

Maximizing Economic Growth through Trade Openness: A Case for Ivory Coast

Amieyeofori V Felix, Augustus Gbosi, Clever Gbanador

Abstract— While the theories strongly favour a positive linkage between international trade and economic growth, empirical studies have not arrived at a consensus on this. Our paper therefore as a contribution to this body of knowledge, was to investigate how international trade can maximize economic growth of Ivory Coast which is the biggest French speaking economy in the West African geographical region. To do that we formulated econometric models with GDP per capita growth rate as proxy for economic growth as the dependent variable, while the Independent Variable is International Trade, is proxied as export, import, export plus import, exchange rate premium, net capital flow (FDI), trade openness, tariff, time to clear goods, ease of doing business indicator. We utilized panel data for our variables within two time periods of 1980-2005, and 2006-2016, and tested their long run empirical relationships using Autoregressive distributed lag (ARDL) cointegration and granger causality test. Our results showed no significant and positive linkage between international trade and economic growth for Ivory Coast during the study period of 1980 – 2016. The negative correlation is due to unchecked population growth with limited human capital development in the face of price volatilities since the country heavily relied on primary products exports. Our study also found that the country, unlike the South East Asian economies, did not invest in its teeming labour force to take advantage of the technological, knowledge and skill transfers from trade openness. The country also lacked active and inclusive participation of the private sectors in the mainstream economy, as it was also heavily dependent on public sectors, that led to gross institutional and governance abuses, evidenced as military rules and unstable civil/democratic that precipitated into series of political crises and civil wars, corruption, and poor infrastructural development during the period of study.

Index Terms— International trade, trade openness, economic growth, gross domestic product per capita growth rate, Autoregressive distributed lag (ARDL) cointegration and granger causality test.

I. INTRODUCTION

International Trade is a cross border trade between different countries (Schnitzer 2010), that deals with the basic demand and supply of goods and services driven by international market forces, and the typical consumers' behaviour that are exhibited by economic beings. International trade enables trading partners from different countries to exchange goods and services to meet their economic needs, while also providing a platform for peaceful dialogue and settlements of disputes amongst participating

nations. (Subedi, (2012). Trade has also been used as a diplomatic tool by promoting economic integration under various trading groups among states, and also as a corrective measure through the use of sanctions to force erring participants to order or civility. (Subedi, 2012). International trade has also helped the growth and development of trading partners by expanding their domestic markets and hence creating efficiency in production of goods and services through division of labour, and specialization. (Schumacher, 2012). Nations trade with one another by exporting domestic goods and services and importing other goods and services that become inputs into their economic growth and development programmes. (Gbosi, 2014). Through international trade, they adopt and adapt new technologies that create efficiency, product innovation and specialization for increased economies of scale, that will spillover to other sectors of the economy in a country. (Morgan & Katsikeas 1997). Besides technology, knowledge and skill transfer, international trade, according to Todaro and Smith (2012), also transfers consumption pattern and social, political and cultural systems across national borders, which is actually dependent on the individual country's growth needs. According to Grossman and Helpman (1991), the degree of trade openness greatly influences how nations transfer and receive new technologies, which creates productivity improvement. There are compelling evidences in the literature that show that international trade positively impacts on the economic growth of nations, however, there are other researcher with opposing views in the literature. The aim of this paper therefore to investigate if we can support the theoretical postulation that trade openness positively supports economic growth in Ivory Coast.

II. THEORETICAL FRAMEWORK

The relationship between international trade and economic growth has attracted several research efforts to confirm the theoretical claim of a positive linkage between the two; unfortunately, there is yet a common view amongst scholars on their relationship in the literature. International trade is a platform for trading partners to exchange goods and services in order to meet their economic needs, while also providing an environment for peaceful dialogue and settlements of disputes amongst participating nations. (Subedi, (2012). Besides trade in goods, International trade in services also occurs through exchange of ideas, know-how and technology, some of which are communications, constructions, transportation, information technology, recreational, financial and banking. International trade became pronounced after the great depression in 1930 as

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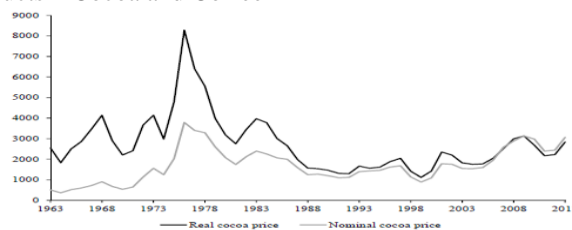
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nations consciously remove national barriers to form regional and global economic groupings and associations (Suranovi, 2010; Morgan & Katsikeas, 1997). One of such structure is the General Agreement on Tariffs and Trade (GATT), that transformed into the World Trade Organization (WTO) through the Uruguay Round of negotiations between 1986-94 in January 1, 1995. According to Todaro and Smith (2012) international trade besides goods and services also transmit social changes, cultural influence, and political ideologies from one country to another, which mostly depends on the stage of development and of course on the needs of the citizens.

