Volume: 9, Issue: 1
Page: 49-73
2022

International Journal of Science and Business

Journal homepage: ijsab.com/ijsb

Cross- Country Investigation of the Impact of Trade Openness and FDI on Economic Growth: A Case of Developing Countries

Viengsaythong DALASENG, NIU Xiongying & Khaysy SRITHILAT

Abstract

The goal of the study is to look at the relationship between trade openness and foreign direct investment (FDI) and economic growth in emerging countries. Secondary data were collected from the World Bank and FAOSTAT for the project. For the years 2000 to 2020, the statistics will include 105 developing nations. The STATA software application is used to analyze the panel data. The Hausman test was used to see if fixed impacts or random impacts calculations were preferable. The first empirical model, which was statistically significant at the 0.01 and 0.1 level of significance, found that gross national expenditure, gross capital, total trade openness, and labor were all positively related to economic growth. Population, on the other hand, was shown to have a negative relationship with economic development that was not statistically significant. Gross capital, gross national spending, exports of goods and services, and labor were all positively associated and statistically significant at the 0.01 and 0.1 level of significance in the second empirical model. Imports of products and services, on the other hand, were inversely connected with total population, but they were statistically significant at the 0.01 and 0.1 level of significance. Gross national spending, total trade openness, goods and services exports, gross capital, and labor were all positively connected with economic growth and statistically significant at the 0.01 and 0.1 level of significance in the third empirical model. Despite not being statistically significant, FDI was shown to be favorably connected with economic growth. Imports of products and services were shown to be adversely linked with economic growth, although statistically significant at the 0.01 level.

IJSB
Accepted 25 February 2022
Published 02 March 2022
DOI: 10.5281/zenodo.6321841

Keywords: *Developing countries, Trade openness, Economic growth, FDI.*

About Author (s)

Viengsaythong DALASENG (Corresponding author), Business School, University of International Business and Economics (UIBE), Beijing, 100029, China.
NIU Xiongying, Business School, University of International Business and Economics (UIBE), Beijing, 100029, China.
Khaysy SRITHILAT, Faculty of Economics and Business Management, National University of Laos, Laos.

1 Introduction

Many past studies and growth theories have suggested that economic growth emanates from increased investment that comes from various financing components mostly domestic savings and foreign sources notably in the form of foreign capital inflows (Chanie, 2017). This is further boosted with trade openness with most studies finding that greater trade openness generates positive growth impacts to the economy and vice versa. Economic growth was a defining feature of the twentieth century, ensuring the rise of the Western world and raising living conditions for many people. Denison (1962), for example, claims that economic growth is defined as an increase in GDP per capita, or an increase in national output measured in constant prices. Direct variables such as natural resources, human capital, technical breakthroughs, and a growth in employed capita have an impact. Indirect variables that contribute to economic growth include private administrations, savings and investment rates, aggregate demand size, financial institutions, financial system efficiency, government efficiency, fiscal and budgetary policies, and capital and labor migration. Economists assume a different method when it comes to the four essential variables of economic growth, such as technology, natural resources, capital formation, and human resources because they are seen to be important aspects in the construction of economic growth theories. Boldeanu & The drivers of economic growth, according to Constantinescu (2015), are linked components that determine an economy's growth rate. The supply determinants account for four of the six fundamental aspects, while demand and efficiency account for the other two. Capital goods, natural resources, technology, and human resources are all supply variables that have a direct influence on the value of services and commodities offered. Economic growth of a country, as measured by GDP denotes to a rise in the rate of progress of GDP, however the aspects that influence respectively component's rate of growth are extremely diverse. Capital formation, public spending, public or private investment, exchange rates, and employment rates, among other factors, have varying impacts on economic growth, and it is important to note that these determinants have different implications depending on whether the countries are developed or not. There are also socio-political variables and actions that have a significant impact on a country's financial progress, as well as inconsistencies between economic and non-economic motorists. Economic determinants include things like technological progress, capital accumulation, and labor, while "ultimate" or non-economic factors include things like government institutions, efficiency, cultural and social factors, political and administrative systems, and geography and demography (Xu, 2000). While much literature emphasizes the importance of trade openness and inward FDI to economic growth, there are some conflicting findings on the two variables and their impact on long-run economic growth in developing countries, and there has been no deliberate effort to clearly document how trade openness and its FDI inflow has impacted economic growth in developing countries in recent years. As a result, this study will assist to resolve these inconsistencies while also contributing to the literature on trade openness and the impact of inbound FDI in economic growth in developing nations. The study will also be valuable for public policy organizations in establishing policies that will help developing nations achieve more trade openness and larger FDI flows, particularly if the findings are proven to have a favourable influence on economic growth. The foremost goal of the current study is to contribute to an improved understanding of the role of trade openness and FDI inflow on developing country economic growth. Other objectives include (i) determining the association between trade openness and developing country economic growth, (ii) establishing the impact of exports and imports of goods and services on developing country economic growth, and (iii) establishing the impact of FDI inflow on the econometric growth of developing countries, (iv) to establish the mediating role of technological innovation on the relationship between (a) trade openness (b) FDI and economic progress of developing countries, (v) to found the mediating role of financial inflow on the relationship between (a) trade openness (b)

FDI and economic progress of developing countries, (vi) to start the mediating role of government consumption on the relationship between (a) trade openness (b) FDI and financial growth of developing countries and (vii) to found the mediating role of inflation rate on the relationship between (a) trade openness (b) FDI and economic growth of developing countries.

2 Literature review

The past empirical studies on FDI and trade openness and their impacts on economic growth have maintained a regional emphasis on selected countries. This is also compounded by the fact that most previous studies have found conflicting results on the impact of the two variables on economic growth as highlighted in the background information. While some studies found a positive association between the two variables, other studies have found the opposite. This is however in different regions and in different times. A study on this area using current data and covering a wide range of developing countries therefore suffices. There is need therefore to undertake a study on trade openness and FDI on economic growth among developing countries so as to ascertain the impact of trade openness and FDI inflow on their economic growth. This study will therefore focus on the impacts of trade openness and FDI inflow on economic growth among developing countries. A total of 105 developing countries will be used in the study on the basis of availability of data for the period spanning between 2000 and 2020.

2.1 FDI and economic growth

Although there is a high anticipation for FDI to promote the host country's economic growth, Zhang (2001) claims that the amount to which FDI boosts growth appears to be reliant on country-specific features. FDI, in particular, has a higher likelihood of promoting economic growth, particularly when host nations adhere to liberalized trade regimes, enhance education and human capital conditions, encourage export-oriented FDI, and therefore contribute to macroeconomic stability. According to Kobrin (2005), 95 percent of the economic changes implemented by developing nations between 1992 and 2001 were pro-FDI. In the 1950s and 1960s, however, Latin America and the Caribbean (LAC) embraced protectionist economic policies. LAC nations began liberalizing their development plans in response to the 1973-1974 oil crisis, the succeeding oil crisis of 1978-1979, and the debt crisis of the 1980s. Governments in the area, for example, have reduced trade barriers, privatized state-owned firms, and removed pricing and capital account controls to integrate their economies with the global economy (Hernández & Parro, 2008). But has this liberalization enhanced FDI inflows beyond what would have occurred in the absence of it, or does it just encourage the reallocation of existing FDI stock to achieve higher profits? (Gastanga, Nugent , & Pashamova, 1998). Borensztein et al. (1998) used a cross-country regression approach to investigate the impact of FDI on economic growth. FDI (FDI) may be a key conduit for knowledge transfer, according to the research. The relationship between foreign and domestic investment and economic growth in developing economies has also been found to be diverse. Data from six Mediterranean nations was used to construct the connection between FDI and GDP per capita: Morocco, Turkey, Jordan, Algeria, and Tunisia. The findings of a random impact model estimation demonstrated a positive but non-significant relationship between FDI and economic growth. The weak inflows of FDI in the 1970s and 1980s were attributed to these results. Carkovic and Levine (2002) investigated the influence of FDI inflows on economic growth and discovered a long-term negative relationship between FDI and economic growth. A panel data collection spanning the years 1960 to 1995 was analyzed using the Generalized Method of Moments (GMM). Athukorala used time series data from 1959 to 2002 to capture the linkages between FDI and GDP in Sri Lanka using the econometric framework of cointegration and an error correcting approach. In Sri Lanka, he observed that FDI had a positive impact on GDP and that the relationship between GDP and FDI is unidirectional. Darrat et al. (2005) examined the influence of FDI on economic growth in the Middle East and North

Africa (MENA) and Central and Eastern Europe (CEE) regions, using a panel dataset to account for both country and period specific impacts. They discovered that FDI inflows enhance economic growth in EU accession nations, but that FDI has little or a negative impact on economic growth in non-EU accession countries and MENA (including Tunisia). The authors justified their findings by stating that EU accession nations must implement required reforms in a timely and impactive manner in order to create favorable FDI impacts on economic development. Using econometric panel data models, Meschi (2006) examined the influence of FDI on financial development in fourteen MENA countries, including Tunisia, from 1980 to 2003. They discovered that the FDI coefficient is almost always negative. She ascribed this outcome to the significant attention of FDI in the prime sector, particularly in the oil industry, which has little technology externalities.

2.1.1 Trends of FDI and Internationalization

In 2018, global FDI (FDI) into the United States fell by 13% to $1.3 trillion, down from $1.5 trillion in. The drop was caused mostly by US multinational firms repatriating accumulated offshore earnings in the first two quarters of 2018, as a result of tax reforms passed at the end of, and inadequate compensation from beneficial events in the second half of the year. Despite an 18% increase in cross-border mergers and acquisitions (M&As) (from $694 billion in to $816 billion in 2018), the decline occurred. The downward trend contrasts sharply with a claimed increase of 41% in green-field investment values (from $698 billion to $981 billion). FDI flows to rich and transitional economies fell sharply, while those to developing nations remained constant, rising by 2%. As a result, developing economies' share of global FDI climbed from 46 percent in to 54 percent in 2018. The repatriation of overseas revenues by US corporations declined in the second half of 2018. The reduction in tax burden on accumulated overseas earnings of US MNEs may have aided the M&A boom in the fourth quarter, reducing the worldwide FDI slide for the year, after forecasts based on the first six months predicted yearly inflows would be down by more than 40%. The basic trend remains constant despite accounting for the implications of the tax reform and the growth in cross-border mergers and acquisitions. Even after accounting for the impacts of the tax adjustment and the spike in cross-border M&As, the underlying FDI trend – which excludes one-off transactions and changes in intra-firm financial flows – remained negative. The underlying trend's average annual growth rate, which was above 10% until a decade ago, has now dropped to less than 1%.

