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Assessment of the Factors Impacting on Export-led Growth Policy Performance of East African Countries:
The Panel-Autoregressive Distributed Lag Model

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Abstract

Exports play a crucial function in a country's economy and financial system, figuring out the extent of employment economic growth, along with the balance of payments. East African Countries have installed numerous trade coverage or policy reforms to promote and improve the export sectors. However, their proportion in general world exports continues to be very low. Despite its massive resource potential, the region's balance of trade stability for multiple years is in deficit; its export-led growth performance persisted poor notwithstanding governments' promotion and support. Hence, it's worthy of looking at the fundamental factors impacting East African countries' export performance. The present study dominantly applied the data of Africa and the Global development indicator of 20 years (2001 to 2020) for 9 East African countries, using a panel-ARDL econometric model. The descriptive outcomes of the research depict that in East Africa, the exports were low; the external trades denoted a continuous deficit in the business, industrial items dominated in the import basket, and primary items were overlooked in the export basket. The pooled mean group (PMG) estimation result also suggests that all the macroeconomic factors (independent variables) FDI, GDP, REER, INF, TOT, and IND are notably affected export in East Africa in the long run. Whereas GDP is the single variable that substantially influences export from East African nations in the short run. The results advise that inflation rate, foreign direct investment inflows, and the effective actual exchange rate had statistically detrimental or negative impacts on export performance in the study countries. To this end, the outcomes stand important for redesigning export trade policies/strategies to boost the performance of exports and the overall ultimate economic growth in East Africa.

Keywords: East Africa, Export performance, Export-led growth policy, Macroeconomic factors, Panel data, PMG/ARDL

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1. Introduction
1.1 General Background

Exports are critical to a country's ability to benefit from international trade. Also, International trade is considered as engine of economic growth, and development for countries. It also makes a considerable contribution as a primary source of foreign currency. By the same token, International trade is one of the areas with standard theories for several centuries, and that shows the importance of trade, investment to economic growth, development, and prosperity of nations.

Export-led growth strategies and policies marked the 1950s and 1960s. Remarkably, the forerunners were the Federal Republic of (Western) Germany and Japan, with large domestic markets and solid commercial backgrounds. However, the notable export-led booms of Germany and Japan following the economic destruction during World War II, followed by growth in export of four Asian Tigers since the 1970s and 1980s, as well as of China post its economic reform of 1978, which has also prompted other countries to consider export promotions as the quickest path to financial stability and economic growth (Johnston, 2016).

Export-led growth is considered as the motor of economic development, which also acts as a dominating source for foreign nations, and a primary globalization element (Udoidem et al., 2017; Eita & Jordaan, 2007). Its expansion could provide a route to employment generation, production efficiency, economies of scale, better resource distribution or allocation, and capital formation (Shahid, 2013; Dar et al., 2013; UNCTAD, 2016; Mohammed, 2014; and Njikam, 2018).

In developing nations (predominantly Africa and Latin America), the failure of Import Substitution Industrialization (ISI) strategy from one point of view, and accomplishment of the Export-Oriented Industrialization (EOI) strategy in several East Asian nations contrarily, has provoked trade policy reforms globally beginning in the 1980s. Then, most developing countries, embracing East Africa's countries, implemented

the Structural Adjustment Program (SAP) sponsored by World Bank and IMF and gradually liberalized their economies. These nations have exposed their ISI strategies in favor of EOS (Mulu Gebreyesus and Alekaw Kebede (2017). Besides, the policy tools for supporting the ISI regimes were a combination of several interventions that included exchange controls, tariffs, quotas, and overrated currencies. Thus, policies to encourage export growth have involved the provision of different forms of implicit subsidies, the removal of import restrictions, and accurate exchange rates.

East Africa Economic Outlook (2020) reports that East African countries embrace thirteen countries that are varied in many aspects. Of which, in this study, nine countries were selected for investigation. According to the East African Economic Outlooks (2020), an increase in GDP of East African nations is expected to be 5.1 percent (pre-COVID-19) in 2020, halfway between 5.2 percent rise in 2018, and 5 percent in 2019, making it Africa's fastest-growing region. The only country with a slow economic projection in 2020 by 1.6 percent due to conflict was Sudan. Every East African country was expected to add to the growth. The region's economic growth is primarily driven by new funding opportunities and incentives for commercial development, rising housing demand, robust public infrastructure spending, and the attainment of advanced stability. However, the area's growth may be significantly slowed due to COVID-19-related distractions such as financial spending plans, supply chains, global marketplace demands, and sales mobilization. As a result, the region's growth in 2020 is forecast to be 0.2 percent in the worst-case scenario and 1.2 percent in the baseline. COVID-19 is still expected to lie in short and medium terms, with a restoration of 2.8 percent under the worst set of circumstances 3.7 percent in the baseline proposed for 2021 (IMF's WEO, 2020; W.B, 2020).

In East African nations', looking at the consequences of a few macroeconomic variables, inflation became projected in 2020 to stay the best on the continent, at 14.2 percent, barely just above the 13.5 percent capable in 2019. The inflation ratio with COVID-19 in 2020 is expected to rise to 18 percent in worst-case circumstance and17.3 percent in the baseline. The country's financial shortfall was also stated to remain relatively stable, rising in 2019 from 4.9 to 4.7 percent GDP in 2020; however, this is no longer the case due to the outbreak of COVID-19. In 2020, the fiscal deficit will most likely be -6.8% in the worst-case situation and -6.1 percent of GDP in the best situations. Besides, Government borrowing (i.e., the public debit) remains strong, at 59.2% of global nominal GDP, which is higher than the IMF's threshold limit of 40% for developing economies and can be associated with a poor prognosis since nations request additional resources to expand their strength and conditioning structures as well as address COVID-19's socioeconomic consequences. The debt misery risk has decreased in Ethiopia, Kenya, Eritrea, Sudan, and South Sudan. Debt torture has become more common in Ethiopia, Kenya, Eritrea, Sudan, and South Sudan. Following COVID-19, the region's current account deficit was revised downward to 7% of GDP in 2020, down from 5.9% in 2019. Overall, profitable or economic growth in the region is expected to have a minor impact on Poverty, inequality, and unemployment, with unemployment, poverty, and inequality expected to continue in 2020 (EAEO, 2020; W.B., 2020).

In the region, for instance in Ethiopia, vulnerability of rainfed husbandry to vagrancies of nature, weak import performance, a firm reliance on agricultural commodity exports, and therefore the performing exchange extremity are crucial strike pitfalls. Among the study countries, Rwanda, Uganda, and Tanzania, also for exports, heavily rely on primary commodities and rainfed agriculture; adverse risks include global commodity prices and climate change. Likewise, the downside issues with a nation like Kenya include slow credit uptake by private sector, failure to increase external resources to a deficit in fiscal, and lack of fiscal and monetary policy coordination. Likewise, some nations have a deficiency of current accounts ranging from 5 to10 percent, similar to Kenya, Ethiopia, and Rwanda. The shortfall in these nations is usually due to superfluous significances over exports (that is, more imports than export), which is mainly associated with internal insufficiency (investment higher than the domestic saving), especially in Ethiopia. Therefore, this made more severe deterioration in product prices and service faults. This pattern is analogous in Kenya (AfDB, 2019).

Recent studies also show that two schemes have appeared in the region for sustained current account poverties/deficits: (i) For export, numerous countries depend on primary goods, reducing worldwide product prices have destructively changed their terms of trade performing in pertinacious poverties of current accounts. For case, trade terms in Africa declined 157.1 in 2016 from 193 in 2012 and 2017 to 168.7. This substantially results in the worsening of primary commodity costs. (ii) The action of speedy profitable growth and performing higher growth has been attained with high investment (i.e., more than the domestic savings). The deficit of the current patient account (or external gap) is explosively tied to the domestic investment savings gap. Investments are grouped according to significant import content and a need for typically inelastic significances. What's more, for every East African Country except Seychelles, the ratio of debt to exports is higher than one-hundred percent. In addition, in Ethiopia, Kenya, and Burundi, the debt service is hitting incredible burdens on limited foreign exchange earnings. According to reports of World Bank (2018), latter of 2010, the indebtedness of Africans has doubled even in some cases tripled (World Bank 2018a.).

Overall, in prior years, multitudinous empirical researches have been delved into export-centered development strategy, specifically on export trade policy and the global economy. Export is most vital for African

countries, albeit the region's exports are not veritably significant in the international markets (Mold & Morrissey, 2006). According to recent studies, in SSA countries, particularly in East Africa, several empirical studies have been conducted on the export-led development approach (Babatunde, 2009; WITS, 2020). Furthermore, raw resources account for 75% of the region's exports, compared to 8% for the world average (Iizuka & Mulu, 2011; Anyanwu 2014 referred in Geyer, 2019).

Notwithstanding that the export sector is veritably essential for the country; there is a quite scanty literature on export, particularly on assessing factors influencing the performance of exports. These few prior studies in the region, particularly Ethiopia, have also paid too much attention to supply-side variables and single commodities like coffee, horticultural crops, and oilseeds. They have been ignored the part of the demand side macroeconomic variables. There has also been no agreement by different researchers regarding the critical determining factors of export performance. Since we've been in a dynamic world, the study on exports needs an update regarding and paying attention to the dynamism.

Subsequently, looking at the different views, the motivation to conduct this study has become timely. Another theoretical and practical reason that triggered the researcher to study the topic is that most studies focused on Asia and Africa towards the north, west, and south. The situation in East Africa got less attention, and little is known about it. It is ironic that a country endowed with fertile soil, reach in natural forests, abundant water resources, and a wide variety of mineral resources such as Ethiopia cannot develop and be known as a 'poor and less developed country.' Also, the lack of effective coordination mechanisms keeps impeding efforts to promote balanced economic growth and development among East African countries.

