GAU Journal of Social Science
ISSN: 3062-0333 | Volume: 01 Issue: 02

The Effect of Public Debt on the Economic Growth of Côte D' Ivoire.

Angela Audrey Milena Pascale Kouakou[1], George Nwokike Ike[2]
Faculty of Business and Economics, Girne American University, Cyprus [1,2]

**Corresponding Email: georgeike@gau.edu.tr*

DOI: https://doi.org/10.64192/w2h6whh

Received: 16.10.24 *Accepted: 28.11.24* *Published: 16.12.24*

Abstract: *This study analyzes the effect of the public debt on the economic growth of Côte d'Ivoire from 1980 to 2016. Using the ARDL-Bound test for cointegration, it shows that there is cointegration when GDP is the dependent variable. Examining the long- and short-term effects of debt on real gross domestic product using the ARDL and Error Correction Model (ECM), it reveals that external public debt, trade openness, and consumer price index has a negative long-run impact on GDP. Meanwhile, private investment positively impacted economic growth. In the short run, the coefficient values of trade openness and consumer price index are not significant. Also, the study performs the causality test using the Toda-Yamamoto causality test, which displays a long-run unidirectional causality between debt and GDP. Debt has a causal effect on economic growth. The country should therefore minimize its dependence on external debt and rather intensify internal reforms to generate revenues.*

Keyword:
External Public Debt,
Economic Growth,
ARDL-Bounds Test

INTRODUCTION

The financial health of a nation is dependent on the proper operation of its public finances. This is because the government is directly responsible for these funds. When budgets are tight, countries can borrow from banks, corporations, and individuals as well as other countries' treasury institutions. This practice contributes significantly to budget deficits because it allows them to be paid off with increased tax revenue. According to the KLEIN (1994) book, a country's debt must allow them to borrow more money than they have. This is crucial to a nation's economic growth; debt can help countries cover budgetary deficits and promote development. As a result, it is possible to say that the relation between debt and economic growth may be compared to any other economic component.

Debts have been created internally and externally due to government borrowing to finance a deficit budget.

Growing the economy and staying competitive are both concerns of fiscal authorities. The reason for this is that borrowing encourages economic growth and continues to support the economy. Many countries have had higher public debts recently; this is normal for any economy. No country accepts debt, regardless of the size of its economy. Studying how debt affects development is crucial. A nation's debt is the total amount of money it owes. This makes it difficult for a country to fund development projects and other national goals due to limited resources and funds.

Several countries face debt problems on a national and macro level. This leads to financial issues, such as unemployment and lower wages. To combat these problems, a country needs to increase its overall welfare by borrowing money. This money must be used to finance infrastructures such as schools and health facilities (Alike & Arowolo, 2010). The country's debt is higher than its Gross Domestic Product on average; this was indicated by statistics in 2016. These six countries — Barbados, Belgium, Cyprus, Jamaica, The Gambia, and Singapore — all had debt at 107% or higher of their GDP. In 2016, Japan had the highest debt-to-gross domestic product ratio at 239.18%. Côte d'Ivoire's debt increased significantly over the last years. Consequently, the country needed to use both external and internal loans to finance development.

Research questions

Our study takes is standpoint on the following key questions:

1. What is the nature of the relationship between Public debt and economic growth of Côte d'Ivoire?

2. What impacts can private investment, trade openness, and the consumer price index have respectively on GDP?

3. Are there any causal effects between public debt and the economic growth of Côte d'Ivoire?

Objectives of the Study

This study aims to ascertain how public debt affects Côte d'Ivoire's economic growth from 1980 to 2016 and to verify the causal relationship between debt and GDP, with a view to elaborating on suitable policies for a solid and long-term economic development.

Significance of the Study

Researchers have conducted various studies attempting to respond to the controversy over the link that might exist between public debt and economic growth, that is, the possible impacts of public debt on the good health of a given economy. However, their results have remained controversial to date. Therefore, it proves necessary to conduct further studies, especially based on the economy of a developing country like Côte d'Ivoire. So far, there has not been any such exclusive and lengthy study as the one I am conducting about the ever-growing debt stock and its impacts on Côte d'Ivoire's legitimate aspiration for economic growth. The study would thus contribute literature and databases on this issue from an Ivorian perspective.

Literature Review & Hypothesis Development

Theories on Economic Growth

Most economic theories about debt revolve around its impact on the economy. Economists from various schools of thought have given controversial answers to this issue. Yet, two major groups spring out in their doctrinal opposition: the Keynesian school and the neoclassical school.

As per Keynesians, rising governmental debt promotes economic expansion. They state that indebtedness is not detrimental to the current or future generations because it leads to new investments. In their approach, the budget deficit can be considered as a factor of economic recovery and job creation. That is to say, it promotes the revival of world demand, resulting in a greater than proportionate rise in investment, which in turn encourages an increase in output. Eventually, the debt fills the deficit, and the increase in consumption that it incurs facilitates debt service.

Contrary to Keynesians, the classics consider indebtedness as a future tax and blame state intervention. Citizens, according to Ricardo (1817), view the debt as a tax that has been postponed to be paid endlessly. Indeed, according to the Ricardian approach, the public deficit is harmful to the economy, and its financing increases the interest rate, anything that discourages private investments: Classics call this "the crowding out effect".

In addition, debt financing can lead to a risk of Ricardian equivalence. Barro (1974) deepens Ricardo's thesis by combining the themes of eviction and rational anticipation. His hypothesis sparked a new debate on the relationship between public debt and budget deficit. Indeed, according to Barro (1974), if the government finances public expenditure with a loan, or if it reduces taxes by not altering public expenditures and money supply, economic agents would contemplate tax rises to cover the debt service. Any such policy will not have the expected stimulating effect, no matter the deficit financing methods. For a long-term inflation and a rise in taxes are likely to cause a lack of credibility for the government.