2.1.2 FDI Inflows

FDI into the United States fell 9% to $252 billion, owing mostly to a one-third decrease in cross-border mergers and acquisitions. Foreign affiliates re-invested an all-time high of $25 billion in Australia, bringing total FDI inflows to a new high of $60 billion. Despite large regional variances, FDI into developing nations remained constant, growing by 2% to $706 billion. In 2018, FDI to developing Asia and Africa increased, while FDI to Latin America and the Caribbean decreased. Developing Asia, which is already the world's largest recipient of FDI, experienced a 4% rise in FDI flows to $512 billion in 2018, with growth in all sub-regions. China, the world's largest recipient of FDI, got $139 billion, up 4% from the previous year. Inflows to Southeast Asia climbed by 3% to a record high of $149 billion for the third year in a row. FDI into Africa climbed by 11% to $46 billion, but is still much below the 10-year average ($50 billion). The growth was due to the continuation of resource-seeking investments, the steady expansion of diversified investments in a few economies, and a more than doubling of FDI (FDI) flows to South Africa (from $2 billion to $5.3 billion). FDI into Latin America and the Caribbean declined by 6% ($147 billion) in 2018, failing to maintain the pace set in. (which followed five years of negative growth). FDI flows to transition economies continued to decline in 2018, decreasing by 28% to $34 billion, following a significant drop in. The dip was caused

by a drop in FDI flows to Russia, the group's largest country and a key recipient of FDI, from $26 billion to $13 billion. The collapse was aided by the re-domiciliation of foreign firms with holdings in the Russian Federation. Half of the world's top 20 host economies are still in the early stages of development. Despite the decrease in FDI, the United States remained the biggest recipient of FDI, followed by China, Hong Kong (China), and Singapore.

2.1.3 FDI Outflows

MNEs from developed nations lowered their foreign investments by 40%, reaching $558 billion in 2018. So, their share of global external FDI plummeted to an all-time low of 55 percent. Rather than actual investment intentions, the significant reduction represented the impact of large-scale repatriations of accrued offshore income by US MNEs, which resulted in negative outflows. In the first half of 2018, US MNEs' reinvested earnings declined by a net $367 billion, to -$200 billion, compared to a positive $168 billion in the same period of. Despite the fact that reinvested earnings recovered to a positive value in the second half of the year, overall FDI outflows from the US declined significantly to $64 billion in 2018, compared to $300 billion in . The tax revisions reduced the tax requirement overhang on foreign assets, which may have led to a record high of $253 billion in cross-border M&A deals by US MNEs. In the fourth quarter of 2018, about half of such acquisitions were made. The majority of purchases occurred in the European Union, mostly in the United Kingdom and Germany, but also in India and Japan. In 2018, External FDI from West Asia hit a new record of $49 billion, owing mostly to MNEs from the United Arab Emirates, Saudi Arabia, and Turkey. Saudi Arabia's FDI nearly quadrupled to $21 billion, primarily in technology, finance, and infrastructure. Turkish firms are growing their investments in Africa. This investment by Latin American MNEs fell to a new low of $7 billion in 2018, owing to negative outflows from Brazil and lower investments from Chile. As foreign affiliates continued to send financial resources (typically raised in offshore capital markets) back to their parents, outflows from Brazil declined to -$13 billion. Mexico's MNEs upped their FDI outbound to $6.9 billion. FDI outflows from transition economies were steady in 2018 at $38 billion. Outward FDI from this category is dominated by the Russian Federation (95 per cent). Outflows from the nation increased by 7% to $36 billion, owing to reinvested earnings and the extension of intra-company loans to existing affiliates. The value of announced manufacturing projects in emerging nations, which are crucial for industrial growth, increased by 68 percent to $271 billion, reversing a decreasing trend in recent years. Projects remained concentrated, however, in Asia, where announced green-field industrial expenditures increased to $212 billion. Manufacturing investments in Africa also increased by 60%, which is a healthy indicator. ExxonMobil (USA) recently announced intentions to construct a $7 billion ethylene factory in Zhoushan. Higher-skilled sectors had the most growth in greenfield projects in East Asia. A succession of projects in automobile manufacture as well as electrical and electronic equipment enhanced the value of announced projects in China, in addition to the mega projects in the chemicals industry. The value of projects in the chemicals sector trebled to $24 billion in East Asia, climbed by half to $25 billion in electrical and electronic equipment, and trebled to $25 billion in motor vehicles and other transportation equipment. Natural resource processing was a major driver of growth in South-East Asia, West Asia, and, to a lesser range, South Asia. For example, in Saudi Arabia, Total (France) and Saudi Aramco signed a memorandum of intent to create a $9 billion petrochemical complex in Jubail. CPC (Taiwan Province of China) has announced a $6.6 billion investment in a petrochemical facility in Paradip, India. Metal processing drew investment in Southeast Asia, with the value of announced projects more than tripling from to $12 billion. In contrast to higher-skill and natural resource-related businesses, announced initiatives in lower-skill industries were usually lackluster, not only in Asia but also in other emerging areas. While projects in food, drinks, and tobacco increased by 29% to $16 billion in emerging economies, those in textiles

decreased by 36% to $7 billion. The drop in projects in traditional early-industrialization industries is a source of concern for low-income nations, particularly in Africa. The need for developing nations to attract additional FDI into these industries in order to assist structural change is still pressing, as seen by the growth of industrial policies (WIR18) and special economic zones.

2.2 Domestic Capital Investment and Economic Growth

A large number of empirical researches on the link between domestic investment and economic growth have been conducted. Economic growth is influenced by a variety of factors, each of which has a different impact on the country's economic growth. Time-series data were gathered between 1980 and 2009 for empirical study on investment and GDP. Various research (Rabnawaz et al., 2015; Redding, 1099) and others have been undertaken in this subject to evaluate the empirical link between growth and investment. Rabnawaz et al. (2015) investigate the positive correlation between public investment and GDP. The Granger causality test was used to determine if there is a bi-causal relationship between GDP and public investment. Kandege examines the impact of investment on Namibia's economic growth from 1970 to 2005. The co-integration and error correction showing method was used in this fashion. Swaby examines the link between government investment and economic growth in Jamaica (Swaby, 2007). Several factors, including public investment, net exports, economic openness, and human capital, have a favorable impact on economic growth in the short and long term.

2.3. Population and Economic Growth

Hasanov (2010) examined if there was any brink consequence of inflation on economic development between 2009 and 2001 using annual data on actual GDP growth, CPI (consumer price index inflation), and RoI (rate of increase) of RGFCF (real Gross Fixed Capital Formation). In the Azerbaijani economy, the calculated threshold model revealed a non-linear relationship between inflation and economic development, with a threshold level of inflation for GDP growth of 13%. When inflation is less than 13%, it has a statistically significant positive influence on GDP growth; however, when inflation exceeds 13%, the positive association becomes negative. When inflation rises beyond the 13 percent level, the economy's growth is likely to slow by approximately 3%, according to the study. All of the variables in the unit root model were stationery, according to Umaru and Zubairu (2012). The results of causality demonstrated that GDP caused inflation rather than inflation causing GDP. Inflation had a favorable impact on economic growth through increasing productivity and production levels, as well as the evolution of total factor productivity, according to the findings. Malik and Chowdhury (2001) discovered two different outcomes. For Bangladesh, Pakistan, Sri Lanka, and India, the association between inflation and economic growth is positive and considerable. Second, growth was less sensitive to changes in inflation rates than inflation was to changes in growth rates. These findings had policy implications in that, although moderate inflation encourages economic growth, quicker growth captivates inflation by warmness the economy.

2.4 Trade Liberalization, Human Capital and Economic Growth

Productivity increase is a significant mechanism via which trade may stimulate economic growth. Because of the higher degree of differentiation established when a country opens up to commerce and invests in research and development (R&D), its comparative advantage can increase over time and lead to the creation of goods with higher profit margins. Grossman and Helpman (1989) described that the advancement of relative advantage over the allocation of capitals to R&D using an endogenous growth model and find that the human-capital rich nation is a net exporter of differentiated products and a net importer of labor-intensive traditional products at any given point in time. They also discover that if product enhancement requires

more human capital than the production of currently differentiated items, the volume of trade as a percentage of global GNP or global spending improves with time. According to Acemoglu et al. (2002), trade openness primes to the acceptance of establishments that protect assets rights, which is critical for the development of a controllable economy. Lastly, Krugman and Venables (1995) described that increasing market access might increase mass benefits and, as a result, enhance income stages. Despite the widespread literature on the ways in which countries might gain from worldwide trade, the question of whether or not a country should move to a free trade system is still hotly debated. The most striking counter-argument to trade liberalization is the protection of newborn industries. To ensure that a newly formed industry survives, the government must protect it from foreign competition until its manufacturing method becomes more profitable and cost-impactive. An inactive comparative advantage might be turned into a persuasive one through strategic industrial strategy (Harrison and Rodriguez-Claire, 2009). In any instance, while weighing the advantages of such a policy, one must evaluate both the costs and the prospective gains derived from the protected industry. The Mill test, for example, stipulates that the protected sector must, in the long term, withstand international competition. The Bastable test, on the other hand, extends this concept by assuming that discounted future benefits from the guarded industry must outweigh present protection costs.

