on the flow of services as well as elucidating 'depth' in services i.e. degree of liberalization in agreements by running a gravity model on panel data with bilateral, time and country fixed effects and first-difference (FD) estimators for robustness tests for the period 1999-2007. Findings from 11 services sectors for 36 exporters and 165 trade partners show that service RTAs increase trade from 18-32%. Indeed depth matters for trade in services as substantial impacts on services trade were observed for high degree service RTAs. Interestingly, sequencing services trade agreements (negotiating goods trade through CUs or FTAs and concluding with service trade negotiations) does not induce trade more than agreements that were signed simultaneously on goods and services. This alludes to the fact that if written service trade agreements exist in advance incentives and strong commercial relationships to liberalize services appear. Similar findings on the positive impact of RTAs (including NAFTA and EU) on both services and goods are portrayed by (Ceglowski, 2006) in their gravity model for 1999-2000 data. Park and Park, (2011)'s gravity

regression analysis show that trade creation effects are sector specific for RTAs under Article V of General Agreement on Trade in Services (GATS) with intra-partner trade business services having the greatest trade- enhancing effects and transportation services having the lowest for developed countries.

In a recent contribution, Álvarez et al. (2018) delve into understanding whether institutional quality matters for bilateral trade in primary, manufacturing and services sectors using the gravity model PPML regressions. Sector specific variables (market share, sectoral prices, and labor competitiveness), RTAs and gravity dataset variables have been included as control variables. Contrary to the previous studies, regional agreements and interrelated contiguity have no significant effects on services trade. This can be attributed to the limited data availability for trade in services. Nevertheless, institutional quality was a key factor in services trade. Out of the six

World Governance Indicators (WGI), regulatory quality exhibited the largest positive impact on services trade while the coefficient of voice and accountability was positive but insignificant. More bilateral services trade was associated with stronger institutions in the importing country mainly because exporters will be appealed by formal institutions where they face less uncertainty and risk. Mitra et.al, (2018) also draw on the gravity model to establish the effect of terrorism (number of terrorist incidents in the origin and destination country) on international air travel. While the impact of small scale/non-fatal terrorist attacks had significant negative impacts of passenger travel, adverse effects of transnational terrorism attacks on air travel were five times larger.

Geda and Yimer (2019) adopt a trade indices and gravity model to establish the effects of AfCFTA tariff reduction protocol on Africa's intra-trade in merchandise trade. Results from the gravity model based on regional blocks show that membership to COMESA, EAC and SADEC result to a trade creation with coefficients of 0.599, 1.073 and 1.679 respectively. However, if only a single trading partner belongs to the RECs and trade is within North East and Southern Africa (NES), COMESA has a positive and trade creation effect of 0.209 while EAC and SADEC have negative effects but only EAC's effect is significant. Since overlapping membership among the three RECs exists and most of the members are in COMESA then COMESA's trade creation effects holds for NES, region. When one trading partner belonging to COMESA trade with the rest of Africa there is a diversion significant trade diversion effect (0.3890). Combining all the regional models to a single continental model, reveals that greatest trade creation possibilities are when the trading partners belong to SADEC (2.212), EAC (1.945), ECOWAS (1.443) and COMESA (0.472)

respectively. Conversely, the trade indices approach predicted a more trade diversion effects and limited trade creation with the implementation of AfCFTA. Merging the two approaches, trade indices and gravity models predict a rise in Africa's intra-trade by close to 19%.

Other, CGE based models studies (ECA, 2012; Mold and Mudwaya; 2016; Afreixm, 2018), amplify AfCFTA's positive impact on Africa's intra-regional goods trade. These prevailing predictions on the positive impacts of AfCFTA on intra-regional goods trade could also be extended to services trade based on (Kimura and Lee, 2006) who showed that RTAs boost both goods and services trade with similar magnitudes.In addition, the positive impact of RTAs were greater for service imports than good imports, a proof that goods and services trade was complimentary. Hence, RTAs need to include services in negotiations as they increase trade in services as much as trade in goods.

Export Diversification

Export expansion can be either through the extensive margin—new products or new markets—or the intensive margin—more of current products. Export diversification is therefore understood as the expansion of exports due to new products or new markets—extensive margin. Amurgo-Pacheco and Pierola (2008) provide a useful narrower definition

by discussing a geographic dimension with export diversification via the extensive margin is the export of new products to existing markets, old products to new markets, and new products to new markets.

Export diversification and economic diversification in general build resilience of poorer countries to external economic shocks. Diversification is more relevant today to Africa as the impact of the global financial crisis affect both rich and poor economies globally. For Africa, with its high dependence on primary commodities and fluctuating world prices on most primary goods, there is therefore a need for Africa to pursue developmental strategies which promote export diversification. In addition, Africa requires high and sustained growth to make progress in combating poverty. Export diversification is widely seen as a positive trade objective in sustaining economic growth (Brenton, Newfarmer and Walkenhorst 2007). Delgado (1995) argued that diversifying the agricultural export base and diversifying the economy across sectors are central to the long-run growth strategies in Africa given the high concentration ratio of agricultural exports (food and beverages typically account for well over half of merchandise exports in non-oil exporting African countries). Moreover, there is convergence in the developmental literature that growth requires structural transformation (primary—manufacturing—services trade), hence African economies must diversify production base into high-value added production in order to sustained economic growth [2] . Diversification is sometimes claimed to be of importance not just for resource-rich countries, but as a pre-requisite for economic growth (Economic Commission for Africa, 2007).

Virtually every theory of international trade predicts that a larger economy will export more in absolute terms than a smaller economy. Nevertheless, trade theories differ in predicting how relatively larger economies export more (Hummels and Klenow, 2005). One strand of literature emphasizes on the export expansion through the intensive margin, based on seminal work by Armington (1969). Brenton et al. (2007) argued that low income countries focus on greater differentiation of existing products, rather than attempting to diversify directly into new export categories. On the other hand, some have argued for the expansion of export via the extensive margin, based on the influential work of Krugman (1980). However, Hummels and Klenow (2005) argue that neither the intensive margin hypothesis by Armington (1969) nor Krugman's extensive margin hypothesis fully explain international trade patterns in developing countries and provided an empirical framework dividing trade expansion into both intensive and extensive. The authors argued that consumer preferences for variety increases as economic development increases, thereby providing an incentive for export expansion in the extensive margin. Their study found that larger economies export higher volume of each goods (intensive margin), export a higher variety of goods (extensive margin[3]) and export higher quality goods.

Imbs and Wacziarg (2003) found that the process of diversification follows a two stage process (U-shape relationship), in which growth in early stages of development is accompanied by diversification, until a turning point upon which the trend reverses toward increasing specialization once more. Few African economies are at the level of development associated with the turning point towards specialisation, suggesting that further growth on the continent can lead to greater diversification. This study adopts a measure of GDP per capita, and there is faint evidence of this relationship in Africa, although oil exporting economies with relatively large GDPs but with poorly diversified exports are anomalies inconsistent with the two-stage diversification hypothesis. A recent finding (Spence

[2] IMF (2012), Staff Report, p.14.

[3] The study found that the extensive margin accounts for 62 per cent of the greater exports of larger economies based on data from UNCTAD TRAINS collected from national statistical agencies of 76 importing countries covering all 227 exporting countries in 1995

and Karingi 2011) suggests that many African countries are currently engaged in export activities incommensurate with their level of development and hence associated with significant opportunity costs. An outcome based measure of export sophistication [4] (EXPY) in which goods are weighted according to the income of the exporting countries is plotted against GDP. The main contribution of the Hausmann, Hwang and Rodrik (2007) study which proposed this measure is that future growth is significantly influenced by current export sophistication. Countries above the line such as Liberia, Madagascar or Egypt can be thought of as exporting products that are 'richer' than they are, and as such can expect higher growth in the future. Nations such as Malawi, Ethiopia and Mali, which are below the line and therefore exporting products of lesser sophistication than those having comparable incomes, will grow more slowly unless they can move into exporting more sophisticated goods.

Imbs and Wacziarg's (2003) U-shape relationship was later verified for developing countries by Cadot, Carrere and Strauss-Khan (2008). The later study suggests that growth at the income levels of most African economies should prompt diversification. As developing economies grow, consumption patterns change through Engel effects, that is increased demand for a greater variety of goods as income rises. A rising middle class in Africa can be expected to demand a larger variety of goods (AfDB, 2011). UNECA's work on export diversification has reiterated the justifications for diversification with respect to the growth dynamics (UNECA and AUC, 2007, 2011; Karingi and Spence, 2011).

Ben Hammouda et al. (2006) offer a richer analysis of the diversification regimes in Africa, found that there is little economic diversification despite prolonged periods of peace and stability, some African economies remain poorly diversified, such as Burkina Faso and Seychelles. Also, some African economies—for instance, Mozambique and Malawi—started the process but have not made any significant breakthrough in diversifying agricultural products and yet to diversify into the higher value activities. Nonetheless, the authors found that some African economies with deepened diversification process are indeed engaging in structural transformation in a sustainable manner. Tunisia's horizontal diversifications into high value activities and Madagascar's capture of vertical value chains in clothing and apparels are exemplarily. However, the study also found other African economies who were backsliding in the diversification process. Typically, African economies which have struggled to move into new sectors is due to rising commodity prices which leads to an ever increasing concentration of exports, enclave economies and Dutch disease effect[5] . Guinea-Bissau and Angola can be categorised by this regime. Lastly, the study found that countries which went through conflicts see their diversification prospects negatively impacted. A category which initially included countries like Liberia, Sierra Leone and the Democratic Republic of Congo, have positive diversification outcomes in more stable years.

Export diversification through product differentiation in Africa has not been subject to extensive economic scrutiny. Brenton et al. (2007) articulate a convincing case for low income countries to focus on greater differentiation of existing products, rather than attempting to diversify directly into new export categories. This stems from the observation that export growth at the intensive margin is far more significant for developing countries than that at the extensive margin (i.e. export growth is dominated by intensifying trade in existing products rather, than undertaking new export activities – see Amurgo-Pacheco and Pierola, 2007; Brenton and Newfarmer, 2009). This may be linked to the fact

[4] Export sophistication is basically referring to diversification of exports into new products (extensive margin products) and usually with higher value-added.

[5] A negative relationship between increased exploitation of natural resources and a decline in manufacturing sector

that the gains from developing new goods for export are socialised through information spillovers, yet the costs are private, leading to a suboptimal level of innovation (Hausmann and Rodrik, 2003).

Moreover, when developing countries do undertake extensive expansion, the survival rate is very low. With imperfect information firms are ex ante unaware of the profitability of entering foreign markets, and evidence suggests that Africa is particularly poor at sustaining export relationships once they are created. Besedes and Prusa (2007) show that African exports would have had a 3 percentage points higher growth rate if it had South Korea's survival compared to a 1.8 percentage points higher growth rate if it had South Korea's deepening (growth of trade in surviving relationships). For Malawi, just 35 percent of export flows survive beyond one year (Brenton et al., 2007). Investing in improving the quality of existing products is further warranted on the grounds that rich countries import more from countries that produce higher quality goods (Hallack, 2006). In the policy framework of new structural economics (Lin, 2010) export diversification is best achieved by focusing on existing comparative advantage, where industries are competitive, leading to the capture of economic rents for reinvestment and subsequent upgrading of endowments structures.

While this is suggestive of a need to prioritize intensive expansion through greater differentiation, Kilnger and Lederman (2006) and Cadot, Carrere and Strauss-Khan (2008) show that the process of diversification (as opposed to export growth) in low income countries is driven by inside the frontier innovation (emulations) and extensive expansion, suggesting that African countries should undertake new export activities if it is to succeed in diversifying its exports, but that they should be in industries in which there is already existing expertise. In practice the dichotomy between intensive and extensive expansion is of little prescriptive utility as export growth and diversification requires the upgrading of production of existing exports and the undertaking of new export activities. This implies that African economies need to explore dynamic comparative advantages10 when promoting diversification. These are potential sectors outside Africa‘s main comparative advantage sectors of primary commodities and fuel. The role of developing the manufacturing sector therefore is of crucial importance. Structural adjustment is of course a costly exercise and therefore indentifying the potential success sectors is essential.

The quality of institutions also matters for diversification. Rauch (2007) presents a model in which institutional reforms is conducive to allowing firms to enter higher value production activities and improve the results of trade liberalization relative to those targeted towards the lower value production. Tybout‘s (2000) found that differences between manufacturing efficiency in developing country firms relative to developed country counterparts are driven by low incomes in target markets, detrimental macro-policies, high transportation costs, bureaucracy, and poor rule of law. Given the rising incomes and improved macro-stability in many African economies, transportation costs and improved rule of law emerge as policy priorities. Improving intellectual property rights, in particular, can help to privatize some of the positive externalities generated by new exporters which lead to sub-optimal innovation (Hausmann and Rodrick, 2003). Greater adherence to international metrology standards is crucial to ensure that differentiated goods can be assessed on a level playing field. With respect to infrastructure, its negative impact on trade costs is well established (Freund and Rocha, 2010; Limao and Venables, 2001).Cheaper international transit is also associated with extensive expansion (Dennis and Shepard, 2007; Pearson, 2010), while recent evidence from Eastern Europe shows it is also a driver of product quality (Harding, 2009). Karingi and Spence (2011) also found infrastructure to be a significant determinant of both productivity and export sophistication in the African context.

Overall, while the literature on export diversification have argued for the prioritization of intensive or extensive margins respectively or both, we put forward an argument that there is a case for African countries to pursue export expansion through the intensive margin—through product differentiation—and also extensive margin conditional on existing industries competitiveness to compete in foreign markets.