In his classical theory, Adam Smith (1776) states that the overall production derives from all inputs, including labor, land, and capital. The expansion of the economy is dependent on the division of labor. In short, according to classical and neoclassical growth theory, the public debt negatively affects economic growth. For these theoreticians, technological innovation is more important than capital accumulation in regard to its impact on the growth of a state's economy. Similarly, most theories support the view that over-indebtedness has a negative impact on economic growth.

Numerous studies have shown that Debt both positively and negatively affects a country's economy; some have even stressed the causal link between debt and GDP.

Panel and Time Series Studies of Debt and Economic Growth

Several researchers using similar methods have investigated the impact of public debt on economic growth, which has fueled controversies. Anning, Frimpong, & Kwame (2015) determined that debt is negatively associated with growth due to corruption and inefficient debt management in Ghana. They used the ordinary least squares (OLS) during the period 1980-2005. They suggest that Tax reform programs should be used to increase revenue instead of borrowing. Similarly, Fincke & Greiner (2013) studied the correlation between

debt and growth. They case-studied seven developed nations over the period 1970-2012. The regression was combined using a random-effect and pooled model to estimate effects. The survey concluded that borrowing money negatively impacted the economy of these countries.

Likewise, Audu (2004) combined methods from both VECM and Johansen cointegration to analyze debt's effect on Nigeria's growth from 1970 to 2002. The results show that high debt service expenses cause public spending and economic growth to suffer. Bhatta (2003) used OLS to analyze how national debt affected the economy of Nepal between 1980 and 2001. That study shows that national debt positively impacts financial activities. As a country, Nepal is landlocked and has an economy that heavily relies on foreign aid and agriculture.

Another study shows that at a debt level of 90%, financial performance slowed down. It was conducted by Reinhart and Rogoff (2010). It shows that, at a debt level of 60%, the debt significantly impacts growth. According to Rais & Anwar (2012), by using the OLS method during the period of 1972 to 2010 on a research based on the link between debt and growth in Pakistan, they found that Pakistan's public debt exceeds its GDP, and the nation's economic and social situation was dismal. These findings are consistent with the neoclassical theory that supported the debt-building hypothesis.

Fosu (1996) examined how Sub-Saharan Africa's economy from 1970 to 1986 was influenced by public debt by implementing the OLS regression approach. His findings showed that borrowing led to a reduction in the annual gross domestic product of 33%. In the case study conducted by ADA (2016), ARDL testing found that high levels of external debt decreased Nigeria's overall GDP. That study covers the 1970-2003 time period. Based on data from all Eurozone nations over the past 30 years, Spilioti (2015) concludes that public debt, GDP, and national savings are all important parts of the economy. As per Karagoöl's (2002), who drew on the Granger causality test to analyze Turkey's economic data over the period 1956-1996, debt has a significant linear, one-way direction effect on the country's economic growth.

Independent variables

Here, we conduct an empirical examination of the independent variables: private investment, the consumer price index, and international trade.

Some studies claim that private investment drives economic growth. In 1998, Ghali used a co-integrated vector autoregressive model to analyze Tunisia's economy between 1963 and 1993. He discovered that private investment in the country boosted economic growth during that time. Badawi (2003) used the same method to analyze Sudan's economy between 1963 and 1993. He found out that both public and private investments contributed to the country's economy. In his case study, private investment has a much greater impact than public sector investment. This point is shared by Ramirez and Nazmi (2003), who report that integration of private and public investment strengthens the economies of nine nations in Latin America.

However, for Khan and Kumar (1997), private investment positively impacts economic growth. The impact is measured through aggregated cross-sectional and panel data covering 95 developing countries, including Ethiopia, over a longer time period, 1970-1990. In a case study of South Africa, Ashipala and Haimbodi (2003) assume that private investment is pivotal for the long-term economic stability of the country. Using data covering the time period 1981-2000, Paterson (2003) analyzed Ethiopia's real GDP growth and investment following the Harrod-Domar Model of Growth. He noted that investment positively correlated with GDP growth. Accordingly, Erden and Holcombe (2005) have pointed out the complementarity of public investment on private investment in some developing countries from 1980 to 1997.

METHODOLOGY

To assess the coefficient estimates of time series data, we resort to the Augmented Dickey-Fuller (ADF) Unit Root Tests, ARDL-Bound cointegration Tests, and Error Techniques of Estimation. To estimate the causality between two variables, we use the Toda-Yamamoto Causality Test.

Model Specification

For this study, five variables are used: the gross domestic product, public debt, private investment, trade openness, and consumer price index. These are used to analyze the weight of the external public debt on the growth of the economy. Appropriately, we use an econometric

approach based on a multiple regression model in linear form. Through the representation of variables, the theoretical model functions specifically as follows:

$$GDP_t = f(DEBT_t, IPRIV_t, TROPEN_t, CPI_t)$$

GDP stands for economic growth, debt for external debt, IPRIV for private investment, TROPEN for trade openness, and CPI for consumer price index. The rationale for implementing this equation comes from the conceptual and empirical literature reviewed by the research. Initially, we assumed that only government debt would affect economic growth, but then we decided to include some control variables. We decided that control variables also help explain GDP, other than debt.

GDP stands for economic growth, debt for external debt, IPRIV for private investment, TROPEN for trade openness, and CPI for consumer price index. The rationale for implementing this equation comes from the conceptual and empirical literature reviewed by the research. Initially, we assumed that only government debt would affect economic growth, but then we decided to include some control variables. We decided that control variables also help explain GDP, other than debt.