Moreover, both in the industrialized and developing countries, it's noticeable that the leading macroeconomic objectives are boosting the performance of their exports. The rationale for this is that export contributes significantly to economic growth and development while also improving the current account balance. The rationale for this is that export contributes significantly to economic growth and development while also improving the current account balance. Besides, external trade of East African countries is denoted by a persistent deficit trade, dominating primary goods in the export basket and dominating manufacturing goods in the import basket.

Above all, some limited scholars demonstrated the underlying export-led economic growth or export performance challenges in the study areas. For illustration, Prior research has provided several understandings and insights concerning the determining factors or factors influencing export performance. Nevertheless, those studies have not been convincing in many ways. First, they couldn't be constant regarding the significant determinants of export success. Second, some previous research used cross-country analysis, resulting in oversimplified conclusions for the unique national setting. Other research used specific country data with decisions that can't move elsewhere the sampled countries. Third, prior studies investigated the inclusive export performance overlooking the fact which disaggregates the sectors will have diverse reactions on the performance of exports. Thus, this study attempts to discourse issues thought above by assessing the factors impacting export-led growth policy performance in the selected nine East African Countries. To this end, as far as the review of the literature shows, current research works have several limitations in terms of focus, scope, time, methods, data, questions, theory, etc. Besides, recognizing, investigating, or assessing the key factors that significantly affect or impact the performance of exports in the study countries would ease the designing of strategies to advance the performance and eventually the general economic growth.

Therefore, these critical issues ignited this study with what the researcher's believe the research gaps be filled through an in-depth study analysis to develop a better understanding and different policy initiative ideas.

1.2 Aim and Objectives

The principal aim of this research is, therefore, to assess the significant considerable macroeconomic determining factors that impact export performance in East African Countries and, in doing so, it will also create an occasion to suggest alternative policy ideas. It specifically tries to answer the following primary research question: How and to what extent do the macro-economic elements (like FDI inflows, GDP per capita, real effective exchange rates, inflation rate, terms of trade, and industrialization) impact export performance in the study countries? Specifically the objectives of the study are:

- To examine the relationship between the per-capital gross domestic product and export performance in East African countries.
- To scrutinize the effect of terms of trade on export performance in East African countries.
- To determine the extent to which real effective exchange rate and inflation rates influences on export performance in East African countries.
- To inspect the effect of foreign direct investment inflows, and industrialization impacts on the performance of exports in the study countries.

Above all, in this study, the following macroeconomic factors have been investigated as per the reviewed literature proposes: "The Foreign Direct Investment Inflows (FDI), Real Effective Exchange Rate (REER), Per Capita Gross Domestic Product (GDP), Inflation Rate (INF), Terms of Trade (TOT), and Industrialization (IND)."

The basis for choosing these variables was data availability.

2. Methodology
2.1 Econometric Model and Estimation Technique
Panel data was found to be more relevant in terms of the study purpose since it includes the necessary techniques for dealing with inter-temporal dynamic behavior as well as the heterogeneity of the studied nations. For instance, it provides for the correction of heterogeneity bias caused by time-invariant variables missing from the econometric model or hidden factors. Furthermore, this research is a mix of both time-series and cross-sectional data (i.e., panel data of the year 2001 to 2020) from nine East African countries. Thus, a ''macro panel data'' analysis was used where periods of years (twenty years) are higher than numbers of observations (nine countries) i.e., T>N. This analysis is goings-on to discover the connotation among the dependent variable (i.e., export performance) and its determining factors.

Honestly speaking, why a panel study in this paper is that most academic journals and articles reviewed by the researchers also used panel data. Equally, some scholars in their research argue that the panel data system is chosen because it provides more information and greater evaluation efficiency, as opposed to a single country analysis (Zhu et al., 2016). Therefore, researching the assessment of factors impacting on export performance in the context of panel data appears to be an apparent choice. The other gain of panel data is, it enables for the study of country heterogeneity.

With reference to recent study by Thida O. et al., (2019), and prior researches such as Giles and Williams (2000); Grenier. et al., (2005); Jongwanich, (2007); Babatunde, (2009); Anagaw, and Demissie, (2012), in assessing the export performance, showed there are six determining factors that could impact the export performance, such as Inflation rate (INF), interest rate (INST), Real Exchange Rate (EXR), Gross Domestic Product (GDP) and Foreign Direct Investment (FDI).

Accordingly, the basic model of this research is given as below. Export-led growth policy performance is a function of the following variables:

$$EXP = f(GDP, FDI, IND, INF, REER, TOT) \dots\dots\dots (1)$$

Following this, the long-run connection that the researcher intends to study in this concept is based on the following equation:

$$lnEXP_{it} = \alpha0 + \alpha1 lnGDP_{it} + \alpha2 lnFDI_{it} + \alpha3 lnIND_{it} + \alpha4 lnINF_{it} + \alpha5 lnREER_{it} + \alpha6 lnTOT_{it} + \varepsilon_{it} \dots\dots\dots (2)$$

2.2 The ARDL Model
One of the key advantages of using an ARDL model is that it allows for the inclusion of complex dynamics while also reducing the issue of multicollinearity. A dynamic connection is one in which there is a causal link that spans many periods (Verbeek, 2017). Or, to put it another way, the model accommodates changes in explanatory variables across time (ARUP, 2010). This model can also estimate short as well as long-term associations at the same time (Boutabba 2014).

In this paper, therefore, analogous to scholars such as (Frank and Blackburne, 2007; Bölük and Mert, 2016; Baek, 2016; Rafindadi et al., 2018), the generalized model of ARDL (p, q,....q), that is lagged dependent variable with P and independent variable with q is as follow:

$$y_{it} = \mu_i + \sum_{j=1}^{p} \lambda_i y_{i,t-j} + \sum_{j=0}^{q} \delta'_{ij} X_{it-j} + \varepsilon_{it} \dots\dots\dots (3)$$

Where y_{it} is the dependent variable (i.e., export performance), $((X'_{ij})'$ is Kx1 vector that are allowed to be purely I(0) or I(1) or cointegrated, λ_{ij} is coefficient of lagged depend variables, δ_{ij} are coefficient vector, μ_i is unit-specific fixed effects, i= 1….N, t= 1,2…T; p, q are optimal lag order; ε_{it} is the error term.

As specified, an error correction format must be supplied if there is a cointegration connection (Baek et al., 2016). Thus, the ARDL model must include an error-correcting mechanism (Verbeek et al., 2017). Therefore, Error correction is represented in this way:

$$\varphi_i (lnEXP_{it-1} - \Theta_{\theta i} - \Theta'_i X_{it}) \dots\dots\dots (4)$$

With

$$\varphi_i = -(1 - \sum_{j=1}^{p} \lambda_{ij}) \qquad \Theta_i = -(\sum_{j=0}^{q} \delta_{ij}/\varphi_i) \qquad \Theta_{\theta i} = -(\mu i/\varphi i)$$

Where, the parameter φ, which determines the adjustment speed, is a part of this error-correction process. As seen in above Equation 3, the term of error correction is represented by the residuals between the brackets. The Θi indicates a vector that contains all independent variables' long-run coefficients.

2.3 Pooled Mean Group (PMG) Estimator

The PMG is an estimator, which covers both pooling and averaging. The estimator allows the intercepts, short-run coefficients and error variances to differ freely across groups, but the long-run coefficients are constrained to be the same. Thus, the good reason to predict the long-run equilibrium relationships between variables to be similar across groups. Finally, to achieve consistent estimates, the ARDL model's error-correction modeling format is defined as follows (Frank and Blackburne 2007; Bölük and Mert 2016; Baek 2016; Verbeek 2017; Rafindadi et al. 2018). That means, the re-parameterized ARDL panel (p, q, q…q) after differencing lagged variables, error correction model is specified as:

$$\Delta ln\text{EXP}_{it} = \mu_i + \varphi_i \left(ln\text{EXP}_{it-1} - \Theta_{\theta i} - \Theta'_i X_{it}\right) + \sum_{j=1}^{p-1} \lambda^*_{ij} \Delta ln\text{EXP}_{it-j} + \sum_{j=0}^{q-1} \delta'^*_{ij} \Delta X_{it-j} + \varepsilon_{it} \dots\dots\dots\dots (5)$$

With

$$\varphi_i = -\left(1 - \sum_{j=1}^{p}\lambda_{ij}\right) \qquad \Theta_i = -\left(\sum_{j=0}^{q} \delta_{ij}/\varphi_i\right) \qquad \Theta_{\theta i} = -(\mu_i/\varphi_i)$$

$$\lambda^*_{ij} = -\sum_{m=j+1}^{p} \lambda_{im} \; j = 1,2, \ldots, p-1 \qquad \delta^*_{ij} = -\sum_{m=j+1}^{q} \delta_{im} \; j = 1,2, \ldots, q-1$$

To this end, in this research, (Eq 5) is the base for estimating panel ARDL using pooled mean group. The error correction (Eq 4) is seen in Equation 3 (original ARDL model). Non-stationary levels are predicted for the variables, which mean that the dependent and right-hand variables are both in first differences. The dependent variable's lag length is denoted by p, whereas the independent variables' lag length is denoted by q and the number of time lags is represented by j. X_{it} indicates a k explanatory variable's vector, whereby δ'_{ij} and λ_{ij} are the short-run effect coefficients. The lagged error correction component, which is the second term on the right-hand side of the equation, represents the long-term effects. The fixed influence of every country is denoted by μ_i and error term by ε_{it}. With a variance greater than zero and a mean of zero, it's supposed to be randomly disseminated across the independent variables i & t and the regressor X_{it}.

