

THE EFFECT OF TRADE LIBERALIZATION, INVESTMENT, EXPENDITURE, AND OIL PRICE ON THE ECONOMIC GROWTH OF COTE D'IVOIRE FROM 1980 TO 2020

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Abstract:

This study examined the effect of trade liberalization, investment, expenditure, and oil price on the economic growth of Cote d'Ivoire over the period 1980-2020, by using the ADF unit root test, Johansen cointegration test, OLS model, Granger causality test, and CUSUM test. The study's result showed that there is a long-run relationship among the variables, as well as economic growth is positively related to trade openness, investment, and expenditure, but it is negatively related to the oil price. Final consumption expenditure has the biggest effect on economic growth. The Granger causality test showed that there are bidirectional long-run causality relationships between investment, expenditure, and GDP, and unidirectional long-run causality relationships running from trade openness and oil price to GDP. Lastly, the CUSUM test indicated that there are no structural changes in the model.

Keywords: Cote d'Ivoire, Ivory Coast, investment, economic growth, trade openness.

JEL Code Classifications: O11, E20

1 Introduction

Côte d'Ivoire (also known as Ivory Coast), is a developing country located on the southern coast of West Africa. It is the largest economy in the West African Economic and Monetary Union, constituting 40% of the monetary union's total GDP. Besides, with an average annual growth rate of 6.08% from 2016 to 2020, Côte d'Ivoire has been one of Africa's fastest-growing economies (Penresa, 2022). Côte d'Ivoire is the fourth-largest exporter of general goods in sub-Saharan Africa (following South Africa, Nigeria, and Angola). The country mainly exports cocoa, coconut, cashew, banana, fish, refined petroleum, and rubber. The main import commodities are crude petroleum, rice, frozen fish, medicine, vehicles, and machinery (World Bank, 2021).

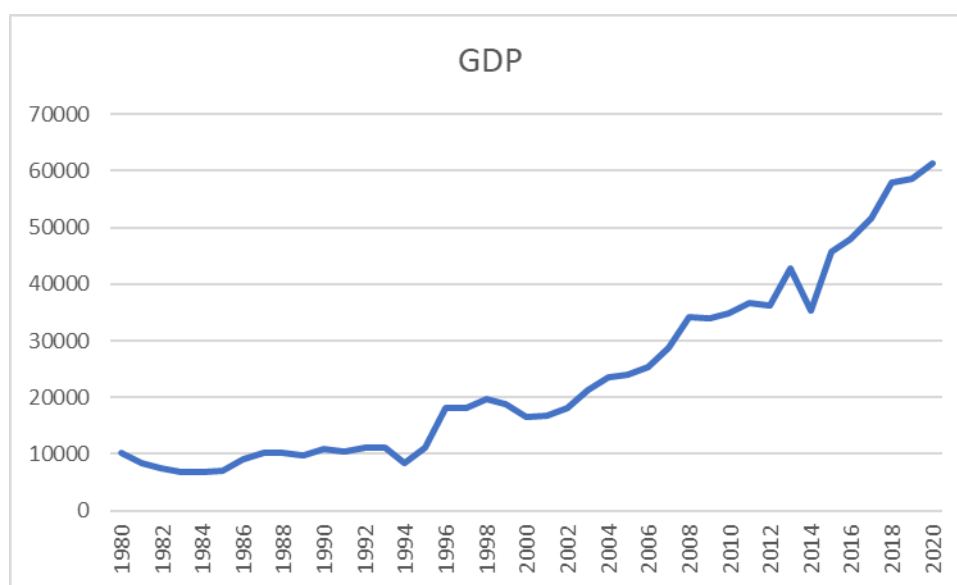
Côte d'Ivoire is largely market-based and depends heavily on the agricultural sector, which contributes to 23% of the GDP, employs 43.5% of the country's working population, and accounts for two-thirds of the country's total exports. Key agricultural products produced in Côte d'Ivoire are cocoa, coffee, cashew, bananas, cassava, palm kernels, sugar, corn, sweet potatoes, cotton, rubber, and timber (Wesgro, 2021). Côte d'Ivoire is the biggest producer of cocoa in the world (40% of the world's production), one of the bigger producers and exporters of cashew, and a major exporter of coffee and palm oil (Njeru, 2021). On the other hand, Côte d'Ivoire is an oil-producing country and the industrial sector in it contributes 20.9% of the GDP. Its main industries are food processing, textiles, wood products, construction materials, and fertilizers (World Bank, 2021).