Data Description

Our research focuses on the impact of public debt on Côte d'Ivoire's economy by analyzing data from 1980 to 2016. It uses five macroeconomic terms to examine data from different sources. These terms are reported in Table 3 below, so are their definitions, sources, and expected signs. This shortened transcription enables easy access and understanding of data.

Table 3-1 Definition, Sources, and Expect Sign

Variables	Sources	Definition	Expect sign
GDP	World Bank	"Gross Domestic Product" in full form. It is the total value of all final products and services produced in a nation during a specific period. It is the most commonly employed measure for the size of an economy.	Dependent variable
DEBT	World Bank	"External Debt Stock" is the entire amount of debt owed by a nation to foreign lenders, including commercial banks, governments, and international financial institutions.	+/-
IPRIV	World Bank	"Private investment" is the investment that does not refer to government spending. It is the purchase of a capital asset with the purpose of generating income and adding value.	+
TROPEN	Calculation Based on World Bank Data	Trade openness: an exchange of goods and services between nations, which is the primary means of economic interaction. It is also defined as the ability to trade abroad, taking into account the level of local production.	+/-
CPI	World Bank	"Consumer price index" (CPI) is the primary method of measuring inflation.	+/-

Source: own construction.

Techniques of Estimation

The appropriate technique for this study depends on whether or not the variables are stationary. We must evaluate the series for the presence of a Unit Root.

Unit Root Test

Before analyzing data trends, we must determine if the series is stationary or not. Stationary series do not undergo marked changes in their statistics; otherwise, they would no longer be considered stationary. Stationarity is tested through the Augmented Dickey-Fuller unit root tests to examine stationarity. With stationary time series, the means, variance, and covariance remain consistent over time. There is no change regardless of time. When testing a variable for unit root, we must discard the null hypothesis (non-stationary) when the ADF test exceeds the 5% critical value, in absolute terms. This implies the alternate theory, meaning that the variables are stationary and do not have unit roots. If the results of the test fall below the crucial value, then the null hypothesis remains at stake. Therefore, a unit root appears in the data, and the variable is not stationary. Consequently, the series is defined as being composed of order one, which necessitates the first difference modeling in order to make it stationary.

Lag Length Selection Criteria

Choosing the optimal lag length is essential to estimate the ARDL-Bound Test for Cointegration and Error Correction Model (ECM). In this context, we use four criteria, which are the Final Prediction Error (FPE), the Akaike Information Criterion (AIC), the Hannan and Quinn's Information Criterion (HQIC), and the Schwarz Bayesian Information Criterion (SBIC).

Cointegration Bound Test

Cointegration is tested using the ARDL Bounds co-integration procedure. The cointegration method was coined by Pesaran and Shin (1999) and later further documented by Pesaran et al. (2001). This test is used here for analyzing long-term relationships and short-term dynamic interactions between variables of interest, whether or not they are time Series variables in the Ivorian economy (GDP, DEBT, PRIVATE INVESTMENT, TRADE OPENNESS, and CONSUMER PRICE INDEX).

As part of the ARDL-Bound test method, we compare the Wald or F-statistic to the Upper and Lower critical values for a particular significance level, denoted as I(0) or I(1). In the cointegration test, if the F-statistic is larger than the Upper critical value I(1), the null hypothesis (no cointegration) is rejected and the alternative hypothesis (cointegration) is accepted. In this case, the long-term Error correction model (ECM) may be estimated. But if the F-statistic is less than the crucial value for the Lower Bound I(0), then there is no cointegration (which comes to accepting the null hypothesis). Thereafter, we can estimate the short-term model that is the Autoregressive Distributed Lag Model (ARDL).

Error Correction Model

Error-correcting models (ECM) are theory-driven methods that enable to evaluation of both the long- and the short-term dynamics of cointegrated sequences. The Dynamic Error Correction Model based on ARDL can be derived by simple linear transformations. It demonstrates the rapidity with which the transition from Short- to long-term equilibrium occurs. It is a form of multiple time series model, frequently used for data with underlying variables that are cointegrated.

Causality Test (Toda-Yamamoto causality test)

The principle of cause and effect is called causality. Various types of causality tests exist in the applied economics literature, like B. Granger's causality test (1969), which measures the short-run relationship/causality between two or more variables. In order to perform this test, all variables at this level must be stationary. The traditional Granger causality test method should ensure the stability of time series data, and the integration process should be clear. However, Granger causality tests are less effective when the process of integrating the time series is different or unclear. Alternatively, we must use Toda and Yamamoto (TY)'s method (Toda and Yamamoto, 1995). This method is superior to any other causality test because it can be used when the variables are randomly cointegrated, in the same order, or not cointegrated. Toda and Yamamoto's test (1995) is a modification of the Wald (MWald) test of linear constraints on some parameters of the stage-extended VAR (dmax + k). Where k is usually the highest order integral estimated in the system, usually at most two, and dmax is the maximum of lags.