2.4 Data and Techniques

This section will deliver details on how these trials and other measures could carry out and the finding is to discourse in Section 3. Besides, fig.3.1 below shows a summary of the various phases. Thus, this part begins by outlining the various unit root tests & cointegration tests, as well as the particular hypothesis that is being evaluated in this study. Next, more information on the variables utilized in the research, the selected countries in this panel, and the study's time frame will be provided. What's more, for the econometric analysis, E-Views11and Stata software are used. The technique is used to guide the various parts of the analysis.
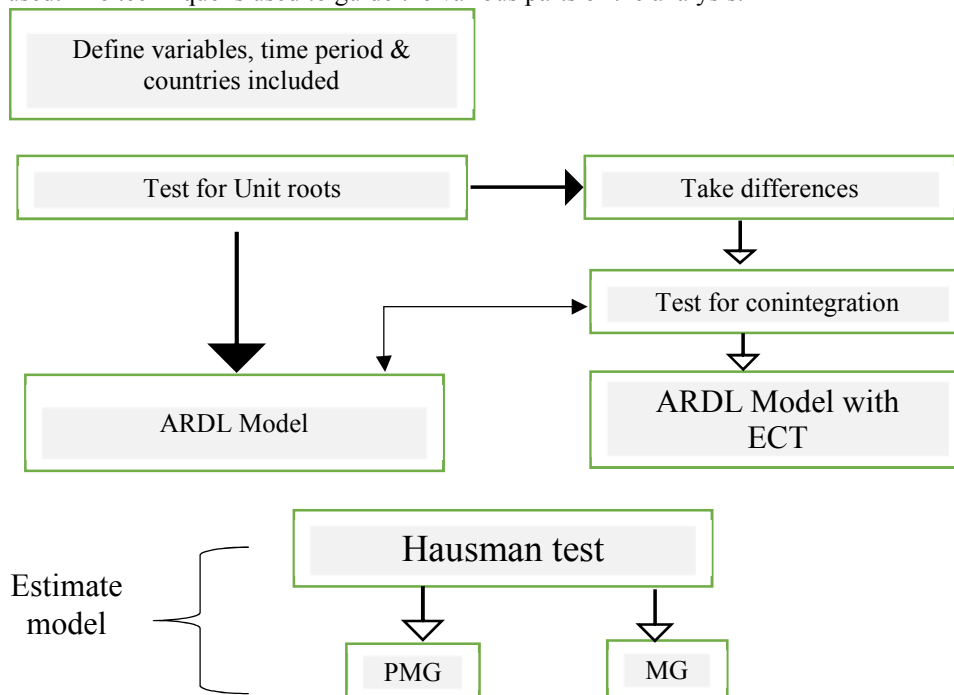

Figure 2.1 a diagram depicting the process of the Econometric analysis

2.5 The Variables, the study countries, and time period
The type of analysis for this study is a panel analysis that incorporated nine countries and a period of 20 years. The fact that this decision is based on panel data has two advantages. A panel data provides additional information and improves estimate efficiency. The sample size of panel data is bigger, and the estimators are less sensitive to model choice. A model utilizing panel data may accommodate for heterogeneity by introducing a country-specific intercept. Moreover, in the analysis, the included nine East African nations are Ethiopia, Burundi, Mozambique, Kenya, Uganda, Rwanda, Zimbabwe, Zambia, and Tanzania. Notably, the study nations were chosen first and foremost depending on the availability of data for the years 2001 to 2020. During this time, a list of countries is compiled, with various income levels and economic growth rates taken into account.

2.5.1 The dependent variable (Export Performance)
Exports are goods and services produced in one country and purchased by citizens of another country (Tran, 2020). Value of goods, insurance, and transportation costs, as well as royalty and licensing fees, are included in the total cost like government services, construction, business, informational, financial, and telecommunication (Mohamoud & Uysal, 2018). In this case, it is total goods and services produced in the selected study countries and consumed by other abroad countries. The export performance (EXP) is measured in terms of value. Because a total export of a country comprises a basket of products and services, it can be simply quantified in terms of value instead of other metrics.

2.5.2 The Independent variables
In this paper, the expected sign and definitions of six macroeconomic factors (independent variables) are discussed as follows:

A. **Foreign Direct Investment Inflow (FDI):** Its accumulated capital stock is used to calculate its value. According to empirical studies, FDI's role in export promotion is divided. FDI has been shown to have a positive influence on exports in several studies while others find it to be insignificant. There is additional research that illustrates the impact of FDI dependency on the type of labor and capital intensity. As a result, it is projected to have a favorable impact on exports in a variety of ways, including enhanced access to foreign financing, technical transfer, improved marketing skills, and so on.

B. **Gross Domestic Product (GDP):** The capacity of the producer has an impact on export supply. As a result, since the increase in domestic supply, GDP per capita is expected to have an influence on export performance when all other variables are held constant, providing a surplus for export. Because the value of all locally produced goods and services can easily be converted, this may also be measured. In terms of exports, it is the most essential factor since it measures the long-term sustainability of production levels. Consequently, we anticipate a beneficial effect of GDP on export growth.

C. **Real Effective Exchange Rate (REER):** In the IMF's definition of a real exchange rate, the price of a local currency in respect to a foreign currency is referred to as the "real exchange rate" (IMF handbook). The actual exchange rate is commonly used to capture a country's relative pricing advantage over its rivals. Exports become cheaper in foreign markets when relative local prices decrease as a consequence of exchange rate depreciation, leading to greater export demand. As a result, we anticipate REER having a negative effect on export growth.

D. **Terms of Trade (TOT):** The ratio between the country's export price index and import price index. To put it another way, a country's TOT is calculated by comparing the price it gets for its exports to the price it pays for its imports (Carbaugh, 2013). Furthermore, the TOT is used to determine whether the research country exports more to benefit from improved terms of trade for its products, or exports less to reach the target revenue. Thus, the prediction for this research is a negative effect of TOT on export performance.

E. **Inflation (INF):** Economic growth and inflation are two parallel lines that will never meet. Inflation can be measured in two ways (Al-Mutairi et al., 2020): (i) it is the annual percentage change in consumer prices, i.e., INF=(Pt-Pt-1)/Pt-1*100. Pt is the CPI ("Consumer Price Index") at time t whereas Pt-1 is a consumer price index at last year (t-1). The Consumer Price Index (CPI) is described as an indicator that examines the average change in price paid by consumers for a representative basket of goods and services over time (Qaiser & Shabbir, 2016). (ii) It is measured by the annual percentage change in GDP deflator (GDP deflator = (Nominal GDP/Real GDP)*100). Generally, it becomes more difficult to purchase goods and services when the money value is devalued by inflation. As a consequence, fewer goods are produced and exported. This study, therefore, can anticipate a negative impact of INF on export.

F. **Industrialization (IND):** Industrialization begins the process of import substitution, which lowers reliance on imported goods. It includes mining, manufacturing (which is frequently listed as a distinct division), construction, power, water, and gas value-added. A sector's net output is its value-added, which is calculated by adding up all of its outputs and subtracting any intermediate inputs. It can be determined without considering the depreciation of manufactured assets or natural resource depletion and deterioration (WB, 2020). As a result, IND's expectations for export have a beneficial influence.

In general, the summary of the variables and expected signs are displayed below in Table-3.1.

Table 2.1 Operational Variables Summary

Variables	Abbreviation	Variable definition/Formula	Types of variables	Expected sign
Export performance	EXP	EXP=log (Export Value-US$)	Dependent	
Real Effective Exchange Rate	REER	REER=log (real exchange rate)	Independent	(-)
Inflation Rate	INF	INF= Log (inflation rate)	Independent	(-)
FDI net inflow	FDI	Log (foreign direct investment)	Independent	(+)
GDP per capita	GDP	GDP=log(C+I+S+G)	Independent	(+)
Terms of Trade	TOT	TOT=log (terms of trade)	Independent	(-)
Industrialization	IND	IND=log (industrialization)	Independent	(+)

3. Empirical Analysis (Result and Discussions)

This section manages to pay for the empirical analysis of results, interpretation, and the accompanying discussions which can be provided for outcomes from the model which mainly deals with the econometrics outcomes and some important tests results of the factors impacting the export performance of nine East African countries employing a panel data that composed a period of 20 years (2001-2020). Each cross-section and time period are represented in the dataset, which includes all of the relevant variables. Therefore, this section offers with the analysis of the results, explanation, and discussions.

The analysis of the econometric results will include: descriptive statistics and summary of the variables in the model, correlation analysis; determination of the optimal lags for the model; cointegration test, diagnostics, and Hausman test to determine the appropriate model to be used for this study are conducted. Finally, an in-depth discussion of the results and comparisons with the existing empirical literature is done.

Above and beyond, in this econometric analysis, two imperative notions will be used all over this section, and hence important to explain them early. These are the statistical significance level and the p-values. A test statistic and equivalent p-values are generated for each of the tests that are conducted and each parameter that is estimated. With these p-values, it's possible to determine if the value's null hypothesis should be rejected or not (i.e., alternative assumptions maybe accepted or acquainted if it is possible). As a result, the threshold of significance, which is often set at 0.05, should be included. However, the null hypothesis may only be rejected if the p-value is less than 5 percent (i.e., <0.05). If it's greater than the significance threshold, it cannot be rejected.

In addition, although the PMG and MG estimators are used to calculate the coefficients of the variables, the following is the null hypothesis. We examine whether or not the coefficient of the parameter (H0: coefficient = 0) is non-zero. Assuming that the p-value is less than 0.05, the null assumption maybe rejected and the variable has a significant impact on the dependent or controlled variable (Ott et al., 2010). Panel unit root checks, the calculation of the lag duration, as well as the panel cointegration test findings, may all be discussed in detail in terms of their consequences.

3.1 Summary and Descriptive Statistics of the variables

In the prior section, it already realized the research methodology and the model specification of this study (i.e., the panel-ARDL model). With reference to econometricians, in this model, there are 10 important steps to estimations. They are (1) specifying the model; (2) describing the data; (3) performing correlation analysis; (4) performing unit root tests; (5) determining the optimal lags for the model; (6) performing the Hausman test; (7) performing cointegration test (optional); (8) Estimating the model (s); (9) performing causality tests (optional) and (10) performing diagnostics (optional). Thus, we will see each of the required steps in this chapter.