Trade Structure and Growth

Three trade models exist that link commerce to economic growth. Each model depicts a separate channel that explains how trade influences productivity or economic growth. The factor proportions trading model contains the first channel. According to Heckscher–Ohlin, resource disparities are the cause of trade in this paradigm. The model demonstrates how comparative advantage is driven by the relative abundance of factor endowments and how it influences country trade patterns. According to this paradigm, a country will be reasonably successful at manufacturing things that make extensive use of the variables with which it is relatively well-endowed. Although the model does not directly create a link between commerce and economic development, its dynamic variant, the Rybczynski theorem, does. When capital is assumed to be abundant, this theorem predicts that the country will expand ultra-biased along the capital expansion path. Natural resource abundance, on the other hand, can occasionally stifle expansion. Resource abundance has been identified as having negative impacts on growth by Auty (1998) and Sachs and Warner (2001). "Dutch Disease" is the name given to this condition. The intra-industry trade model contains the second channel. Several empirical economic experts of global trade have argued throughout the years that traditional theories of comparative benefit cannot imp actually clarify trade among industrial nations. This experimental critique might be characterized by directing to characteristics of global trade that appear to be at odds with conventional wisdom. That is, much of global commerce takes place between nations with similar factor endowments, and much of it is intra-industry. Traditional comparative advantage pressures work on groupings of items, resulting in inter-industry specialization and commerce.

2.4.1 Trade Liberalization and Economic Growth

In the literature on development and growth, the link among trade openness and growth is a hotly discussed issue. This problem, however, is far from being solved. Theoretical growth research implies that the link between trade barriers and growth is at best complicated and confusing. The endogenous growth literature is varied enough to offer a variety of scenarios in which trade limitations might reduce or enhance global growth rates (see Romer, 1990; Grossman and Helpman, 1990). It's worth noting that if trade partners are asymmetric countries with vastly different technologies and endowments, even though economic

integration boosts the global growth rate, it may have a negative impact on individual countries. It's worth noting that the association between trade policy and growth has received more attention in the theoretical growth literature than the relationship between trade volumes and growth. As a result, the conclusion concerning trade barriers and growth cannot be transferred directly to the impact of changes in trade quantities on growth. Despite the fact that these two ideas, trade volumes and trade restrictions, are very closely connected, their impact on growth can be quite different. This is because a country's external sector is influenced by a number of other essential elements such as geographical characteristics, country size, and money. To put it another way, one should be as transparent as possible about the openness metric he employs and the precise mechanisms by which it influences growth.The static advantages from trade and losses from trade restrictions have been widely addressed in the theory of international trade. Commerce theory, on the other hand, offers little guidance on the consequences of international trade on economic and technological progress. The new trade theory, on the other hand, makes it obvious that trade advantages can come from a variety of basic factors, including variations in comparative advantage and expanding returns across the economy. The enormous disparities in growth rates across East Asian, Latin American, and Sub-Saharan African nations during the previous few decades have rekindled interest in the impact of trade policy on growth. Most developing nations' development plans were dominated by import substitution industrialization (ISI) tactics during the majority of the twentieth century. While emerging nations in Latin America who used ISI methods had lower development rates, East Asian countries that used export-promotion policies regularly outperformed others. This explains why, since the late 1970s, a growing amount of empirical and theoretical research has switched toward analyzing the link between trade liberalization and country economic performance.

2.5 Technological Innovation and Economic Growth

Technological advancement is seen as a critical component in increasing energy efficiency. Although there are other ways to promote economic growth, such as market-based techniques, laws, and restrictions, technological innovation has a higher influence because of its direct link to the energy efficiency function. Advanced technologies in this situation allow the economy to achieve a certain amount of production while utilizing less energy. Furthermore, technical progress allows the economy to transition from fossil fuels to renewable energy sources in order to fulfill energy demands. However, technical progress decreases energy consumption only somewhat, therefore it may not save a significant amount of energy. For example, if the price of energy reduces as a result of increased energy efficiency, economic actors may be enticed to utilize more energy (Greening et al., 2002).

2.6 Financial Development and Economic Growth

Ohlin (1933), who made on Ricardo's classical model of comparative advantage, is credited with coining the term "FDI." Heckscher-Ohlin sought to explain how and why certain economies attract FDI while others do not. The hypothesis is based on the evolution of the notion of international capital movements for international commerce as a result of disparities in resource endowments across countries. The implication for FDI is that companies look for regions to spend their money where there are plenty of resources. The eclectic theory (Dunning, 1977), sometimes known as OLI, is the second theory (Ohlin, 1933). It is a combination of three ideas. Essentially, the theory states that a country will manufacture for domestic consumption, export items that use its abundant and inexpensive factor(s), and import products that use the country's scarce factor(s). Firms engage in FDI, according to the idea, when the benefits of ownership, location, and internalization combine to make it desirable to do so. The benefit that a firm receives as a result of owning a unique asset, such as a strong brand, technical expertise, or managerial competence, is known as ownership advantage. The benefit of locating an

economic activity in a location due to its natural or acquired traits is known as location advantage. Internalization benefit refers to the advantage of doing a corporate function domestic rather than outsourcing it to an inefficient market. According to Nayyar (2014), FDI is the outcome of enterprises having Ownership particular (income producing) advantages (O) that they seek to use in foreign Locations (L), which they can only accomplish successfully through Internalization (I). The debate over the role of financial development in economic growth continues to rage, drawing a slew of theoretical and empirical research that look at the link between the two (Ang, 2008; Murinde, 2012). The essential question is (a) whether the financial sector drives economic growth or (b) if economic growth explains financial sector expansion. The first theory, known as'supply-leading,' asserts that financial development is a necessary precondition for economic growth; as a result, finance precedes economic growth, and causation runs from financial development to economic growth. The number and composition of financial development factors, according to proponents, cause economic growth by directly increasing savings in the form of financial assets, resulting in capital creation and hence economic expansion (King and Levine, 1993). In contrast to the preceding, the second hypothesis, often known as demand-following, claims that finance follows rather than drives economic growth, and that finance plays a minimal role in growth. Finance, according to this logic, is only a by-product or an impact of economic expansion on the real side (Robinson, 1952). As a result, more financial institutions, financial products, and services are said to arise in response to increased demand for financial services as an economy grows. As a result, as the economy's real sector improves, so does the financial system, expanding the chances for obtaining cash for investment and risk reduction. The lack of financial institutions in developing nations, according to proponents of the demand-following theory, indicates a lack of demand for their services.

2.9 Study's Framework

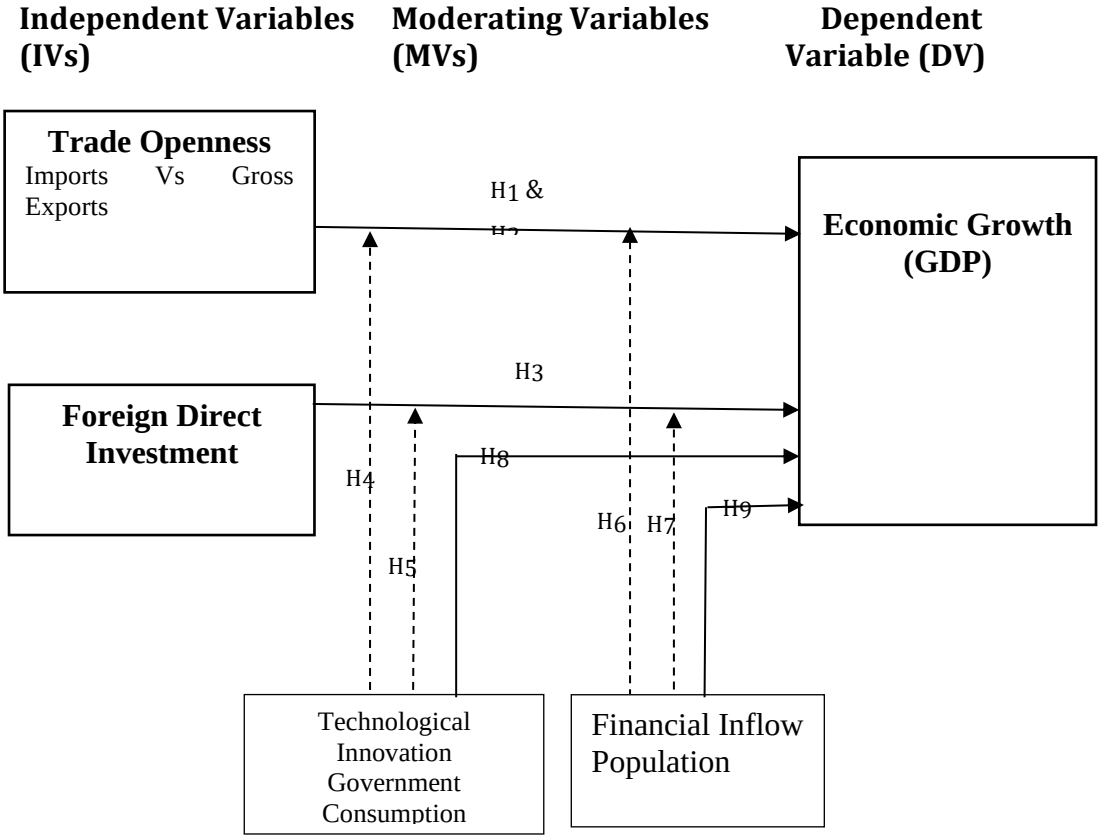

Figure 1: Conceptual framework

2.10 The research hypothesis

The study will test the following hypotheses;

***H_1**: There is a relationship between trade openness and the economic growth of developing countries*

***H_1**: FDI inflow has a positive impact on the economic growth of developing countries*

***H_1**: There is a positive relationship between exports and imports of goods and services and the economic growth of developing countries.*

***H_1**: The mediating role of inflation rate on the relationship between (a) trade openness (b) FDI and has a positive impact on economic growth of developing countries.*

***H_1**: The mediating role of population on the relationship between (a) trade openness (b) FDI and has a positive impact on economic growth of developing countries.*

***H_1**: The mediating role of government consumption on the relationship between (a) trade openness (b) FDI and has a positive impact on economic growth of developing countries.*

3 Method

3.1 Data to be used in the study

The study will source its data from respective county reports, the World Bank and FAOSATAT. The World Bank will however be the main source of the bulk of the data. The data covers the period between 2000 and 2020. A total of 105 countries were included in the study as on the basis of availability of sufficient data. The World Bank dataset contains information on various variables but for the purposes of this study, the variable of interest is gross domestic product (GDP) which will be used as a measure for economic growth. The other variables of interest are gross exports and imports of goods and services to respective countries included in the study. Other variables will include domestic capital investment (gross capital formation), labour force, population, government expenditure and inflation. The data will also include total FDI (FDI) inflows to the respective developing countries and this will be obtained from FAOSTAT website.