Toda and Yamamoto's causality test (1995) requires the estimation of the following VAR mode (dmax+k):

$$y_t = \alpha_1 + \sum_{i=1}^{dmax} \beta_{1i}\gamma_{t-i} + \sum_{i=dmax+1}^{dmax+k} \beta_{1i}\gamma_{t-i} + \sum_{i=1}^{dmax} \gamma_{1i}x_{t-i} + \sum_{i=dmax+1}^{dmax+k} \gamma_{1i}x_{t-i} + \varepsilon_{1t}$$

$$y_t = \alpha_2 + \sum_{i=1}^{dmax} \beta_{2i}\gamma_{t-i} + \sum_{i=dmax+1}^{dmax+k} \beta_{2i}\gamma_{t-i} + \sum_{i=1}^{dmax} \gamma_{2i}x_{t-i} + \sum_{i=dmax+1}^{dmax+k} \gamma_{2i}x_{t-i} + \varepsilon_{2t}$$

RESULTS & FINDINGS

Descriptive Statistics

This section describes the variables used in this research. The research exploited historical data from 1980-2016, covering 36 years. It used GDP to measure economic rise, and explained the variables based on public debt (DEBT), private investment (IPRIV), Trade openness (TROPEN), and Consumer price index (CPI). Descriptive statistics were

calculated for the understanding of the structure of the data. The following chart shows how the data behaved.

Table 4-1 Descriptive Statistics

Variables	Observation	Mean	Standard Deviation	Minimum	Maximum	Variance	Skewness	Kurtosis
GDP	37	1418.605	219.8114	1138.665	1994.715	48317.04	1.16436	3.683088
DEBT	37	1.08e+10	2.30e+09	6.34e+09	1.46e+10	5.29e+18	-0.3099962	2.127289
IPRIV	37	7.847163	2.615164	4.095666	13.92803	6.839085	0.878592	3.085817
TROPEN	37	37.40515	6.104142	24.7599	47.53487	37.26055	-0.1057498	2.200496
CPI	37	68.68516	28.68976	25.35446	111.6859	823.1023	-0.0043272	1.577099

The economy of Côte d'Ivoire expanded by 1418.6% on average during the period under study. There was a minimum growth of 1138.6 percent and a maximum growth of 1994.7 percent. The standard deviation shows a variation of 219.81 percent in growth. Average debt was 1.08e+10 percent, while maximum and minimum debts were 1.46e+10 percent and 6.34e+09 percent. The standard deviation was 2.30e+09 %, indicating that public debt levels varied over time. The average of private investment was 7.84%, with a minimum level of 4.09% and 13.92% as maximum level. Trade open averaged 37.40 percent, with maximum and minimum levels of 47.53 and 24.75 percent, respectively. The average of inflation was 68.68, with a maximum and minimum levels respectively of 111.68 and 25.35 percent.

Skewness measures how the series is asymmetric or otherwise distributed about its mean. A normal distribution has a skewness of zero. When variables are skewed positively, the distribution shows a longer right tail. Conversely, the left's tail becomes longer when variables are skewed negatively. The table demonstrates that variables such as GDP and IPRIV have a positive skewness, whereas DEBT, TROPEN, and CPI skew negatively.

Kurtosis measures the peak or flatness of the distribution of the series. When the Kurtosis value is three, a series is normally distributed. A kurtosis level greater than three implies a peaked distribution (leptokurtic), whereas less than three indicates a flat distribution or platykurtic. In this table, the results suggest that GDP and IPRIV are leptokurtic, while any other variables are platykurtic.

Diagnostic Test

Correlation Test

The correlation test determines if variables are statistically correlated. The correlation coefficient quantifies the degree and direction of the link between variables. From the correlation matrix, it is apparent that none of the variables is highly correlated with GDP. The associations between the two most important variables, GDP and DEBT, are -0.6147 (significant), and therefore, they substantially correlate negatively. GDP is also directly correlated substantially with IPRIV positively (0.5029), very highly correlated negatively with CPI (-0.7095), and moderately correlated (negatively) with TROPEN (-0.3550).

Table 4-2 Pairwise Correlation Matrix

	GDP	DEBT	IPRIV	TROPEN	CPI
GDP	1.0000				
DEBT	-0.6147	1.0000			
IPRIV	0.5029	-0.6637	1.0000		
TROPEN	-0.3550	-0.1452	-0.0183	1.0000	
CPI	-0.7095	0.1101	0.1909	0.3853	1.0000

Multicollinearity Test

When developing a regression model, it is important to hold that no perfect linear relationship exists between explanatory variables. The regression model is therefore considered to be the “best linear unbiased estimator (BLUE)” when these conditions are applied. The second assumption is that multicollinearity should not exist among variables. When checking for multicollinearity, we use the variance inflation factor (VIF). It

measures how much a set of data lines up with each other. Tolerance (1/VIF) is a calculation used by many researchers to check the degree of collinearity. The lower the tolerance value, the more collinear the data is. A tolerance value lower than 0.10 is very close to a VIF of 10 or more; it therefore expresses multicollinearity issues. Multicollinearity can occur when other variables (independent variables) are linearly combined with the one (dependent variable) being tested. The results of our multicollinearity test indicate that our regression model does not have a multicollinearity problem, as shown in the test result.

Table 4-3 Variance Inflation Factor

Variables	VIF	1/VIF
DEBT	2.35	0.425484
IPRIV	2.33	0.428667
TROPEN	1.40	0.715245
CPI	1.55	0.646297
Mean VIF	1.91	

Test for the Relation between Dependent and Independent Variables

Unit Root Test

The studied data from 1980 to 2016 were meant for stationarity behavior. And because time series data are not usually stationary, a stationary test, anything that enables us to avoid wrong results. The unit root test was conducted based on the Augmented Dickey-Fuller (ADF) approach at the level and difference. The cointegration test requires prior stationarity of the data. ADF findings at the level disclosed only stationary GDP at level I(0). We therefore conducted the test at first difference, and realized that non-stationary variables at levels turned out to be stationary at the first difference, resulting in the integrated value of one I(1). The combination of different order conditions facilitates the testing of ARDL-Bound co-integration between the variables of the study.