Figure 1.1 shows the GDP of Cote d'Ivoire from 1980 to 2020. It is clear that GDP declined from USD 10176 million in 1980 to USD 6978 million in 1985. This was mainly due to a fall in world prices for cocoa and coffee during that period. Nonetheless, with the government's Structural Adjustment Program (SAP), which objectives were to straighten the financial situation of the country and create the

conditions for economic growth, GDP increased from USD 9158 million in 1986 to USD 19620 million in 1998. But because of the civil war that created an unstable business climate for investors with the degradation of the infrastructures and the slowdown of import-export exchanges, GDP decreased again to USD 16578 million in 2000.

However, despite all the consequences engendered by this crisis, the country has undertaken the recovery of its economy; and as a result of the political agreement concluded between the Ivorian State and the rebellion after the civil war, a climate of peace settled in the country, allowing some progress in restoring the institutions of the reunification of the country (Oxford Business Group, 2017). Thereby, following the end of more than a decade of civil conflict, the country has experienced a boom in investment and economic growth with a GDP that moved from USD 16811 million in 2001 to USD 42760 million in 2013. But in 2014, GDP decreased to USD 35364 million. However, with the announcement of the International Monetary Fund (IMF) and the World Bank (WB) about USD 8.8 million in debt relief for Cote d'Ivoire under the highly Indebted Poor Countries Initiative as well as the climate of peace in the country, some development agencies like the African Development Bank came back to settle down their headquarter in the country, creating a boon for international investors. As a result, the investment rate grew up with a boom in the private sector, and international exchanges got fluid. This allowed Cote d'Ivoire to reach, in 2020, USD 61349 million of GDP, thereby putting the country among the countries with the highest growth rate in the world, according to the World Bank.

Figure 1: GDP of Cote d'Ivoire, at current prices, in million USD, 1980-2020



Source: World Bank Open Data, 2021

Furthermore, since the end of the political and military crisis in 2011, the Foreign Direct Investment (FDI) in the country has continually grown because of the strong economic performance and the government's focus on rebuilding infrastructures (Oxford Business Group, 2019). The government also, to increase investment in the country, set up a single window system, allowing a business to be set up in 24 hours, and established the Chamber of Commerce and Industry of Cote d'Ivoire and other government bodies tasked to improve governance and business environment, convinced that further improvements in the business environment including sustained efforts to strengthen governance would help in making the private investment be the main driver of growth. Besides, the country has always shown a willingness to improve its trading system by opening up its economy to foreign trade, reducing tariffs and non-tariff barriers, and lifting of customs and heavy administrative procedures (IMF, 2018).

But despite all these efforts, the Ivorian economy is still a developing economy that has a lot of problems such as unstable economic growth, low levels of productivity, and a deficit in the balance of trade.

The main objective of this study is to investigate the effect of trade liberalization, investment, expenditure, and oil price on the economic growth of Cote d'Ivoire from 1980 to 2020. The organization of this study is as follows. The following section is the literature review and Section 3 provides a brief discussion of the methodology. Section 4 reports the empirical results, Section 5 presents the highlights of the important findings of the study, and the conclusion and recommendations are presented in Section 6.

2 Previous Studies

Many studies have examined the relationship between trade openness, oil price, investment, expenditure, and economic growth by using different econometric methods. A number of these studies will be discussed in this section.

Mangir et al. (2017) investigated the relationship between trade openness and economic growth of 10 African countries from 1990 to 2015 by using ARDL model and found that an increase in trade openness has a positive impact on economic growth. Irwin (2019) also tested the impact of trade reforms on economic growth and concluded trade reforms that significantly reduce import tariffs have a positive impact on economic growth. Furthermore, Gnangnon (2018) studied the impact of trade liberalization on the economic growth of 150 countries from 1995 to 2015 and found a strong positive impact of trade liberalization on economic growth. By using Johansson Co-integration test and the Error Correction Model, Bekele (2017) examined the effect of trade liberalization on the Ethiopian economy from 1980 to 2016, and the result showed a short and long-run relationship between trade liberalization and economic growth.

Paudel (2014) also studied the impacts of trade liberalization on the economic growth of 193 countries from 1985 to 2010 and concluded trade liberalization affects economic growth positively. Gries and Redlin (2012) used the Panel cointegration test and panel error-correction model to test the relationship between GDP and trade openness for 158 countries over the period 1970-2009. They found a positive and significant causality relationship between openness and growth. In addition, by using ARDL model, Malefane and Odhiambo (2018) examined the impact of trade openness on the economic growth of South Africa from 1975 to 2014 and found trade openness has a positive and significant impact on economic growth.

Idris et al. (2016) investigated the relationship between trade openness and economic growth of 87 selected countries for the 1977-2011 period and concluded economic growth is affected positively by trade liberalization. Besides, by using the ADF unit root test, Johansen Cointegration test, and Granger Causality test, Mohsen and Chua (2015) investigated the relationship between trade openness, investment, and economic growth of Syria from 1980 to 2010. They found trade openness and investment affect economic growth positively. Cevik et al. (2019) also tested the relationship between trade openness and economic growth in Turkey from 1950 to 2014 and concluded a positive relationship between trade openness and economic growth.