Trade and Trade Policy in Rwanda

Rwanda runs a negative trade balance, but shows a balance of payments surplus. The currency outflow due to a negative current account is more than offset by the inflow of foreign currency thanks to the positive capital account. The country is thus able to sustain its negative trade balance with the inflow of foreign currency originating from capital and financial inflows, mostly represented by official development assistance (ODA). On average, since 2005, ODA has amounted to around 70–80 per cent of Rwanda's negative trade balance.

Rwanda's historically negative trade balance is explained by the significant reliance of the country's formal sector on imported goods as compared to limited exports. In past years this significant trade imbalance has increased Rwanda's reliance on external sources of financing, such as aid, while rendering the economy particularly vulnerable to fluctuation in terms of trade. In 2011, Rwanda's exports amounted to US$466 million compared to over US$2 billion of imports, resulting in a trade deficit of US$1.55 billion, 24 per cent of the country's GDP (National Bank of Rwanda, 2012a).

Rwanda's main export flows are determined by a limited number of commodities, namely tea, coffee, tin ores, niobium, tantalum, and tungsten ores. These few products generated over 60 per cent of export earnings in 2011. On the other hand, as a consequence of limited domestic production of consumer and capital goods, import flows cover a large variety of product classes

The immediate origins and destinations of external trade are mostly neighboring countries such as the United Republic of Tanzania, Kenya, and the Democratic Republic of the Congo. This is the result of Rwanda's landlocked status, as trade flows need to reach neighboring port facilities before entering the national market or being shipped towards other destinations. The main export route for Rwandan merchandise is via Mombasa Port in Kenya, followed by the Port of Dar-es-Salaam in the United Republic of Tanzania. However, a significant share of Rwandan exports is also directed to Uganda, which, being landlocked itself, serves as a trading platform in the eastern part of the Democratic Republic of the Congo. This reliance on foreign infrastructure constitutes a major impediment for the development of Rwanda's international trade with non-neighboring partners not only because of high transportation costs and long shipment time, but also because of the dependence on often inadequate infrastructure, poor administrative procedures, and, ultimately, the risk of operating in potentially unstable countries.

In 2006, Rwanda joined the EAC Customs Union, a large trade bloc unifying Burundi, Kenya, Rwanda, the United Republic of Tanzania, and Uganda in a common free trade area. The EAC common market made an important contribution to Rwandan trade flows to and from neighboring countries, increasing the country's trade integration with local markets. However, significant non-tariff barriers such as product standards and packaging still reduce Rwanda's effective ability to export to key overseas markets such as the European Union and the United States, as well as regionally. Such barriers also constitute a major impediment to the country's efforts to reposition its exports towards higher levels of the value chain, a necessary step for reducing its exposure to commodity price fluctuations.

Table 1: Rwanda Balance of payments

Reference	Last	Previous	Units	Frequency
Exports of Goods and Services	2020	1,855,000,000,000	2,031,000,000,000	RWF
Imports of Goods and Services	2020	3,442,000,000,000	3,365,000,000,000	RWF
Balance of Goods	2019	-1,472,821,521	-1,154,517,937	USD
Current Account Balance	2019	-1,253,742,220	-978,437,757	USD
Exports of Goods	2019	1,231,810,067	1,129,625,985	USD
Imports of Goods	2019	2,704,631,588	2,284,143,923	USD
Real Exports of Goods and Services	2017	1,290,000,000,000	966,000,000,000	NCU
Real Imports of Goods and Services	2017	2,641,000,000,000	2,398,000,000,000	NCU

Source: IMF, 2021

Trade Flows of Goods

Rwanda's participation in international trade grew steadily during the past decade: both imports and exports showed rapid and sustained improvement, recording average annual growth rates of 17 per cent over the last 11 years.

During the same period the trade balance deteriorated, decreasing from a negative value of US$238 million in 2000 to minus US$1,550 million in 2011. Relative to the country's GDP, Rwanda's trade deficits increased from about 10 per cent in 2000 to 25 per cent in 2011, mainly as a result of the higher increase of trade inflows with respect to the national output.

Table 2: Trade in Rwanda

Rwanda Trade	Last	Previous	Highest	Lowest	Unit
Balance of Trade	-226.40	-191.40	-100.59	-1268.30	USD Million
Current Account	-1234.87	-1253.74	99.12	-1352.50	USD Million
Current Account to GDP	-8.70	-7.80	1.80	-15.90	percent of GDP
Imports	343.30	334.50	1859.00	156.90	USD Million
Exports	116.95	143.15	590.80	37.16	USD Million
Capital Flows	-733.20	-402.30	426.80	-814.60	USD Million
Terrorism Index	3.75	2.95	3.94	0.42	
Foreign Direct Investment	99.92	384.46	384.46	99.92	USD Million
External Debt	3010.00	2452.60	3010.00	511.20	USD Million

Source: National Institute of Statistics 2020 Year report.

Merchandise exports

Rwanda's exports are represented by the country's main cash crops, coffee and tea, and by the extraction sector. In 2011, coffee and tea amounted to 30 per cent of the country's total exported goods, while minerals accounted for about one-third. Figure 2 presents the evolution of the three major export commodities as a share of total exports. The contribution of crop exports to trade outflows decreased from 80 per cent in 1999 to 30 per cent in 2011. Over the same period, mineral exports rose to represent 33 per cent of total outbound shipments by 2011, starting from less than 10 per cent in 1998.

Table 2 shows the evolution of values and volumes of Rwanda's main exports from 1998 to 2011. Coffee production for export varied throughout the time sample, with large variations but with no clear upward trend, fluctuating at around 16,000 tons. Ninety per cent of coffee production, the vast majority of it Arabica, is exported before roasting. The export value for coffee is greatly affected by market unit price volatility, which largely determines the year-on-year value fluctuation of coffee exports. The sector for years showed a lack of dynamism as a consequence of a deterioration of quality. This was due partially to loss of soil fertility and plantation aging, but more substantially by a lack of producer organization18 and by loose quality controls.

Tea has historically been the second most important export crop after coffee. The sector employs 53,000 workers directly and is a source of revenue for over one million people (Republic of Rwanda, 2011c). The country's tea industry is robust, benefiting from favorable climatic conditions and good soil quality. Over 90 per cent of Rwandan tea production is exported. Roughly three-quarters of the entire Rwandan tea production is sold at the Mombasa tea auction,19 while the remaining part is sold directly to private customers; the selling price in Mombasa serves as a reference for setting prices to private clients. Export destinations for tea are the United Kingdom for "prime" grade tea, Egypt and Pakistan for medium grades, and South Africa, Sudan, and Yemen for lower grades.

Since the early 2000s, the coffee and tea sectors have undergone significant transformations, with a focus on increased production and productivity, and on the penetration of markets for higher-value products. As regards coffee, Rwanda has made significant progress from standard or ordinary-grade coffee to specialty coffee production. Prior to 2001, Rwanda was unknown on the specialty coffee market; its coffee exports essentially consisted of bulk commercial grades sold at a discount from US$0.10 to US$0.20 per pound below the prevailing New York Commodity Exchanges "C" market price. By 2006, Rwanda had turned into a specialty coffee origin that supplied specialty roasters and large retail chains in the United States and Europe (USAID, 2006). The amount of specialty (fully-washed) coffee increased from 1 to 20 per cent of production from 2002 to 2007 (Republic of Rwanda, 2008b). In 2006, specialty coffee was sold by Coffee Washing Stations (CWS) at a premium of 45 cents per pound over the New York "C" price. By 2007, Rwandan-branded coffees were a standard Starbucks offering in Europe and the Middle East (Republic of Rwanda, 2008b).

The tea sector has similarly re-oriented towards highquality and niche tea markets – branded tea, highquality tea, and diversified tea. In particular, Rwanda is gradually pursuing a migration from bulk CTC (crush, tear, curl) black tea, the majority of which is sold at auction, to targeted sales of higher-value products (orthodox teas, which attract a premium of up to 75 per cent over CTC tea, green teas, and blended and packaged teas), sold over the counter directly to buyers with whom strong relationships have been built (Republic of Rwanda, 2008a).

Table 3: Performance in Rwanda's formal exports

	2016	2017	2018	2019	2020
I. Share of exports					
Traditional products	48.5	50.7	45.7	38.8	29.4
Export crops	21.4	15.7	15.4	19.7	16.4
Coffee	10.3	7.8	8.3	9.1	7.9
Tea	11.1	7.9	7.2	10.6	8.5
Minerals	23.0	32.1	28.1	17.2	11.6
Cassiterite	9.0	8.7	9.9	5.0	4.7
Coltan	9.6	19.1	14.5	9.7	5.3
Wolfram	4.4	4.3	3.7	2.5	1.6
Others	4.1	2.8	2.2	1.9	1.5
Other products	33.2	30.1	31.4	35.2	40.5
Informal cross border exports	17.2	15.6	14.9	15.8	16.4
Reexports	18.3	19.2	22.9	26.0	30.1
II. Change in value					
Traditional products	-5.1	24.2	-7.1	-19.8	-17.4
Export crops	-8.6	-12.8	1.0	20.7	-9.4
Coffee	-18.4	-9.8	8.7	4.0	-5.7
Tea	2.9	-15.6	-6.7	40.0	-12.5
Minerals	-10.1	65.9	-9.9	-42.1	-26.6
Cassiterite	-45.4	15.5	17.8	-52.4	1.6
Coltan	47.5	136.5	-22.1	-36.8	-40.0
Wolfram	63.9	14.4	-11.5	-34.8	-31.5
Others	98.6	-17.0	-19.7	-19.9	-15.9
Other products	56.9	8.1	7.1	6.0	25.3
Informal cross border exports	42.5	7.4	-1.7	0.8	12.6
Reexports	189.8	25.0	22.5	7.6	26.1
Total	27.3	19.0	2.9	-5.5	9.0
III. Change in volume					
Traditional products	4.8	6.8	-3.5	0.5	-5.5
Export crops	0.3	3.9	-5.8	12.5	-1.0
Coffee	89	17.7	-20.1	17.7	-0.8
Tea	-5.4	-6.4	7.9	8.9	-1.1
Minerals	-14.9	27.2	9.3	-30.5	-10.2
Cassiterite	-33.3	5.6	21.6	-35.4	-7.7
Coltan	28.6	115.4	-6.6	-28.3	-23.1
Wolfram	74.0	26.7	-0.2	-19.4	-3.8

Source: NISR, World Bank staff calculations

Empirical Evidence on the Impact of Economic Integration

Empirical studies of economic integration can be divided into partial equilibrium analyses, computable general equilibrium (CGE) models and econometric studies. Although not without their detractors, computable general equilibrium approaches are generally preferable because of the way they attempt to capture the complex interaction between and within sectors to the stimulus of trade liberalisation measures. In a partial equilibrium setting, such interactions on relative prices and factor utilization between sectors are lost. Hence in this brief review we will focus firstly on econometric studies, and then on computable general equilibrium studies.

Econometric studies of trade liberalization have focused on the extent to which trade liberalisation has affected economic growth, exports and import flows, and the trade balance. Most initial studies resoundingly endorsed trade liberalisation as a way of enhancing economic growth and development. Wacziarg and Welch (2003) studied the relationship between economic integration and economic growth, over the period 1950-1998 and found that countries that liberalized trade regimes experienced on average an increase in annual rates of growth 1.5 percentage points higher compared to the pre-liberalisation period. The post-liberalisation increase in investment was between 1.5 and 2.5 percentage points and that liberalisation raised the trade to GDP ratio on average by five percentage points. Felbermayr (2005) used a dynamic Panel Data model to test for evidence of a Trade-Income relationship and found a strong positive effect of openness on income growth. Emiko Fukase (2010) analyzed the relationship between openness, education and economic growth using a series of panel data techniques, using data for 106 countries over the period 1969 to 2004 and found that trade openness had had a positive effect on economic growth.

On the other hand, Rodriguez and Rodrik (2000) reviewed a number of empirical studies, including Dollar (1992), Ben-David (1993), Sachs and Warner (1995), and Edwards (1998), and they found no evidence of a robust positive relationship between open trade policies and economic growth. SantosPaulino and Thirlwall,(2004) estimated the effect of trade liberalisation on export growth, import growth, the balance of trade and the balance of payments for a sample of 22 developing countries that had adopted trade liberalisation policies since the mid-1970s. Although they found that liberalisation stimulated export growth, it also raised import growth by more, leading to a worsening of the balance of trade and payments which constrained the growth of output.

In contrast, Wu and Zeng (2008) studied the impact of trade liberalisation on imports, exports, and overall trade balance for developing countries and found strong and consistent evidence that trade liberalisation resulted in higher imports and exports, but no robust evidence that liberalisation had a negative impact on the trade balance. Among the African-specific studies, Jones and Morrissey (2008) studied the impact of liberalisation on imports. They compared imports of liberalizing countries to non-liberalizing countries in Africa and found no evidence to suggest that imports increased disproportionately after liberalisation. Allaro (2012) examined the impact of trade liberalisation on Ethiopia's trade balance using the data over the period 1974 to 2009, and found that trade liberalisation led to a worsening trade balance as a result of a rapid increase in imports in Ethiopia.

How do these results compare with those generated by CGE models? In the 1990s, CGE models were used widely to estimate large welfare gains from the trade liberalization achieved under the Uruguay Round. The OECD, along with others, predicted global welfare gains in the order of US$200 billion, approximately a third of which would accrue to developing countries. In hindsight, however, it appears that these estimates were excessively optimistic.. According to subsequent estimates, 70 per cent of the gains from the Uruguay Round would go to the developed countries; more importantly, the remaining 30 per cent would be captured by few large export-oriented developing countries. Indeed, the 48 leastdeveloped countries (LDCs) could be worse off by some US$600 million a year within the first six years of the Uruguay Round (1995–2001), with SSA worse off by US$1.2 billion (UNDP, 1997, cited by Charlton and Stiglitz, 2005, p. 47).