3.1.1 Variables

The dependent variable and independent variables are as presented below. Gross domestic product (GDP) has been used as the proxy measure for economic growth. A number of key variables have also been discussed and this include gross domestic capital (K), labour (L), trade openness, and FDI (FDI). Export of goods and services will be used to calculate trade openness. Also included is the mediating variables that include population, government consumption and inflation.

3.1.1.1 Dependent variable

Gross domestic product has been used as a proxy measure for economic growth. GDP has been used by many authors as a measure of economic progress while others use gross domestic per capita as a measure of economic growth (Boldeanu & Constantinescu, 2015).

3.1.1.2 Independent variables

Gross domestic capital (K), labor (L), trade openness, and FDI (FDI) have been used as the key independent variables in this study. Gross domestic capital (K) also refers to gross capital formation as renamed by the World Bank. Gross domestic capital for investment has been found to stimulate economic growth even though the issue of causality between the two variables has been an issue of contention. For instance, Meyer and Sanusi (2019) found that gross capital formation stimulates economic growth but the causality direction was from economic growth to gross capital formation. Labor force is a critical component in economic growth. Labor force is the engine of economic growth as all other factors cannot be operational without labor force. Labor provides the necessary operational capacity of the productive resources in any given economy without which all operations would be grounded. For instance,

(Zhu Sheng et al., 2011) found a positive relationship between labour force and economic growth. On trade openness, it has been argued that countries that open up their economies to trade have higher per capita GDP and grow much faster (Romer, 1990) (Barro, 2003). For instance, countries such as Canada, Australia, Denmark and Sweden experienced tremendous positive improvement in their economies in the 19th century through opening up to international trade. Similarly, the "Gang of Four" which include Singapore, Taiwan, Hong Kong and South Korea in Southeast Asia have experienced tremendous economic growth, which can be attributed to opening up to international trade after World War II. On the other hand, it has been argued that a combination of trade openness and FDI inflow has a huge impact on economic growth. For instance, Makki and Somwaru (2004) argue that FDI (FDI) and trade are normally seen as catalysts of economic growth in most developing countries with FDI facilitating technology transfer from developed countries to developing countries while trade is a vehicle for efficient production of goods and services through comparative advantage. However, they argue that even though FDI and trade may have a positive impact on the economy, the size of such an impact may vary from country to country depending on factors like human capital, domestic investment, infrastructure, macroeconomic policies and macroeconomic stability.

3.1.1.2 Mediating/control variables

Population, government consumption and inflation will be used as mediating variables in this study. Population has been found to positively correlate with economic growth even though it has been found that an increase in the aging population category could negatively affect economic growth in the long run. For instance, (Kargi, 2014) found that population positively influences economic growth. Government consumption is a major booster to economic growth in most countries as they make available huge resources for consumption of goods and services and investment in respective economies. For instance, (Landau, 1983) found a positive relationship between economic growth and government consumption expenditure. Governments spend enormous amounts of resources to provide a number of public goods and in the process inject the required capital in their economies that not only boosts economic growth but also creates a number of employment opportunities that are critical for economic growth. The relationship between inflation and economic growth still remains contentious as many authors find conflicting results with minimal agreement on the causality between the two variables. However, many studies argue that low inflation rates are good for economic growth. For instance, (dr. sc. Mario Švigir, Josipa Miloš, struč. spec. oec,) found that low inflation was important for economic growth even though it wasn't a sufficient condition.

3.2 Theoretical Models

The study will adopt a production theory in the development of the empirical models in its bid to investigate the interaction of trade openness and FDI inflow with economic growth in selected developing. This will be based on the traditional neo-classical aggregate production function which takes the form:

$Y_{jt} = AK_{it}^{\alpha} L_{it}^{1-\alpha}$ ..... (1)

Where:

Y = gross domestic product (GDP) in year *t,* in country *i* (current US$)

L = labour force in year *t* in country *i*

K = domestic capital stock in year *t* in country *i* (current US$)

A = parameter that indicates total factor efficiency in particular countries

α and 1-α are the elasticities of capital and labour.

Taking logarithms on both sides of equation (1), the new equation becomes (2) as follows:

$lnY_{it} = C + \alpha lnK_{it} + (1-\alpha) lnL_{it} + U_{it}$ ..... (2)

To further simplify equation (2) it becomes as follows:

$lnY_{it} = \beta_0 + \beta_1 lnK_{it} + \beta_2 lnL_{it} + U_{it}$ ..... (3)

where β_0 is a constant term, lnY_{it}, lnK_{it} and lnL_{it} are respectively the natural logarithms of Y_{it}, K_{it}, and L_{it}. U_{it} is the error term while β_1 and β_2 are elasticity coefficients. There are 105 countries and 18 years and therefore, i =1, 2, ……105 and t =1, 2, ……18.

The study will use equation (3) to derive the models in the model section so as to be used to establish the relationship between trade openness and FDI inflow and economic growth in developing countries.

3.3 Empirical models

Model 1: Relationship between trade openness and the economic growth in developing countries

To investigate the relationship between trade openness and economic growth in developing countries, equation (3) is further modified into an appropriate form by including trade openness in the log-linear equation in order to facilitate the use of appropriate estimation methods in analysis. The equation will also be modified by including population (Popn) so as to simultaneously estimate its impact on economic growth in the developing countries as follows:

$lnY_{it} = \beta_0 + \beta_1 lnK_{it} + \beta_2 lnL_{it} + \beta_3 lnPopn_{it} + \beta_4 lnTOp_{it} + \beta_5 lnGovExp_{it} + \beta_6 lnInfl_{it} + U_{it}$ ..... (4)

Where lnY_{it} is the natural log of gross domestic product (GDP), lnK, lnL, lnPopn, lnTOp lnGovExp and lnInfl are respectively the natural logs of domestic capital investment (gross capital formation), labour force, population, trade openness measured by the sum of export and import of goods and services to respective developing countries, government expenditure and inflation. The coefficients β_1 to β_6 are elasticity coefficients and U_{it} is the error term. Given the different economic conditions in different countries, a set of country dummy variables will be added into equation (4) in order to take care of the country differences and this becomes:

$lnY_{it} = \beta_0 + \beta_1 lnK_{it} + \beta_2 lnL_{it} + \beta_3 lnPopn_{it} + \beta_4 lnTOp_{it} + \beta_5 lnGovExp_{it} + \beta_6 lnInfl_{it} + \sum_{i=2}^{30} c_i D_i + U_{it}$ ..... (5)

Where D*i* is a dummy variable for country *i* and c*i* is the difference between the intercept for country *j* and that for the first country.

Model 2: Impact of exports and import of goods and services on the economic growth of developing countries

Equation (5) will further be modified so as to estimate the impact of exports and imports of goods and services to and from respective countries on economic growth in developing countries by substituting trade openness (TOp) by exports and imports of goods and services respectively to and from developing countries as modelled in equation (6).

$lnY_{it} = \beta_0 + \beta_1 lnK_{it} + \beta_2 lnL_{it} + \beta_3 lnPopn_{it} + \beta_4 lnX_{it} + \beta_5 lnM_{it} + \beta_6 lnGovExp_{it} + \beta_7 lnInfl_{it} + \sum_{i=2}^{30} c_i D_i + U_{it}$ ..... (6)

Where X_{it} and M_{it} are exports and imports of goods and services to and from developing countries respectively.

Model 3: Impact of FDI inflow on the economic growth of developing countries

To investigate the relationship between FDI inflo w and economic growth in developing countries, equation 6 will be modified by including FDI inflow in the log-linear equation in order to estimate the correlation between FDI inflow and economic growth in developing countries. The equation will become equation (7) as follows:

$lnY_{it} = \beta_0 + \beta_1 lnK_{it} + \beta_2 lnL_{it} + \beta_3 lnPopn_{it} + \beta_4 lnFDI_{it} + \beta_5 lnGovExp_{it} + \beta_6 lnInfl_{it} + \sum_{i=2}^{30} c_i D_i + U_{it}$ ..... (7)

Equation (7) will further be modified so as to estimate simultaneously the impact of FDI inflow and Trade openness on economic growth in developing countries. The equation will become equation (8) as follows:

$$lnY_{it} = \beta_0 + \beta_1 lnK_{it} + \beta_2 lnL_{it} + \beta_3 lnPopn_{it} + \beta_4 lnTOp_{it} + \beta_5 lnFDI_{it} + \beta_6 lnGovExp_{it} + \beta_7 lnInfl_{it} + \sum_{i=2}^{30} c_i D_i + U_{it} \quad \ldots\ldots (8)$$

Equation (8) will further be modified so as to estimate simultaneously the impact of FDI inflow and export and import of goods and services on economic growth in developing countries. The equation will become equation (9) as follows:

$$lnY_{it} = \beta_0 + \beta_1 lnK_{it} + \beta_2 lnL_{it} + \beta_3 lnPopn_{it} + \beta_4 lnX_{it} + a_5 lnM_{it} + \beta_6 lnFDI_{it} + \beta_7 lnGovExp_{it} + \beta_8 lnInfl_{it} + \sum_{i=2}^{30} c_i D_i + U_{it} \quad \ldots\ldots (9)$$

3.4 Estimation Methods

Hausman test will be used to determine whether fixed impacts specifications will be preferred over random impacts specifications for the data used in this study during the analysis. Country dummies will be used in the estimations in all the empirical models in order take care of country differences as the different countries operate in different conditions and from different regions.