Mohsen and Chua (2020) tested the effect of trade openness, investment, final consumption expenditure, and oil price on China's economy, over the period 1980-2018. They found that GDP is positively related to trade openness, investment, and expenditure, but negatively related to the oil price. Besides, by using ARDL approach, unit root tests, Granger Causality test, and TYDL approach, Hundie (2014) examined the causal relationship between saving, investment, and economic growth in Ethiopia from 1970 to 2011. It was found that saving and investment play a key role in promoting economic growth. Bakari (2017) also investigated the relationship between domestic investment and economic growth in Malaysia from 1960 to 2015 and concluded a positive effect of domestic investment, exports, and labor on economic growth in the long-run term.

Aurangzeb and Haq (2012) studied the impact of investment on the economic growth of Pakistan from 1981 to 2010 and found a significant and positive impact of investment on economic growth. In addition, to test the effect of consumption on Indonesia's economic growth, Rafiy et al. (2017) used ARDL model and found that consumption spending has long and short-run effects on economic growth. Besides, by using a cross-section sample of 24 developing countries, Khan and Reinhart (1990) studied the effect of private and public sector investment on economic growth and found positive effects on economic growth. Nonetheless, private-sector investment plays a much larger role in achieving economic growth than public investment.

To test the effect of crude oil prices on GDP growth in Kenya, Kibunyi et al. (2018) used ARDL model and concluded that crude oil prices have a positive long-run impact on GDP growth. Mohsen et al. (2017) also tested the effect of oil price on the Syrian economy from 1980 to 2010 and found oil price has a positive long-run relationship with economic growth. Akinsola and Odhiambo (2020) used ARDL and NARDL to investigate the impact of oil prices on economic growth in Ethiopia, Mali, Gambia, Mozambique, Tanzania, Senegal, and Uganda. They found that an oil price decrease has a positive effect on economic growth, whereas a rise in oil price presents a negative effect. By using Pearson's bound test method and vector error correction model, Alkhateeb and Sultan (2019) tested the effect of oil prices on Indian economic growth and concluded a negative effect of oil prices on economic growth. Besides, Omitogun et al. (2018) used ARDL to test the Nigerian economy from 1981 to 2016. It was found that oil price positively and significantly affects economic growth. Furthermore, to test the impact of oil price shocks on the economic growth of Kazakhstan, Kose and Baimaganbetov (2015) used a structural vector autoregression (SVAR) model and found oil price shocks affect economic growth negatively.

Hence, related to the main objective of this study, many empirical studies analysed the effect of trade openness, investment, expenditure, and oil price on the economic growth of different countries by using different methodologies, but none of the previous studies tested its effect on the economic growth of Côte d'Ivoire.

3 Methodology

To achieve the objective of this study, the economic growth model will be developed to test the effect of trade openness, investment, expenditure, and oil price on the economic growth of Cote d'Ivoire. Our model consists of five variables: gross domestic product (GDP), trade openness (OPEN), gross fixed capital formation (GFCF), final consumption expenditure (FCE), and oil price (OP). This model with GDP as the dependent variable is presented as follows:

$$\ln GDP = \beta_0 + \beta_1 OPEN + \beta_2 \ln GFCF + \beta_3 \ln FCE + \beta_4 \ln OP + \varepsilon \quad (1)$$

where β_0 is the intercept, β_1 , β_2 , β_3 , and β_4 are the slope coefficients, $\ln GDP$ is the natural log of gross domestic product (USD), $OPEN$ is the trade openness as an indicator of the trade liberalization (the percentage of total exports and imports to GDP), $\ln GFCF$ is the natural log of gross fixed capital formation (USD), $\ln OP$ is the natural log of oil price (US dollars per barrel), $\ln FCE$ is the natural log of final consumption expenditure (USD), and ε_t is the error term.

Annual time series data of Cote d'Ivoire over the period 1980-2020 will be used in this study. The data are obtained from the World Bank (WB). All variables in this study are expressed in the logarithmic form, except for OPEN. Additionally, trade openness is used in this study as a proxy for the degree of trade liberalization. There are many indicators of trade openness such as tariffs, the percentage of exports to GDP, the percentage of imports to GDP, the percentage of the trade balance to GDP, and the percentage of total exports and imports to GDP. The percentage of total exports and imports to GDP will be used in this study as an indicator of trade openness. Regarding the oil price, the Average Crude Oil Spot Price has been used in this study. It is calculated as an equally weighted price of the West Texas

Intermediate (WTI) Crude Oil Price, Brent Crude Oil Price, and Dubai Crude Oil Price. This metric gives a nice overview of the broad crude oil market, rather than looking at one type of crude oil price alone.