Table 4-4 ADF Unit Root Test at Level

Variables	Level	p-value	Order	Decision
GDP	-3.322**	0.0139	**I(0)**	Stationary
DEBT	-2.257	0.1862	**I(0)**	Non Stationary
IPRIV	-1.744	0.4084	**I(0)**	Non Stationary
TROPEN	-0.880	0.7946	**I(0)**	Non Stationary
CPI	-0.275	0.9290	**I(0)**	Non Stationary

Note: *, **, and *** indicate significant levels at 10%, 5%, and 1%.

Table 4-5 ADF Unit Root Test at First Difference

Variables	First Difference	p-value	Order	Decision
GDP	-2.557	0.1022	**I(1)**	Non Stationary
DEBT	-7.492***	0.0000	**I(1)**	Stationary
IPRIV	-5.575 ***	0.0000	**I(1)**	Stationary
TROPEN	-4.463 ***	0.0002	**I(1)**	Stationary
CPI	-4.593 ***	0.0001	**I(1)**	Stationary

Note: *, **, and *** indicate significant levels at 10%, 5%, and 1% respectively.

Lag Selection

After performing the lag length test, we select the lag optimal, which is the lowest value among them. We have 4 lag length selections, namely: AIC, FPE, HQIC, and SBI, C, which are used in our research. Our results show that the perfect lag length is lag 2 AIC. With that appropriate lag, we can now adopt the ARDL-Bounds test.

Table 4-6 Lag Length Selection Result

Lag	FPE	AIC	HQIC	SBIC
0	3.5e+26	75.3178	75.3941	75.5446
1	1.8e+23	67.6994	68.1571*	69.0598*
2	1.6e+23*	67.4999*	68.3391	69.994

Note: *indicates the lag picked by the criterion.

ARDL-Bound Test

The ARDL-Bounds cointegration test has three benefits over other cointegration methods. The ARDL-Bounds test may be used regardless of whether the variables are integrated in the same order; it can work with variables of order one, zero, or fractional, like in our case. Secondly, the ARDL test is more functional with small and limited data. The ARDL approach enables estimating the long-term model unbiased (Harris and Sollis, 2003). The cointegration test that follows will determine whether or not there exists a long-term relationship between the variables. Such a test will involve several experiments, which in turn will include different variables as dependent variables at each trial. We converted all the variables to their natural Logarithm (*ln*) (*lnGDP, lnDEBT, lnIPRIV, lnTROPEN, lnCPI*) so their coefficients are interpreted as elasticities. It is also used to reduce the heteroscedasticity in their model. Submitting the null hypothesis of non-cointegration, the Bound test depends mostly on the joint F-statistic, with non-standard asymptotic. In the first, the ARDL-Bound test uses OLS to estimate the five equations. With the estimation of the five equations, an F-test enables us to see whether or not those variables have a long-term connection.

Hypotheses:
H0:b1i=b2i=b3i=b4i=b5i=0 (Where, i=1, 2, 3, 4, 5)
H0:b1ib2ib3ib4ib5i≠0

Equation:

$$\Delta lnGdp_t = a_{01} + b_{11} lnGdp_{t-i} + b_{21} lnDebt_{t-i} + b_{31} lnIpriv_{t-i} + b_{41} lnTropen_{t-i} + b_{51} lnCpi_{t-i} + \sum_{i=1}^{q} a_{1i} \Delta lnGdp_{t-i} + \sum_{i=1}^{q} a_{2i} \Delta lnDebt_{t-i} + \sum_{i=1}^{q} a_{3i} \Delta lnIpriv_{t-i} + \sum_{i=1}^{q} a_{4i} \Delta lnTropen_{t-i} + \sum_{i=1}^{q} a_{5i} \Delta lnCpi_{t-i} + \varepsilon_{1t}$$

$$\Delta lnDebt_t = a_{02} + b_{12} lnGdp_{t-i} + b_{22} lnDebt_{t-i} + b_{32} lnIpriv_{t-i} + b_{42} lnTropen_{t-i} + b_{52} lnCpi_{t-i} + \sum_{i=1}^{q} a_{1i} \Delta lnDebt_{t-i} + \sum_{i=1}^{q} a_{2i} \Delta lnGdp_{t-i} + \sum_{i=1}^{q} a_{3i} \Delta lnIpriv_{t-i} + \sum_{i=1}^{q} a_{4i} \Delta lnTropen_{t-i} + \sum_{i=1}^{q} a_{5i} \Delta lnCpi_{t-i} + \varepsilon_{2t}$$

$$\Delta lnIpriv_t = a_{03} + b_{13} lnGdp_{t-i} + b_{23} lnDebt_{t-i} + b_{33} lnIpriv_{t-i} + b_{43} lnTropen_{t-i} + b_{53} lnCpi_{t-i} + \sum_{i=1}^{q} a_{1i} \Delta lnIpriv_{t-i} + \sum_{i=1}^{q} a_{2i} \Delta lnGdp_{t-i} + \sum_{i=1}^{q} a_{3i} \Delta lnDebt_{t-i} + \sum_{i=1}^{q} a_{4i} \Delta lnTropen_{t-i} + \sum_{i=1}^{q} a_{5i} \Delta lnCpi_{t-i} + \varepsilon_{3t}$$

$$\Delta lnTropen_t = a_{04} + b_{14} lnGdp_{t-i} + b_{24} lnDebt_{t-i} + b_{34} lnIpriv_{t-i} + b_{44} lnTropen_{t-i} + b_{54} lnCpi_{t-i} + \sum_{i=1}^{q} a_{1i} \Delta lnTropen_{t-i} + \sum_{i=1}^{q} a_{2i} \Delta lnGdp_{t-i} + \sum_{i=1}^{q} a_{3i} \Delta lnDebt_{t-i} + \sum_{i=1}^{q} a_{4i} \Delta lnIpriv_{t-i} + \sum_{i=1}^{q} a_{5i} \Delta lnCpi_{t-i} + \varepsilon_{4t}$$