Using the GTAP 6.0 CGE trade model, Fosu and Mold (2008) simulate a complete global liberalization scenario to measure the distribution of gains across countries. The global welfare gains amounted to only US$94 billion or a mere 0.3 per cent of world GDP. However, the gains for SSA are even smaller - the estimated welfare gain of US$259 million is equivalent to only 0.08 per cent of

SSA GDP. In per capita terms, this represents a welfare gain for SSA equivalent to 36 cents per capita on a one-off basis. Moreover, even these results hinge on the inclusion of South Africa within the group of 12 SSA regions. Excluding South Africa, the welfare result is a loss for SSA of US$579 million. The conclusion is that SSA stands to gain relatively little from any further global trade liberalization

Recent Macroeconomic Developments

Growth in 2016 slowed down to around 6 percent, reflecting the need to address growing external imbalances through fiscal restraint and greater exchange rate flexibility. This was further magnified by supply shocks due to drought, and the weak prices for Rwandan exports throughout 2016. In the first quarter of 2017, growth further performance in agriculture and construction. The key outcomes of 2016 and the first quarter of 2017 include the reversal of growing external imbalances and maintaining single-digit inflation amid food price shocks and a sizable exchange rate depreciation.

With respect to the economy's production side, the growth in all key economic sectors slowed down. Agriculture grew by 3.9 percent in 2016 compared to 5 percent in 2015 largely reflecting unfavourable weather conditions. In the first quarter of 2017, the growth in agriculture further slowed down to 2.6 percent. Growth in the industrial activities slowed to 6.8 percent in 2016 from 8.9 percent in 2015, reflecting weaker performance in construction sector. In the first quarter of 2017, manufacturing and mining maintained their annualized growth rate at 6.8 and 7.7 percent respectively, while construction contracted by 0.2 percent following the completion of large investment projects in 2016. Growth in services slowed down from 10.4 percent in 2015 to 7.4 percent in 2016 on the back of relatively weak growth in private consumption. The annualized growth rate in services in the first quarter of 2017 was 6 percent.

On the demand side, Rwanda saw a slowdown in growth rates of both consumption and investments in 2016. Growth in private consumption slowed as a result of depreciation of the exchange rate, while the government largely maintained the rate of growth in public consumption of recent years. Investment growth also slowed down, mostly as a result of slow growth in public investments as part of authorities' adjustment program and fiscal restraint for 2016 and 2017. In this context, the developments in 2016 and in the first months

of 2017 illustrated the large extent to which the growth in Rwanda depends on public investments. With respect to net exports, the volume growth in exports outperformed import growth but the trade balance continued to widen in 2015, albeit slower than in 2015. Data from the first quarter of 2017, however, indicate that the widening trend of external imbalances has been already reversed.

In terms of prices, Rwanda experienced inflationary pressures from multiple sources in 2016, including the supply shock from the drought that affected East Africa and the Horn, and the pass-through from exchange rate depreciation. Inflation, historically at low single digits, increased to 7.3 percent at the end of 2016 further climbing to 8.1 percent in February 2017 before slowing down to 4.8 percent in June 2017. Food prices that grew by double digits were the main drivers of high inflation registered in Rwanda between July 2016 and May 2017. Rural areas were more vulnerable to price pressures than urban areas because of a larger share of food items in the consumption basket.

The environment for monetary and fiscal policies in 2016 and in the first months of 2017 was affected by several factors including weaker global and regional growth, inflationary pressures, and the need for external adjustment stemming from widening external imbalances in previous years. The policy response consisted of a greater exchange rate flexibility that resulted in about 10 percent depreciation in 2016, fiscal restraint largely through controlling capital expenditures, and maintaining a stable monetary policy rate throughout most of 2016. These policies, supported by a new IMF program launched in mid-2016, helped to slow down the widening of external imbalances and

return to a path of foreign exchange reserve accumulation.

Export prices for commodities recovered partly in the first quarter of 2017 helping traditional exports to somewhat reverse the negative trend of recent years. Performance of non-traditional exports remained strong in 2016 and in the first quarter of 2017. Tourism continued to perform strongly, both in 2016 and in the first quarter of 2017. As for imports, the growth rate in 2016 was subdued as part of the adjustment program while food imports remained strong, on the back of food shortages as a result of the drought.

Productivity and Structural Transformation Patterns

The growth slowdown of 2016 and 2017 driven by the drought, weak export prices and fiscal restraint to address growing external imbalances can be seen as a temporary phenomenon. At the same time, long-term productivity patterns examined in this report point to several factors that, if not addressed, may depress Rwanda's growth potential.

Structural transformation, characterised by an inter-sectoral movement of labour from subsistence agriculture mostly to the service sector, has been the main driver of growth since the early 2000s. The growth in productivity within economic sectors played a smaller role. Service sector has contributed to the growth in productivity as it absorbed labor from agriculture and most of the entrants to the job market. Within-sector productivity growth in non-tradable services was not high, highlighting the limits of these services in driving the long-term growth. While manufacturing sector demonstrated high productivity growth in recent years, it attracted a negligible fraction of the total increase in the labour force. Creating enabling environment for a greater labour absorption capacity in manufacturing, coupled with an improved productivity in agriculture, will be key for sustaining growth in the medium to long-term.

With respect to the patterns in total factor productivity (TFP), it appears that TFP growth has slowed recently with capital accumulation becoming the main driver of growth. In this context, the surge in public investment of 2013- 2015 helped to maintain a high growth rate. The recent slowdown underscores the dependence of the economy on government-led investment. There is only limited scope to further increase public investment as it can lead to debt accumulation and thus cannot be sustainable in long-term. This highlights the importance of the more efficient use of available investment resources to underpin strong TFP and, ultimately, economic growth. For the private investment, evidence points that allocation of capital investment to housing, hotels and restaurants where the expected payoffs are yet to materialise could be one of the factors behind the slowdown in TFP growth. Going forward, creating conditions that encourage the private sector to channel investment resources to the tradable sector where the potential for productivity growth is high will be key for sustaining a high growth rate in long run.

Macroeconomic Outlook and Risks

The impact of fiscal restraint and supply shocks will be felt throughout 2017. As agriculture recovers during the year growth may be higher than in the first quarter of 2017 but still well below the historical average of around eight percent per annum. Tapering food price shock and a lower inflation would allow monetary policy to become more accommodative. The fiscal policy stance in the second half of 2017 will also be more expansionary. However, persistent external imbalances and elevated public debt will constrain the use of macroeconomic instruments in the medium term. In macroeconomic management, the authorities will be guided by the need to maintain adequate foreign exchange reserves and maintain Rwanda's status of low risk of debt distress.

Returning to a higher growth trajectory in 2018 is attainable, although there are risks. In the medium term, economic activity will benefit from the

expected recovery of prices of traditional exports, including minerals, tea, and coffee. A more competitive exchange rate will support the non-traditional tradable activities under the "Made in Rwanda" initiative. On balance, the outlook in agriculture is positive, although adverse climatic events pose risks. Overall, medium to long term outlook will depend on the extent to which the private sector will move to invest in the tradable sectors with higher growth and productivity potential. Other risks to growth are associated with weak external environment, regional tensions, and regional security outlook.

Analysis of Export Sector Performance

From a very low base, Rwanda's exports have increased four-fold in the last decade from just US$400 million in 2007 to US$1.6 billion in 2016. Rwanda's exports are more diversified with the growth of services, re-exports and small-scale cross-border trade. Exports to the region, and especially to the DRC and to the EAC countries, mainly as re-exports and through small-scale cross-border trade contributed the bulk of export growth for Rwanda. However, non-tariff barriers including cumbersome customs procedures, export bans and roadblocks continue to impede the growth of intra-regional trade.

Traditional agricultural exports – tea, coffee, and minerals – are still important export earners but overall performance has been mixed in recent years. Traditional exports currently generate less than half of the total exports earnings, while a decade ago Rwanda's exports exclusively consisted of these traditional goods. Export volumes of coffee have been stagnant while the volume of tea production has nearly doubled, although with muted economic impact given low value addition. Declining prices and low production of traditional minerals has also substantially affected export earnings.

Non-traditional merchandise exports have emerged in Rwanda, offsetting mixed performance of traditional sectors. Other minerals, agriculture, and manufacturing, that generated only US$4 million in 2004 reached US$155 million in 2016. Re-exports and small-scale exports mainly to DRC and to the EAC region also made a substantial contribution to export growth. Although re-exports do not generate substantial value added and jobs, they enable local clusters of economic activity that can be built upon.

Services exports are concentrated in traditional sectors of tourism and transport but exports in high-productivity ICT and financial services have started. Continued efforts to diversity tourism products will help to reduce the risk of over-dependence on traditional tourism which currently accounts for 29 percent of total exports.

Firm-level analysis of exporters in Rwanda reveals that the number of exporters has increased but the size of exporting firms is smaller than those in regional peer countries. Exports are concentrated in a few exporters but such concentration is similar to the levels found in countries with the same level of development. Rwandan exporting firms are on average less diversified, both in terms of the number of exported products as well as the number of destination markets. Over 50 percent of exporting firms export only a single product to a single destination. The majority of firms serve only the regional-market (EAC and DRC) and the average value of exports per exporter to regional markets is much smaller than that of firms who export to the rest of the world.

The challenges of small exporting firms are survival and growth in the export markets. There is a high degree of churning of firms with high entry and exit rates. Exporting firms that import intermediate inputs are on average more diversified in terms of both export product as well as destinations than pure exporters.

This emphasizes the need for continued efforts to reduce barriers to imports and improve trade logistics. For Rwanda, facilitating imports of inputs, including through effective management of exchange rate policy, is a key element in promoting export diversification. The analysis also reveals that growth of exports is driven by incumbent firms that

have managed to proceed past the initial survival stage. This suggests that measures that assist new exporters to survive will have longer-term pay-offs in terms of greater export growth.

Table 4: Rwanda selected macroeconomic indicators

	2016	2017	2018	2019	2020
	(Annual percentage change, unless otherwise indicated)				
GDP growth rate	8.8	4.7	7.6	8.9	5.9
Agriculture	6.5	3.3	6.6	5.0	3.9
Industry	8.4	9.3	11.0	8.9	6.8
Services	11.6	5.2	7.0	10.4	7.1
Consumer price index					
End of period	3.9	3.6	2.1	4.5	7.3
Period average	6.3	4.2	1.8	2.5	5.7
Money and credit					
Broad money (M3)	34.8	11.1	19.6	30.0	7.8
Credit to the private sector	14.1	15.6	19.0	21.1	7.5
Policy rate (end of period)	7.5	7.0	6.5	6.5	6.3
Exchange rate (Rwf/US$)					
End of period	631.4	670.1	694.4	747.4	819.8
Period average	614.3	646.7	682.8	720.0	787.8
General government budget[1]	(Percent of GDP, unless otherwise indicated)				
Revenue and grants	25.3	23.5	25.8	25.0	24.5
Total revenue	14.3	15.7	16.6	17.7	18.5
Total grants	11.0	7.8	9.1	7.3	5.9
Total expenditure and net lending	26.5	28.4	29.7	29.9	27.9
Current expenditure	14.8	13.5	15.0	14.7	15.1
Capital expenditure	11.6	12.0	13.7	13.6	11.5
Net lending	0.0	2.9	1.0	1.6	1.4
Overall deficit					
Including grants	-1.5	-5.2	-4.2	-4.8	-3.9
Excluding grants	-12.5	-13.0	-13.4	-12.2	-9.8
Financing	1.4	5.2	4.2	4.8	3.9
Foreign financing	2.3	7.2	2.0	3.3	3.6
Domestic financing	-0.9	-2.0	2.2	1.5	0.3
External sector					
Goods exports (goods and services)	15.1	16.8	16.4	18.4	19.0
Goods imports (goods and services)	32.6	32.1	33.2	35.6	37.0
Current account balance	-10.2	-7.3	-11.8	-13.4	-14.4
Gross international reserves (million US$)	850.3	1,070.0	950.8	922.3	1,001.5

Source: NISR, World Bank staff calculation

Obstacles and Challenges facing TFTA:

Although there are noticeable potential of the new TFTA, there are also numbers of obstacles or challenges need to be faced in order to achieve these potentials. Those obstacles could be summarized as follow:

First: the three RECs are at different stages of integration in the way that may influence the negotiation process. COMESA launched a free trade area in 2000 and a custom union in 2009. And parallel to negotiation of TFTA, there is still an ongoing negotiations process within the COMESA in joining the free trade area and the custom union [6]. The members of COMESA agreed on a list of

[6] Uganda and Ethiopia agreed to join COMESA free trade area only in December 2014.

sensitive products where current tariff rates are determined as common external tariff within a transition period of three years can be extended with additional two years. EAC was established in 2000. In 2005 EAC members Tanzania, Kenya, and Uganda formed a custom union transformed in 2010 to a common market. Rwanda and Burundi who joined EAC in 2007 are also parts of the custom union and common market since 2009. SADC was formed in 1992. In 2008 a free trade area was established including the southern African Custom Union SACU members who allow tariff free imports from other SADC members. The agreement is based on minimum conditions where full trade liberalization is only provided on 85% of intra trade within SADC (Riedel, 2014).

Second: the existence of trade barriers, especially non-tariff barriers, as a consequence of inadequate implementation of agreed commitments within the three RECs. This could undermine the gain that could be delivered from existing and future intraregional trade areas. Beside those barriers there are also the restrictive rules of origin which are applied in each REC that hinder cross border trade. Such rules have been manipulated to achieve protectionist objectives and promote rent seeking behaviour rather than those of preventing trade deflection. Restrictive rules of origin discourage competitiveness investment in regional value added activities such as textile and clothing and agro processing sectors. The rules of origin for COMESA and EAC are almost the same as they are based on the general value added rule of 35% for local contents (with some exceptions in the case of COMESA) [7] or cost, insurance and freight (c.i.f) value rule of 60% of costs of imported production material. Some member countries applied different rules of origin, for example Egypt applies high rate of 45% value added rue on local materials. SADC rules of origin are significantly different and more complicated than those applied in the other two RECs. SADC adopted "made-to-measure" product-specific rules of origin which uses a variety of methods for determining eligibility (Kalenga, 2013). According to (Brenton, 2004), SADC rules of origin are complex and not supportive to enhance intra-regional trade and competitiveness.