Because this study involves time series data, it is necessary to begin the analysis with the unit root tests. Augmented Dickey-Fuller (ADF) unit root tests will be conducted on each variable in the model to find out whether the time series data are stationary at the level or first difference. After testing for stationarity and confirming the order of integration of each time series, and if the variables in the model are found to be integrated of the same order, the Johansen cointegration test will be applied to establish whether there is any long-run or equilibrium relationship between the variables in the model. If the variables are cointegrated, then the Granger causality tests will be conducted based on the VECM to determine the long and short-run causality relationships among the variables in the model. However, if the Johansen test results indicate no cointegration among the variables in a particular model, then the Granger causality tests will be based on the VAR model. On the other hand, the Ordinary Least Squares (OLS) model will be used in this study to estimate the coefficient of the variables, and it will be subjected to several statistical diagnostic tests, namely, the normality, serial correlation, and heteroscedasticity tests to ascertain its statistical adequacy. Lastly, a stability test based on the cumulative sum (CUSUM) will be applied to determine whether the parameters of the model are stable over the period of the study.

4 Empirical Results and Discussion

In the first step of the analysis, we carried out the ADF unit root test to determine whether the variables in the model are stationary or non-stationary at levels. If any of the time series is found to contain a unit root and is not stationary at the level, the ADF test is repeated on the first differenced series. Table 1 shows that all the variables in the model are not stationary at the level, but became stationary after first differencing at 1% or 5% level of significance. Hence, all the variables in the model are integrated into order one, I(1).

Table 1: ADF unit root test results

	Level			First difference		
	Intercept	Trend and intercept	No trend &no intercept	Intercept	Trend and intercept	No trend &no intercept
lnGDP	0.801241	-2.995185	2.057680	-5.7038***	-5.8735***	-5.0590***
OPEN	-1.182358	-0.933448	-0.663181	-5.3688***	-5.3608***	-5.4059***
lnGFCF	0.485286	-2.298021	0.999479	-4.4269***	-4.9684***	-4.3508***
lnFCE	0.422076	-2.933756	1.751738	-5.6636***	-5.0985***	-5.2173***
lnOP	-1.201314	-2.325130	0.057889	-5.9150***	-5.9261***	-5.9872

Note: *** denotes significance at the 1 percent level, and ** at the 5 percent level.

4.1 Johansen Cointegration Test Results

Since all the variables are stationary in the first difference, we can apply the Johansen cointegration test to determine if there is any cointegration or long-run equilibrium relationship between the variables in the model. However, before running the cointegration test we need to run the VAR model first to determine the optimal lag length, which is 4 based on the minimum AIC.

After having determined the optimal lag length, we then proceeded with the cointegration test for the model. Table 2 indicates that there are at most five cointegration equations based on the Trace test

and Maximum Eigen test. In other words, the results reveal that there is a long-run relationship among the variables in the system comprising $\ln GDP$, $OPEN$, $\ln GFCF$, $\ln FCE$, and $\ln OP$.

Table 2: Johansen cointegration test results

No. of CE(s)	Trace Statistic	0.05 Critical Value	Max-Eigen Statistic	0.05 Critical Value
$r = 0$	225.0253***	0.0000	92.66665***	0.0000
$r \leq 1$	132.3587***	0.0000	56.71656***	0.0000
$r \leq 2$	75.64214***	0.0000	35.98931***	0.0004
$r \leq 3$	39.65283***	0.0000	30.23404***	0.0002
$r \leq 4$	9.418796**	0.0447	9.418796**	0.0447

Notes: *** denotes significance at the 1 percent level, and ** at the 5 percent level.

4.2 Ordinary Least Squares (OLS) Model Results

After having found cointegration relationships among the variables $\ln GDP$, $OPEN$, $\ln GFCF$, $\ln FCE$, and $\ln OP$, so now we can estimate the coefficient of the variables using the ordinary least square (OLS) model.

Table 3: OLS model results

Independent Variables	Coefficient	Prob.
$OPEN$	0.228613***	0.0029
$\ln GFCF$	0.094699***	0.0000
$\ln FCE$	0.907490***	0.0000
$\ln OP$	-0.021264**	0.0187
c	0.239822**	0.0220
Dependent Variable	$\ln GDP$	
R-squared	0.995885	
F-statistic	2057.025***	
Prob(F-statistic)	0.000000	

Notes: *** denotes significance at the 1 percent level, and ** at the 5 percent level.