International trade is founded on two broad theories, the Classical or Country-Based, and then from mid-twentieth century, into a Firm based or Company Based theories, also known as Modern Theories, that is associated with multinationals and globalization where trade is done between companies. While there are several trade theories in the literature, the one that is pivotal to our paper is the theory of Comparative Advantage, postulated by David Ricardo, upon which most modern theories were anchored. The Comparative Advantage postulates that though a country may have absolute advantage in the production of two products, countries can still trade through specialization. That both trading nations can still experience welfare gain regardless of one country having absolute advantage in both products so far as the other country exports goods in which its inferiority is least. (Acharyya 2014). The theory of Comparative Advantage was the basis for the Heckscher-Ohlin Theory which states that a country could gain comparative advantage by producing in products where it utilized such production factors as land, labour or capital in which has relative abundance. Such factors provide the funds required for investment in plants and equipment. Under this concept, international trade provides a positive sum game where all participants' benefits to some degree which is actually the desire of trading partners, as opposed to the classical zero sum game model, where one wins and the other loses. The zero-sum game presents an unfavourable economic and financial problem to developing countries, as gains from the trade often accrue to the developed nations due to the distortions of the industrial set up of the developing industries, killing infant industries that cannot compete at world prices. (Abiodun, 2017). African economies technically should have benefited immensely through trade in view of its natural resource abundance, however, the opposite is the case for most of the continent's economies including Ivory Coast which though is branded as one of the best performing economies in nominal GDP terms on the continent, it is still reeling in poverty. The World Bank in its 2015 report, showed that Ivory Coast was almost at the base of the HDI scale at 171 out of 188 countries, while poverty grew from 10 percent of the population in 1985 to about 51 percent in 2011, showing that in effect, the reported sterling growth in GDP terms is superficial in terms of the population, especially the most vulnerable sections of the population. (World Bank). Ivory Coast is also lagging in literacy level, at 43.27 percent in 2015, and according to OECD 2017 Report, illiteracy and school drop-outs are major hindrances to the

economy, because more than 50 percent of the young people cannot read nor write, while every second young person is illiterate. The report further showed that only 4.7 percent of youths pursue up to tertiary education. The country also recorded relatively low rates of secondary school enrolment, and suffers from the prevalence of poor quality of public education in Ivory Coast. (OECD (2017)). As a primary product export dependent country, Ivory Coast also had its share of shocks in market price volatilities in its major products – Cocoa and Coffee



Source: World Bank Global Economic Monitor.
Note: The price index is Manufacture Unit Value (MUV) index from the World Bank and the base year is 2010.

Figure 1: Historical Cocoa market prices, Source: (Tothmihaly (2017)).

The country also took its turn in civil wars fueled mostly by inequality between the richer south and the poorer northern part of the country. For a long time, the country ran as a one party system under President Félix Houphouët-Boigny, which was the core reason that inflamed the country into conflict and civil war. (Eberhardt and Teal, 2010). The tension eventually broke out into Civil War in September 2002 that lasted for nearly two years to late 2004, and another war broke out in 2011 that lasted for four months, mostly due to the 2010 presidential elections between forces loyal to [Laurent Gbagbo](#), and supporters of the acclaimed president-elect [Alassane Ouattara](#). As a result of this South-North conflict, the Northern cocoa producers were cut off from using the Southern ports for their exports during the civil conflicts. The conflicts also reduced the living standards of many Ivorians who could no longer afford imports. (Forbes 2005).