Before embarking on the empirical outcomes of the model, it is crucial to speak about the characteristics and the distributional patterns of the variables which can be included in the model. This allows having an inclusive look at variables being studied. Accordingly, there are many measures of evaluation, as an instance, Gebeyawu, (2017) mentioned in Hetal (2006), proposed three principal strategies of evaluation namely; 1) The model's variables are summarized in the model's summary statistics. Moreover, the variables' median, mean, skewness, standard deviation, kurtosis, maximum and minimum values are all included in the description. Accordingly, the Table 3.1 below displays the descriptive statistic values of the variables which encompass each of the dependent and independent variables for 180 observations. Furthermore, the study has export performance (EXP) as a dependent variable and the following seven independent variables (Such as FDI, GDP, IND, INF, REER, and TOT) to assess their influence or impacts on export performance of the selected 9 East African Countries.

The values of Maximum and Minimum of all variable indicate the minimum and maximum values from each country used in this study respectively. Mean indicates; the mean value of the common of all sampled countries in each variable; while skewers & kurtosis degree the normality of the variables used within the used in the study. Also, skewness measures normality from a standard normal distribution reference point; whereas kurtosis

measures the peachiness of the data. Besides, the standard deviation is large enough to explore the variations in the data.

Table 3.1 Summary statistics for the variables

	EXP	FDI	GDP	IND	INF	REER	TOT
Mean	4.18E+09	3.903829	692.8787	20.67296	14.35944	116.7512	117.9261
Median	3.91E+09	2.617174	584.7928	19.36648	7.441959	114.7193	106.9831
Maximum	1.16E+10	39.45620	1878.347	42.73594	610.0000	196.0000	197.4470
Minimum	38676370	-0.001305	111.9272	9.435128	-5.755335	67.82277	82.02154
Std. Dev.	3.21E+09	5.690712	427.3673	6.356968	52.62277	23.14635	29.57312
Skewness	0.540356	3.752264	0.845047	0.563446	9.610309	0.949742	1.134522
Kurtosis	2.348265	19.10444	2.985444	3.102604	101.5688	4.395828	3.105022
Jarque-Bera	11.94524	2367.531	21.42473	9.603116	75639.25	41.67280	38.69689
Probability	0.002548	0.000000	0.000022	0.008217	0.000000	0.000000	0.000000
Sum	7.53E+11	702.6893	124718.2	3721.133	2584.699	21015.21	21226.69
Observations	180	180	180	180	180	180	180

Source: Author's computation from the output of E-Views11, WB, UNTCAD, 2021

From the above table 3.1, the mean of the dependent variable in (Export) equals 4.18E+09, this demonstrates an average value of export of services and goods in East African countries with standard deviations of 3.21E+09. Also, the result revealed that the minimum and the maximum value of 38676370 and 1.16E+10 respectively, or this indicates that export performance of the region from 2001 to 2020 ranges from 38676370 to 1.16E+10. Export in percentage rate is approximately normally distributed with skewness value of 0.540356 and kurtosis of 2.348265.

3.2 Correlation Analysis

Correlation analysis is so crucial to expose that regressors do no longer have perfect or precise linear representations of one another (i.e., keep away from multicollinearity). Hence, a correlation analysis is completed to investigate the correlation between variables. The connotation is given employing the correlation coefficient that levels from 0 to 1 and suggests the quantity or level of the relationship. Furthermore, the symbols or signs of the correlation coefficient could be negative or positive that indicative of the relationships between variables. Thus, in the instance of a positive sign and a high correlation coefficient value, it means that there is a high positive correlation between the variables and the dependent variable.

What's more, according to Cameron and Trivedi (2010), Multicollinearity arises when the study variable correlates extremely strongly, generally over 0.80 or 0.90, when the tolerance values should not exceed 0.10 and the variance inflation factor (VIF) value should not exceed ten (10) Furthermore, the tests for heteroscedasticity revealed no models with heteroscedasticity problems. To increase the normality of the dataset, data log transformation was applied to all of the research variables. This is backed up by prior research including (Kumar et. al., 2001; Zheng, 2013; Okafor, 2014 and Falk, 2014) which recommended that taking logs may enhance the linearity as well as normality of the data series. Below is a correlation of variables (Stata outputs).

Table 3.2: A correlation of variables

```
. correlate EXP GDP FDI ToT INF IND REER
(obs=180)

             |      EXP      GDP      FDI      ToT      INF      IND     REER
-------------+---------------------------------------------------------------
         EXP |   1.0000
         GDP |   0.7227   1.0000
         FDI |   0.1204   0.0211   1.0000
         ToT |   0.0173   0.3093  -0.0804   1.0000
         INF |  -0.0372   0.1095  -0.0553  -0.0211   1.0000
         IND |   0.3463   0.5090   0.0701   0.1835  -0.0943   1.0000
        REER |   0.2861   0.3509  -0.3015   0.3114   0.0796  -0.1423   1.0000
```

In preferred, in the report of Table 3.2 of the correlation of variables, in all cases, the correlation coefficient does not exceed 0.8 so that multicollinearity is not always present. Further, the correlation evaluation provides data on the linear connection between the independent and dependent variables. Therefore, it's evidence for a linear relationship among the variables.

3.3 The PURTs (Panel Unit Root Test)

The PURTs decide that no variable is incorporated of order two or I(2). As shown by actual data, an examination

of the relationship between the macroeconomic factors of export performance (i.e., the independent variables) and their export performance (i.e., dependent variable) is defined in Table 3.3 below. Primarily, the evaluation of stationarity and long-run equilibrium became inspected utilizing panel unit root and cointegration checks with the help of E-Views software programs. In doing so, it became followed two checking methods (Levin, Lin, and Chu—for the assumption of homogeneous slopes & Im, Pesaran and Shin—for the assumption of heterogeneous slopes) panel unit root assessments. These PURTs have greater power than the first-generation test developed by Levin and Lin (1993) which does not outfit for heterogeneity in the autoregressive coefficient (Ee, 2016).

Table 3.3 Results of Panel Unit Root Tests

Test Method	Im, Pesaran and Shin W-stat (IPS)		Levin, Lin & Chu t* (LLC)		
Variables	Level	1st Difference	Level	1st Difference	Conclusion
EXP	0.92557	-5.16041	-1.59515	-3.30940	I(1)
	(0.8227)	(0.0000) *	(0.0553)	(0.0005) *	
FDI	-0.65503	-5.57342	-0.80579	-5.41208	I(1)
	(0.2562)	(0.0000) *	(0.2102)	(0.0000) *	
GDP	1.13656	-3.58079	-1.20629	-3.90620	I(1)
	(0.8721)	(0.0002) *	(0.1139)	(0.0000) *	
IND	0.95415	-5.59358 (0.0000)	-0.04669	-4.20029	I(1)
	(0.8300)	*	(0.4814)	(0.0000) *	
INF	-3.18855	-	-2.88790	-	I(0)
	(0.0007) *		(0.0019) **		
REER	0.02981	-4.79420 (0.0000)	0.19350	-5.94370	I(1)
	(0.5119)	*	(0.5767)	(0.0000) *	
TOT	-0.58289	-6.51020 (0.0000)	-2.38481	-7.17173	I(1)
	(0.2800)	*	(0.0085) **	(0.0000) *	

Source: Author's computation as of the output of STATA. **Notes:** The stars ***, ** and *, label significance levels at 1%, 5% and 10% respectively. The values in braces ( ) represent the p-values.

Thus, in this empirical research, diverse kinds of PURTs techniques are applied by LLC (2002) and IPS (2003). As a consequence, several unit-root tests demonstrate that rejecting the null hypothesis for inflation rate (INF) is the only variable that can be rejected. Due to the fact that p-values are less than the 5 percent limit, this is the case. Accepting the alternative hypothesis for this variable (i.e., INF) indicates that it does not have a unit root, and all of the previous authors' Chi-square findings imply that they are stationary to a great extent. If the p-values are more than 5%, we must accept the null hypothesis, as shown by the fact that the (determinants) figures set include unit-root at the level. As a result, the first difference must be applied to the other variables.

Thus, in this empirical study, diverse panel unit root assessment techniques are carried out by IPS (2003) and LLC (2002). Accordingly, the unit root checks of outcomes display that rejecting the null assumption for only one variable that's the inflation rate (INF). This is due to the reality that for the reason those p-values are decrease than the level of the 5% significance. In different ways, accepting the opportunity speculation for this variable (i.e., INF), the method that it lacks a unit-root, and all of the aforementioned authors' Chi-rectangular results strongly suggest that they're stationary on the volume. We need to obtain a null hypothesis if the p-values are more than 5%, and we can observe (determinants) data set includes unit-root at the extent. As a result, we must apply the first difference to the remaining variables.

In other words, it can be comprehended that only one variable is stationary at level (i.e., inflation rate); hence, the null assumption of non-stationarity (unit-root) at the level may be rejected. Except for this variable (i.e., INF), all other (six) variables make sure turn into stationary after the first difference. Consequently, given this finding, the variables used in this study are said to be integrated of orders I(0) and I(1). This order of integration permits us to use the autoregressive distributed lags (ARDL) estimation approach (Phillips and Perron, 1988; Pesaran and Pesaran, 1997; Pesaran et al., 1999, 2001). With the majority of the variables being included at order one, I(1), it indicates that there may be a high possibility of a long-run relationship.