Table 3 shows that $\ln GDP$ is positively related to $OPEN$, $\ln GFCF$, and $\ln FCE$, but it is related negatively to $\ln OP$. Besides, the R-squared, which indicates how much of the total variation of the dependent variable can be explained by the independent variables, is 99.6% which is more than 60%, then the date of this model is fitted strongly. Besides, F-statistic is used to test if the independent variables jointly influence the dependent variable. We found that the probability of the F-statistic is 0.000, which is less than 5%. Hence, F-statistic is significant, which means that all independent variables ($OPEN$, $\ln GFCF$, $\ln FCE$, and $\ln OP$) jointly affect the dependent variable ($\ln GDP$). From Table 3, the long-run $\ln GDP$ equation can be written as:

$$\ln GDP = 0.239 + 0.228 OPEN + 0.094 \ln GFCF + 0.907 \ln FCE - 0.021 \ln OP \quad (2)$$

The coefficient of $OPEN$ indicates that for every one percent increase in trade openness, the GDP of Cote d'Ivoire will increase by 0.228 percent. Trade openness enhances the economic growth of a country by providing access to goods and services, achieving efficiency in the allocation of resources, and facilitating integration with sources of innovation such as technology through the import of high-tech

goods. Besides, trade openness creates a more dynamic business environment and increases local and foreign investment which create job opportunities and improve the human capital in the country. Moreover, trade openness creates a foreign competition of local products in the domestic market, which lead producers to improve their production by adopting new and modern production technology. Therefore, many developing countries, overall, those in Africa, have adopted trade reforms, involving the decreasing of tariffs and non-tariff barriers. Cote d'Ivoire, as one of these countries, has adopted trade openness strategies, by providing more facilities to promote import and export activities in the country. For example, it has simplified import and export procedures, reduced the high tariff rates, decreased export taxes, and signed several bilateral and free trade agreements with different countries, which have motivated producers to improve and increase their production in the country. This increased the country's importing and exporting, thus raising GDP to remarkable growth. Similar results were found by Paudel (2014), Malefane and Odhiambo (2018), Gnanon (2018), and Cevik et al. (2019).

The coefficient of $\ln GFCF$ indicates that for every one percent increase in gross fixed capital formation, the GDP of Cote d'Ivoire will increase by 0.094 percent. Investment plays an important role in supporting the economic growth in the country by creating new job opportunities and producing goods and services for domestic consumption and export, which is reflected positively on the local economy. Besides, an increase in investment creates a higher degree of competition in the local market, which motivates producers to improve the quality and quantity of their production by adopting modern management and using new technology in their production activities.

Investment is also important for improving the productivity of an economy. Investing in education increases labor productivity, and investment in new technology and capital increases the economy's productive capacity. Besides, an increase in investment drives companies to more research and development in the capital structure. If it wants to take new products and services to the market, they will typically engage in research and development activities as their first step towards innovating and introducing new products and services or improving their existing offerings. That will also increase the labor productivity by making companies more productive and efficient. As labor becomes more efficient, this increased efficiency nationwide leads to economic growth for the entire country and a higher nationwide GDP.

Furthermore, a rise in investment can also cause a multiplier effect. If firms gain more sales and profit, they are willing to reinvest this in further investment. Also, households who gain employment from the investment, have more income to spend. Thus, an increase in investment should be a boost to economic growth. Therefore, the Ivorian government has been working hard on improving the investment climate and allowing businesses to thrive, leading them to improve the production level in the country. The same results are obtained by Khan and Reinhart (1990), Aurangzeb and Haq (2012), and Hundie (2014).

The coefficient of $\ln FCE$ indicates that for every one percent increase in final consumption expenditure, the GDP of Cote d'Ivoire will increase by 0.907 percent. Final consumption expenditure represents a large proportion of GDP. The rise in final consumption means an increase in the local demand for different goods and services in the country, which motivates producers to increase their production, and that will boost economic growth in the country. If for some reason consumers begin to spend less money; this, in turn, affects businesses as they begin to experience a decrease in sales. If consumer spending continues to decline and businesses begin to cut back on production, the economy experiences a slowdown and may eventually enter a recession. However, the more money consumers spend in a given economy, the better the companies in that economy tend to perform. When people spend more, production will be increased, more job opportunities will be created, and companies can afford to replace their old equipment with new tools, spend more on research and development, develop new production processes, produce newer and better products, and earn higher profits. For this reason, it is unsurprising that the increase in consumer spending helps the economy sustain its expansion. This result agrees with Mohsen and Chua (2020).

The coefficient of InOP indicates that for every one percent increase in oil price, the GDP of Cote d'Ivoire will decrease by 0.021 percent. This result was expected because crude oil is used as an input for various purposes such as production, transportation, home heating, and power generation. Since the companies use oil as fuel for machines and to transport inputs to it and output to the markets, any increase in oil prices affects the prices of equipment and inputs, which in turn raises the cost of production and this affects negatively the total output in the country. Moreover, the rise in the cost of transportation and production activities after the oil price increase will affect the prices of a variety of goods and services, as producers may pass production costs on to consumers. Hence, the overall price will go up in the country, which will increase inflation, reduce real income, and cut consumption. Besides, the high cost of production and transportation will increase the prices of local products in the global market, which leads to a decline in international competitiveness and external demand for these products. This drives producers to reduce their production, so the country's economic growth will go down. This finding agrees with Kose and Baimaganbetov (2015), Omitogun et al. (2018), Alkhateeb and Sultan (2019), and Akinsola and Odhiambo (2020).