III. EMPIRICAL REVIEW

International trade from our theoretical reviews has been established as a catalyst for economic growth, however, the empirical studies are inconclusive on the subject. One set of empirical studies established positive relationship, and these include the works of Krueger, 1980, 1998; Dollar, 1992; Stiglitz, 1998; Wacziarg, 2003; Sachs & Warner, 1995; Frankel & Romer, 1999; Balassa, 1978; Dao, 2014; Barro, 1996. Some empirical works on Ivory Coast such as Aka (2006), Constant, and Yaoxing (2010), Keho (2017). Even the World Bank (2012) as cited in Dowrick and Golley (2004), showed that per capita growth of most developed economies increased from 1960 level of 1 percent to about 5 percent in the 1990s due to globalization. The opposing views are held by such researchers as Rodrik, 1997; Chang, 2009; Oskam, 2004; Rodriguez & Rodrik, 1999; Vamvakidis, 2002; Hassan & Islam, 2005; Rodrik et al., 2004. Khamala, 2015, also using data from 47 sub-Saharan African countries with GDP per capita found negative linkage between economic growth and trade openness. Khamala, 2015, also using data from 47 sub-Saharan countries with GDP per capita as dependent

variable, showed negative correlation between trade openness and with growth. According to Tahir and Ali (2014), the confusion of which template speaks explicitly on the subject arose from the different objective and most times subjective models used by researchers in describing trade openness. Besides the methodologies, there are also issues of poor data quality especially from low income developing countries. There is also the problem of establishing a consistent measure of trade openness by researchers. According to Rodrik (1997) trade openness does not immediately lead to economic growth, as growth is strongly dependent on investment in human capital development, infrastructure, and institutions of macroeconomic management, which generally would take some time to achieve. To Rodrik and Rodriguez (2000), the relationship between growth and trade openness is dependent on both domestic and external characteristics of a country. Following this argument, Oskam et al (2004), showed that the unfavourable relationship between the two may be influenced by (i) inadequate institutions, governance and deficient infrastructure (ii) infant industry argument (iii) trade openness eventually cause relative income differences and therefore make developing economies less competitive- and (iv) trade exposes developing economies to external (price) shocks and growth path instability. Rodrik (2006), added that the focus on trade and growth should shift from policy to getting institutions right rather than the much talked about Policy rightness. He argues that policies that do not require deep seated institutional change and those policies alone cannot produce lasting effects without sound institutional support. Consequently, the structure must allow fiscal institutions to compensate for lost in trade revenue; the capital market must supply sufficient fund into expanding sectors of the economy, while there must be policing of the customs for transparency and competence, while the institutions regulating the labour market must handle transitional employment efficiently, if trade openness must catalyze growth for an economy. Finally, according to Zahonogo (2017), there has to be focused investment in human capital development, and deep and efficient financial system to support the positive trade openness and growth nexus. Our research is therefore a contribution to this debate to investigate how international trade relates with economic growth of Ivory Coast.

IV. DATA AND RESEARCH METHODOLOGY

We adopted a panel data, quasi-experimental research design to capture our dependent and independent variables that are presented in annual time series and cross sectional data format, with the pooling together of our independent variables within the same time frame. Our research is also based on the Ex-Post-Facto econometric model because of past historical data of the time period 1980 to 2016 (Isiwu, 2004). To therefore estimate the parameters of our operating variables, we relied on econometric models based on regression equations using panel data of time series and cross sectional format. Finally, we also adopted the Granger Causality Test to address the issue of causation, since regression models only deal with the dependence of one variable on another, and not on causality of the variables

(Gujarati, 2004). The research is limited to data only from quantitative secondary time series and cross sectional panel data collected from existing sources. Given that the research covers a long time period from 1980 to 2016, our data set were also limited to annual data for ease of application. The secondary data was collated from several published sources such as the CIA World Fact Book, World Development Indicators (World Bank), African Development Indicators (World Bank), International Financial Statistics (IMF), National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN).

Our key variables therefore are Economic Growth as the dependent variable, while the Independent Variable is International Trade, ITD, proxied as Export, Import, Export plus Import, Exchange Rate Premium, Net Capital Flow (FDI), trade openness, tariff, Time to Clear Goods, Ease of Doing Business Indicator. Our literature survey showed the prevalence of GDP, and GDP per capita as most common proxies for Economic Growth, and as a contribution, we decided to use GDP per capita growth rate after the work of Upreti (2015) as our proxy for Economic Growth. The per capita GDP measures growth over the entire population of the county, and has been a very useful economic performance indicator that captures the trickledown effect of growth on the population. Rather than working with the absolute term, we have chosen the growth rate of the per capita GDP to provide a closer measure of how this grows with the population. Evidently, unless this grows more than the population growth rate, international trade would not have contributed significantly to the economic, since from our literature, trade exports and imports not only goods and services, but technology, culture, and way of life, and even taste. Our model is to enable us to see a sustainable economic growth as a result of policy shifts if any from year to year due to international trade.