$$\Delta lnCpi_t = a_{05} + b_{15} lnGdp_{t-i} + b_{25} lnDebt_{t-i} + b_{35} lnIpriv_{t-i} + b_{45} lnTropen_{t-i} + b_{55} lnCpi_{t-i} + \sum_{i=1}^{q} a_{1i} \Delta lnCpi_{t-i} + \sum_{i=1}^{q} a_{2i} \Delta lnGdp_{t-i} + \sum_{i=1}^{q} a_{3i} \Delta lnDebt_{t-i} + \sum_{i=1}^{q} a_{4i} \Delta lnIpriv_{t-i} + \sum_{i=1}^{q} a_{5i} \Delta lnTropen_{t-i} + \varepsilon_{5t}$$

Pesaran et al. (2001) hold that there are two forms of critical values for any significance level. The ARDL model, which integrates all variables in order, zero represents the first level. As for the second, it is assumed to be calculated on the integration of variables of order one, I(1). If the F-statistic value exceeds that of the critical upper bound I(1), then the null hypothesis of non-cointegration is rejected and the long-term model, that is, the ECM, is estimated. On the

contrary, if the F-statistic is less than the lower bound I(0), the null hypothesis is approved, and the short-term model, the ARDL (Autoregressive Distributed Lag) model, operates. In other ways, cointegration tests are inconclusive. Following the lag criteria, the selected optimal lag is AIC lag 2.

On conducting the test on the basis that each variable is dependent on the ARDL regressions, the chart shows that when *lnGDP* is the dependent variable (equation 1), the value is = 8.751. For equation (2) with *lnDEBT* as dependent variables the value is= 5.551; for equation (3) with *lnIPRIV* as dependent variables the value is= 14.175; for equation (4) with *lnTROPEN* as dependent variables the value is = 1.102; and for equation (5), with *lnCPI* as dependent variables the value is = 2.499. The test confirms that a long-run relationship exists between the variables when *lnGDP, lnDEBT, and lnIPRIV* are the dependent variables. And their F-statistics exceed the upper-bound critical value of 5% (4.01). In this case, the null hypothesis of non-cointegration is rejected. However, for equations 4 and 5 (*lnTROPEN, lnCPI)*, the null hypothesis is accepted. In our study, the GDP represents the main dependent variable. In regard to the cointegration test, a long-term relationship appears between the variables when *lnGDP* is the dependent variable.

Table 4-7 ARDL-bound Cointegration Test Result

Dependent variables	AIC lags ($p,q_1q_2q_3q_4$)	F-statistic	Decision
lnGdp(lndebt,lnipriv,lntropen,lncpi)	(2,0 0 1 2)	8.751	Cointegration
Lndebt(lnGdp,lnipriv,lntropen,lncpi)	(1,2 1 1 2)	5.551	Cointegration
Lnipriv(lnGdp,lndebt,lntropen,lncpi)	(1,0 0 1 2)	14.175	Cointegration
Lntropen(lnGdp,lndebt,lnipriv,lncpi)	(1,2 0 1 1)	1.102	No cointegration
Lncpi(lnGdp,lndebt,lnipriv,lntropen)	(2,2 0 1 1)	2.499	No cointegration
Upper-bound critical value at 5%		4.01	
Lower-bound critical value at 5%		2.86	

Note: Upper and Lower bounds are from the Pesaran et al.(2001) table

ARDL Error Correction Model (ECM) (Long and Short Term)

Our research confirmed that there exists a long-run cointegration between *lnGDP* and its determinant. In this part, we estimated the short- and long-run relationships between the variables, drawing on the ARDL Error Correction Model (ECM)

Equation:

$$\Delta lngdpt=a0+i=1pa1i\Delta lngdpt-i+i=1pa2i\Delta lndebtt-1+i=1pa3i\Delta lniprivt-1+i=1pa4i\Delta lntropent-1+i=1pa5i\Delta lncpit-1+\lambda ECTt-1+t$$

All the results are transcribed in the following tables.

Table 4-8 Results of Long Run Coefficients Employing the ARDL Approach (2 0 0 1 2) aic

Variables	Coeff	Std. Error	z	p>|z|	[95% conf Interval]	
lnDEBT	-0.1838017*	0.0603074	-3.05	0.005	-0.3080072	-0.0595962
lnIPRIV	0.182571*	0.0477965	3.82	0.001	0.0841323	0.2810097
lnTROPEN	-0.2454403*	0.0635523	-3.86	0.001	-0.3763288	-0.1145518
lnCPI	-0.1764085*	0.0343234	-5.14	0.000	-0.2470989	-0.1057181
Cons	6.97606	1.595112	4.37	0.000	3.690864	10.26126

The long-term trends reveal that *lnDEBT*, *lnTROPEN,* and *lnCPI* have a negative relationship with *lnGDP,* while *lnIPRIV* shows a positive relationship. Statistically, the coefficients are at a high significance of 5%. The negative coefficient of *lnDEBT* shows that debt depressed the economic growth of Côte d'Ivoire. This finding is substantiated by Ada (2016), who found a negative effect of external debt on Nigeria's GDP from 1970 to 2003, based on ARDL bound

testing. *lnIPRIV* coefficient is significant and positive, which means that a 1 percent increase in private investment will boost economic growth by 0.1825 percent. This view is shared by Paterson (2003). *lnTROPEN*'s coefficient is significant and negative, an indication that trade openness will be a brake to GDP in the long run. A 1 percent increase in trade openness will decrease economic growth to a percentage of -0.2454. Hye and Lau (2015) support that view. Statistically, *lnCPI* is negative and significant. That means that in the long run, CPI will reduce the GDP. This point is supported by Ahmed and Mortaza (2005). In the short run, the values of debt and private investment are not captured. However, we notice that the results of the *lnTROPEN* and *lnCPI* are not significant at 1% and 5% in the short term. This empirical study employed yearly data from 1980 to 2016 and used the ARDL-bound cointegration to analyze the model in the short and long run, focusing on the targeted variables.