The rules of origin are not the only non-tariff barriers in those RECs. Kenya for example imposes stringent technical regulations on sugar imports affecting sugar exports from Mauritius; Zimbabwe facing difficulties in exporting milk products to Zambia due to difficulties in obtaining import permits; and milk trade between Kenya and Zambia being affected by non-tariff barriers prevalence. In a study conducted by (World Bank, 2011), the non-tariff barriers reduce SADC intra trade by about 3.3 billion USD.

Third: there is also the problem of high transportation cost and inadequate infrastructure that limited the potential gains of this agreement. This is beside the inefficient administrative procedures at border crossing, and other costs incurred within domestic policy and regulatory environments that are considered as the most important constraint to Intra-African trade.

Forth: the problem of dual membership that affecting the potentials of trade agreements within and between the three RECs. Such overlapping membership is considered as one of the main factors that inhibited the full potential of their ability to stimulate intra-regional trade. The region of TFTA has the most regional integration initiatives in Africa, including the East African Community (EAC), the intergovernmental Authority on Development (IGAD), the Common Market for Eastern and Southern Africa (COMESA), the Southern African Development Community (SADC), the Southern African Custom Union (SACU) and the Indian Ocean Commission (IOC). The legal and institutional situation became more complicated knowing that COMESA, EAC and SADC's integration goals and strategies are similar, and in particular, they are all operating under different rules of origin

[7] COMESA has an exception for goods of particular importance, requiring only a minimum of 25% of imported manufacturing materials.

and trade instruments, countering the objectives of facilitating and simplifying trade(Kalenga, 2013).

METHODOLOGY

Dominant models of economic growth assume that growth requires the accumulation of physical capital, human capital, and increases in the productivity of these factors of production. However to this day we do not fully know what exactly constitutes or determines productivity. Hausmann and Hidalgo (2011) introduce the idea that the productivity of a country can be understood by looking at the ubiquity and complexity of the goods that it is able to produce. To observe what countries produce the authors use international trade data compiled by the United Nations (Comtrade). Their analysis of the data over a long time period shows that as countries grow, they diversify their export baskets. That is, rather than abandoning what they made in the past, countries continue to add new products to their export mix. In general, developed economies export a wide range of products while developing countries export only a few. Moreover, developed countries tend to export products that are relatively complex and rare (made by few other countries) while developing countries tend to export products that are relatively simple and ubiquitous (made by many countries).

Econometric model

The empirical model for studying the influence of trade agreements on services export flows is the gravity model. This model was originally applied by Tinbergen (1962) in the context of international trade. However, it was not founded on economic theory. As a result, theory-consistent gravity models have been developed over time.

Starting with Anderson (1979) and Bergstrand (1985) who used the concepts of Constant Elasticity of Substitution (CES) and product differentiation to derive models in which bilateral trade flows rely on transport costs and income. The gravity model was later based on inter alia monopolistic competition (Anderson and Van Wincoop, 2003), Hecksher-Ohlin theory (Deardorff, 1998), Ricardian theory (Eaton et al., 2002), and heterogenous firm theory (Chaney, 2008; Helpman et al., 2008).

Our model took note of these improvements. Particularly, incorporation of multilateral resistance terms by Anderson and Van Wincoop (2003). The baseline model is presented in equation 1 as follows:

$$T_{ab} = \gamma \frac{Y_{\alpha}^{\alpha} Y_{b}^{\beta} e^{\theta Z_{ab}.\varepsilon_{ab}}}{D_{ab}^{\delta}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 1$$

Where Tab represents value of trade flows between country a and b. Ya is the GDP of country a (exporter) and Yb is the GDP for country b (importer). Dab is the distance between the two countries. γ, α, β and θ are parameters to be estimated. Zab,t includes additional covariates (time zone differences, common language, common currency, contiguity, Preferential Trade Agreement (PTA), Free Trade Agreement (FTA), Customs Union (CU), and Common Market (CM)) together with multilateral resistance terms. εab is the error term.

Log-linearizing equation 1 leads to:

$$lnT_{ab} = ln\gamma + \alpha lnY_{a} + \beta lnY_{b} - \delta lnD_{ab} + \theta Z_{ab} + ln\varepsilon_{ab} \dots\dots\dots\dots\dots\dots\dots\dots\dots 2$$

Equation 2 is an OLS model. As proved by Silva and Tenreyro (2006; 2011), this equation has two major problems. First, it omits zero bilateral trade values upon log-linearization. This is because the natural logarithim of zero is undefined. Second, the error term tends to be heteroscedastic which leads to biased estimates. Therefore, Silva and Tenreyro (2006; 2011) propose the PPML approach as a remedy.

PPML approach assumes a non-negative integer or count dependent variable (trade flows) (Cameron and Trivedi, 2005). It is presented as follows:

$$\sum_{ab}[T_{ab} - \exp(ln\gamma + \alpha lnY_{a} + \beta lnY_{b} - \delta lnD_{ab} + \theta Z_{ab} + ln\varepsilon_{ab})]X_{ab} = 0 \dots\dots\dots\dots\dots\dots 3$$

Where Xab = [1, $lnYa$, $lnYb$,$InDab$, Zab]. Parameters $ln\gamma$, α, β, δ and θ are obtained by running a poisson regression model of services exports (total and categories) on Xab. The trade

flow must not be a Poisson or integer for the PPML estimator to be consistent. Instead, the conditional mean should be correctly specified, $E(Tab|Xab)$ = exp ($ln\gamma + \alpha lnYa + \beta lnYb - \delta InDab + \theta Zab + ln\varepsilon ab$). This is because the estimator does not fully control for heteroscedasticity and inferences are based on the White robust covariance matrix estimator (Kandilov and Grennes, 2010).

Besides handling the problem of heteroscedasticity and zero flows, the PPML approach is also available in many econometric software (like Stata which is used in this study). It also avoids Jensens Inequality bias and does not suffer from the problem of equidispersion which assumes identical mean and variance of the dependent variable (Silva et al., 2011; 2015). We ultimately estimate eleven equations in our empirical analysis. These equations are differentiated by the dependent variable. That is total bilateral services, travel exports, transport, communication, Computer and information services, construction, financial, government services, insurance, Other Business services, and Personal, cultural and recreational services. Equation 3 is a representation of the respective equations with covariates which were explained earlier.

$Serviceijt = f(GDPOit\ , GDPDjt, Dij, TZDij, CCij, CLij, CONTij\ , PTAijt\ , FTAijt\ , CMijt, CUijt\ )$…… 3

Where i are COMESA countries, j are importers and t is time.

Table 5: Variable definition, measurement and source

Variable	Definition	Description	Source
Dependent			
Service	Categories of services	Includes, separate services in USD millions: total; travel; transport; financial; insurance; communication; computer and information services; Other Business Services, Construction; Personal, Cultural andRecreational services	OECD
Independent			
TZD	Time Zone Differences	Difference in hours between capitals of COMESA countries and theirpartners	CEPII database
D	Distance	Bilateral distance (kilometers) between capitals of COMESA countries and their partners country	CEPII database
CL	Common language	Dummy if a partner has a common language with a COMESA country	CEPII database
CC	Common Currency	Dummy if a partner has a common currency with a COMESA country	CEPII database
CONT	Contiguity	Dummy if a partner has a common border with a COMESA country	CEPII database
PTA	Preferential Trade Agreement	Dummy if a country is in a similar PTA with a COMESA member	CEPII database
CM	Common Market	Dummy if a country is in a similar CM with a COMESA member	CEPII database
FTA	Free Trade Agreement	Dummy if a country is in a similar FTA with a COMESA member	CEPII database
GDPO	GDP origin	Natural logarithm of GDP (Current) (USD millions) for COMESA countries	WDI
GDPD	GDP partner	Natural logarithm of GDP (Current) (USD millions) of an importer	WDI

Model specification

Usually econometric models of exports focus on the demand side, with two main explanatory variables: the level of external demand, with a positive effect on exports, and the relative price of the country in relation with the external market. Our approach includes other relevant variables such as the level of GDP of the country as a variable that represents the supply side and has a positive effect, the level of private consumption of the country, as a variable that represents internal demand and has a negative effect on exports, and a variable related with the educational level of the population, as a measure of the changes in quality of production and organisation.

The variables included in Model 1 are the following:

EXP90it= Exports of goods and services of country i in year t, in billions of dollars at the price levels and exchange rates of 2000.

DEXTit = External Demand, measured by the sum of the real value of GDP in the other 24 OECD countries in year t, in B$90.

GDP90it = Internal Supply, measured by the real value of GDP in country i and year t, in B$90.

IPRit = Index of Prices Ratio, measured by the ratio between the external index of prices of exports of each country and the external index of exports of the USA.

TYRit/TYRUt = ratio between the average years of schooling of adult population of each country in comparison with the corresponding value of this variable in the USA. This variable is an indicator of relative quality of production and socio-economic organisation.

The Index of prices ratio is measured by the ratio between the index of external prices of exports of each country, IPEXX, and that variable in the USA:

(1) IPRit =IPEXXit/IPEXXUt

The index of external prices of exports of a country is the ratio between the index of internal prices of exports, IPINX, and the index of the exchange rate, the index of the exchange rate being the ratio between the exchange rate in year t, ERit, and the same variable in the base year. The base year is 1990 in this case.

(2) IPEXXit = IPINXit / IERit, where IERit = ERit/Erio

As the exchange rate is in units of currency in each country by US$, the variable IER is equal to unity for the USA and in that country the index of external prices is equal to the index of internal prices. Relation (2) has an important role in explaining the international variations of the exchange rate, as shown in several models such as those analysed in Guisan(2003). Model 1 is a dynamic log-linear model, expressed in the form of a mixed dynamic model, including among the explanatory variables, besides the lagged value of the dependent variable, the increases in the natural logarithms of DEXT, GDP90, and IPR, as well as the indicator of changes in quality, measured by the educational distance in relation with the USA.

RESULTS FROM REVIEWS

Dependent Variable: LOG(EXP90?)

Method: Least Squares

Date: 15/09/21 Time: 13:35

Sample: 1995Q1 2006Q4

Included observations: 47

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(EXP90?)	0.272108	0.036629	7.428806	0.0000
C	3.667400	0.121038	30.29951	0.0000

R-squared	0.550841	Mean dependent var	4.557891
Adjusted R-squared	0.540859	S.D. dependent var	0.169738
S.E. of regression	0.115014	Akaike info criterion	-1.445896
Sum squared resid	0.595275	Schwarz criterion	-1.367167
Log likelihood	35.97856	Hannan-Quinn criter.	-1.416270
F-statistic	55.18715	Durbin-Watson stat	0.864319
Prob(F-statistic)	0.000000		

The model performs very well: the goodness of fit is high, all the coefficients are significantly different from zero and have the adequate signs, and the lagged value of the explained variable has a coefficient near one. The hypothesis of homogeneity of parameters between individual countries is tested in Guisan(2003) with satisfactory results, and the model shows good forecasting accuracy as we shall see in the next section, where we compare this model with other interesting models of foreign trade, in relation with predictive capacity.

Export Growth Decomposition

The change in aggregate Rwanda export between year $t-k$ and year t, ΔE_t can be decomposed into the change due to increases or decreases in export at the existing exporting firms (i.e., intensive margin), the increase due to entry of new exporting firms, and the decrease in the due to the exit of existing exporters.

$$\Delta E_t = \sum_{j\varepsilon c} \Delta E_{jt} + \sum_{j\in E} E_{jt} + \sum_{j\in X} E_{jt-k}$$

Where ΔE_t is the change in Rwanda export between year t-k and year t, C is the set of continuing exporters that are active in export markets in both t-k and t, E is the set of entering exporters that are active in export markets in t but not in t-k, and X is the set of exiting exporters that are active in export markets in t-k but not in t.

The change in exports shipped by continuing exporters can be further decomposed into new destinations, dropped destinations, and continuing destinations. The decomposition of export growth of continuing firms along the destination dimension.

$$\sum_{j\varepsilon c} \Delta E_{jt} = \sum_{j\in CD} E_{jdt} + \sum_{j\in ED} E_{jdt} + \sum_{j\in EXD} E_{jdt-k}$$

where $\sum_{j\varepsilon c} \Delta E_{jt}$ is the growth in exports of continuing exporters in Rwanda between t-k and t, CD is the set of continued destinations that are

served in both t-k and t, XD is the set of new destinations that are served in t but not in t-k, and XD is the set of dropped destinations that are served in t-k but not in t.

Finally, the exports of continuing firms in their continued destinations along the product dimension can be decomposed as:

$$\sum_{j\varepsilon c} \Delta E_{jt} = \sum_{j\in CD} E_{jdt} + \sum_{j\in ED} E_{jdt} + \sum_{j\in EXD} E_{jdt-k}$$

Where $\sum_{j\varepsilon c;d\in CD} \Delta E_{jt}$

is the growth in exports of continuing exporters in their continued destinations t and t-k, CP is the set of continued HSs 4-digit products that are exported in both t-k and t, EP is the set of new products that are exported in t but not in t-k, and XP is the set of dropped products that are exported in t-k but not in t.