Our model specification for this study adopted Autoregressive distributed Lag (ARDL) Cointegration and Granger Causality Tests, after the work of Constant, and Yaoxing (2010), Keho (2017), and Moyoetal (2017) as opposed the commonly used Ordinary Least Square (OLS) regression model in most of the empirical work on Nigeria. The functional relationship between the dependent and independent variables are thus stated here:

Dependent Variable= GDP per Capita Growth Rate (GDPGRPC), which is the change of the per capita GDP growth rate as compared to the rate from previous year. The sign therefore can either be negative or positive in a given year and this can due to either drop in economic growth or increase in population growth rate in a particular year.

The Independent Variable is International Trade, ITD, and from our literature, this is impacted by the following, Export (EXP), Import (IMP), Export plus Import (EXIM), Exchange Rate Premium (FX), Net Capital Flow (FDI), Import plus Export, over GDP (EXIMG), Tariff (TRF), Time to Clear Goods (TRDF), Doing Business Indicator (EODB). Again, according to the literature economic growth is positively impacted by international trade, therefore the functional relationship of our variables can be formulated as $GDPGRPC = f (ITD)$, whereas

ITD = f (EXP, IMP, EXIM, FX, FDI, EXIMG, TRF, TRDF, EODB). We can now express our functional relationship between our dependent and independent variables in the following form:

$$GDPGRPC = f (EXP, IMP, EXIM, FX, FDI, EXIMG, TRF, TRDF, EODB).$$

Consequently, the mathematical model can be expressed as:

$$GDPGRPC = \alpha_0 + \alpha_1 EXP + \alpha_2 IMP + \alpha_3 (EXIM) + \alpha_4 FX + \alpha_5 FDI + \alpha_6 EXIMG + \alpha_7 TRF + \alpha_8 TRDF + \alpha_9 EODB + U,$$

where α is the coefficient of the parameters, and U is the stochastic term or the random variable or the unexplained variation, while the coefficients of the independent variables are expected to have the following signs in the model are: $\alpha_1 > 0$; $\alpha_2 > 0$; $\alpha_3 > 0$; $\alpha_8 > 0$; $\alpha_9 > 0$

We broke down our method of data analysis into three subheads: the first step requires testing Stationarity of the variables using the Unit Root Test. A Time Series Data is said to be stationary if its mean, variance, and autocovariance are constant over time. (Gujarati:2006). The test for stationarity is critical as it enables the researcher to make reasonable generalization and forecast of the data beyond a particular time period. To do that, we employed the Augmented Dickey-Fuller (ADF) formulae to test the existence of unit roots in the data. The next step is the testing of the presence of any long-run relationship between the variables using the ARDL of cointegration. According to Giles, (2013), an ARDL regression is expressed as: $y_t = \beta_0 + \beta_1 y_{t-1} + \dots + \beta_p y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + \dots + \alpha_q x_{t-q} + \epsilon_t$, where ϵ_t is a random "disturbance" term. The ARDL only tests for the presence of long-run relationship and not on the the direction of relationship. The advantage of using the ARDL to the conventional cointegration techniques is its ability to handle small and finite sample sizes even though the variables are purely I(0), purely I(1) or fractionally integrated. ARDL can also provide long run estimates that are unbiased with valid t-statistics even where the causality of the variables is reversed due to the presence of endogeneity.

1 The final step uses the Granger Causality tests to confirm the direction of the relationship among the variables. The causality can either be unidirectional or bi-directional. It is unidirectional when only X causes Y and not Y causing X, while bi-directional occurs when each of X and Y causes the other. The variables become statistically independent when there is no causal relationship between them. Our study also adopted the Vector Error Correction Model (VECM) as opposed to VAR Model to capture causality if the variables are cointegrated. VECM model is used when there exist a long run relationship between the variables under consideration, and therefore useful in evaluating the cointegrated series. The analysis also requires the testing of some hypotheses which are stated below:

H01: International trade as trade openness does not impact on the economic growth of Nigerian significantly and positively.

HA1: International trade as trade openness does impact economic growth of Nigerian significantly and positively. Finally, we shall use the E-View Econometric Software

Package in our estimation in this study.