3.5 Robustness test

Before carrying out the regression analysis for the three models, some important assumptions will made in the analysis. These assumptions will be related to selection of the right model for estimation, that is, whether fixed impacts or random impacts while at the same time taking care of heteroskedasticity and checking the presence of cross-sectional dependence and autocorrelation

3.5.1 Hausman test

The rejection criterion is that a P-value of less than 5% indicates the rejection of null hypotheses and accepting alternative hypothesis. The rejection of the null hypothesis suggests that the fixed-impact model is the appropriate model that fits to examination of the results of the study; and hence, the findings and discussion of the results will be based on the results of the fixed impact estimation.

3.5.2 Heteroskedasticity

Heteroskedasticity test is conducted to check the variance of the error terms in a model. It is said to be present if the variance is not constant or unequal. The Heteroskedasticity assumption needs to be tested before carrying out a regression analysis. However, when doing analysis in Stata, it can be controlled by using the robust option when running the Stata command.

3.5.3 Cross-sectional dependence

Cross-sectional dependence is normally a problem with macro data panels with long time series normally over 20 to 30 years. Cross-sectional dependence is not much of a problem in micro data panels of fewer years with large number of cases. The Pesaran CD test is used to test whether the residuals in panel data are correlated with the null hypothesis that residuals are not correlated. This test will be carried out during analysis even though this is a micro data set.

3.5.4 Serial correlation

Serial correlation that refers to understanding the correlation between the variables with its own past values is checked by the way of undertaking the test named Lagram-Multiplier test for serial correlation.

4. Result and discussion

4.2 Summary of trade openness, FDI and economic growth in developing countries

The following discussion was attained from the summary table, the maximum value of the economic growth denoted by GDP is 1.21e+13 while the minimum value is 2.58e+08. The average GDP is 1.71e+11 with a standard deviation of 7.16e+11, which gives an indication that there is a large disparity in economic growth in the developing countries selected for the study. The Gross Domestic Product, which includes all private and public consumption, government outlays, investments, additions to private inventories, paid-in building expenses, and the international balance of trade, is used to quantify economic growth. A higher GDP indicates that a country is performing better economically than its peers, and vice versa. The huge standard deviation of 7.16e+11 further indicates a large disparity in the economic growth among the developing countries in the study. The disparity is due to the different measures that have been set up the various countries to enhance economic development. For instance, a country like India has a well-developed manufacturing and health sector, which enhance economic growth. On the other hand, some African countries hardly have any functional manufacturing and health sector that can drive the country's economic growth. Gross capital records a maximum value of 5.38e+12 while it has a minimum value of 6974332. The average value of gross capital is 5.70e+10 with a standard deviation on 3.19e+11, which indicates that there is less or little disparity in capital among the developing countries under study. Gross working capital is the sum of a company's current assets (assets that are convertible to cash within a year or less). Gross working capital includes assets such as cash, receivable accounts, inventory, short-term investments, and marketable securities. Higher gross capital implies that the country is doing better economically than the others and vice versa. The less standard deviation of 3.19e+11further indicates a less disparity in the economic growth among the developing countries in the study. The disparity is due to the different measures that have been set up the various countries to enhance capital development. Some countries have put up measures to ensure that foreign investors find it easy to invest and work with them in both the short-term and long-term. Labor force records a maximum value of 7.87e+08 while it has a minimum value of 75327. The average value of labor force is 2.24e+07 with a standard deviation on 8.72e+07, which indicates that there is high disparity in labor force among the developing countries under study. The labor force is the number of people who are employed plus the unemployed who are looking for work. The labor pool does not include the jobless who aren't looking for work. For example, stay-at-home moms, retirees, and students are not part of the labor force. Developing countries have a high labor force since they are characterized by a young and growing population. Higher labor force does not necessarily imply that the country is doing better economically than the others and vice versa. The less standard deviation of 8.72e+07 further indicates a high disparity in the labor force distribution among the developing countries in the study. The disparity is due to the different difference between skilled and non-skilled labor employed in the country. Total population records a maximum value of 1.39e+09 while it has a minimum value of 81131. The average value of total population is 4.96e+07 with a standard deviation on 1.75e+08, which indicates that there is low disparity in total population among the developing countries under study. Developing countries have a high population growth rate since they are characterized by a young and growing population. Higher population does not necessarily imply that the country is doing better economically than the others and vice versa. The less standard deviation of 1.75e+08 further indicates a less disparity in the population distribution among the developing countries in the study. The population in these counties is regarded to be almost similar because politicians bank on the electorate to bear more children to meet their political aspirations.

Exports of goods and services records a maximum value of 2.46e+12 while it has a minimum value of 1.94e+07. The average value of exports is 5.42e+10 with a standard deviation on 1.80e+11, which indicates that there is low disparity in exports among the developing countries under study. The major exports from the developing countries include raw materials, unprocessed or semi processed agricultural products and human services inform of labour. Higher exports do necessarily imply that the country is doing better economically than the others and vice versa. The less standard deviation of 1.08e+11 further indicates a less disparity in the export's distribution among the developing countries in the study. The exports of goods and services in these countries include un-processed products or products that are imported and later re-exported after a little development and repackaging. Imports of goods and services records a maximum value of 2.24e+12 while it has a minimum value of 8.60e+07. The average value of exports is 5.10e+10 with a standard deviation on 1.65e+11, which indicates that there is low disparity in imports among the developing countries under study. The major imports into the developing countries include pharmaceuticals, finished high end goods, machinery, electronics and chemicals. Higher imports do not necessarily imply that the country is doing better economically than the others and vice versa. The less standard deviation of 1.65e+11 further indicates a less disparity in the import's distribution among the developing countries in the study. The imports of goods and services in these countries include automobile parts, petroleum and other synthetic products. Similarly, expatriate services rendered by foreigners play a critical role in improving the skills of the local employees, which leads to economic development due to human capital accumulation. Overall trade openness records a maximum value of 4.70e+12 while it has a minimum value of 0. The average value of exports is 1.00e+11 with a standard deviation on 3.36e+11, which indicates that there is high disparity in trade openness among the developing countries under study. The major difference in the disparity of trade openness involves the political instability that is experienced in some countries, this instability scares investors and traders from investing in the developing countries. Similarly, currency instability plays a very key role in lowering the trade openness in the countries. Higher overall trade openness indicates that the country engages in international trade with other countries in the world and vice versa. The high standard deviation of 3.36e+11 further indicates a high disparity in the overall trade openness among the developing countries in the study. Total FDI inflow records a maximum value of 135610 while it has a minimum value of -7397.3. The average value of total population is 4008.466 with a standard deviation on 12546.25, which indicates that there is low disparity in total FDI inflow among the developing countries under study. Developing countries have a relatively high inflow of FDI to help in development and economic growth. Higher FDI inflow does not necessarily imply that the country is doing better economically than the others and vice versa. The high standard deviation of 12546.25 further indicates a high disparity in the inflow of FDI into the developing countries under study. Diplomatic relations and measures placed by every country plays a critical role in encouraging FDI inflow into the developing countries. Gross national expenditure records a maximum value of 1.19e+13 while it has a minimum value of 0. The average value of gross capital is 1.67e+11 with a standard deviation on 7.02e+11, which indicates that there is very high disparity in gross national expenditure among the developing countries under study. Gross national expenditure is the sum of household final consumption expenditure, general government final consumption expenditure, and gross capital formation and the sum of a company's current assets (assets that are convertible to cash within a year or less). Higher national expenditure implies that the country is doing better economically than the others and vice versa. The higher standard deviation of 7.02e+11further indicates a high disparity in the gross national expenditure among the developing countries in the study.

Annual inflation consumer price records a maximum value of 513.9068 while it has a minimum value of -60.4964. The average value of annual inflation consumer price is 6.305184 with a standard deviation on 2.02e+10, which indicates that there is less or little disparity in annual inflation on consumer goods among the developing countries under study. Annual Inflation on consumer goods is a quantitative measure of the rate at which the average price level of a basket of selected goods and services in an economy increases over some period of time. It is the rise in the general level of prices where a unit of currency imp actively buys less than it did in prior periods. Often expressed as a percentage, inflation thus indicates a decrease in the purchasing power of a nation's currency. Higher inflation on consumer goods implies that the country is not doing better economically than the others and vice versa. The less standard deviation of 2.02e+10 further indicates a less disparity in the annual inflation in the consumer goods among the developing countries in the study.

Table 1: Summary of key Variables

Variable	Observation	Mean	Standard deviation	Min	Max
GDP	1887	1.71e+11	7.16e+11	2.58e+08	1.21e+13
Gross capital	1814	5.70e+10	3.19e+11	6974332	5.38e+12
Labour force	1872	2.24e+07	8.72e+07	75327	7.87e+08
Population	1890	4.96e+07	1.75e+08	81131	1.39e+09
Exports of goods and services	1860	5.42e+10	1.80e+11	1.94e+07	2.46e+12
Imports of goods and services	1733	5.10e+10	1.65e+11	8.60e+07	2.24e+12
Overall trade openness	1889	1.00e+11	3.36e+11	0	4.70e+12
Total FDI inflow	1877	4008.466	12546.25	-7397.3	135610
Gross national expenditure	1890	1.67e+11	7.02e+11	0	1.19e+13
Annual inflation consumer price	1700	6.305184	2.02e+10	-60.4964	513.9068