4.3 Statistical Diagnostic Tests Results

To check the model's adequacy, it is essential to subject the model to several diagnostic tests, namely, the normality, serial correlation, and heteroskedasticity test. A 5% level of significance will be used in this study. From Table 4, it is clear that the model does not have serial correlation or heteroscedasticity, and the series is normally distributed as well because the computed P-value is greater than the 5% significance level.

Table 4: Diagnostic tests results

Normality test	Serial correlation LM test	Heteroskedasticity (ARCH) test
2.200841 (0.332731)	1.730839 (0.1052)	1.192836 (0.2696)

Based on the results that we got, we can say that the model is the Best Regression Model because the R square value is high, Prob (F-statistic) is significant, residuals are normally distributed, and no serial correlation or Heteroskedasticity in the residual.

4.4 Granger Causality Tests Results

Since the variables in the model are cointegrated, the Granger causality tests based on the VECM are used to examine the short- and long-run causality relationships among the variables in the model. The F-test results show the significance of the short-run causal effects, while the significance of the coefficient of the lagged error correction term [ect(-1)] shows the long-run causal effect.

The Granger causality test results based on the VECM are shown in Table 5. The significance of the coefficient of the lagged error correction term shows the long-run causal effect. It is clear that there are unidirectional short-run causality relationships running from OPEN and InGFCF to InGDP, and a bidirectional short-run causality relationship between InFCE and InGDP. However, there is no evidence of any short-run causality relationship between InOP and InGDP. On the other hand, there are bidirectional long-run causality relationships between InGFCF, InFCE, and InGDP, and unidirectional long-run causality relationships running from OPEN and InOP to InGDP.

Table 5 Granger causality test results

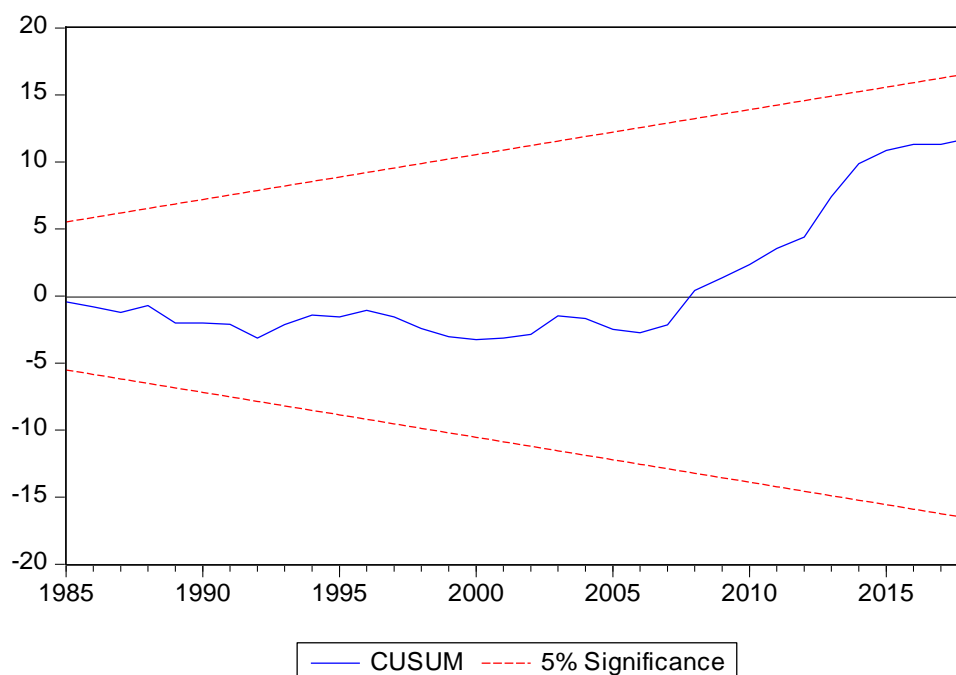
Dependent variables	Independent variables					
	$\sum \Delta \ln GDP$	$\sum \Delta OPEN$	$\sum \Delta GFCF$	$\sum \Delta \ln FCE$	$\sum \Delta \ln OP$	ect(-1)
$\Delta \ln GDP$	-	0.592*	0.244**	1.237*	-0.012	2.203**
$\Delta OPEN$	0.852	-	-0.140*	-0.632	0.012	-0.286
$\Delta \ln GFCF$	-1.731	0.621	-	1.277	-0.082	3.990**
$\Delta \ln FCE$	-2.292**	0.784**	0.268*	-	-0.035	2.728**
$\Delta \ln OP$	-1.086	1.470	0.168	1.366	-	-2.190

Notes: ** denotes significance at the 5 percent level, and * at the 10 percent level.