3.4 Optimal lag selection for the model and variables

Thus, having analyzed the stationarity of the variables, one can now decide the optimal lag length to choose the number of lags. Practically, what is the suitable preference of lag choice? It is the problem of model choice to determine the apt choice. In choosing a suitable model, an economic theory doesn't provide any guidance. As a result, several supplementary criteria possibly employed to choose among various models that are statistically viable. Choosing lags based on a Wald-test is one of the strategies for model selection in this case. This entails assessing the importance of adding more lag to the version. The AIC (Akaike Information Criterion) and BIC (Schwarz Bayesian Criterion) information criteria are both frequently used information criterion reduction techniques.

In this paper, the AIC is used for model choice. Nonetheless, it's feasible to manually pick the most satisfying

lag duration for both (i.e., dependent and independent) variables and inform E-Views11, but it's also possible to select automatically right here. Consequently, the software's final output provides an AIC lag of no more than one for each of the regressors and dependent variables. When T is large enough, the choice of lag isn't critical for robustness (Pesaran et al., 1999). The result is found below in the following Table 3.4.

Table 3.4: Optimal lag order selection criteria

Model Selection Criteria Table
Dependent Variable: EXP
Date: 09/30/21   Time: 19:26
Included observations: 166

Model	LogL	AIC*	BIC	HQ	Specification
1	672.089702	-7.868738	-6.310143	-7.235556	ARDL (1, 1, 1, 1, 1, 1, 1)

Source: Author's computation from the output of E-Views 11.

3.5 The Panel Co-integration Test

The co-integration idea is related to the existence of long run equilibrium where an economic system meets through the years as desired in theory. The cointegration test is also one way to test the theory (Sumiyati, 2020). If a shock occurs in an economic system, a force encourages the economy to return to its equilibrium condition within a certain period. In other words, if there is asymmetry or disequilibrium in the short term, there will be a force that will push the economy towards its equilibrium condition or pull data to always move side by side (Ekananda, 2018). Thus, in this study, the application of cointegration approaches is built on the reality that macroeconomic information has behavior, as said above.

There must be cointegration between the variables to establish a long-term connection. Therefore, key assumptions of the pooled mean group (PMG/ARDL) form of the cointegration test is that the long-run relationship between the variables is stable across nations. Also, cointegration is based on the idea that due to non-stationarity, two series might vary (heterogeneously) in the short run but are connected (homogeneously) in the long-run (Granger, 1982).

In this study, since all except one variable are integrated of order one, the empirical result confirmed that the panel estimation of the residuals should necessary be stationary to set up a cointegrated aggregate of most of the variables in the panel model. Consequently, this study followed the Kao residual cointegration test and the currently advanced panel cointegration checks through Pedroni (2004) proposes an approach that allows for the use of panel statistics, addressing the issue of small samples while also taking into account variability in the cointegrating equation's intercepts and slopes. Moreover, for the null hypothesis of no cointegration in heterogeneous panels, Pedroni's technique contains several exceptional findings. Panel assessments— "within dimension"— are used to describe the test groups, whereas group assessments— "among measurement"— are used to describe the alternative structure. The "within dimension" tests collect data from all areas of the "within size." It accounts for common temporal aspects while still allowing for individual variation. The "between size" checks, also known as "group mean cointegration statistics," allow for parameter variability among individuals. In addition, the two dimensions present eleven test statistics, all below the null hypothesis of no cointegration.

If the p-value is equal to or less than the 5% significance threshold, the null hypothesis is rejected for inference. The cointegration tests values are provided in Tables 3.5 as below.

Table 3.5: Panel Co-integration Test Results (Pedroni & Kao Residuals)

Pedroni Residual Cointegration Test

Series: EXP01 FDI GDP IND INF REER TOT

Date: 09/21/21   Time: 16:22

Sample: 2001 2020

Included observations: 180

Cross-sections included: 9

Null Hypothesis: No cointegration

Automatic lag length selection based on AIC with lags from 1 to 2

Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	-0.974546	0.8351	-0.843665	0.8006
Panel rho-Statistic	3.019008	0.9987	3.648622	0.9999
Panel PP-Statistic	-4.234355	0.0000***	-1.818363	0.0345**
Panel ADF-Statistic	-3.787363	0.0001***	-1.726195	0.0422**

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	4.207031	1.0000
Group PP-Statistic	-4.597060	0.0000***
Group ADF-Statistic	-2.836922	0.0023***

Kao Residual Cointegration Test

Series: EXP01 FDI GDP IND INF REER TOT

Null Hypothesis: No cointegration

Trend assumption: No deterministic trend

	t-Statistic	Prob.
ADF	-2.400957***	0.0082
Residual variance	6.61E-05	
HAC variance	7.00E-05	

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(RESID)

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-0.302669	0.069032	-4.384452	0.0000
D(RESID(-1))	-0.142316	0.083791	-1.698474	0.0917
R-squared	0.173308	Mean dependent var		0.000809
Adjusted R-squared	0.167185	S.D. dependent var		0.009296
S.E. of regression	0.008484	Akaike info criterion		-6.686868
Log likelihood	460.0505	Hannan-Quinn criter.		-6.669545
Durbin-Watson stat	1.944680			

Source: Author's computation from the output of E-Views11. **Note:** *** and ** labels rejection of null hypothesis at 1% and 5% significance level respectively.

As revealed in Table 3.5 above test results, the anticipation of co-integration among all variables is tested with the help of Kao's and Pedroni (2004) co-integration tests, which are via all seven-panel co-integration assessments. Accordingly, the outcomes of both tests (i.e., the within-dimension and between-dimensions) showed that at significance levels of 5% and 1%, the null hypothesis is rejected (i.e., no-cointegration) as indicated by asterisks in the table. Consequently, because of the majority of the test data reject the null assumption of no-cointegration (i.e., p-value being less than 0.05); hence, it's possible to infer that the variables studied have a cointegrating connection. Furthermore, results of the cointegration tests also approve for the existence of robust evidence for supporting a presence of long-run relationships amongst the dependent variable and the influencing factor variables along with GDP, FDI, INF, IND, REER, and TOT in East African Countries. And also, we estimated the long-run panel-ARDL model in this work based on the panel unit root tests and panel co-integration

findings.

3.6 Estimation of the Models

From the outcome of the Hausman test, we can estimate the model for this study by comparing whether MG or PMG estimation model is appropriate. Below Table 3.6 shows the result.

Table 3.6 Estimation for MG or PMG model

```
. hausman mg pmg, sigmamore

                 ———— Coefficients ————
                  (b)           (B)           (b-B)       sqrt(diag(V_b-V_B))
                  mg            pmg          Difference          S.E.

      GDP         7685577       1455905       6229672          4567289
      FDI        -2.37e+07     -4.40e+08      4.16e+08         4.40e+08
      ToT        -1.57e+07      5.46e+07     -7.02e+07         4.17e+07
      INF         2.44e+07     -1.42e+07      3.86e+07         1.52e+08
      IND         5.60e+07      3.23e+08     -2.67e+08         6.13e+08
      REER       -3.00e+07     -6.98e+07      3.98e+07         2.50e+07

                b = consistent under Ho and Ha; obtained from xtpmg
         B = inconsistent under Ha, efficient under Ho; obtained from xtpmg

    Test:  Ho:  difference in coefficients not systematic

             chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                     =       11.20
             Prob>chi2 =      0.0824
```

Source: Author's computation from the output of Stata, WB, UNTCAD, 2021

Hence, to differentiate the MG and PMG estimation on this observation, it hired Hausman to check that's based totally on consistency and performance of the estimates. The null assumption of long-run heterogeneity isn't always rejected by the Hausman test, implying that the PMG estimate is more reliable and efficient than the MG estimation. Consequently, the longer-term influence of the independent factors on the dependent variable is interpreted using a tailored estimate of PMG outcomes. In different phrases, as illustrated above in Table 3.6, to estimate MG or PMG is suitable, the Hausman test result confirmed that prob.>chi2 = 0.0824. This means that the probability value is larger in comparison to 0.05 or (5%). Thus, the null assumption is rejected. Hence, PMG is the best efficient so that appropriate model for this study.

3.7 Estimation of PMG/ARDL Model

According to Lee et al., (2015), there are 3 principal assumptions of the PMG estimator. These are: (i) the mistake phrases (error-terms) are serially uncorrelated. (ii) there's an extended time period (long run) relationships within the dependent and independent variables (iii) Long-term variables are consistent across nations.

In this paper, we assumes that the (PMG)-ARDL econometric approach suits because it endures both long- and short-term relationships between export performance and its determining factors in East African countries. The short-term link between export and macroeconomic factors varies in each country because of changes in economic and/or policy delays, but the long-term implications are expected to be similar.

As a result of the Hausman test, which demonstrated that the cointegrating vector's slopes were homogeneous, the researchers have picked the PMG estimations. The panel-ARDL (p, q) approach has various benefits over other estimators, such as the MG: (i) The (ARDL) model is used to estimate both short- and long-term outcomes concurrently (ii) Using the ARDL approach; it is possible to evaluate the projected coefficients in the long run even though the Engle-Granger technique has endogeneity issues. To make substances more complicated, although the PMG estimate allows for a wide range of differences between nations in the short-run coefficients, intercepts, long-run equilibrium values, and error variances, it requires uniformity in the long-run slop coefficients. Also, most importantly an appealing feature of the panel-ARDL technique is that its advantage whilst variables have a mixed integration order, including I(0), I(1), or both (Kollie, 2020).

Consequently, Table 3.7 provides the findings of several econometric analyses that should be taken into consideration which demonstrates outcomes of the PMG-ARDL model estimations of long- and short-run equations from the datasets of E-Views as follows.