4.3 Relationship between trade openness and the economic growth in developing countries

This sub-section presents the findings for the first model on the relationship between the trade openness and the economic growth in developing countries. Gross capital, Labour input, total population, gross national expenditure supplements the easy of trade therefore contributing to the total trade openness in developing countries. The estimated results were obtained based on the log-linear equation, which was a modification of equation (3), hence equation (4) was used for the analysis. Population (Popn) was also included so as to simultaneously estimate its impact on economic growth in the developing countries. The robust option was included in the Stata command when running the results using fixed impacts regression with country dummies to address any possible heteroscedasticity challenges during regression. The Pesaran CD test is used to test whether the residuals in panel data are correlated with the null hypothesis that residuals are not correlated. The results for this model were obtained after carrying out a Hausman test as a criterion to determine between random and fixed impacts regression. The Hausman test had a prob>chi2 of .0000 which implied that fixed impacts estimation was preferred to random impacts. The regression results are as presented in Table 2 which presents elasticities of capital, labor, population, overall trade openness, gross national expenditure and their relationship to economic growth. The estimation results in table 2, generate consist and expected results for the variables in the regression. The R^2 value estimation in column 2 is 0.969 when using the fixed impacts country dummies and none using fixed impacts without country dummies is used in column 1 as shown in table 1. Therefore, column 2 results in table 2 will be used for interpretation. The R2 value of 0.969 implies that 96.9 percent of economic growth in the developing countries is explained by the independent variables included in the regression. The high percentage indicates that the independent

variables that can be included for regression in explain economic growth in the developing countries. From the regression, the results show that gross national expenditure (GNE) has the highest positive impact on economic growth in developing countries as compared to other variables followed by overall trade openness, labour, capital and population as shown in Table 2. Firstly, the elasticity of area Gross National Expenditure (GNE) is 0.859, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 2. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.859 increase in Gross National Expenditure. This result was expected as argued by Alexiou, (2009), who found government spending to be influencing economic growth in Southern Eastern Europe. Therefore, when a country is doing well economically it tends to have more budgetary allocations towards gross national expenditure on public goods and vice versa. Secondly, the elasticity of labour employed in economic growth (L) is 0.159, which is positive and statistically significant at 0.1 significance level as indicated in column 2 of table 2. This gives an implication that, when holding everything constant a 1 percent increase in economic growth leads to a 0.159 increase in labour demand and employed in the economy. This result was expected as argued by, Asaleye, Abiola , Okodua, Oloni, & Ogunjobi, (), who proved that labor is required to enhance and maintain economic development in any specific economy, on their research evidenced in Nigeria. This indicates that if more labor is required to run the many sectors of the economy. A better economy means that there is little or no unemployment because the sectors responsible for its growth offer employment opportunities to the citizens. Thirdly, the elasticity of Overall trade openness is 0.159, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 2. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.159 increase in overall trade openness. The result is expected as proved by Asaleye, Abiola , Okodua, Oloni, & Ogunjobi, (), on their research on the impact of labour and trade openness in Nigeria. Similarly, the same countries provide better measures for other countries to trade with them. Countries with a low trade openness tend to have a low trade partners and rely on importing goods from other countries. Both the domestic and foreign traders find it easy to trade within a country that has better terms of trade because it provides the much-required security. Fourth, the elasticity of capital is 0.0530, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 2. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.0530 increase in capital. The result is expected as seen in Avelino, Brown, & Hunter, (2005) who argue that capital mobility has increased economic growth in Latin Ameerica. When a country indicates better economic terms, it accumulates, protects and utilizes capital better than the countries with a low economic growth. Countries experiencing economic growth have measures in place to ensure that their capital continues to grow and is protected against any form of destruction. Countries with better and working economic terms encourage more capital investment from both foreign and domestic investors.

Finally, total population was found to have a negative correlation to economic growth despite being statistically significant. The elasticity of population to economic growth is -0.109. This implies that an increase in order to achieve 1 percent economic growth leads to a decrease in -0.109 percent in population. The result is expected as argued by Becker, Glaeser, & Murphy., (1999) who in their research indicated that if population growth is not checked it would have negative impact on economic growth. They live busy lives tending to match the high living of developed economies, which discourage the aspect of having big families and encourage small families. Late marriages are common in these economies because the citizens concentrate on

education, amassing wealth and gaining experience in the drivers of the economy before deciding to have children hence the population will be impacted negatively.

Table 2: Relationship between trade openness and economic growth

	(1)	(2)	(3)
	re	Fe	Fd
VARIABLES	lnGDP	lnGDP	lnGDP
lnK	0.0449***	0.0530***	0.0530**
	(0.0108)	(0.0109)	(0.0239)
lnL	0.0704*	0.104*	0.104*
	(0.0427)	(0.0570)	(0.104)
lnPopn	0.101**	-0.109	-0.109
	(0.0423)	(0.0701)	(0.117)
lnOverallTop	0.157***	0.159***	0.159***
	(0.00739)	(0.00776)	(0.0268)
lnGNE	0.862***	0.859***	0.859***
	(0.0141)	(0.0147)	(0.0299)
Constant	0.0404	0.604	0.782
	(0.138)	(0.388)	(0.583)
Observations	1,798	1,798	1,798
R-squared		0.969	0.998
Number of id	104	104	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.4 Impact of exports and import of goods and services on the economic growth of developing countries

This sub-section presents the findings for the second model on the relationship between the trade openness and the economic growth in developing countries. Gross capital, Labour input, total population, gross national expenditure, exports, and imports. The estimated results were obtained based on the log-linear equation, which was a modification of equation (5), by substituting total trade openness with exports and imports in equation (5), hence equation (6) was used for the analysis. Population (Popn) was also included so as to simultaneously estimate its impact on economic growth in the developing countries. The robust option was included in the Stata command when running the results using fixed impacts regression with country dummies to address any possible heteroscedasticity challenges during regression. The Pesaran CD test is used to test whether the residuals in panel data are correlated with the null hypothesis that residuals are not correlated. The results for this model were obtained after carrying out a Hausman test as a criterion to determine between random and fixed impacts regression. The Hausman test had a prob>chi2 of .0000 which implied that fixed impacts estimation was preferred to random impacts. The regression results are as presented in Table 3 which presents elasticities of capital, labour, population, exports, imports, gross national expenditure and their relationship to economic growth. The estimation results in table 3, generate consist and expected results for the variables in the regression. The R^2 value estimation in column 2 is 0.983 when using the fixed impacts country dummies and none using fixed impacts without country dummies is used in column 1 as shown in table 3. Therefore, column 2 results in table 3 will be used for interpretation. The R2 value of 0.983 implies that 98.3 percent of economic growth in the developing countries is explained by the independent variables included in the regression. The high percentage indicates that the independent variables that can be included in the regression explain economic growth in the developing countries. From the regression, the results show that gross national expenditure (GNE) has the highest positive impact on economic growth in developing countries as compared to other variables followed by exports, labour, and capital. Population and imports were found to be

negatively correlated despite being statistically significant as shown in Table 3. Firstly, the elasticity of area Gross National Expenditure (GNE) is 1.023, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 3. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 1.023 increase in Gross National Expenditure. The result is as expected as argued Alexiou, (2009) and indicated the study of the positive influence that gross national expenditure has on economic growth. In this analysis, it indicates that GNE improves with the introduction of exports and imports into the equation, as it records an all-time high.

Secondly, the elasticity of labour employed in economic growth (L) is 0.0685, which is positive and statistically significant at 0.1 significance level as indicated in column 2 of table 3. This gives an implication that, when holding everything constant a 1 percent increase in economic growth leads to a 0.0685 increase in labour demand and employed in the economy. There is a significant decrease in the labor employed in the economy with the introduction of imports and exports in the model. The result is as expected as seen by Asaleye, Abiola , Okodua, Oloni, & Ogunjobi, () on their research on the impact of labour on Nigeria's econmic growth. This result was expected because little labor is required to produce goods when a country relies on imports heavily, it reduces the local production of goods. Thirdly, the elasticity of exports is 0.160, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 3. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.160 increase in exports. The result is expected as indicated by Feder, (1983) who argues that exports can lead to economic growth of a country. When a country indicates better economic terms, it produces surplus goods and tries to sell them to other countries, hence bringing in more revenue from the exports. A country with a better economic growth tends grows to become an exporting country rather than an importing country. Fourth, the elasticity of capital is 0.0469, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 3. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.0469 increase in capital. There is a significant drop in the elasticity of wealth when we substitute overall trade openness with exports and imports. The result is expected as explained by Avelino, Brown, & Hunter, (2005), who found out that capital accelerated ecnonmic growth in the developed countries. This implies that the overreliance on exports and imports will not help in creating capital for the developing economies. The elasticity of imports is -0.146, which is negative and statistically significant at 0.01 significance level as shown in column 2 of table 3. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.146 decrease in imports. The result is expected because when a country records better economic terms it stops an overreliance on importation of goods and services. Similarly, Esfahani, (1991), found out that overreliance on imports has a negative impact on economic growth. On the contrary, they shift to export of goods and services because they produce in surplus and import in deficit. Finally, total population was found to have a negative correlation to economic growth despite being statistically significant. The elasticity of population to economic growth is -0.102, which is significant at 0.1 level of confidence. This implies that an increase in order to achieve 1 percent economic growth leads to a decrease in -0.102 percent in population. The result is expected because when the population tend to be more involved in activities that help in economic growth and forget on reproduction. The lifestyle changes that come with economic growth do not allow the individuals to have big families hence discouraging population growth.