We now test for the determinants of productivity among manufacturing firms in Rwanda. Here we use the standard Cobb-Douglas production function which assumes constant returns to scale and diminishing returns to capital and labor (where α and β lie between 0 and 1) and can be specified as:

$Y = K^{\alpha} L\beta$

Where Y is output (value added), K is capital (replacement cost of capital) and L is labor (number of employees). Taking logarithms on both sides, we get:

log Y = α log K + β log L

If we subtract log L from both sides, we get:

log Y – log L = α log K + β log L - log L

Let us assume that α + β = 1 + θ. If θ = 0, then we have constant returns to scale, if θ > 0, we have increasing returns to scale and if θ < 0, then diminishing returns to scale.

Using this assumption, we can rewrite the equation above as:

log (Y/L) = α log
K + (β-1) log L

substituting (β-1) as (θ-α), this equation can be further rewritten as:

log (Y/L) = α log
(K/L) + θ log L

which states that log output per worker is a function of log capital per worker and log employment. The co-efficient for the employment variable will give us estimates on returns to scale.

Regressing this equation will give us:

log (Y/L) = α1 +
α2 log (K/L)$_i$ +
α3 log L$_i$ + u$_i$

where the error term u$_i$ captures total factor productivity. We now assume that TFP is dependent on various firm characteristics like location, firm age, worker's and manager's education levels etc. and plug these variables into the production function and estimate using a linear regression method with robust standard errors. The equation can be specified as:

lvadl = α1 + α2 lkl$_i$ + α3 lemp + α4 anyfor$_i$ + α5 firmage$_i$ + α6 kigali$_i$ + α7 mgmale$_i$ + α8

mgeduc$_i$ + α9 avgeduc$_i$ + α10 credit$_i$ + α11 sole$_i$ + α12 export$_i$ + ε$_i$

The coefficients on the various dummies can be interpreted as effects on total factor productivity (see table 6), provided the residual *ε$_i$* is uncorrelated with the independent variables.

Table 6: Results of the productivity estimation (Manufacturing firms)

lvadl	Coef.	Std. Err.	t	P>t
lkl	0.3425	0.0758	4.52	0.00
lemp	-0.0639	0.1709	-0.37	0.71
mgeduc	0.0050	0.3465	0.01	0.99
avgeduc	0.0198	0.0406	0.49	0.63
firmage	-0.0142	0.0153	-0.93	0.36
mgmale	0.4490	0.4842	0.93	0.36
kigali	0.9527	0.4119	2.31	0.02
export	0.7309	0.5496	1.33	0.19
anyfor	1.2600	0.4803	2.62	0.01
sole	0.1421	0.4041	0.35	0.73
credit	0.2818	0.3456	0.82	0.42

Source: Data Computation

Four important findings come out of this estimation. Firstly, firms with any foreign ownership are 3.5 times more productive than Rwandan owned firms. Foreign firms may bring with them a higher skill set as well as knowledge about the market which gives them an advantage over their counterparts. This finding suggests that encouraging FDI in the manufacturing sector in Rwanda can be quite beneficial.

Secondly, firms located in Kigali City are 2.6 times more productive than those located anywhere else in the country. Being located in the capital city gives firms more access to skilled employees, better infrastructure, and access to information. As per the Business and Investment Climate Survey (2008) businesses in Kigali report an easier time recruiting and training personnel than do businesses in other parts of the country.

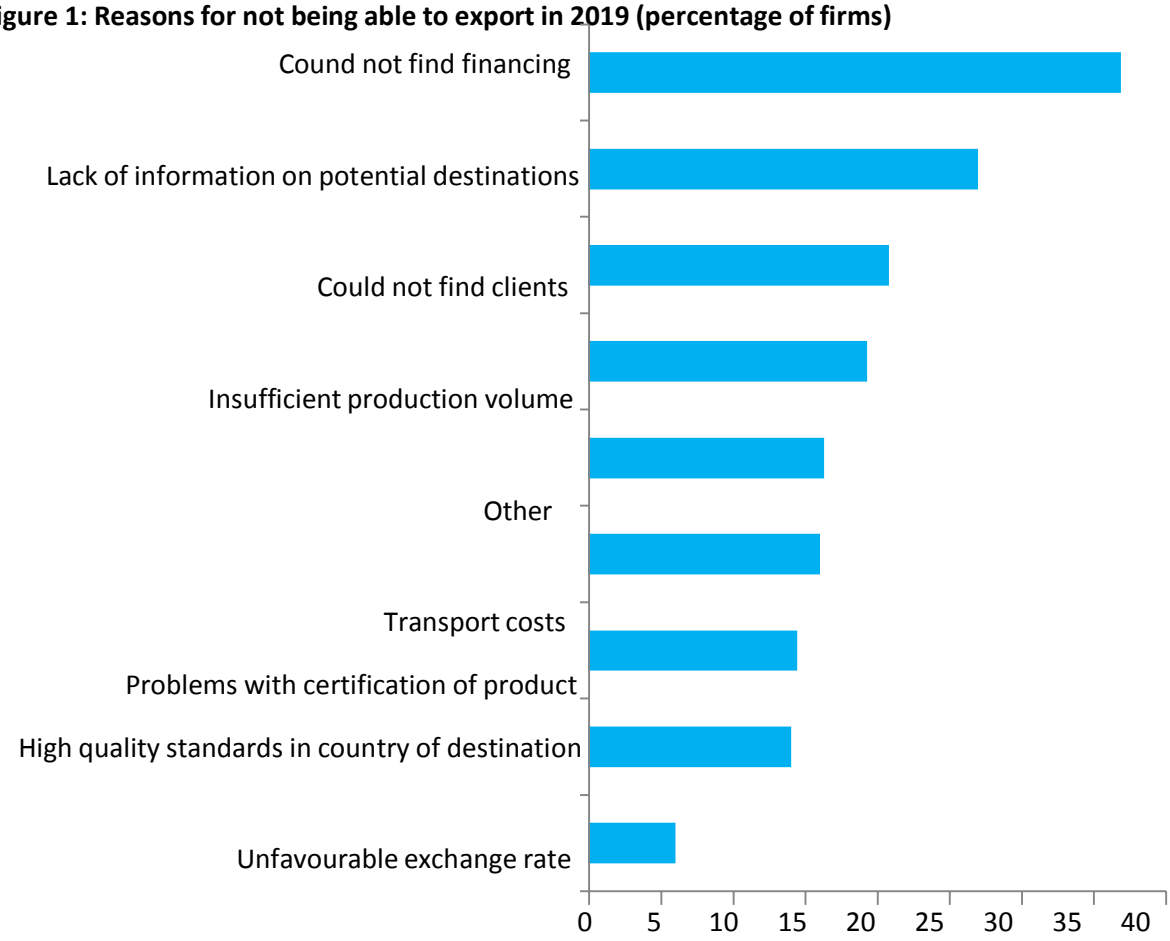
Thirdly, firms who export are twice more productive than non-exporters, however this result is only significant at the 20% level. This obviously begs the question - do firms raise their productivity by exporting or do more productive firms export? The answer is often difficult to empirically determine and the *Learning to Compete* project in Rwanda has a separate paper dedicated to this question. For now, we know that there might be productivity differences between exporters and non-exporters in Rwanda.

Lastly, we find no evidence of increasing returns to scale among manufacturing firms in Rwanda. At present, the data does not allow us to test for increasing returns to scale in different sub-sectors in the manufacturing sector (e.g., agro-processing, light manufacturing etc.). What probably explains the better performance of large firms in Rwanda is their high stock of capital per worker and their propensity to be foreign owned and exporters.

Exports Estimation

As per the Rwanda Industrial Survey, only 14% of firms exported in the year 2019. Exports play a central role in achieving the medium- and long-term economic goals of Rwanda ($900 per capita income by 2020). As mentioned in the previous section, Rwanda is at present a net importer and depends on volatile commodity products like tea, coffee, and minerals for the majority of its product-based export revenues. The following are the reasons cited by firms for not being able to export in 2019.

Figure 1: Reasons for not being able to export in 2019 (percentage of firms)



Lack of financing could probably be attributed to firms not having adequate finances to meet their installed production capacity, let alone be prepared for the exports market. Firm also lack information and face high transport costs.

We now regress the export dummy on various firm characteristics using a linear regression model with robust standard errors. The coefficients can be interpreted as measuring the partial effects on the probability of exporting. The equation is specifiedas follows.

$$export = \alpha 1 + \alpha 2\ anyfor_i + \alpha 3\ firmage_i + \alpha 4\ lemp_i + \alpha 5\ kigali_i + \alpha 6\ mgmale_i + \alpha 7\ mgeduc_i + \alpha 8\ credit_i + \alpha 9\ iso_i + \alpha 10\ lsales_i + \varepsilon_i.$$

Table 7: Results of the Exports Estimation (Manufacturing firms)

export	Coef.	Std. Err.	t	P>t
anyfor	0.2863	0.1198	2.39	0.02
firmage	-0.0075	0.0041	-1.80	0.07
large	0.3420	0.1256	2.72	0.01
kigali	-0.0694	0.0757	-0.92	0.36
mgmale	0.0432	0.0572	0.75	0.45
mgeduc	-0.0431	0.0529	-0.81	0.42
credit	0.0025	0.0533	0.05	0.96
iso	0.1161	0.1106	1.05	0.30
lsales	0.0489	0.0153	3.20	0.00

Source: Data compilation

As shown in Table 7 above, firm size matters for exporting in Rwanda; large firms have a 34 percentage points higher probability of being an exporter when compared to SMEs. After controlling for firm size, firms with any foreign ownership have a 29 percentage points higher probability of being exporters when compared to Rwandan owned firms. Foreign ownership seems to have a positive impact on both productivity and exports. Younger firms also have a higher probability of being exporters though the magnitude is weak. Credit does not seem to play a significant role in determining exports.

Investment Estimation

The role of the private investment has been recognized in Rwanda's long-term Vision 2020 strategy. In order to transform Rwanda's economy into a middle- i n c o m e country, a transformation from a subsistence agriculture economy to a knowledge - based economy, with high levels of savings and private investment is required (Vision 2020). 71% of firms in the industrial sector made an investment in 2010. We tease out the determinants of investment among manufacturing firms in Rwanda using the equation below:

$$investment = \alpha 1 + \alpha 2\ anyfor_i + \alpha 3\ firmage_i + \alpha 4\ lemp_i + \alpha 5\ kigali_i + \alpha 6\ mgmale_i + \alpha 7\ mgeduc_i + \alpha 8\ credit_i + \alpha 9\ lsales_i + \varepsilon_i.$$

Table 8: Results of the Investment Estimation (Manufacturing firms)

investment	Coef.	Std. Err.	t	P>t
anyfor	-0.0830	0.1347	-0.62	0.54
firmage	-0.0085	0.0045	-1.88	0.06
large	-0.1122	0.1230	-0.91	0.36
kigali	-0.0499	0.0835	-0.60	0.55
mgmale	0.0364	0.0984	0.37	0.71
mgeduc	-0.0878	0.0723	-1.21	0.23
credit	-0.0380	0.0676	-0.56	0.58
lsales	0.0356	0.0169	2.10	0.04
cons	0.5000	0.1950	2.56	0.01

Source: Kee HL, Nicita A and Olarreaga M (2009).

The only significant finding for investment is that younger firms have a higher probability of investing when compared to older firms (though the magnitude is weak). This is not a surprising finding as young firms often need to invest in their early years. Credit does not play a significant role in investment decisions in Rwanda. This could be explained by the fact that most firms finance their investment and working capital using enterprise funds. As per the RIS, 43% of firms financed their investment in 2010 using enterprise funds.

To summarize:

- Large firms are more than three times more productive, tend to be exporters and have more foreign ownership when compared to SMEs in Rwanda.
- There are three main determinants of total factor productivity in Rwanda all of which have a positive impact on TFP – having any foreign ownership, being an exporter (though not a robust finding) and being located in the capital city. Large firms in Rwanda tend to be exporters and have more foreign ownership which may partly explain their better performance. In addition, large firms also have much higher capital stock per worker when compared to SMEs which has a positive effect on firm productivity.

- We find no evidence of increasing returns to scale among manufacturing firms in Rwanda.
- For exports, larger foreign owned firms have an advantage over their counterparts in the manufacturing sector. Firms cited lack of information and transport costs as some of the barriers to export.
- For investment, the only significant determinant after controlling for firm size is firm age, with younger firms having a higher probability of being investors. Credit does not play a significant role in investment decisions in Rwanda.

RESULTS AND ANALYSIS

Currently, there are 26 countries that have committed to participate in the T-FTA. Each country belongs to the existing RECs currently existing in the region, namely; COMESA, EAC and SADC. Of the 26 countries, 13 (half) have overlapping membership by belonging to 2 RECs and Zambia is one of them as it belongs to both COMESA and SADC. Both COMESA and SADC are implementing FTAs whereas EAC is a Customs Union.

While COMESA and SADC are FTAs, some members do not participate in the FTAs. For instance, in COMESA, DR. Congo, Eritrea, Ethiopia, Swaziland and Uganda are not part of the FTA whereas DR. Congo is not equally part of the SADC FTA as shown in table 9.

Table 9: Overlapping memberships across COMESA, EAC and SADC

	COMESA	EAC	SADC
Angola			X
Botswana			X
Burundi	X	X	
Comoros	X		
Congo DR	X		X
Djibouti	X		
Egypt	X		
Eritrea	X		
Ethiopia	X		
Kenya	X	X	
Lesotho			X
Libya	X		
Madagascar	X		X
Malawi	X		X
Mauritius	X		X
Mozambique	X		X
Namibia			X
Rwanda	X	X	
Seychelles	X		X
South Africa			X
Sudan	X		
Swaziland	X		X
Uganda	X	X	
Tanzania		X	X
Zambia	X		X
Zimbabwe	X		X

Source: author's construction

NOTE: COMESA (19) countries include: Burundi, Comoros, Congo, Dem Rep., Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, and Zimbabwe.