Table 3.7 Estimation Result for PMG model

Dependent Variable: Export (EXP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
FDI	-4.07E+08**	1.55E+08	-2.622520	0.0100
GDP	3.728186***	1282097.	2.907881	0.0044
IND	2.34E+08***	77519528	3.017562	0.0032
INF	-8.3965939***	26131278	-3.213235	0.0017
REER	-5.2099665***	19631836	-2.653836	0.0091
TOT	2.9816275*	16158309	1.845260	0.0677
Short Run Equation				
COINTEQ01	-0.494485***	0.067169	-1.406671	0.0043
D(FDI)	-23652892	26089394	-0.906609	0.3666
D(GDP)	4.410409***	1610914.	2.737831	0.0072
D(IND)	-31747200	41622545	-0.762740	0.4472
D(INF)	5524725.	13622230	0.405567	0.6858
D(REER)	5338966.	9112093.	-0.146944	0.8834
D(TOT)	6313601.	8494157.	0.743288	0.4589
C	0.230233**	0.031653	0.955146	0.0342
Root MSE	3.52E+08	Mean dependent var		2.25E+08
S.D. dependent var	6.88E+08	S.E. of regression		4.48E+08
Akaike info criterion	40.28376	Sum squared resid		2.22E+19
Schwarz criterion	41.50772	Log likelihood		-3556.538
Hannan-Quinn criter.	40.78002			

Source: Author's computation from the output of E-Views11 & STATA, WB, UNTCAD, 2021. **Note:** ***, **, * is statistically different from zero at 1%, 5% and 10% significance level respectively. **Method:** PMG/ARDL Model **Designated Model**: ARDL (1, 1, 1, 1, 1, 1, 1) and **selection method**: Akaike info criterion (AIC).

Table 3.7 illustrate the study findings from the panel PMG-ARDL econometric model display that out of variables included, all of the variables are statistically significant in the long-run while in the short term, only one variable is important at least at the 10% level of significance. Put it differently, FDI ("Foreign direct investment") inflows, per capita GDP ("Gross Domestic Product"), INF (inflation rate), REER ("Real Effective Exchange Rate"), TOT ("Terms of trade"), and IND (Industrialization) are variables which considerably affect exports in the long-run and per capita GDP impacts the performance of export in East African nations in short-run.

As revealed in the Table, the result of the model also confirms that except for GDP, whose p-values are 0.0072 (i.e., significant at 1% level), the relationship of all variables was inverted and not significant in short-run. Perhaps, the reason for insignificant results in the short-run is possibly due to the study countries' disparities in terms of policy and/or economic lags within export and the macro-economic factor variables. For instance, the econometric model result shows a significant long-term negative association between export performance and REER ("Real Effective Exchange Rate") at a one percent level of significance. However, this relationship is inverted and insignificant in short-run.

The ECT ("Error Correction Term") and its negative sign coefficient should be the most motivating outcome of the short-run PMG-ARDL computation. Which draw attention to the macroeconomic factors or the independent variables protected within the model jointly affects the dependent variable (i.e., EXP (Export performance)). Further to this, since the coefficient is negative, it also points out the existence of long-run convergence to equilibrium. Moreover, the COINTEQ01 or the ECT meaning the speed adjustment lies inside suitable limits (-1 to 0) and is statistically good-sized or significant at one percent significance level (since the p-value is 0.0043). A negative and significant ECT, according to Asongu (2014), complies with the error-correcting scenario for a stable error correction system. Thus, the range of EC is lie down between one and zero in absolute values. Where zero denotes 'no adjustment,' and one denotes 'complete adjustment.'

Consequently, the EC coefficient on the export performance i.e., (QOINTEQ01) = -0.494485 indicates that per year, a deviation from the long run is adjusted by 49.5 percent, and it takes roughly 1/0.494485=2.0223 years for a system to converge to the complete adjustment or the long-run equilibrium. Thus, it's clear that from the result (i.e., almost 2 years), the speed variation from short to long-run equilibrium is not sluggish. In other terms,

the presence of substantial long-run cointegration in the ECT indicates that we may infer joint causation of the variables, i.e., all the independent factors impact the dependent variable (i.e., EXP) in long-run.

In Table 3.7 findings reveal that one percent increases in exporting countries, GDP will lead to about 3.728186% increases in exports performance in the long run, and for one percent rise in GDP, it will enhance about 4.410409% improvement in export performance of East-African nations in short-run. This variable has an impact on what we expect from economic theory. This is because as the production volume of the economy expands, this leads to advance or increase the supply of exports. Expectedly, the findings of the study as revealed, GDP has a statistically positive significant effect (both in short-long runs) on the performance of export in the study countries. The possible reason is that utmost the East African countries' agricultural products and other local products are used domestically and are not sold in the international markets.

In other words, the positive impacts of GDP on export performance in East African countries both in the short-term and long-terms are reliable with hypothetical expectations. This finding implies that a country's GDP is a key factor in its export capability. A larger GDP indicates a greater production capacity, which translates into the economy's potential to export more (supply-side). So, the governments of the study countries have to promote the competitiveness of the exports sector where the government has to use efficient and well-organized government expenditure to increase the sectors value-added. To mitigate the effects of exchange rate depreciation, the government must also enhance the sector's backward link to lessen its import-input reliance.

Besides, for this study, a significant and positive results of GDP on export performance also consistence with the previous findings (e.g., Eshetu Yohaness, 2020; Kandiero and Randa; 2004; Majeed & Ahmed, 2006; Taylor 2007; Babatunde (2009); Gebeyawu K., 2017; Oo et al. (2019); Bakar et al. (2015); Tumwebaze (2015) and Sumiyati, 2020) who sued to the per capita gross domestic product (GDP) has a significant effect on Export performance. They maintained that, in exchange for a certain amount of global market access, countries with stronger production capacity should be expected to export more. However, the result of this study differs from that of Uysal & Mohamoud, (2018), which indicated GDP was found to be statistically insignificant and does not affect the export performance at a significance level of 5% in East Africa.

Another important independent variable in this study is industrialization. As depicted in Table 3.7, Industrialization (IND) has earned positive signs and is significant at one percent significance level in long run but insignificant or trivial in short-run. Subsequently, in the long-run, these results signify that the value of export rises as industrialization rises. In other words, a 1% rise in IND would increase exports value by about 23%. Thus, this result shade lights the importance of industrial development in East African Countries. What's more, the finding of this study (i.e., an encouraging and noteworthy/significant result of IND on export performance) is consistent with recent studies such as (Zalk, 2014) and (Özgur Uysal et al., 2018) demonstrated as to no countries have got a speedy and sustained economic growth and high level of income without industrialization.

Unpredictably, the FDI's long-term coefficient is negative and significant at the 5% significance level, while its short-term coefficient is negligible, as indicated in Table 3.7. Hence, what is more problematic in making clear is the deceptive significant negative correlation between export performance and FDI (one could expect as the hypothesis of this study, positive significant but reversed). A non-significant finding may be predicted in this research sample, given the reliance of most countries on primary goods or agricultural exports (which seem to be less reliant on infrastructure, manufacturing, or industrial products). However, a substantially significant adverse or negative association is quite unexpected. In other words, the result of this econometric model implies that FDI inflows in East African nations have not encouraged in export growth as intended. This finding contradicts with previous research (i.e., Uysal & Mohamoud, 2018; Okechukwu et al, 2018; Vuksic, 2011 and Odhiambo, 2017), which found that FDI has a significant effect in increasing the export value of countries. Furthermore, the conclusion overlooks the claim that FDI has a significant role in promoting economic development in low-income countries by acting as a medium for transferring technology and managerial know-how to these nations, as well as facilitating exporting operations produced by FDI flows (Ademola and Oyejide, 2009).

However, this result is consistent with some scholars' research work who found no vigorous evidence or a negative connotation of FDI on EXP (i.e., Ibraimova (2011); Akguc, 2013; Drama, (2014); Selimi, 2016); Harding & Javorcik, 2012 and Kuntluru et al., 2012). Their research found that the importance of FDI in improving exports in developing nations is dependent on the investment incentives. If the goal is to capture the home market, it will not increase the value of exports. FDI, on the other hand, will help to export growth if the goal is to expand export markets by exploiting a country's comparative advantage. This study supports the former argument that foreign investors in East African countries mainly come for capturing local market (uses tariff-jumping investment type) rather than export motives. Likewise, the effect of FDI inflows on export performance is unclear in the literature reviewed, with some studies showing a positive relationship and others offering a negative relationship. As per some research, the effect of FDI on export depends on the mode and motive of entry (MUSTI et al., 2020).

Furthermore, the reason for the negative significant result of FDI in this study is also perhaps due to in the study countries, inflows of FDI were largely intense in manufacturing, construction, and services sectors. Recently, the EAC trade and investment report show that FDI into East African nations fell by 15.9% in 2018 to US$ 5.7

billion from US$ 6.8 billion in 2017. There was a 2.3 percent rise in inflows into Tanzania, whereas inflows into Rwanda and Burundi decreased by 76.8% and 11.5 percent, respectively, to $15.1 million and $1.15 billion, respectively, in 2018. Similarly, FDI into Uganda and Kenya declined by 51.8% and 32.4% to US$ 630.6 million and US$ 485.5 million, respectively in 2018. What's more, Construction, service, and manufacturing industries accounted for the majority of FDI inflows to East African nations (EAC, 2018).

Finally, FDI inflows may have a positive impact on a country's economic growth and development by providing long-term capital with modern technology, management, and advertising and marketing skills, all of which help the economy's export performance. Nevertheless, the influence of FDI on export performance becomes contentious, since it depends on the goal of FDI float, such as whether to target the domestic market or tap the export market (i.e., whether to target the local market or the international market). The fact that the common degree (average level) of FDI inflows to East Africa, as shown in Table 3.7, is not favorable for export development is a reasonable economic rationale for this. As a result, it is critical for policymakers in the area (East Africa) to develop and implement legislation and policies that will increase major inflows of foreign direct investment.