Table 3: The relationship between exports and imports on economic growth

VARIABLES	(1) Re lnGDP	(2) fe lnGDP	(3) Fd lnGDP
lnK	0.0386***	0.0469***	0.0469***
	(0.00924)	(0.00942)	(0.0141)
lnL	0.0389	0.0685*	0.0685*
	(0.0352)	(0.0457)	(0.0472)
lnPopn	-0.0378	-0.102*	-0.102*
	(0.0350)	(0.0568)	(0.0557)
lnX	0.176***	0.160***	0.160***
	(0.00649)	(0.00665)	(0.0347)
lnM	-0.161***	-0.146***	-0.146***
	(0.0121)	(0.0125)	(0.0322)
lnGNE	1.018***	1.023***	1.023***
	(0.0127)	(0.0132)	(0.0167)
Constant	0.110	0.744**	0.917**
	(0.116)	(0.351)	(0.453)
Observations	1,644	1,644	1,644
R-squared		0.983	0.999
Number of id	102	102	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.5 Impact of FDI inflow on the economic growth of developing countries

This sub-section presents the findings for the third model on the relationship between the trade openness and the economic growth in developing countries. Gross capital, Labour input, total population, gross national expenditure, exports, and imports, total trade openness and FDI. The estimated results were obtained based on the log-linear equation, which was a modification of equation (7), by including FDI in equation (8), hence equation (9) was used for the analysis. The robust option was included in the Stata command when running the results using fixed impacts regression with country dummies to address any possible heteroscedasticity challenges during regression. The Pesaran CD test is used to test whether the residuals in panel data are correlated with the null hypothesis that residuals are not correlated. The results for this model were obtained after carrying out a Hausman test as a criterion to determine between random and fixed impacts regression. The Hausman test had a prob>chi2 of .0000 which implied that fixed impacts estimation was preferred to random impacts. The regression results are as presented in Table 3 which presents elasticities of capital, FDI, total trade openness, labour, population, exports, imports, gross national expenditure and their relationship to economic growth. The estimation results in table 4, generate consist and expected results for the variables in the regression. The R^2 value estimation in column 2 is 0.972 when using the fixed impacts country dummies and none using fixed impacts without country dummies is used in column 1 as shown in table 4. Therefore, column 2 results in table 4 will be used for interpretation. The R2 value of 0.972 implies that 97.2 percent of economic growth in the developing countries is explained by the independent variables included in the regression. The high percentage indicates that the independent variables that can be included in the regression explain economic growth in the developing countries. From the regression, the results show that gross national expenditure (GNE) has the highest positive impact on economic growth in developing countries as compared to other variables followed by exports, labour, FDI, overall trade openness and capital. Population and imports were found to be negatively correlated despite being statistically significant as shown in Table 4. Firstly, the elasticity of area Gross National Expenditure (GNE) is 0.876, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 4.

This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.876 increase in Gross National Expenditure. In this analysis, it indicates that GNE improves with the introduction of FDI into the equation. The result is applauded because it conforms with (Alexiou, 2009) on the impact of national expenditure on economic growth in Southern Eastern Europe. Secondly, the elasticity of labour employed in economic growth (L) is 0.0552, which is positive and statistically significant at 0.1 significance level as indicated in column 2 of table 4. This gives an implication that, when holding everything constant a 1 percent increase in economic growth leads to a 0.0552 increase in labour demand and employed in the economy. There is a significant decrease in the labor employed in the economy with the introduction of FDI in the model. The result is as expected by Asaleye, Abiola , Okodua, Oloni, & Ogunjobi, (), as they found out that they found a relationship between labour and economic development in Nigeria. This result is conceivable because labor is required to run FDI that is brought to the country to stimulate the economy. Thirdly, the elasticity of exports is 0.151, which is positive and statistically significant at 0.01 significance level as shown in column 4 of table 4. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.151 increase in exports. The results are expected and are plausible by Feder, (1983) who indicates that exports of goods and services are important for economic growth. When a country indicates better economic terms, it produces surplus goods and tries to sell them to other countries, hence bringing in more revenue from the exports. A country with a better economic growth tends grows to become an exporting country rather than an importing country. Fourth, the elasticity of capital is 0.0424, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 4. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.0424 increase in capital. This elasticity indicates that there is an influence of FDI on the capital formation in a developing economy. The elasticity of imports is -0.154, which is negative and statistically significant at 0.01 significance level as shown in column 4 of table 4. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to -0.154 decrease in imports. The result is expected as argued by Esfahani, (1991), where he found out that when a country records better economic terms it stops an overreliance on importation of goods and services. On the contrary, they shift to export of goods and services because they produce in surplus and import in deficit.

The elasticity of Overall trade openness is 0.133, which is positive and statistically significant at 0.01 significance level as shown in column 2 of table 4. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.133 increase in overall trade openness. This result is expected as explained by Asaleye, Abiola , Okodua, Oloni, & Ogunjobi, () found out that when a country indicates better economic terms, many trade partners open up their borders to trade with them. Similarly, the same countries provide better measures for other countries to trade with them. This is the orientation of a country's economy in the context of international trade. The degree of openness is measured by the actual size of registered imports and exports of an economy. The elasticity of area FDI (FDI) is 0.00443, which is positive and statistically significant at 0.1 significance level as shown in column 2 of table 4. This implies that, if all things are held constant, an increase in order to achieve a 1 percent increase in economic growth leads to 0.00443 increase in FDI. A FDI (FDI) is an investment made by a firm or individual in one country into business interests located in another country. This result is expected, for instance, Laura , Areendam , Sebnem , & Selin , (2006), on their paper, How Does FDI Promote Economic Growth? Exploring the Impacts of Financial Markets on Linkages, argued that an increase in FDI leads to higher growth rates in financially developed countries compared to rates observed in financially poor countries.

Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets in a foreign company. However, FDIs are distinguished from portfolio investments in which an investor merely purchases equities of foreign-based companies. Finally, Secondly, the elasticity of population in economic growth (L) is -0.0730, which is negative and statistically insignificant as indicated in column 2 of table 4. The result is expected because of the lifestyle changes in developing countries.

Table 4: The relationship between FDI and economic growth

	(1)	(2)	(3)	(4)
	Re	fe	fd	Fdo
VARIABLES	lnGDP	lnGDP	lnGDP	lnGDP
lnK	0.0370***	0.0424***	0.0424*	0.0518***
	(0.0105)	(0.0107)	(0.0232)	(0.0153)
lnL	0.0139	0.0552*	0.0552*	0.0713*
	(0.0426)	(0.0564)	(0.0977)	(0.0485)
lnPopn	0.0134	-0.0730	-0.0730	-0.104*
	(0.0423)	(0.0692)	(0.108)	(0.0572)
lnX				0.151***
				(0.0343)
lnM				-0.154***
				(0.0321)
lnFDI	0.00669**	0.00443	0.00443*	0.00478*
	(0.00284)	(0.00282)	(0.00423)	(0.00339)
lnGNE	0.882***	0.876***	0.876***	1.039***
	(0.0140)	(0.0145)	(0.0334)	(0.0174)
lnOverallTop	0.132***	0.133***	0.133***	
	(0.00765)	(0.00801)	(0.0306)	
Constant	0.132	1.123***	1.386**	1.016**
	(0.146)	(0.380)	(0.562)	(0.471)
Observations	1,729	1,729	1,729	1,581
R-squared		0.972	0.998	0.999
Number of id	104	104		

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.6 Summary of the key findings of the study with emphasis on the significant variables in each objective

In response to research hypothesis H1, the study found that gross capital, labour, overall trade opennes, and gross national expenditure use were positively and statistically significantly influencing economic development in developing countries. Total population was found to negatively influence economic development but it was not statistically significant. In response to research hypothesis H2, gross capital, labour, exports, gross national expenditure were found to negatively and statistically significantly affect the use of fertilizer. On the other hand, population and imports were negatively and statistically significantly influencing economic growth in developing countries. In response to research hypothesis H3, gross capital, labour, exports, FDI (FDI), gross national expenditure (GNE) were found to positively and statistically significantly influence economic growth in developing countries. Total population was found to positively influence economic development, but was not statistically significant in economic development. On the other hand, imports were found to be negatively and statistically significantly influencing economic growth in developing countries.

Conclusion and limitations

From the findings of the study, it was concluded that overall trade openness, capital and labour were positively and significantly correlated economic growth in developing countries. Of all the variables considered, overall trade openness and capital were found to have the highest

impact economic growth in developing countries. Moreover, concerning the variables on the impact of exports and imports of goods and services on economic growth in developing countries, all the six variables were statistically significantly influencing economic growth and these were Gross National Expenditure, Capital, exports and labour, population and imports. Out of the six variables, Gross National Expenditure, capital, exports and labour were positively correlated with economic growth while population and imports were negatively correlated with economic growth in developing countries. Additionally, on population, the governments should encourage the people to maintain small families that they can easily take care of without straining the little resources that they have. Therefore, family planning services with education should be freely offered to the populace. On imports of goods and services, the governments should discourage overreliance on imported goods by the population, however they should encourage importation of goods for reexport hence increase the balance of trade and create more revenue to the country. Only the imports of essential goods and machinery that will boast exports and wealth creation should be encouraged. On the variables affecting FDI inflow on economic growth, gross national expenditure, overall trade openness, gross national expenditure, capital, exports of goods and services and labour were found to statistically significantly influence the economic growth in developing countries. FDI was found to be positively correlated with economic growth despite not being statistically significant. Domestic governments should encourage technology transfers through FDI to have substantial spillover impacts for the entire economy of the developing countries. This will increase resource allocation and encourage growth off the economy. Imports of goods and services was found to be negatively correlated but statistically significant. This implies that in order to boost the economic growth, it is recommended that respective countries come up with strategies aimed at reducing imports of goods to their respective countries. It is also recommended that the domestic governments introduce import quotas and impose tariffs on imports. These strategies could also mitigate the negative impacts illegal imports into the countries. On the other hand, population was found to be negatively correlated to economic growth and was not statistically significant. It is recommended that the governments in the developing countries should invest in public goods in order to keep their populations safe and healthy. This study evaluated the impact trade openness and FDI on economic growth of developing countries which has adequately been done. There was also a challenge in getting the right measure for trade openness because the data might be changed by the agencies responsible for submitting them to the World Bank website. It is therefore recommended that further research be carried out on the measures of overall trade openness.

References:

Acaravci, A., & Özturk., İ. (2012). FDI, export and economıc growth: empirical evidence from new eu countries. *Romanian Journal of Economic Forecasting*.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2002). Reversal of fortune: Geography and institutions in the making of the modern world income distribution MIT Press.

Aitken B., Gordon H. Hanson and Ann E. Harrison (1997), "Spillovers, Foreign Investment, and Export Behavior", Journal of International Economics, Vol. 43, pp. 103- 132.

Aizenman, J., & Noy, I. (2006). FDI and trade—Two-way linkages? *The quarterly review of economics and finance, 46*(3), 317-337.

Alcalá, F., & Ciccone, A. (2004). Trade and productivity. MIT Press.

Alesina, A., Spolaore, E., Wacziarg, R., 2000. Economic integration and political disintegration. *Am. Econ. Rev*. 90 (5), 1276–1296.