4.5 The Stability Test Result

CUSUM statistic is used to determine the model's parameter stability in this study. The decision about parameter stability is based on the position of the plots relative to the 5 % critical bounds. If the plots of the CUSUM statistic stay within the area in the two critical lines, then the parameters of the model are stable over the period of the study. Figures 2 indicate that the position of CUSUM plots stays within the area in the two critical lines, which means there are no structural changes in the model.

Figure 2: CUSUM test results



5 Highlights of the Important Findings of the Study

The most important finding of this study is that trade openness, investment, expenditure, and oil price have significant effects on the economic growth of Cote d'Ivoire. Trade openness supports the economic growth of Cote d'Ivoire by opening the doors for producers to import more machines and production inputs that can be using in their production activities, as well as enhancing the local economy by providing access to goods and services and facilitating the import of high-tech goods. However, trade

openness can be a cause for the increase in the deficit in the balance of trade, so it is necessary for the government to further boost the quantity and returns on exports by motivating producers to improve and increase their production and be more competitive in foreign markets. Besides, investment plays an important role in supporting the Ivorian economy by producing more goods and services, creating new job opportunities, and increasing the competition in the local market that drives local companies to work hard on improving the quality and quantity of its production. Hence, it is imperative that the government has to put more effort to attract more investments by creating an attractive investment climate to achieve a high level of economic growth and development in the country.

Furthermore, expenditure has a positive effect on the economic growth of Cote d'Ivoire, because the rise in expenditure motivates producers to increase their production to meet the increase in demand, and that will boost economic growth in the country. Therefore, it is important that the government works on improving the standard of living that will increase the expenditure in the country, which can play a bigger role in achieving economic growth. However, oil price fluctuations may have an extensive impact on the local economy. A rise in the oil price affects negatively the economic growth of Cote d'Ivoire by increasing the cost of production and decreasing the real income, which reduces the consumption, investment, and production in the country, so the economic growth will go down. Hence, less dependence on imported oil products may help the country's economic growth in the long run.

6 Conclusion

This study investigated the effect of trade openness, investment, expenditure, and oil price on the economic growth of Cote d'Ivoire, using annual time series data from 1980 to 2020. The ADF unit root test, Johansen cointegration test, OLS model, Granger causality test based on the VECM, and lastly CUSUM test, were applied in this study.

The ADF unit root test results indicated that all variables in the model are not stationary at the level but became stationary after first differencing. The Cointegration test pointed to a significant long-run relationship among the variables. Besides, the results of the OLS model showed that economic growth is positively related to trade openness, investment, and expenditure, but it is related negatively to oil prices. Granger causality tests showed that unidirectional short-run causality relationships are running from trade openness and investment to GDP, and a bidirectional short-run causality relationship is between final consumption expenditure and GDP. However, there is no evidence of any short-run causality relationship between oil price and GDP. On the other hand, there are bidirectional long-run causality relationships between investment, final consumption expenditure, and GDP, and unidirectional long-run causality relationships running from trade openness and oil price to GDP. Lastly, the CUSUM test indicated that there are no structural changes in the model.

Based on the results of this study, the Ivorian government needs to promote international trade in the country by simplifying import and export procedures, as well as removing most tariff and non-tariff barriers in front of importing and exporting from and to different countries. Moreover, it is important to decrease corruption and create an attractive investment climate to increase investment in the country. The government also should encourage producers to improve and diversify their production to increase their competitiveness in the global market. It is necessary also for Cote d'Ivoire to increase its exporting of finished products and decrease its dependence on exporting raw materials, to reduce the effect of the raw material price fluctuation on the local economy. The government should also improve the efficiency of government spending, create new job opportunities, reduce the poverty, and increase salaries, which will help in improving the standards of living that will improve the economic growth in the country.

On the other hand, many studies have analyzed the determinants of economic growth of different countries, but to the best knowledge of the researcher, none of the previous empirical studies have analyzed the determinants of the economic growth in Côte d'Ivoire. This study will test the effect of some factors such as trade openness, investment, expenditure, and oil price on the Ivorian economy, in

an attempt to analyze a part of the economic growth determinants of Cote d'Ivoire. Besides, because of the lack of data for some variables such as the real interest rate, human capital, and labor force, we were not able to include these variables in our model despite their importance in this study. Furthermore, future researchers can investigate how financial liberalization affects the economic growth of Côte d'Ivoire.