V. RESULTS AND ANALYSES

We now present the results of our empirical models below:

A. Summary of Econometric Model Results for Ivory Coast

Table I: UNIT ROOT TEST

YEAR	VARIABLE	T STATISTICS	PROBABILITY
1980-2005	EXIMP I(0)***	- 1.988	0.2397
2006-2016	EXIMP I(1)***	- 6.31	1.00
1980 – 2005	EXIMG I(0)***	- 1.096	0.9103
2006 2016	EXIMG I(1)***	- 2.99	0.0077
1980 – 2005	EXPORTS I(0)***	- 1.751	0.6988
2006 2016	EXPORTS I(1)**	- 5.21	0.0184
1980 – 2005	FDI I(0)***	- 1.775	0.6849
2006 2016	FDI I(0)**	- 4.26	0.0115
1980 – 2005	FX I(0)***	- 2.258	0.4402
2006 2016	FX I(1)***	- 5.08	0.0017
1980 – 2005	PER CAPITA GDP GROWTH I(0)***	- 1.097	0.2397
2006 2016	PER CAPITA GDP GROWTH I(1)***	- 6.16	0.0000
1980 – 2005	IMPORTS I(0)***	- 2.071	0.5367
2006 2016	IMPORTS I(1)**	- 4.88	0.0202
2006 2016	EASE OF DOING BUSINESS I(0)***	- 1.727201	0.3902

* Stationary at 1% ** Stationary at 1% and 5% *** Stationary at 1% , 5% and 10%, Source: Author

Table II: BOUNDS TESTS

	(1980-2005)	(2006-2016)
F -STATISTICS	4.852047	4.275571
CRITICAL VALUE	I0 I1	I0 I1
BOUNDS		
10%	2.12 3.23	3.17 4.14
5%	2.45 3.61	3.79 4.85
2.5%	2.75 3.99	4.41 5.52
1%	3.15 4.43	2.96 4.26

Table III: LONG RUN ARDL MODEL ESTIMATION OUTPUT

VARIABLE	1980-2005	2006-2016
IMPORT	-54.070	7.554829
EXPORT	-59.36	-8.463989
EASE OF DOING BUSINESS		0.870889
FOREIGN EXCHANGE	-0.141020	-9.123404
EXIM	112.421	-1.3888880
EXIMG	-12.924	-3.230908
FDI	0.356856	-9.31442
R ²	0.657585	0.708294
DURBIN WATSON	2.357	2.938851

Source: Author

Table IV. Results of Test of Hypotheses- Ivory Coast

Hypotheses	Description	Ivory Coast			
		1980 -		2006 - 2016	
		Long Run Coefficients	Remarks	Long Run Coefficients	Remarks
Ho1	Trade Openness	-12.9 24233	Accept Null Hypotheses	-3.23 0908	Accept Null Hypotheses
Ho2	Export Trade	-59.3 59042	Accept Null Hypotheses	-8.46 4959	Accept Null Hypotheses
Ho3	Import	-54.0 70504	Accept Null Hypotheses	7.55 4829	Reject Null Hypotheses
Ho4	Ease of doing business			0.87 0889	Reject Null Hypotheses
Ho5	Exchange Rate	-0.14 1020	Accept Null Hypotheses	-9.12 3404	Accept Null Hypotheses
Ho6	Net Capital Inflow	0.35 6856	Reject Null Hypotheses	-9.31 4442	Accept Null Hypotheses
HA6					

Source: Author

B. Discussions of Results

From our analysis, our test confirmed the null hypothesis (Ho1) that International trade proxied as trade openness, did not impact economic growth in Ivory Coast positively during the period 1980-2016. While our finding differs from the widely held theoretical view of positive linkage between the two variables, there are empirical findings that support our results, from such works as Rodrik, 1997; Chang, 2009; Oskam, 2004; Rodriguez & Rodrik, 1999; Vamvakidis, 2002; Hassan & Islam, 2005; Rodrik et al., 2004; Atoyebi et al. (2004). Khamala, 2015, also using data from 47 sub-Saharan countries with GDP per capita as dependent variable, showed negative correlation between trade openness and growth. Aka (2006) also using data from 1969-2001 showed that globalization and openness are not positively correlated with growth for Ivory Coast. Vlastou (2010) study of 34 African countries, also showed that trade openness is negatively linked with growth. This is also in line with the work of Tekin (2012), using data from 27 African least developed countries, that trade openness and per capita GDP do not have any significant relationship.