Athukorala, P.P.A.W., 2003. The impact of FDI for economic growth: a case study in Sri Lanka. In: 9th International Conference on Sri Lanka Studies, 28–30 November, Matara, Sri Lanka, In: http://www.slageconr.net/slsnet/ 9thicsls/fullpapers/fullp092.pdf.

Auty, R. M., Resource Abundance and Economic Development, Helsinki: UNUWorld Institute for Development Economic Research (1998).

Borensztein, E., Gregorio, J.D., Lee, J.W., 1998. How does FDI affect economic growth? Journal of International Economics 45, 115–135.

Carkovic, M., Levine, R., 2002. Does FDI accelerate economic growth? In: Moran, T.H., Graham, E.M., Blomstrom, M. (Eds.), Does FDI Promote Development? Institute for International Economics.

Chang, Tsangyao, and Steven B. Caudill (2005), Financial development and economic growth: the case of Taiwan, Applied Economics 37: 1329-1335.

Chan-Hyun, S and Hongshik.L, 2010. Trade Structure, FTAs, and Economic Growth. Review of Development Economics, 14(3), 683–698, DOI:10.1111/j.1467-9361.2010.00574.x

Chanie, M. (). The impact of FDI on economic growth in Ethiopia: An empirical investigation. *International Journal of Current Research Vol. 9, Issue, 09*, 58301-58306.

Darrat, A.F., Kherfi, S., Soliman, M., 2005. FDI and economic growth in CEE and MENA countries: a tale of two regions. In: 12th Economic Research Forum's Annual Conference, Cairo, Egypt.

Dowrick, Steve, and Jane Golley (2004), Trade openness and growth: Who benefits? Oxford Review Economic Policy 20: 38-56.

Dritsaki, C., & Stiakakis, E. (2014). FDIs, Exports, and Economic Growth in Croatia: A Time Series Analysis. *Procedia Economics and Finance, 14*(0), 181-190.

Dunning, J.H., & Lundan, S.M. (2008). Multinational Enterprises and The Global Economy. Cheltenham: Edward Elgar Publishing.

Gastanga, M. V., Nugent , B. J., & Pashamova, B. (1998). Host countries reform and FDI inflows: How much difference do they make? *World Development, 26*(7), 1299-1314.

Graham , E. M. & Krugman , P. R. (1995). *FDI in the United States* . Washington, DC : Institute for International Economics

Greening AL, Greene DL, Difiglio C. Energy efficiency and consumptiondthe rebound impactda survey. Energy Policy 2000;28(6):389e401.

Grossman, G.M., Helpman, E., 1991. Innovation and Growth in the Global Economy. MIT Press, Cambridge, MA.

Gu¨ nther, J., 2002. FDI as a multiplier of modern technology in Hungarian industry. Intereconomics 37 (5) 263–269.

Hasanov, F. (2010) Relationship between Inflation and Economic Growth in Azerbaijani Economy': Is there any Threshold Impact? Asian Journal of Business and Management Sciences, Vol. 1, No. 1, pp. 6-7.

Hernàndez, L., & Parro, F. (2008). Economic reforms, financial development and growth: Lessons from the Chilean experience. *Cuadernos De Economia, 45*(131), 53-103.

Houssem Eddine Chebbi, 2010. "Long And Short–Run Linkages Between Economic Growth, Energy Consumption Andco2emissions In Tunisia," Middle East Development Journal (MEDJ), World Scientific Publishing Co. Pte. Ltd., vol. 2(01), pages 139-158.

King, R.G., Levine, R., 1993. Finance, entrepreneurship and growth. J King, Robert G., and Ross Levine (1993), Finance, Entrepreneurship and Growth: Theory and Evidence, Journal of Monetary Economics, 32: 513-542.

Kobrin, J. (2005). 'The determinants of liberalization of FDI policy in developing countries: A cross-sectional analysis, 1992-2001. *Transnational Corporations, 14*(1), 1-38.

Kojo Menyah; Saban Nazlioglu and Yemane Wolde-Rufael, (2014), Financial development, trade openness and economic growth in African countries: New insights from a panel causality approach, Economic Modelling, 37, (C), 386-394

Krugman, P., & Venables, A. J. (1995). The seamless world: A spatial model of international specialization. Unpublished manuscript.

Kurtishi-Kastrati, S. (2013). Impact of FDI on economic growth: An overview of the main theories of FDI and empirical research. *European Scientific Journa, 9*(7).

Law, S.H., 2008. Does a country's openness to trade and capital account lead to financial development? Evidence from Malaysia. Asian Econ. J. 22 (2), 161–177.

Mamun, K.A., Nath, H.K., 2004. Export-led growth in Bangladesh: a time series analysis. Applied Economics Letters 12 (6) 361–364.

Marandu, E.,Mburu.P.T.,& Amanze, D, 2019. An Analysis of Trends in FDI Inflows to Africa. International Journal of Business Administration Vol. 10, No. 1; 2019

Marbuah, G. (2010) The Inflation-Growth Nexus: Testing for Optimal Inflation for Ghana, *Journal of Monetary and Economic Integration*, Vol. 11, No. 2, pp. 71-72.

Marchant, M. A., Cornell, D. N., & Koo. , W. (2002). International trade and FDI: Substitutes or complements? *Journal of Agricultural and Applied Economics, 34*(2), 289-302.

Markusen, James & Melvin, James & Maskus, Keith & Kaempfer, William. (1995). International Trade: Theory and Evidence. University Library of Munich, Germany, MPRA Paper.

Meschi, E., 2006. FDI and growth in MENA countries: an empirical analysis. In: The Fifth International Conference of the Middle East Economic Association, 10–12 March, Sousse.

Ozoh FO, Nwaka ID, Igberi CO, Uma KE (2016). The Influence of Investments on Economic Growth: The Case of Nigeria. *Int J Res Manag Econ Commer* 6: 29-39.

Pam Zahonogo, . "Trade and Economic Growth in Developing Countries: Evidence from Sub-Saharan Africa," The International Trade Journal, Taylor & Francis Journals, vol. 32(2), pages 189-208, February.

Pedroni, P., 1999. Critical values for cointegration tests in heterogenous panels with multiple regressors. Oxf. Bull. Econ. Stat. S1 (61), 653–670.

Quartey, P. (2010) Price Stability and the Growth Maximizing rate of inflation for Ghana, *Business and Economic Journal*, Vol. 1, No. 1, pp. 180-194.

Rabnawaz, Ambar and Jafar, Rana Muhammad Sohail. (2015). Impact of Public Investment on Economic Growth. Munich Personal RePEc Archive

Rajan, R.G., Zingales, L., 2003. The great reversals: the politics of financial development in the twentieth century. J. Financ. Econ. 69 (1), 5–50

Redding, S. (1999). Dynamic comparative advantage and the welfare impacts of trade Oxford University Press. doi:10.1093/oep/51.1.15.

Robinson, J., 1952. The Rate of Interest and Other Essays. Macmillan, London.
Romalis, J. (2007). Market access, openness and growth. Unpublished manuscript.
Romer, P. M. (1994). The origins of endogenous growth American Economic Association.
Ricardo, D. (1817). The Principles of Political Economy and Taxation, Everyman, London.
Rodríguez, F., & Rodrik, D. (2000). Trade policy and economic growth: A skeptic's guide to the cross-national evidence MIT Press
Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions rule: The primacy of institutions over geography and integration in economic development *Kluwer Academic Publishers.*
Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy, 98(I)*(571).
Romer, P.M., 1986. Increasing returns and long-run growth. Journal of Political Economy 94 (5) 1002–1037.
Sachs, J.D., Warner, A., (1995). Economic reform and the process of global integration. Brook. Pap. Econ. Act. 1, 1–118
Saghir R, Khan A (2012) Determinants of public and private investment an empirical study of *Pakistan. Int J Bus Soc Sci* 3:1-6.
Sengupta, J.K., Espana, J.R., 1994. Exports and economic growth in Asian NICs: an econometric analysis for Korea. Applied Economics 26, 41–51.
Sergii, P. (2009) Inflation and Economic Growth: The Non-Linear relationship. Evidence from CIS Countries, Kyiv School of Economics, Ukraine.
Swaby R (2007) Public investment and growth in Jamaica. Res Econ Program Div Bank of Jamaica, Kingston.
Tybout, J. R. (2001). Plant- and firm-level evidence on 'new' trade theories. Unpublished manuscript
Umaru, A. and Zubairu, J. (2012) The Impact of Inflation on the Growth and Development of the Nigerian Economy: An Empirical Analysis, International Journal of Business and Social Science, Vol. 3, No. 10, pp. 187-188
Ullah I, Shah M, Khan FU (2014). Domestic investment, FDI, and economic growth nexus: *A case of Pakistan. Econ Res Int*, pp: 203-207.
Vamvakidis, A. (2002). How robust is the growthopenness connection? historical evidence Kluwer Academic Publishers.
Wang, J.Y., Blomstrom, M., 1992. Foreign investment and technology transfer: a simple model. European Economic Review 36 (1) 137–155.
Xu, B. (2000). Multinational enterprises, technology diffusion, and host country productivity growth. *Journal of Development Economics, 62*(2), 477-493.
Zahonogo, P., Trade and economic growth in developing countries: Evidence from sub-Saharan Africa, Journal of African Trade (), http://dx.doi.org/10.1016/j.joat..02.001
Zhang,K.H.(2001). "Does FDI Promote Economic Growth? Evidence From East Asia And Latin America," Contemporary Economic Policy, Western Economic Association International, vol. 19(2), pages 175-185.

Cite this article:

Viengsaythong DALASENG, NIU Xiongying & Khaysy SRITHILAT (2022). Cross- Country Investigation of the Impact of Trade Openness and FDI on Economic Growth: A Case of Developing Countries. *International Journal of Science and Business, 9*(1), 49-73. doi: https://doi.org/10.5281/zenodo.6321841

Retrieved from http://ijsab.com/wp-content/uploads/895.pdf

Published by