Rwanda has become the fifth country to ratify the tripartite Free Trade Area Agreement (TFTA). Members of the Lower House of the Rwanda Parliament approved the draft law for the ratification of the agreement on Wednesday, July 10, 2019. The TFTA was launched on 15 June 2015 in Egypt by the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), and the Southern African Development Community (SADC).

Based on the current membership in the 3 RECs, it is clear that Rwanda is already trading with each of the 26 countries envisaged to be members of the T-FTA either through COMESA or SADC trade regimes.

Rwanda's Formal External Trade in Goods

This section provides an overview of Rwanda's total trade in goods covering the period from first quarter 2018 to the third quarter of 2020, on a quarterly basis. In the third quarter of 2020, Rwanda's total trade was US$ 1486.45 million, an increase of 27.53 percent over the third quarter of 2019 and an increase of 46.69 percent from US$ 1013.36 million in the preceding quarter (second quarter of 2020).

The latest available country-specific data from 2019 shows that 89.4% of products exported from Rwanda were bought by importers in: the Democratic Republic of Congo (32.1% of the global total), United Arab Emirates (29.6%), Uganda (5.3%), Switzerland (4.6%), Pakistan (3.4%), United Kingdom (3.3%), Burundi (also 3.3%), Singapore (2.6%), South Sudan (1.7%), Belgium (1.4%), United States (1.1%) and Kenya (1%).

From a continental perspective, 46.5% of Rwanda's exports by value were delivered to fellow African countries while 40.2% were sold to importers in Asia. Rwanda shipped another 12% worth of goods to Europe.

Smaller percentages went to North America (1.2%), Oceania's New Zealand and Australia (0.1%), and Latin America excluding Mexico but including the Caribbean (0.02%). Given Rwanda's population of 12.7 million people, its total $335.7 million in 2020 exports translates to roughly $30 for every resident in the Central African nation.

Figure 2 below summarizes the balance of Rwanda's formal trade in goods. Year-over-year, the deficit on traded goods decreased by 2.52 percent, from the same period in 2019. Total imports of goods constitute 65.82 percent of total trade in goods (US$ 978.31 million), while domestic exports constituted 28.85 percent (US$ 428.78 million) and re-exports constituted 5.34 percent (US$ 79.36 million).

Figure 2: Value of Rwanda's Formal External Trade in Goods, 2018Q1-2020Q3

Source: NISR with raw data from RRA/Customs Department

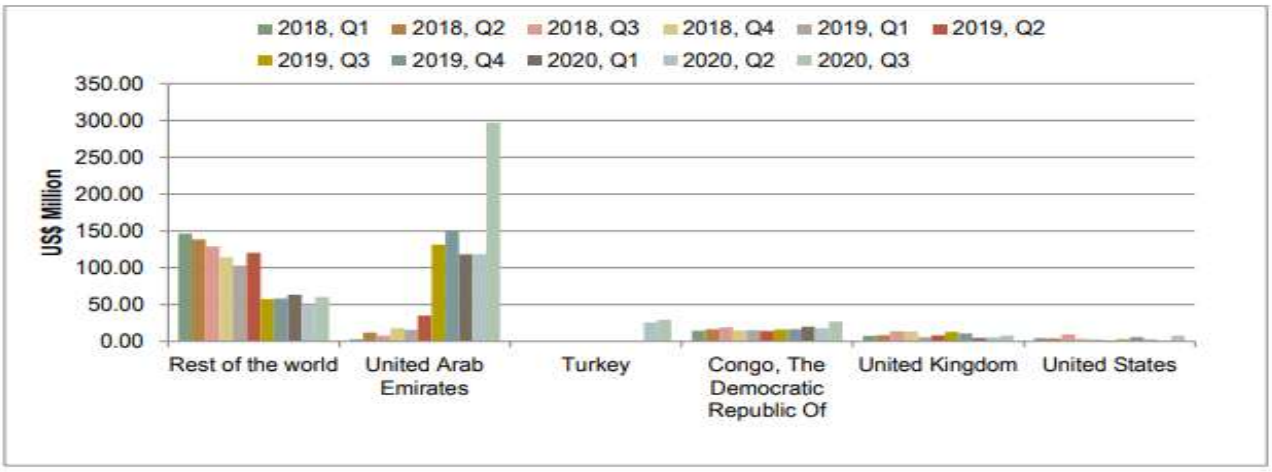
Compared to the second quarter of 2020, the third quarter of 2020 registered an increase in values of 97.40 percent, with total domestic exports estimated at US$ 428.78 million. Year over-year, domestic exports' values increased also by 93.68 percent compared to the same quarter of 2019.

Trade Partners

Rwanda's key destination markets of exports during the third quarter of 2020 were the United Arab Emirates (US$ 297.09 million, 62.29 percent share), Turkey (US$ 29.02 million, 6.77 percent share), the Democratic Republic of Congo (US$ 26.82 million, 6.26 percent share), United Kingdom (US$ 7.90 million, 1.84 percent share) and United States of America (US$ 7.82 million, 1.82 percent share).

Together, these five countries accounted for US$ 368.66 million; that is 85.98 percent share of total value of domestic exports. Figure 2 summarizes these figures from quarter one of 2018 up to the third quarter of 2020

Figure 3: Rwanda's key export partners, 2018Q1-2020Q3

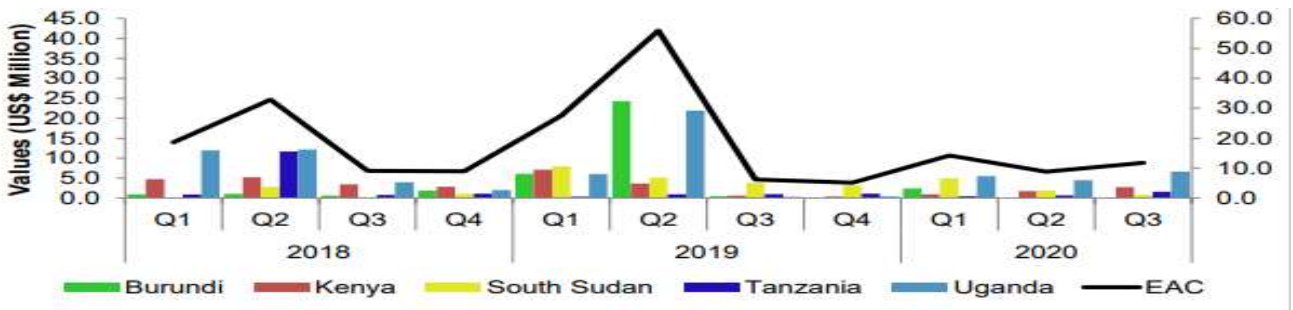


Source: NISR with raw data from RRA/Customs Department

East African Community Partner States

In the third quarter of 2020, Rwanda's domestic exports to the East African Community Partner States was estimated at US$ 11.77 million, around 3 percent of total domestic exports value see appendix 6.8b. Of these, about 56.35 percent were destined to Uganda (US$ 6.63 million). Domestic exports' values to EAC Partner States increased by 33.92 percent in comparison with the second quarter of 2020 and by 90.03 percent when compared to the same quarter of 2019. In terms of exports to EAC partner states, Kenya stood at the second place with domestic exports from Rwanda valued at US$ 2.75 million.

Figure 4: Exports to EAC Partner States, 2018Q1-2020Q3



Source: NISR with raw data from RRA/Customs Department.

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Trade with Selected Regional Economic Organizations

At the more granular four-digit Harmonized Tariff System code level, coffee represents Rwanda's most valuable exported product at 20.7% of the country's total. In second place was live bovine cattle (16.8%) trailed by gold (16.1%), niobium and zirconium ores or concentrates (13.5%), tin ores or concentrates (6.2%), flour, meal, starch or malt extract food preparations (2.1%), fresh or dried flowers for bouquets or ornamental purposes (1.7%), tungsten ores and concentrates (1.4%), unwrought lead (1.3%) then vegetable saps and extracts (also 1.3%).

In macroeconomic terms, Rwanda's total exported goods represent an estimated .01% of its overall Gross Domestic Product for 2020 ($29.6 billion valued in Purchasing Power Parity US dollars). That 0.01% for exports to overall GDP in PPP for 2020 compares to roughly 1% for 2019. Those percentages suggest a relatively decreasing reliance on products sold on international markets for Rwanda's total economic performance, albeit based on very short timeframe. Another key indicator of a country's economic performance is its unemployment rate. Rwanda's unemployment rate was 17% at January 2021, down from 13.1% at January 2020 according to Trading Economics.

Common Market for Eastern and Southern Africa

During the third quarter of 2020, Rwanda's total trade with the Common Market for Eastern and Southern Africa (COMESA) Member States was US$ 296.54 million compared to US$ 251.47 million registered in the same quarter of 2019 and US$ 184.32 million registered in the second quarter of 2020. Exports to COMESA Member States increased by 95.08 percent in 20209Q3 when compared to the same quarter of 2019 and by 43.88 compared to the second quarter of 2020. Imports from COMESA Member States increased by 53.72 percent in 2020Q3 when compared to the same quarter of 2019 and by 87.24 percent when compared to the second quarter of 2020. On the re-exports side, Rwanda registered revenues estimated at US$ 77.94 million during the third quarter of 2020 from COMESA Member States; a decrease of 32.06 percent in value terms against the same quarter of 2019 and an increase of 27.36 percent when compared to the second quarter of 2020. Thus, a deficit in trade balance of US$ 61.51 million has been registered during the 2020Q3 against a surplus of US$ 74.61 million during the same quarter of 2019 and a decrease of US$ 6.91 million registered in the second quarter of 2020.

Communauté Economique des Pays de Grands Lacs

During the third quarter of 2020, total exports to Communauté Economique des Pays de Grands Lacs (CEPGL) Member States (Burundi and the Democratic Republic of Congo), including re-exports, totalized US$ 103.68 million and total imports were US$ 2.84 million. Therefore, the trade in goods surplus with CEPGL member states totaled US$ 100.84 million compared to US$ 92.93 million registered in the same quarter of 2019 and to US$ 76.13 million in the second quarter of 2020.

Economic Community of West African States (ECOWAS)

During the third quarter of 2020, total exports to the Economic Community of West African States (ECOWAS) Member Countries, including re-exports, totalized US$ 0.14 million and the total imports were US$ 36.98 million. Therefore, the trade in goods deficit with ECOWAS Member States extended to US$ 36.84 million from the deficit of US$ 18.64 million in the same quarter of 2019.

Southern African Development Community

Rwanda's total trade with the Southern African Development Community (SADC) Member States totaled US$ 378.69 million during the third quarter of 2020 compared to US$ 243.83 million in the third quarter of 2019 and US$ 214.83 million during the first quarter of 2020. Year-over-year, domestic exports to the SADC increased by 63.24 percent, from 17.75 US$ million in the third quarter of 2019 to US$ 28.98 million in the third quarter of 2020; while total imports increased by about 85.40

percent, from US$ 147.00 million to US$ 272.53 million.

Over the same period, re-exports decreased by 2.39 percent, from US$ 79.08 million to 77.19 US$ million. Therefore, the trade in goods deficit with SADC totaled US$ 166.36 million compared to a deficit of US$ 50.16 million during the same quarter of 2019 and to a deficit of US$ 28.20 million in the second quarter of 2020.

CONCLUSIONS AND RECOMMENDATIONS

The paper identified three key constraints to export diversification and intra-industry trade in Africa.

First, while African countries have a comparative advantage on primary commodities (including agricultural products), the average tariff barriers faced by African exports of agricultural are quite high. In addition, African LDCs impose very high tariffs on their imports of intermediate goods which are crucial for the expansion of intra-industry trade and export diversification in Africa.

Second, we find that Africa encounters higher average tariff rates on goods traded within the continent than when exported to the rest of the world.

Third, constraints in trade in services are less pronounced. These constraints need to be addressed in a systematic manner, ensuring that efforts towards boosting export diversification and intra-industry trade in Africa is undeterred.

As stated at the beginning of this report, the aim of the study was to investigate intra-industry trade and export diversification in the PTA/COMESA sub-region. There is no doubt that the tripartite FTA provides enormous opportunities for regional development through deeper integration and enhanced market access. From the results of the data and information that has been analysed, it is evident that the COMESA-EAC-SADC Tripartite FTA will have a larger impact on Rwanda's export performance. In 2015 the member states of the three major African RECs: COMESA, EAC and SADC agreed on establishing a common TFTA which is considered as an important milestone towards Africa Continental trade integration. This paper analyzes the impact of regional integration among TFTA countries and evaluates the economic potentials of this agreement.

Firstly, since Rwanda is already trading with all the T-FTA countries, there is much increase in market size for the countries in terms of population. This is despite the inclusion of the countries that are not yet fully participating in the current FTAs that Rwanda is a member to.

Secondly, although there are great potentials associated with TFTA for the whole region. The gains from such agreement are not equally distributed. South Africa and Egypt appears to be the bigger winners of this agreement due to the structural characteristics of their economy that makes them able to achieve welfare gains from African trade agreement within their region or outside.

Thirdly, FTAs are observed to have the greatest positive effect on exports of total, travel, transport, government, communication, financial and Other Business Services. The tripartite will lead to increased exports and imports within the region as a result of realignment of demand and supply within the region, increased aggregate demand in the region will result in increased industrial production across the region as new firms join the regional market. The distribution of changes in production will vary between different countries both within and between sectors.

Fourthly, results from the PPML estimator of the gravity model indicate that whereas Free Trade Area (FTA) agreements are likely to boost service exports by COMESA members within the African region, deeper trade agreements-where depth is evaluated in terms of whether a trade agreement has more provisions for member states and guarantee lesser trade restictions- have the greater effect on services exported. Deep trade agreements include Common Markets and Customs Unions

whereas AfCFTA is an example of a Free Trade Agreement.