Growth statistics on Africa showed that in spite of the continent's vast natural endowments, and active participation in global trade, it only contributes 2-3 percent of global trade and global GDP respectively. This is even in the stark reality that it trades more with outsiders, about 88 percent than internal trade amongst itself. Though the continent shares close population figures with India and China, its combined GDP of \$2.26 trillion, is lower than India of \$2.29 trillion, and China of \$11.383 trillion as at 2016 (IMF, 2016). Also, just like its share of global GDP, Africa's share of the more than the \$32 trillion of global trade in 2015 in export and import trade averages 2.4% and 3.4% respectively. (WTO, 2016, World Trade Statistical Review, 2016). These statistics also contradicts African membership of most global trading bodies, such as the WTO, where it constitutes about 27% of the 164 membership (WTO, 2016). Oskam et al (2004), identified (i) poor institutions, governance and deficient infrastructure (ii) trade openness make developing economies less competitive due to relative income and, (iii) trade exposes developing economies to external (price) shocks and growth path instability, as potential causes of the unfavourable impact between trade openness and economic growth. Rodrik (1997) reported that the positive impact of trade openness on growth generally takes time due to lags in human capital development, infrastructure, and institutions of macroeconomic management, and therefore, it is not an instantaneous impact.

Our empirical finding is also explained with the descriptive statistics of the plot of GDP per Capita Growth Rate as proxy for economic growth as shown in figure 1 which shows a relatively unimpressive performance compared to the plot of nominal GDP growth in figure 2, and that of GDP per Capita in figure 3, both of which trended positively within the period of study. The reasons for such relationship with GDP per capita growth rate as proxy for economic growth despite the trade openness during the period of study is attributable to several factors (i) the lack of transforming its teeming labour force into needed human capital as was the case with the South East Asian economies of Indonesia, Malaysia, and Thailand, that invested heavily in human capital development as shown in table 5 below.

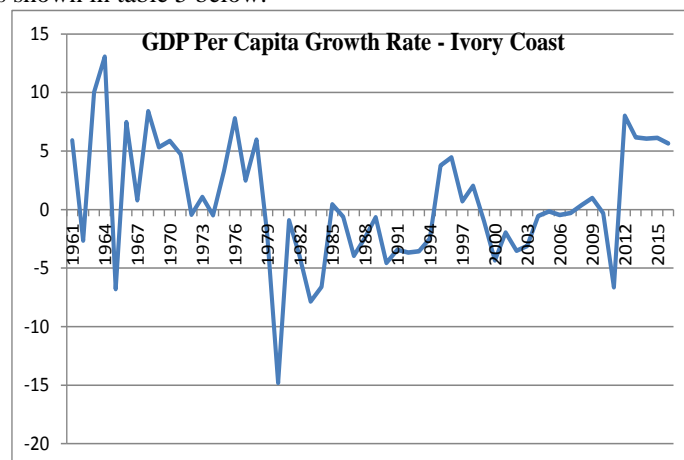


Figure 1: GDP Per Capita Growth Rate (%) for Ivory Coast. Source: Generated by Author from World Bank Data

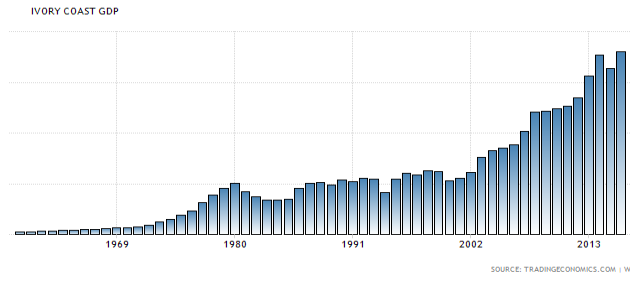


Figure 2: Historical GDP for Ivory Coast for 1980 to 2016, Source: World Bank

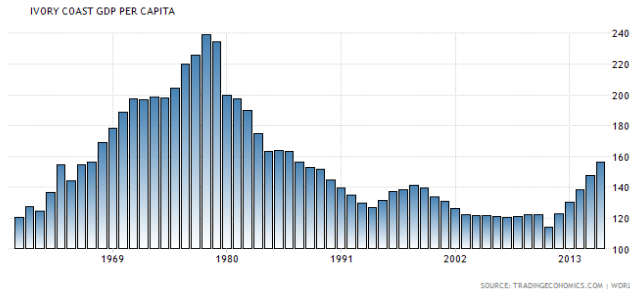


Figure 3: Historical GDP per Capita for Ivory Coast for 1980 to 2016, Source: World Bank

Table V: 2015 WEF Human Capital Index-Cross Country Comparison

Nigeria	Indonesia	South Africa	Malaysia	Kenya	Ghana	Rwanda	Ivory Coast	Thailand
120	69	92	52	101	82	108	117	57