R2 and adjusted R2 values were assessed at a percentage of 97, confirming that the model fits well. There comes out a negative error correction term, ECM(-1) (-0.5488775), and a statistically significant one at the 1% level. The ensuing high coefficient indicated that the unbalance can be quickly addressed in the long run if no other crisis occurs in the explanatory variables. In other words, the deviation of GDP from its long run is corrected at 54% every year.

The model stability was tested using many diagnostic procedures, including the LM serial correlation test and white heteroskedasticity. The ARDL Model has been found to be stable after undergoing a battery of stability tests. Additionally, one more test of stability was conducted, CUSUMQ, to investigate the long-term and short-term stability of data. These evaluations are suggested by Pesaran and Shin (1999). With the stability test, the graph shows that the plots are between the critical boundaries at a significance of 5%. The results validate the postulate that short- and long-term factors impacted Côte d'Ivoire's economic growth from 1980-2016.

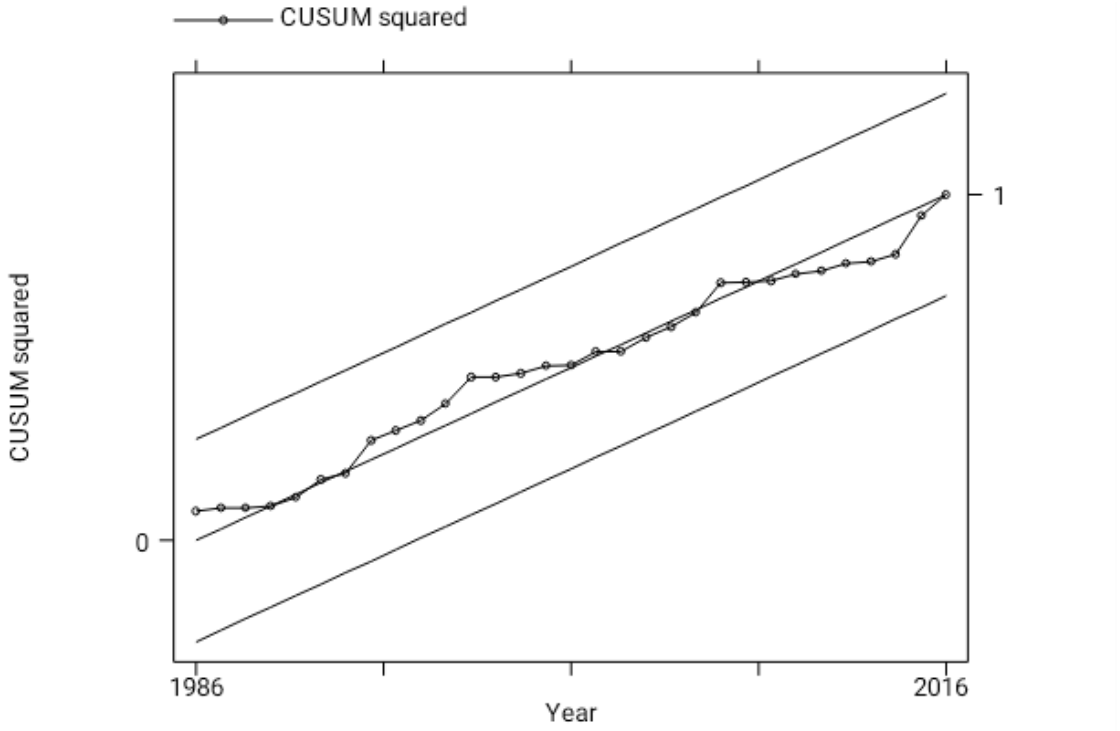
Table 4-9 Short-Run Coefficients Employing ARDL Approach (2 0 0 1 2) aic

	Coeff	**Std. Error.**	**t**	**p>|t|**	**[95% Conf. interval]**	
Δ*lnGDP*	0.4272174	0.1840527	2.32	0.029	0.0481537	0.806281
ΔlnTROPEN	0.976845	0.0654527	1.49	0.148	-0.0371178	0.2324868
ΔlnCPI	-0.0183332	0.1058435	-0.17	0.864	-0.2363219	0.1996556
ECM(-1)	-0.5488775	0.1201342	-4.57	0.000	-0.7962985	-0.3014566
R-squared	0.9749					
ADJ-R	0.9658					
F-statistic	107.82			0.000		
DW-statistic	2.386916					

Table 4-10 Results of Diagnostic Tests

	2statistic	**probability**
Breusch-Godfrey Serial Correlation	2.844	0.0917
White Heteroskedasticity test	35.00	0.4204

Figure 2: Cusum Squared Test



1. **Causality Test (Toda-Yamamoto)**

The following chart displays the outcome of the Toda-Yamamoto causality test.