Lastly, in terms of the linkages between intra-industry trade and export diversification in the African sample, we found that an increase in export diversification is positively correlated to intra-industry trade and vice versa.

The study recommended that in order to gain from the T-FTA, Rwanda must position itself so as to integrate and gain from the regional trade opportunities that the T-FTA promises. Key recommendations are that;

- Rwanda must come up with a robust initiative to address the supply side constraints facing exporters in the country. Key is to work at improving the economic supporting infrastructures with the aim of improving the country's competitiveness.
- Rwanda should develop strategies to move towards improved industrialization and value addition
- Rwanda should reform its trade policy regime and position itself in such a way that it will gain from the T-FTA. The reforms should aim at building a competitive export sector that can utilize the regional opportunities. Other objectives of the reforms should be to mainstream trade in the whole national development agenda in all sectors of the economy.
- Efforts to diversify exports should be stepped up and the country must develop niches within the region including services.

It should be better to note that the tripartite would lead to increased exports and imports within the region as a result of realignment of demand and supply within the region, increased aggregate demand in the region will result in increased industrial production across the region as new firms join the regional market. The distribution of changes in production will vary between different countries both within and between sectors.

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APPENDICES

Appendix 1: Summary of External Merchandise Trade, 2019Q1 – 2020Q3

Value: US$ Million — Shares in percentages

	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
Exports of goods	**227.13**	**268.28**	**341.61**	**328.69**	**290.20**	**279.86**	**508.13**	**24.27**	**26.53**	**29.31**	**26.92**	**24.05**	**27.62**	**34.18**
Domestic exports	*142.47*	*179.03*	*221.38*	*241.36*	*207.95*	*217.21*	*428.78*	*15.22*	*17.70*	*18.99*	*19.77*	*17.23*	*21.43*	*28.85*
Re-exports	*84.66*	*89.24*	*120.23*	*87.33*	*82.25*	*62.65*	*79.36*	*9.05*	*8.82*	*10.32*	*7.15*	*6.82*	*6.18*	*5.34*
Imports of goods	*708.67*	*743.12*	*823.94*	*892.38*	*916.68*	*733.50*	*978.31*	*75.73*	*73.47*	*70.69*	*73.08*	*75.95*	*72.38*	*65.82*
A. Total Exports (f.o.b.)	**227.13**	**268.28**	**341.61**	**328.69**	**290.20**	**279.86**	**508.13**							
B. Total Imports (c.i.f.)	**708.67**	**743.12**	**823.94**	**892.38**	**916.68**	**733.50**	**978.31**							
Total Value of Trade (A+B)	935.80	1,011.39	1,165.56	1,221.07	1,206.89	1,013.36	1,486.45	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Balance of Trade (A-B)	**-481.54**	**-474.84**	**-482.33**	**-563.68**	**-626.48**	**-453.64**	**-470.18**							

Source: NISR with raw data from RRA/Customs

Appendix 2: Exported goods, 2019Q1 – 2020Q3 (Value: US$ Million)

Year and Period		2019Q1	2019Q2	2019Q3	2019 Q4	2020Q1	2020Q2	2020Q3
SITC SECTION	**COMMODITY DESCRIPTION/ TOTAL ESTIMATES**	**142.47**	**179.03**	**221.38**	**241.36**	**207.95**	**217.21**	**428.78**
0	Food and live animals	62.45	77.55	66.16	64.65	59.54	49.82	64.96
1	Beverages and tobacco	0.14	0.25	0.05	0.04	0.07	0.02	0.02
2	Crude materials, inedible, except fuels	39.49	34.72	22.02	26.18	24.59	18.06	23.75
3	Mineral fuels, lubricants and related materials	1.13	17.27	0.13	0.13	0.09	0.11	0.14
4	Animals and vegetable oils, fats & waxes	0.02	0.03	0.15	0.05	0.08	0.10	0.13
5	Chemicals & related products, n.e.s.	1.45	0.74	0.79	0.57	1.32	1.22	1.62
6	Manufactured goods classified chiefly by material	8.04	16.64	7.11	6.72	7.57	6.76	11.84
7	Machinery and transport equipment	3.95	5.00	2.07	2.24	4.74	1.80	2.27
8	Miscellaneous manufactured articles	2.39	3.45	4.05	4.91	2.76	2.26	7.02
9	Other commodities & transactions, n.e.s	23.37	23.37	118.84	135.87	107.19	137.06	317.01

Source: NISR with raw data from RRA/Custom

Appendix 3: Exported goods, shares in percentage 2019Q1- 2020Q3

Year and Period		2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
SITC SECTION	COMMODITY DESCRIPTION/ TOTAL ESTIMATES	100.00	100.00	100.00	100.00	100.00	100.00	100.00
0	Food and live animals	43.84	43.32	29.88	26.78	28.63	22.94	15.15
1	Beverages and tobacco	0.10	0.14	0.02	0.02	0.04	0.01	0.00
2	Crude materials, inedible, except fuels	27.72	19.39	9.95	10.85	11.83	8.31	5.54
3	Mineral fuels, lubricants and related materials	0.80	9.65	0.06	0.05	0.04	0.05	0.03
4	Animals and vegetable oils, fats & waxes	0.02	0.02	0.07	0.02	0.04	0.05	0.03
5	Chemicals & related products, n.e.s.	1.02	0.41	0.36	0.24	0.63	0.56	0.38
6	Manufactured goods classified chiefly by material	5.64	9.29	3.21	2.78	3.64	3.11	2.76
7	Machinery and transport equipment	2.77	2.79	0.93	0.93	2.28	0.83	0.53
8	Miscellaneous manufactured articles	1.68	1.93	1.83	2.04	1.33	1.04	1.64
9	Other commodities & transactions, n.e.s	16.41	13.06	53.68	56.29	51.55	63.10	73.93

Source: NISR with raw data from RRA/Customs

Appendix 4: Imported goods, 2019Q1- 2020Q3 (Value: US$ Million)

Year and Period		2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
SITC SECTION	COMMODITY DESCRIPTION/ TOTAL ESTIMATES	708.67	743.12	823.94	892.38	916.68	733.50	978.31
0	Food and live animals	89.96	81.99	98.90	120.66	108.51	97.37	104.58
1	Beverages and tobacco	6.42	6.95	6.95	6.75	6.60	4.42	4.47
2	Crude materials, inedible, except fuels	16.29	20.44	18.12	16.80	17.32	19.54	17.71
3	Mineral fuels, lubricants and related materials	127.18	134.89	143.28	127.07	149.14	76.08	61.35
4	Animals and vegetable oils, fats & waxes	31.56	28.17	19.33	22.47	33.97	23.02	26.68
5	Chemicals & related products, n.e.s.	95.37	80.83	93.00	85.62	108.94	77.75	104.17
6	Manufactured goods classified chiefly by material	125.08	127.75	138.11	145.96	132.92	103.42	170.91
7	Machinery and transport equipment	163.55	190.37	125.81	168.17	185.48	133.07	143.06
8	Miscellaneous manufactured articles	47.05	66.51	61.97	60.90	64.04	40.05	55.33
9	Other commodities & transactions, n.e.s	0.00	0.00	111.40	127.95	109.76	158.77	281.48

Source: NISR with raw data from RRA/Customs

Appendix 5: Imported goods, shares in percentage 2019Q1-2020Q3

Year and Period		2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
SITC SECTION	COMMODITY DESCRIPTION/ TOTAL ESTIMATES	100.00	100.00	100.00	100.00	100.00	100.00	100.00
0	Food and live animals	12.69	11.03	12.00	13.52	11.84	13.27	10.69
1	Beverages and tobacco	0.91	0.93	0.84	0.76	0.72	0.60	0.46
2	Crude materials, inedible, except fuels	2.30	2.75	2.20	1.88	1.89	2.66	1.81
3	Mineral fuels, lubricants and related materials	17.95	18.15	17.39	14.24	16.27	10.37	6.27
4	Animals and vegetable oils, fats & waxes	4.45	3.79	2.35	2.52	3.71	3.14	2.73
5	Chemicals & related products, n.e.s.	13.46	10.88	11.29	9.59	11.88	10.60	10.65
6	Manufactured goods classified chiefly by material	17.65	17.19	16.76	16.36	14.50	14.10	17.47

7	Machinery and transport equipment	23.08	25.62	15.27	18.85	20.23	18.14	14.62
8	Miscellaneous manufactured articles	6.64	8.95	7.52	6.82	6.99	5.46	5.66
9	Other commodities & transactions, n.e.s	0.00	0.00	13.52	14.34	11.97	21.65	28.77

Source: NISR with raw data from RRA/Customs

Appendix 6: Re-exported goods, 2019Q1- 2020Q3 (Value: US$ Million)

Year and Period		2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
SITC SECTION	**DESCRIPTION/ TOTAL ESTIMATES**	**84.66**	**89.24**	**120.23**	**87.33**	**82.25**	**62.65**	**79.36**
0	Food and live animals	17.35	20.65	48.76	23.69	21.51	21.83	24.34
1	Beverages and tobacco	1.21	1.71	1.16	1.08	0.80	0.70	1.16
2	Crude materials, inedible, except fuels	5.36	4.32	5.06	4.08	3.69	3.68	6.03
3	Mineral fuels, lubricants and related materials	32.47	35.76	36.25	31.22	27.96	14.67	18.89
4	Animals and vegetable oils, fats & waxes	10.89	9.59	8.40	8.49	8.85	9.46	8.85
5	Chemicals & related products, n.e.s.	3.41	2.97	3.08	3.67	3.77	2.77	3.29
6	Manufactured goods classified chiefly by material	3.01	3.71	5.90	3.63	3.65	2.68	7.04
7	Machinery and transport equipment	7.56	7.30	8.11	7.05	8.25	4.54	4.77
8	Miscellaneous manufactured articles	3.27	3.16	3.34	4.08	3.77	2.33	4.49
9	Other commodities & transactions, n.e.s	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: NISR with raw data from RRA/Customs

Appendix 7: Re-exported goods, shares in percentage 2019Q1- 2020Q3

Year and Period		2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
SITC SECTION	**DESCRIPTION/ TOTAL ESTIMATES**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	Food and live animals	20.49	23.14	40.56	27.13	26.16	34.84	30.67
1	Beverages and tobacco	1.43	1.92	0.97	1.23	0.97	1.11	1.46
2	Crude materials, inedible, except fuels	6.33	4.84	4.21	4.67	4.49	5.88	7.59
3	Mineral fuels, lubricants and related materials	38.35	40.07	30.15	35.75	33.99	23.42	23.80
4	Animals and vegetable oils, fats & waxes	12.86	10.75	6.99	9.72	10.76	15.10	11.15
5	Chemicals & related products, n.e.s.	4.03	3.33	2.56	4.20	4.59	4.43	4.14
6	Manufactured goods classified chiefly by material	3.56	4.15	4.91	4.15	4.44	4.28	8.87
7	Machinery and transport equipment	8.93	8.18	6.74	8.08	10.03	7.24	6.02
8	Miscellaneous manufactured articles	3.86	3.54	2.78	4.67	4.59	3.72	5.66
9	Other commodities & transactions, n.e.s	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: NISR with raw data from RRA/Customs

Appendix 8: Top twenty domestic exports partners, 2019Q1-2020Q3 (Value: US$ Million)

Year and Period	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
COUNTRY OF DESTINATION	**142.47**	**179.03**	**221.38**	**241.36**	**207.95**	**217.21**	**428.78**
United Arab Emirates	15.91	34.93	131.44	149.90	118.26	118.16	297.09
Turkey	0.20	0.23	0.28	0.17	0.23	25.79	29.02
Congo, The Democratic Republic Of	15.16	14.30	16.15	16.47	19.80	17.53	26.82

United Kingdom	5.78	8.13	13.01	10.66	4.47	5.43	7.90
United States	2.47	1.28	2.80	5.89	1.93	1.49	7.82
Uganda	6.02	21.95	0.27	0.40	5.47	4.47	6.63
Pakistan	10.19	10.18	9.90	9.01	10.87	9.39	6.49
Singapore	9.13	7.29	5.99	7.43	4.30	3.19	5.24
Belgium	2.30	2.40	4.65	5.20	3.57	3.23	4.74
China	6.32	0.96	6.67	1.12	1.58	0.85	4.08
India	1.33	1.46	1.86	2.00	1.46	1.64	3.75
Switzerland	18.32	9.44	7.32	8.62	3.21	2.45	3.21
Hong Kong	3.34	4.25	0.58	1.51	7.01	2.90	3.18
Netherlands	1.51	1.13	1.68	1.03	1.62	1.58	3.08
Kenya	13.02	6.64	0.62	0.39	0.97	1.76	2.75
Egypt	0.99	1.35	1.74	2.39	3.27	1.86	2.19
Kazakhstan	1.49	1.53	2.30	2.09	2.11	1.59	1.76
Tanzania, United Republic Of	0.36	0.96	1.02	1.11	0.43	0.65	1.60
Russian Federation	0.96	1.32	0.36	0.45	1.04	1.43	1.03
Malaysia	1.44	0.88	0.46	0.79	0.20	0.24	0.97

Source: NISR with raw data from RRA/Customs

Appendix 9: Top twenty domestic exports partners, shares in percentage, 2019Q1-2020Q3