Still, in this study's econometric model result, the coefficient for the actual effective exchange rate (REER) is marked negative and significant as anticipated. The result in Table 3.7 proves that a 1% depreciation in REER leads to -5.2099665% escalation to the export performance in East African countries; or the elasticity of export due to a percentage change of REER is 5.2099665. This supports the fact that depreciation of REER boosts the attractiveness of the export performance of East African countries in the international markets. A discount within the relative domestic costs because of the change charges devaluation/depreciation makes exports less expensive within the international markets resulting in more desirable demand for exports and consequently leads better export. Essentially, this result is in line with economic theory— a devaluation of currency is one main policy measure for a country's export growth. What's more, Depreciation boosts the profitability of the tradable sector. Several researches indicate that a favorable and substantial influence of REER on export performance, which leads to a rise in the percentage of tradable in domestic value-added. Whereas some scholars revealed also that real overvaluation or appreciation stifles exports and causes a drop in the economic process.

It is a general view (i.e., from a theoretical perspective) that exchange rates (REER) fluctuations are an important source of macroeconomic ambiguity. Since the result of the model has confirmed a negative bond (i.e., correlation coefficient = –5.21) between REER and EXP (export performance) in East African countries. This implies that currency depreciation negatively affect the export performance of the study countries. As a result, only sophisticated econometrics methodologies and tools can be used to examine the precise influence of REER on export performance. These factors generally motivate the investigation of the link between the East African economy's exchange rate and exports. Meanwhile, Abidin et al., (2013) found that the REER negatively impacts Malaysian exports to OIC countries. Similarly, the result is also consistent with the findings of Eyayu (2014) on the export determinant of SSA countries. Besides, the result is in line with findings of some scholars such as (Cheung and Sengupta (2011); Borena (2009), and Makolle (2013) who found that adverse (negative) and great influence of REER on EXP in their studies. Whereas researchers such as Melesse (2011), Menji (2010) and Nyeadi et al., (2014), found the insignificant effect of REER on export performance.

Apart from factors such as per capita GDP, IND, REER and FDI, the other export performance determining factors are Inflation (INF) and Terms of Trade (TOT). Based on the econometric model results, we concluded that a one percent rise in terms of trade leads to a 2.9816275% rising in the export improvement of the region (East Africa) in long-run. That means in the long-run, the result indicates a positive significant connotation within TOT and EXP in East African Countries. This infers that the enhancement of TOT is valuable to export development. Therefore, it is assumed that devising measures to improve a country's terms of trade boosts its economy. There are several ramifications to trade-enhancing terms. For every unit of exports sold, it may purchase more units of imported products, resulting in an advantage over the number of products required to acquire a given amount of imported goods.

It is common for a nation to have a trade imbalance if it buys more than it exports. Because of this, there is a net outflow of scarce foreign cash, which causes the native currency to devalue (i.e., the cost of exports is now lower than the cost of imports). Thus, generally these consequences in the worsening of trade terms (TOT) though it might not happen in the short run rather in the long run. Put in another way, the result of a positive affiliation between TOT and export performance (EXP) in East African countries, implies that an enhancement of terms of trade encourages an expansion of economic growth. In this regard, two key features that affected TOT have been revealed: Exchange rate and Trade balance. Depreciation of the currency and, as a consequence, a decline in TOT is the effects of a negative trade balance, which indicates an increase in imports relative to exports. Consequently, a strategy reforming the TOT can help export growth in East African countries.

At last, the econometrics model result approves that in long-run, the INF rate has a negative as well as significant effect on export performance (EXP) in East African Countries. That means as seen in Table 3.7 above, the outcome revealed that the influence of inflation (INF) on EXP confirms that it has a negative and strong influence on EXP in the nine East African Countries. Accordingly, this result supports the hypothesis anticipated,

which means the expectation of a negative impact of inflation on EXP. Furthermore, the independent variable (inflation) has a coefficient value of -8.396593 which implies that for each a one percent rise in INF level, it will drop exports volume of 8.4 billion US dollars. As a consequence, exports will suffer if the price of products continues to rise. Prices will rise as local and foreign goods compete for customers, affecting the pricing policy (Kamin and Klau, 2003). Likewise, Inflation can lead to a rise in the price of input in a way that condenses the productivity of firms (Dritsakis, 2004; Narayan and Smyth, 2011). Thus, the high cost of production will diminish the competitiveness of a country compared to the other countries (Sinn, 2014).

In other words, the study results in inflation harm the performance of exports in the East African countries. According to Bekele (2020), inflation results in a rise in the costs of production and a real appreciation of the currency, this reduces domestic firms' international competitiveness and discourages firms from engaging in the manufacturing sector. In addition, a high rate of inflation slows down economic growth. Based on previous research conducted by Ari Putra et al., (2017) also disclosed that inflation (INF) has a negative effect on exports, it is necessary to have controls carried out by the Government on inflation rate instability. In increasing domestic products, the increase in export value will be inversely proportional to the inflation rate. On the contrary, Oo et al., (2019) found that inflation positively affects exports. Meanwhile, the results of the study Bakar et al. (2015) showed that inflation does not affect exports performance.

So, the general inflation level should control by governments. Furthermore, as a monetary policymaker, the Central Banks of East African countries have to strengthen policy coordination with the government to control the general inflation rate. This finding supports the previous empirical work of Uysal and Mohamoud (2018) and Abidin et al., (2013). They showed that inflation harms exports.

4. Conclusion and Recommendations
4.1 Concluding Remark

This paper dominantly investigated the macroeconomic determining factors of export-led growth policy performance in East African Countries. It emphasized answering for a major research question; how and to what extent the elements (FDI, GDP, real exchange rate, and terms of trade, inflation rate and industrialization) impact on export performance in the study countries? Consequently, the study has carried out a panel-data econometric technique along with stationarity test, co-integration check, and errors correction mechanisms in the panel autoregressive distributive lag model (i.e., panel-ARDL) methods been observed to provide a vigorous estimate.

The East African nations, whose data are comprised in this analysis, are carefully chosen primarily in-built of data availability and thus bring about possible selection bias. As a result, the sample utilized may not represent the total population, making it challenging to apply the results to other developing nations, especially to East African countries. Nonetheless, this constraint does not necessarily imply that the study's conclusions (findings) are invalid; the estimates are still impartial, dependable, and consistent, the researchers have underrated or overestimated the exact effects of the indicated macroeconomic variables on export performance, and as well the illative problems make it hard to generalize the result of a study to the entire sampled countries. Instead, as a scholar, in this study, our choice of a panel-ARDL econometric model with error correction systems was enabled us to forecast or estimate both the long and short-term impacts of export performance in the study countries.

What's more, of issues are the long-run coefficients, that is for the motive that as understood that the effect of macroeconomic variables (the independent variables) at the dependent variable (export performance) are probable to be discovered in the longer run, a potential justification here is that it takes considerate time for policies to affect those variables. Next, employing an ARDL/PMG model is also beneficial. However, it does not limit the variables to be integrated in the same order, which means letting us mix different variables on the integration level, while also at the same time obtaining reasonable estimates. It's a dynamic version (that is, including lags), and it may estimate each long and short-run outcome simultaneously. In light of the view's research question, the ARDL model is a better fit, given the focus is on evaluating export performance as the dependent variable. The ARDL model also has the benefit of predicting variables that are I(0), I(1), or both. Correspondingly, while co-integration exists, co-integration will no longer cause issues in model estimation if the model is changed to an ARDL version with an Errors Correction Time Period (ECT).

For an approximation of their model, other researches that employed the ARDL model used the Pooled Mean Group (PMG) and Mean Group (MG) estimators. Indeed, Unit roots must be checked, maximum lag lengths must be identified, and co-integration tests must be performed before the model can be constructed. The tests employed for this research analysis were chosen based on the methodology evaluations and the alternatives provided in E-Views and STATA (software applied for assessment). The panel unit roots were assessed using different unit root exams. The lag time was constant throughout the PKC (Pedroni & Kao co-integration) and AIC (Akaike information criterion) evaluations. For a panel of 9 East African nations, this research considered their level of economic growth and income boom (i.e., rising rapidly in economic growth). The data availability determines the period for which the study is carried out, ranging from 2001 to 2020. Because relative rather than absolute alterations can be produced through the estimate, and heteroskedasticity can be decreased, the variables are

translated in natural logarithms.

The econometric model is anticipated with the MG and PMG estimators, wherein when the Hausman test is applied, it shows what estimators are appropriate. Further, the empirical outputs of the unit root test displayed that inflation rates (INF) was stationary on the I(0) level and opposite variables display either ambiguous outcomes or clean that records are stationary while first variations (first difference) are taken on I(1). All variables, however, are stationary in initial differences or levels, allowing the ARDL model to be used. Similarly, on account that a broadly held of the variables being included at order one, I(1), it indicates a high opportunity for longer-term relationships. Also, the Pedroni co-integration test suggests ambiguous outcomes. Therefore an error correction period (ECT) is covered too, Alter for co-integration on the one hand, and check whether this period shows co-integration links on the other. Then, the ECT proves that co-integration exists, and consequently, the model consists of an ECT. The Hausman test, which is applied, after all of the models, indicates that the PMG estimator is the most appropriate estimate of this study.

The most striking finding from the model is that just one variable (i.e., GDP per capita) has a statistically significant impact on export performance in the short run. Indeed, these factors have a statistically significant impact on export success in East African countries in the long term. The model results approve that apart from GDP, whose p-values are 0.0072 (i.e., significant at 1% level), the relationship of all variables in the short-run is inverted and trivial (i.e., reversed and insignificant result). The reason for insignificant results in the short run is conceivably because of the study countries' differences in policy and economic lags in macroeconomic and export variables. The importance of the error correction term (ECT) and its negative sign coefficient is another encouraging conclusion from the short-run PMG-ARDL estimation. This indicates that the model's macroeconomic factors (i.e., independent variables) have a combined effect on the dependent variable (i.e., export performance). Further to this, since the coefficient is negative, it also points out the existence of long-run convergence to equilibrium.