The Human Capital Index report ranks a country using 46 different human capital measures some of which are school enrolment and Quality of education, educational attainment and Workplace learning, employment which includes participation in economic activities, skills, and vulnerability. These indicators are further broken down into different age groups from under 15, 15–24, 25–54, 55–64, and those at 65 years and over. According to the report, human capital for the business sector means the economic value of an employee’s set of skills, while for the policy maker in government; it means the workforce within the population that drives

Table 6: 2017 Global Innovation Index

Nigeria	Indonesia	South Africa	Malaysia	Kenya	Rwanda	Ivory Coast	Thailand
119	87	57	37	80	99	112	51

The report showed that the top 45 countries on the list belong to the High and Upper Medium income countries that have fully grasped the linkage between economic growth and innovation, and hence investment in the training of their labour force to participate in the global competitive market. Figure 4 further shows a chart from Global Innovation Index showing the relationship between GDP growth and Research and Development, which continues to show the connection between economic growth and education and hence research and development.

economic growth.

The country’s poor human capital index of 117 out of 124 countries is explainable with its relatively poor literacy figures of 43.27 percent in 2015, which is just a marginal increase from previous years performance of 34.14 percent in 1988, 36.35 percent in 1998, 48.74 percent in 2000, and 43.98 percent in 2014. (World Bank). Also, according to OECD 2017 Report, illiteracy and school drop-outs were major hindrances to the economy, as more than 50 percent of the young people cannot read nor write, while every second young person is illiterate. The report further showed that only 4.7 percent of youths pursue up to tertiary education. The country also recorded relatively low rates of secondary school enrolment, and suffers from the prevalence of poor quality of public education in Ivory Coast. (OECD (2017)). It is also not surprising therefore that the country also recorded abysmally poor ranking in global innovation index as shown in table 6 reported by Insead Business School, where Ivory Coast recorded very low score at 112 out of 127 countries that were surveyed. Again, a 1988 CIA country report on Ivory Coast, by Handoff (1988) reported that unskilled workers accounted for about 67 percent of the labor force in 1960, but this number rose to about 80 percent of the work force in 1982. This is because the French dominated the top level managerial and professional staff until the mid-1980s. It further reported that Ivoirians only occupied 29 percent of the top level jobs in the country's 300 largest companies, compared to 67.4 percent that were filled by non-Africans. This is as the country relies heavily on Europeans artisans as mechanics, technicians, and shop owners, and in an attempt to reverse this trend, the government in 1973 set up the National Commission on Ivorianization to encourage the appointment of Ivoirians to managerial posts, but never produced the expected results, so much that the IMF as part of a series of measures to stabilize the economy, directed the country to drop 585 of the 650 foreign experts on government payrolls, but by the end of 1987 there were still 425 privately recruited foreign experts, costing the government CFA F11 billion annually.(World Bank).

R&D expenditures growth, 2005–15

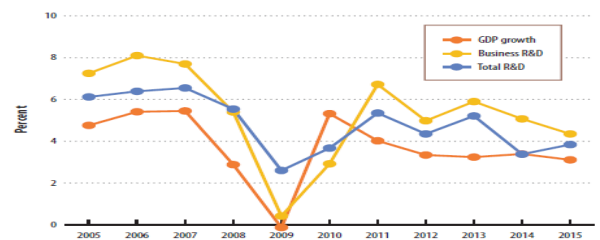
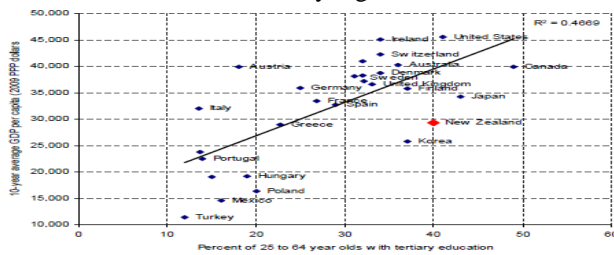


Figure 4. R&D expenditure with GDP Growth, 2005-2015. Source. Global Innovation Index

Again, the country’s low performance in Human Capital, and Global Innovation Indices is also consistent with the findings of Earle (2010) which showed a positive correlation between tertiary education level with higher skills sets, and

economic growth as shown in figure 5. This further helped to explain the economic miracles of the South East Asian economies because of their relatively higher skills sets.