REFERENCES

- Akinsola, M. O., & Odhiambo, N. M. (2020). Asymmetric effect of oil price on economic growth: Panel analysis of low-income oil-importing countries. *Energy Reports*, 6, 1057-1066.
- Alkhateeb, T. Y., & Sultan, Z. A. (2019). Oil price and economic growth: The case of Indian economy. *International Journal of Energy Economics and Policy*, 9 (3), 274-279.
- Aurangzeb, & Haq, A. U. (2012). Impact of Investment Activities on Economic Growth of Pakistan. *Business and Management Review*, 2 (1), 92-100.
- Bakari, S (2017). The Impact of Domestic Investment on Economic Growth: New Evidence from Malaysia. *Journal of Smart Economic Growth*. 2 (2), 105-121, March.
- Bekele, Y. E. (2017). Exploring the Relationship between Trade Liberalization and Ethiopian Economic Growth. *Ethiopian Journal of Economics*, 26 (2), 109-141.
- Cevik, E. I., Atukeren, E., & Korkmaz, T. (2019). Trade Openness and Economic Growth in Turkey: A Rolling Frequency Domain Analysis. *Economics*, 4 (41), 1-16.
- Gnangnon, S. K. (2018). Multilateral Trade Liberalization and Economic Growth. *Journal of Economic Integration*, 33 (2), 1261-1301.
- Gries, T., & Redlin, M. (2014). Trade Openness and Economic Growth: A Panel Causality Analysis. CIE Working Papers No. 52. Center for International Economics, University of Paderborn, Paderborn.
- Hundie, S. K. (2014). Savings, investment and economic growth in Ethiopia: Evidence from ARDL approach to co-integration and TYDL Granger-causality tests. *Journal of Economics and International Finance*, 6 (10), 232-248.
- Idris, J., Yusop, Z., & Habibullah, M. S. (2016). Trade Openness and Economic Growth: A Causality Test IN Panel Perspective. *International Journal of Business and Society*, 17 (2), 281-290.
- Irwin, D. A. (2019). Does Trade Reform Promote Economic Growth? A Review of Recent Evidence. Working paper. Washington: Peterson Institute for International Economics.
- Khan, M. S., & Reinhart, C. M. (1990). Private Investment and Economic Growth in Developing Countries. *World Development*, 18 (1), 19-27.
- Kibunyi, A. N., & Wanjala, K. (2018). Effect of Crude Oil Prices on GDP Growth and Selected Macroeconomic Variable in Kenya. *Journal of Economics and Business*, 1 (3), 282-298.
- Kose, N., & Baimaganbetov, S. (2015). The asymmetric impact of oil price shocks on Kazakhstan macroeconomic dynamics: A structural vector autoregression approach. *International Journal of Energy Economics and Policy*, 5 (4), 1058-1064.
- Malefane, M. R., & Odhiambo, N. M. (2018). Impact of Trade Openness on Economic Growth: Empirical Evidence from South Africa. *International economics*, 71 (4), 387-416.
- Mohsen, S. A., & Chua, S. Y. (2015). Effects of Trade Openness, Investment, and Population on the Economic Growth: Case of Syria. *Hyperion Economic Journal*, 2 (3).
- Mohsen, S. A., & Chua, S. Y. (2020). Trade Liberalization and Economic Growth in China. *Asian Journal of Economics and Business*, 1 (2).
- Mohsen, S. A., Chua, S. Y., & SAB, N. (2017). Determinants of Economic Growth in Syria between 1980 and 2010. *Eurasian Journal of Business and Economics*, 10 (19).
- Njeru, G. (2021). Cacao: une alternative durable aux énergies fossiles. *BBC News*.
- Omitogun, O., Longe, A.E., & Muhammad, S. (2018). The impact of oil price and revenue variations on economic growth in Nigeria. *OPEC Energy Review*, 42 (4), 387-402.

- Oxford Business Group. (2019). Foreign Investment in Cote d'Ivoire. Retrieved from Oxford Business Group: <http://oxfordbusinessgroup.com>
- Paudel, R. C. (2014). Trade Liberalization and Economic Growth in Developing Countries: Does Stage of Development Matter? Crawford School of Public Policy, No. 14-13.
- Penresa. (2022). Côte d'Ivoire - A Shining Ivory of Opportunity. Forbes. Website: https://cms.forbesafrica.com/wp-content/uploads/2021/11/forbes-cotedeivory_2021_32pags_vok_online.pdf
- Rafiy, M., Adam, P., Bachmid, G., & Saenong, Z. (2018). An Analysis of the Effect of Consumption Spending and Investment on Indonesia's Economic Growth. *Iranian Economic Review*, 22 (3), 753-766.
- Wesgro. (2021). Ivory Coast. South Africa: Wesgro. Website: www.wesgro.co.za/uploads/files/Research/Wesgro-IQ_Ivory-Coast_07.2021.pdf