Essentially, the significant positive impacts of GDP on export performance in East African countries both in the short and long terms are consistent with theoretical expectations. This finding implies that a country's GDP is a crucial driver of its export capability. Unreliably, however, the coefficient of FDI inflows is significant and negative at the 5% significance level in the long run though inconsequential in the short run, conferring to the findings. FDI inflows may positively contribute to a country's economic development by providing long-term capital, new technology, and management and marketing skills, all of which help the economy's export performance. Nevertheless, the effects of FDI on export performance are debatable, depending on the purpose for FDI flow, such as capturing the domestic market or tapping the export market. One likely economic explanation for this is that East Africa's average FDI inflows are not conducive to export growth as intended.

In conclusion, concerning empirical results from the PMG-ARDL econometric regression, it can therefore approve that the investigated macroeconomic elements (independent variables) such as FDI, GDP, REER, INF, TOT, and IND, definitely have a significant long-term impact on the dependent variable (i.e., export performance) and hence can play an ultimate role to help realize sustainable development in emerging economies specifically in East African Countries.

Above all, although this thesis's empirical findings are consistent with a few primary research, more research on the elements that influence total export performance is required to improve our knowledge of the eventual role of export-led growth policies and strategies in the economic development process growth. Therefore, In East African nations, macroeconomic factors significantly influence export performance. As a result, data from current empirical research suggests that macroeconomic factors may play a significant role in assisting nations in achieving long-term growth.

4.2 Contributions and Limitations

In fact, this research is greatly important not only for East Africa, but also for other developing countries. The 9 East African countries studied are developing nations; therefore, any knowledge brought to the literature through this study can be determined to other developing countries.

The contribution to the literature on export performance analysis lies in examining the effect of macroeconomic factors on export performance in East Africa. This is an area that, despite its importance to these countries, has been the least explored. First, this study takes this argument further and shows that the basis of the independent variables, such as FDI inflows, matter for host countries' export performance. Second, there is a possibility that no study has attempted to compare the impact of macroeconomic elements on export performance within and between East African countries; the contributions have improved understanding of the impact of macroeconomic variables on export performance in the study countries. That is, by treating the effects of the independent variables, some of the other factors affecting export performance are also accounted for, and vice versa. The export sector of an economy also plays an important role as the engine of economic growth. Therefore, understanding the fundamentals of macroeconomic factors and their impact on export performance in any country can lead to improvement in trade policy and export performance in particular.

Furthermore, identifying the drivers of export-led growth will help inform legislators so that they can use appropriate policies to influence growth in sectors and the economy as a whole. Since a successful export-oriented growth strategy is one of the tools to increase economic growth, the results of this study help the players involved in the export sector to see the main constraints and challenges faced by the sector and the direction of the export trade. This researches contributions to the literature, suggests important and interesting implications for policymakers (how to boost exports in the country and thereby improving the trade balance and economic growth), investors and academics.

Despite the fact that this research has contributed and led to important insights, the study still had some weaknesses. Limitations are potential weaknesses of the study and are beyond the researchers' control. No research is free from limitations. Likewise, this research has limitations related to the lack of research inputs to support the study with previous research experiences in the chose study countries. Besides, although some of these illustrative variables are collected by World Bank Development Indicators (WDI), there are significant delays in obtaining data from developing countries such as East Africa. Data quality in developing countries like East Africa can also be questionable.

4.3 Recommendations

Based on the main findings of the study, we suggest the following points:

- Design harmonious consultative export-oriented strategies with clear and implementable outputs and targets for each critical good and service.
- The governments of the study countries have to promote the competitiveness of the exports sector where the government has to use efficient and well-organized government expenditure to increase the sectors value-added. Moreover, it needs to launch a system to collaborate with stakeholders.
- The fact that 'no countries have got rapid and continued economic growth, high level of incomes, and as a successful export without industrialization.' Thus, government of the study country should emphasize for effective utilization and enhancements for the importance of industrial development in East African Countries.
- Due to the significant negative result of FDI in this study is also perhaps because inflows of FDI were essentially intense in manufacturing, construction, and services sectors in the study countries. Thus, Policymakers in the region must design and implement policies that will encourage considerable FDI inflows.
- In addition, rising inflation reduces the rate of economic growth. It is thought that a moderate and steady inflation rate enhances economic growth and hence the country's development and export. So, the general inflation level should control by governments. Furthermore, as a monetary policymaker, the Central Banks of East African countries have to strengthen policy coordination with the government to control the general inflation level.
- And so, two key features that affected terms of trade (TOT) have been revealed: exchange rate and Trade balance. A trade imbalance, or an increase in imports over exports, causes the currency rate to devalue and, consequently, the TOT to deteriorate. Thus, a strategy reforming the TOT can help export growth in East African countries.
- Policy scholars need to take the lion's share to initiate, capacitate, and work with the legislature by employing innovative scientific methods. They shall knock on the legislature's door by conducting research and policy analysis and providing sound and timely feedback and recommendations.

To close, this paper aimed at assessing the factors impacting on exports performance in East Africa in consideration of six macroeconomic elements; per capita GDP, real effective exchange rate, inflation rate, FDI inflows, terms of trade, and industrialization variables were found to be undeniably having a significant long-term impact on export performance in East African countries. However this is not a sufficient predictor variable set. Hence, supplementary research should aim at exploring for the macroeconomic factors of export performance while looking at other variables apart from those looked at in this study. In addition, further research should be done on a comparative study that can bring higher learning culture and strengthen the export sectors of East African countries, so that result can scale up the export trade development among the countries.

5. References

African Export-Import Bank. (2019). The African Trade Report 2019. Cairo, Egypt: African Export Import Bank.

African Development Bank, OECD, UNDP. (2018). Eastern Africa Regional Integration Strategy Paper 2018–2022. Working Paper WP/2018/184. Abidjan.

Al-Mutairi, A., Al-Abduljader, S., & Naser, K. (2020). Determinants of Inflation in Kuwait. The Journal of Developing areas, 54 (3), 19-34.

Ari Putra, G. N., & Sutrisna, I. K. 2017.The Effect Of Production And Inflation On Exports And Economic Growth in Indonesia. E-Jurnal Ekonomi Pembangunan Universitas Udayana, 6(1), 2165– 2194.

Babatunde, M. A. (2009). Can Trade Liberalization Stimulate Export Performance in SubSaharan Africa? Babatunde, Journal of International and Global Economic Studies, 2 (1), 68-92.

East Africa Economic Outlook. (2019). Macroeconomic Developments and Prospects. African Development Bank 2019, ISBN 978-9938-882-97-1.

East Africa Monitor (EAM). (2020). Ethiopia Eyes Economic Reforms to Ease Forex Shortage. Retrieved from https://eastafricamonitor.com.

Euis Eti Sumiyati (2020). "Factors Affecting Manufacturing Exports" Journal of Economics, Business, and Accountancy Ventura Vol. 23, No. 2, August – November 2020, pages 254 – 266

Gebreeyesus, M. and A. Demile (2017). "Why export promotion efforts failed to deliver? Assessment of the export incentives and their implementation in Ethiopia" Ethiopian Development Research Institute (EDRI) Working Paper 17, Addis Ababa Ethiopia.

Giles, J.A., and C.L. Williams (2000). 'Export-led Growth: A Survey of the Empirical Literature and Some Non-causality Results. Part 1''. The Journal of International Trade & Economic Development, 9(3): 261–337.

International Monetary Fund, World Economic Outlook Databases (GDP based on Purchasing Power Parity). Accessed on June 15, 2020

Johnson, M. (2016). Export-Led Growth Strategies Through History. Investopedia. [Retrieved from].

Khalid Mahmood Zafar (2018). 'ARDL – Analysis of the Relationship among Exports, FDI, Current Account Deficit and Economic Growth in Pakistan SDM', Education Department, D.I.Khan, PakistanIran. Econ. Rev. Vol. 24, No. 2, 2020. pp. 393-414.

Kollie, G. (2020). Export-Led Growth Hypothesis in ECOWAS: A Panel Data Analysis. African Journal of Economic Review, 8(2), 258-275.

MUSTI, Babagana Mala and MALLUM, Ahmed (2020). "Impact of foreign direct investment on export performance in Nigeria", International Journal of Advanced Academic Research | Social and Management Sciences| ISSN: 2488-9849 Vol. 6, Issue 4 (April 2020).

Observatory of Economic Complexity (OEC). (2020). Retrieved from https://oec.world/en.

Thida Oo, Jerome Kueh, and Daw Tin Hla (2019), 'Determine the determinants of export performance for ASEAN countries', International Business Research; Vol. 12, No. 8; 2019 ISSN 1913-9004 E-ISSN 1913-9012 Published by Canadian Center of Science and Education.

Tran, M. (2020). Export Performance and Solutions for Promoting Export - Case Company: Y Corporation. Retrieved from https://www.theseus.fi

Uysal, O., & Mohamoud, A.S. (2018). Determinants of Export Performance in East Africa Countries. Chinese Business Review, 17 (4), 168-178.

World Bank. 2018a. International Debt Statistics [database]. Washington, DC.

World Bank (WB). (2020). The World Bank DataBase: Ethiopia Current Account Balance (% of GDP). Retrieved from https://data.worldbank.org

World Integrated Trade Solution (WITS). (2020). World Integrated Trade Solution Trade Stats (TradeStats). Retrieved from Sub-Saharan Africa Exports of goods and services, in % of GDP: https://wits.worldbank.org

World Integrated Trade Solution (WITS). (2020). World Integrated Trade Solution Trade Stats (TradeStats). Retrieved from Sub-Saharan Africa Exports of goods and services, in % of GDP: https://wits.worldbank.org.

World Bank (2021). World Development Indicators: (Accessed August 2021). http://data.worldbank.org/indicator.

Zalk, N. (2014). Industrialization and industrial policy: The importance of manufacturing. The Training Programme—Portfolio Committee on Trade and Industry.