Source: OECD, Education at a Glance 2009 and The Conference Board and Groningen Growth and Development Centre
 Note: Tertiary qualification is defined as diploma and above for purposes of international comparison.

Figure 5: Impact of tertiary education and economic growth, Source: Earle (2010)

Malaysia, labour force of 14.7 million consist of 27 percent of highly skilled workers, 59.7 percent for semi skilled workers, while low skill workers averaged only 13 percent. The 14.7 million labourforceis from a population of 31.7 million people in 2016. (Talentcorp 2018).

Specifically, the Indonesia economy is one of the success story in South East Asia, which recorded a nominal GDP of \$9.74 billion as at 1970 but had grown into a \$1.02 trillion economy in 2017. With a population of 262 million people in 2017, Indonesia only had 6 million unemployed, with a very high skilled labour force with an education spend of 20.52 percent of its 2018 budget. Darmawan et al (2018) showed that 60 percent of Indonesian economic growth for the past two decades,came from consistent labour productivity improvements by converting its increasing labour force into productive economic use. As at 2012, with a labour force of 110.8 million for a population of 245 million, its work force was dominated by more than 50% of highly skilled higher education labour force, while Primary School levelconsists of about 48,6%. These Asian economies strongly depend on educating their population to move their economies forward as they focus on building their human capacity, through their very flexible academic programmes that enables students to choose between vocational training and university. They also have educational system especially for the 21st century must be tailored to meet the 360 degrees need of the entire society if the economy must progress. (The Nation (2016).Given the low level of education, the labour force in Ivory Coast has relegated to peasantry, and according to Morisset (2015), 80 percent of the workers earn less than \$ 120 per month in self-employment, in household enterprises or on farms, while only very few work in mining and banking sectors to earn more than \$2000 per month. Sow (2017) also confirmed that out of the 76.8 percent of labour force participation rate, with only 6.7 percent unemployment rate, only 23 percent of the workers are employed in in wage-jobs, while the rest are engaged in low productivity area of the economy such as in self-employment on family farms, or retailing of goods and services. The WTO 2017 trade policy review for Ivory Coast reported that though the country showed very strong economic performance, it lost one position in the HDI ranking for 2015 to be 172nd out of 188 countries, This is a clear testimony of the superficiality of its sterling growth which has not reduced the poverty level nor improve the human capital of the country.

The 2015 WEF Human Capital Index further report recognized that the long term economic growth and success of a nation depends on the appropriate channeling of its human capital endowment to productive use in the economy. It therefore recommends for government to invest in their human capacity if they must reap the benefits of economic growth. Other factors we identified as responsible for the negative linkage include (ii) Reliance on Unprocessed Raw Natural Resource Commodities Export (iii) Prevalence of Finished Consumer Goods Importation (iv) A relatively low private sector participation in the economy (v) Institutional and Governance Failure (vi) Impact of the Civil Wars in the country.

VI. POLICY RECOMMENDATIONS

From the results obtained from our analyses, there is no long run positive relationship between International trade proxied as trade openness and economic growth proxied as GDP per capita growth rate. This is because of the use of a more pragmatic GDP per Capita Growth rate in order to capture the impact of increasing population growth rate that is consistently higher than economic growth rate.This shows the deficiency in measuring economic performance with nominal GDP. This result therefore stress the need for African economies to focus on development of its labour force as higher education attainment positively correlates with economic growth, which sadly is significantly lacking in Ivory Coast as significant portion of the labour force are illiterates and primary school holders, with very low tertiary education holders. This explains the relatively poor performance through trade as Ivory Coast never took advantage of the benefits of international trade which are institutional development, innovation and technological and knowledge transfer and diffusion and learning by doing when compared again with Indonesia, Thailand and Malaysia. It further explains why the Country also ranked very low on the Global Innovation and Human Capacity Indices. The lack of technological innovation also helped further the country's continued reliance on raw primary products export that are subject to price, market and seasonal volatilities. There were also visible issues of poor governance and institutional problems, prevalence of public expenditure with a relatively low private sector participation to grow the economies. The economy also took a beating during the period of the civil wars in the country. As a way forward therefore, Ivory Coast and other developing economies must focus in transforming their teeming population into human capital by measuring economic growth with GDP per capita growth rate instead of the nominal GDP. If the country must play the catch-up game, it must also invest and incentivize the private sector to also invest in focused research and development (R&D) in all key sectors of the economy.

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Maximizing Economic Growth through Trade Openness: A Case for Ivory Coast

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