Year and Period	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
COUNTRY OF DESTINATION	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
United Arab Emirates	11.17	19.51	59.37	62.11	56.87	54.40	69.29
Turkey	0.14	0.13	0.13	0.07	0.11	11.87	6.77
Congo, The Democratic RepublicOf	10.64	7.99	7.30	6.82	9.52	8.07	6.26
United Kingdom	4.06	4.54	5.88	4.41	2.15	2.50	1.84
United States	1.74	0.71	1.27	2.44	0.93	0.68	1.82
Uganda	4.22	12.26	0.12	0.17	2.63	2.06	1.55
Pakistan	7.15	5.69	4.47	3.73	5.23	4.32	1.51
Singapore	6.41	4.07	2.71	3.08	2.07	1.47	1.22
Belgium	1.61	1.34	2.10	2.16	1.72	1.49	1.11
China	4.43	0.54	3.01	0.46	0.76	0.39	0.95
India	0.93	0.82	0.84	0.83	0.70	0.75	0.87
Switzerland	12.86	5.27	3.31	3.57	1.54	1.13	0.75
Hong Kong	2.34	2.38	0.26	0.63	3.37	1.34	0.74
Netherlands	1.06	0.63	0.76	0.43	0.78	0.73	0.72
Kenya	9.14	3.71	0.28	0.16	0.46	0.81	0.64
Egypt	0.70	0.75	0.79	0.99	1.57	0.86	0.51
Kazakhstan	1.05	0.85	1.04	0.87	1.01	0.73	0.41
Tanzania, United Republic Of	0.25	0.53	0.46	0.46	0.21	0.30	0.37
Russian Federation	0.68	0.74	0.16	0.19	0.50	0.66	0.24
Malaysia	1.01	0.49	0.21	0.33	0.09	0.11	0.23

Source: NISR with raw data from RRA/Customs

Appendix 10: Top twenty imports by country of origin, 2019Q1- 2020Q3 (Value: US$ Million)

Year and Period	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3

COUNTRY OF ORIGIN	739.97	822.60	823.94	892.38	916.68	733.50	978.31
Tanzania, United Republic Of	36.97	54.61	72.87	104.16	59.49	67.49	213.34
China	148.74	140.62	154.76	183.93	200.38	115.39	165.06
Kenya	42.11	57.47	90.31	87.75	78.65	77.37	135.36
India	75.01	69.55	58.74	70.56	92.34	61.56	54.09
United Arab Emirates	54.32	62.56	61.11	66.51	87.52	41.17	49.05
South Africa	11.55	10.81	55.94	42.46	48.18	30.33	45.29
Burkina Faso	0.01	0.00	18.25	0.04	16.02	57.02	36.03
Cameroon	0.00	0.01	17.45	48.01	45.31	28.98	23.66
Egypt	6.83	6.29	10.02	14.63	9.02	8.58	22.22
Belgium	12.80	8.24	11.03	11.63	19.40	22.87	16.94
Russian Federation	7.54	3.91	12.76	12.39	5.63	11.85	16.88
United States	14.92	22.30	8.34	7.97	21.99	14.93	15.86
Switzerland	28.45	26.89	35.00	23.71	26.10	23.61	15.77
Indonesia	15.79	18.28	8.76	15.01	22.69	17.70	14.07
Germany	15.66	46.04	13.20	17.37	12.94	15.34	13.29
Turkey	16.05	37.35	7.97	13.65	12.62	11.78	13.10
Hong Kong	5.74	5.73	3.82	4.37	6.99	5.44	9.33
Japan	11.78	5.90	6.59	5.49	5.85	3.20	8.00
Pakistan	9.18	5.53	7.59	13.59	16.49	11.69	7.61
France	6.51	7.43	8.32	7.06	7.91	10.32	7.33

Source: NISR with raw data from RRA/Customs

Appendix 11: Top twenty imports by country of origin, shares in percentage 2019Q1-2020Q3

Year and Period	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
COUNTRY OF ORIGIN	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Tanzania, United Republic Of	5.00	6.64	8.84	11.67	6.49	9.20	21.81
China	20.10	17.09	18.78	20.61	21.86	15.73	16.87
Kenya	5.69	6.99	10.96	9.83	8.58	10.55	13.84
India	10.14	8.45	7.13	7.91	10.07	8.39	5.53
United Arab Emirates	7.34	7.61	7.42	7.45	9.55	5.61	5.01
South Africa	1.56	1.31	6.79	4.76	5.26	4.13	4.63
Burkina Faso	0.00	0.00	2.21	0.00	1.75	7.77	3.68
Cameroon	0.00	0.00	2.12	5.38	4.94	3.95	2.42
Egypt	0.92	0.76	1.22	1.64	0.98	1.17	2.27
Belgium	1.73	1.00	1.34	1.30	2.12	3.12	1.73
Russian Federation	1.02	0.48	1.55	1.39	0.61	1.62	1.73
United States	2.02	2.71	1.01	0.89	2.40	2.04	1.62
Switzerland	3.84	3.27	4.25	2.66	2.85	3.22	1.61
Indonesia	2.13	2.22	1.06	1.68	2.47	2.41	1.44
Germany	2.12	5.60	1.60	1.95	1.41	2.09	1.36
Turkey	2.17	4.54	0.97	1.53	1.38	1.61	1.34
Hong Kong	0.78	0.70	0.46	0.49	0.76	0.74	0.95
Japan	1.59	0.72	0.80	0.62	0.64	0.44	0.82

Pakistan	1.24	0.67	0.92	1.52	1.80	1.59	0.78
France	0.88	0.90	1.01	0.79	0.86	1.41	0.75

Source: NISR with raw data from RRA/Customs

Appendix 12: Top twenty re-exports partners, 2019Q1-2020Q3 (Value: US$ Million)

Year and Period	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
COUNTRY OF DESTINATION	**84.66**	**89.24**	**120.23**	**87.33**	**82.25**	**62.65**	**79.36**
Congo, The Democratic Republic Of	77.15	79.53	77.96	76.67	73.94	59.84	76.85
Uganda	0.76	0.49	0.67	1.14	0.52	0.69	0.55
Ethiopia	1.06	3.08	3.07	2.49	1.32	0.24	0.35
United Arab Emirates	0.59	0.88	0.84	0.51	0.42	0.10	0.32
Tanzania, United Republic Of	0.00	0.44	1.03	0.11	0.55	0.63	0.27
South Sudan	0.18	0.04	0.00	0.01	0.24	0.00	0.19
Congo	0.01	0.06	2.41	0.18	0.01	0.01	0.15
Belgium	0.70	0.55	0.24	0.53	0.12	0.04	0.13
Kenya	0.08	0.08	0.21	0.07	0.07	0.00	0.13
Qatar	1.47	0.00	0.00	0.12	1.83	0.33	0.07
Zambia	0.00	0.00	0.00	0.00	0.00	0.00	0.07
United States	0.04	0.08	0.04	0.06	0.19	0.01	0.06
United Kingdom	0.21	0.19	0.37	0.17	0.16	0.11	0.06
Netherlands	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Germany	0.11	0.20	0.15	0.27	0.10	0.00	0.03
Cote D"Ivoire	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Canada	0.00	0.00	0.00	0.04	0.03	0.04	0.02
Saudi Arabia	0.00	0.01	0.01	0.00	0.00	0.07	0.01
Oman	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Sweden	0.00	0.00	0.00	0.00	0.00	0.04	0.00

Source: NISR with raw data from RRA/Customs

Appendix 13: Top twenty re-exports partners, shares in percentage 2019Q1-2020Q3

Year and Period	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
COUNTRY OF DESTINATION	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
Congo, The Democratic Republic Of	91.12	89.11	64.84	87.79	89.89	95.53	96.84
Uganda	0.89	0.55	0.56	1.31	0.63	1.10	0.69
Ethiopia	1.26	3.45	2.55	2.85	1.60	0.38	0.44
United Arab Emirates	0.69	0.99	0.70	0.59	0.51	0.16	0.41
Tanzania, United Republic Of	0.01	0.49	0.86	0.12	0.67	1.00	0.35
South Sudan	0.22	0.05	0.00	0.01	0.29	0.00	0.23
Congo	0.01	0.07	2.00	0.20	0.01	0.02	0.19
Belgium	0.82	0.61	0.20	0.61	0.14	0.06	0.17
Kenya	0.09	0.09	0.18	0.08	0.09	0.00	0.17
Qatar	1.74	0.00	0.00	0.14	2.23	0.53	0.08
Zambia	0.00	0.00	0.00	0.00	0.00	0.00	0.08
United States	0.05	0.09	0.03	0.07	0.23	0.02	0.08
United Kingdom	0.25	0.21	0.31	0.19	0.19	0.17	0.08
Netherlands	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Germany	0.13	0.22	0.12	0.30	0.12	0.00	0.04

Cote D"Ivoire	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Canada	0.00	0.00	0.00	0.04	0.03	0.07	0.03
Saudi Arabia	0.00	0.01	0.01	0.00	0.00	0.11	0.02
Oman	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sweden	0.00	0.00	0.00	0.00	0.00	0.06	0.00

Source: NISR with raw data from RRA/Customs

Appendix 14: Trade with selected Economic Organizations, 2019Q1-2020Q3 (Value: US$ Million)

Economic Block	Flow	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
EAC	Export	27.53	55.97	6.19	5.15	14.21	8.79	11.77
	Import	118.89	113.56	164.30	192.57	138.66	144.89	348.72
	Re-export	2.57	3.65	34.33	5.27	3.75	1.71	1.14
CEPGL	Export	21.24	38.61	16.63	16.62	22.18	17.55	26.83
	Import	5.19	4.67	4.48	4.00	3.06	1.65	2.84
	Re-export	78.69	82.14	80.78	80.61	76.30	60.24	76.85
COMESA	Export	36.84	66.68	20.28	20.61	34.12	27.50	39.57
	Import	99.89	78.42	116.46	120.10	100.37	95.61	179.02
	Re-export	80.98	86.35	114.73	85.07	78.22	61.20	77.94
COMMONWEALTH	Export	43.05	55.09	34.68	32.99	29.91	27.43	36.66
	Import	249.60	223.34	332.19	397.62	367.05	295.57	506.66
	Re-export	1.23	1.46	32.01	1.56	1.37	1.48	1.10
ECOWAS	Export	0.80	1.08	0.32	0.07	0.53	0.45	0.11
	Import	0.43	0.40	18.96	0.80	17.09	57.49	36.98
	Re-export	0.00	0.00	0.00	0.00	0.00	0.00	0.02
SADC	Export	16.12	15.53	17.75	18.44	20.47	18.34	28.98
	Import	63.02	80.08	147.00	164.71	119.85	107.02	272.53
	Re-export	77.30	80.17	79.08	76.81	74.50	60.48	77.19
EU	Export	14.28	16.66	23.99	23.75	12.38	14.91	18.64
	Import	91.41	95.78	68.14	70.88	74.51	79.73	73.90
	Re-export	1.02	0.93	0.76	0.97	0.38	0.18	0.27

Source: NISR with raw data from RRA/Customs

Appendix 15: Trade with selected Economic Organizations, shares in percentage 2019Q1-2020Q3

Economic Block	Flow	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
EAC	Export	19.33	31.26	2.80	2.13	6.83	4.04	2.74
	Import	16.78	15.28	19.94	21.58	15.13	19.75	35.65
	Re-export	3.04	4.09	28.55	6.03	4.56	2.73	1.44
CEPGL	Export	14.91	21.57	7.51	6.88	10.67	8.08	6.26
	Import	0.73	0.63	0.54	0.45	0.33	0.23	0.29
	Re-export	92.95	92.04	67.19	92.30	92.77	96.16	96.84
COMESA	Export	25.86	37.24	9.16	8.54	16.41	12.66	9.23
	Import	14.10	10.55	14.13	13.46	10.95	13.04	18.30
	Re-export	95.65	96.76	95.42	97.41	95.10	97.69	98.22
COMMONWEALTH	Export	30.22	30.77	15.67	13.67	14.38	12.63	8.55
	Import	35.22	30.05	40.32	44.56	40.04	40.30	51.79
	Re-export	1.45	1.63	26.62	1.78	1.66	2.37	1.39
ECOWAS	Export	0.56	0.60	0.14	0.03	0.26	0.21	0.03
	Import	0.06	0.05	2.30	0.09	1.86	7.84	3.78
	Re-export	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	Export	11.32	8.67	8.02	7.64	9.85	8.44	6.76
	Import	8.89	10.78	17.84	18.46	13.07	14.59	27.86

SADC	Re-export	91.30	89.83	65.77	87.95	90.58	96.55	97.26
	Export	10.02	9.31	10.84	9.84	5.95	6.87	4.35
	Import	12.90	12.89	8.27	7.94	8.13	10.87	7.55
EU	Re-export	1.20	1.04	0.63	1.11	0.46	0.29	0.34

Source: NISR with raw data from RRA/Customs

Appendix 16: Trade by Mode of Transport, Values in US$ million, shares in percentage 2019Q1-2020Q3

Imports

Via	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
Air	70.84	100.44	184.35	201.39	188.34	223.40	364.35
Land	637.83	642.67	639.59	690.98	728.34	510.10	613.96
Total	**708.67**	**743.12**	**823.94**	**892.38**	**916.68**	**733.50**	**978.31**

Share in %

Via	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
Air	10%	14%	22%	23%	21%	30%	37%
Land	90%	86%	78%	77%	79%	70%	63%

Exports

Via	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
Air	34.47	46.03	125.63	144.15	116.29	142.02	324.69
Land	108.00	133.00	95.75	97.21	91.67	75.19	104.09
Total	**142.47**	**179.03**	**221.38**	**241.36**	**207.79**	**217.21**	**428.78**

Share in %

Via	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
Air	24%	26%	57%	60%	56%	65%	76%
Land	76%	74%	43%	40%	44%	35%	24%

Re-exports

Via	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
Air	3.91	4.87	6.09	3.90	4.54	0.99	0.74
Land	79.75	82.38	111.15	79.44	77.71	59.66	78.62
Total	**84.66**	**89.24**	**120.23**	**87.33**	**82.25**	**62.65**	**79.36**

Share in %

Via	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
Air	5%	5%	5%	4%	6%	2%	1%
Land	95%	95%	95%	96%	94%	98%	99%