Table 4-11 Toda-Yamamoto Causality (modified WALD) Test Result

Equation	Lag (k)	Lag(k+dmax)	chi2	prob	Causality Direction
DEBT to GDP	4	1+4	29.073	0.000	DEBT GDP
GDP to DEBT	4	1+4	6.96	0.224	GDP DEBT

The table above displays a high one-way causal link from DEBT to GDP of Côte d'Ivoire at the 1% level of significance. There is no causal relationship when Debt is considered as a dependent variable. The unidirectional causality from DEBT to GDP is a long-run one.

DISSCUSIONS

Summary of the Findings and Discussion

Hypothesis	Decision
Debt positively impacts Côte d'Ivoire's economic growth.	**reject**
Private investment contributes to the economic growth of Côte d'Ivoire.	**accept**
Trade openness positively affects Côte d'Ivoire's economic growth.	**reject**
Consumer price index negatively affects economic growth in Côte d'Ivoire.	**accept**
A two-way causal link exists between public debt and economic growth in Côte d'Ivoire.	**reject**

After conducting several tests as part of our studies on a time series basis, going from 1980 to 2016, we discovered that debt negatively affects the economic growth of Côte d'Ivoire. All things being equal, a 1 % rise in external public debt decreases the country's growth rate. These results confirm the classical theory that debt slows down economic growth. Our finding is underpinned by ADA (2016), who contends that external debt negatively impacted Nigeria's GDP from 1970 to 2003 from an ARDL bound testing perspective. FOSU (1996) also found a 33% decrease in GDPs of Sub-Saharan African countries over the period 1970-1986 using the OLS method. The ever-growing accumulation of public debt justifies that negative relationship. There ensues a negative impact on private investment, an increase in fiscal pressure, a reduction in the government's ability to implement reforms, and a reduction in social spending.

Secondly, our study shows that Private investment contributes to the economic growth in Côte d'Ivoire. It aids in the fight against poverty by funding essential programs, generating jobs, boosting productivity and competition, and building a stronger and more sustainable economy. Paterson (2003) found similar results between investment and Ethiopia's GDP growth by applying the Harrod-Domar growth model on the country's data over the 1981-2000 period.

Conversely, the negative relation between trade openness and economic growth in Côte d'Ivoire displayed by our analysis reinforces theoretical studies according to which trade liberalization is not always fitting for countries in early stages of development. Hye and Lau (2015) exemplify this point through analyzing trade openness and economic growth in India from 1971 to 2009, using the ARDL method. They found out that while trade openness could boost

economic growth in the short run, it was detrimental in the long run. Their finding is in line with Prebish-Singer (1950), which states that developing countries' terms of trade tend to decline when world commodity prices fall, and this forces commodity exporters to increase exports, leading to a downward pressure on export prices and a further deterioration of trade.

Finally, our study shows that the consumer price index in Côte d'Ivoire is consistent with the empirical findings of CPI portrayed in previous studies investigating its effect on economic growth. In our specific case, CPI has a negative impact. An increase in the level of general prices has proven negative for Côte d'Ivoire's economic growth over the period submitted to our analysis. That empirical finding matches that of Ahmed and Mortaza (2005), who studied Bangladesh's economic growth and CPI using the Co-integration and the Error Correction Model. Their study showed that the country experienced a critical inflation threshold at 6%. Additionally, this data shows a long-run correlation between CPI and GDP, which is consistently negative.

CONCLUSION

A great deal of studies have been conducted in regard to the link between debt and economic growth, and these have produced a range of results, some converging and many others diverging. This work has allowed us to go over many of them and, in the face of their divergences, to wonder about the actual relationship that might exist between these two variants based on the case study of Côte d'Ivoire. Our search has included such factors as consumer price index, trade openness, and private investment, which add to external debt stocks, with a view to assessing their impacts on the country's GDP through a somewhat different approach. The results of this empirical study are intended to assist the country's economic policymakers, given that not much research has been done on the subject regarding work in Côte d'Ivoire to date.

We used GDP to explain economic growth since it is a measure of productivity. We also focused on the external stock public debt and some other explanatory variables, such as private investment, trade openness, and consumer price index, and explained their respective connections. To achieve the set objective, our empirical study combined methodological and theoretical approaches, resorting to the ADF unit root test, ARDL-Bound test for cointegration,

but also to ARDL-ECM. We employed the Toda-Yamamoto test for causality. We also used the *ln* form to facilitate the handling of data for some tests.

We found out that GDP, private investment, debt, trade openness, and consumer price index variables are cointegrated when the GDP is the dependent variable. These results suggested that the variables move together over time. A statistically significant impact was obtained for all variables. The results indicate that public debt, trade openness, and consumer price index hinder economic growth. They show, in contrast, that private investment positively impacts economic boom. All these findings are statistically significant at 1 percent. In the aftermath of the Cointegration test and ARDL-ECM tests, the test of causality (Toda-Yamamoto) was employed to elicit the relation between public external debt (DEBT) and economic growth (GDP). The finding displays a one-way causal effect between those two variables. It shows that debt definitely impacts Côte d'Ivoire's economic growth in a negative way, following a unidirectional rapport.

BIBLIOGRAPHY

Ada, M. S. (2016). Impact of External Debt on Economic Growth in Nigeria: An ARDL Bound Testing Approach, 7(10), 16–26.

Adhikary, B. K. (2011). FDI, Trade Openness, Capital Formation, and Economic Growth in Bangladesh: A Linkage Analysis. International Journal of Business and Management, 6, 16-28.

Adepoju, A. A., Salau, A. S., & Obayelu, A. E. (2007). The Effects of External Debt Management on Sustainable Economic Growth: Lessons from Nigeria. Munich Personal RePEc Archive, (2147), 1–31.

Ahmed, S., & Mortaza, M. G.(2005). Policy Analysis Unit (PAU) Working Paper Series: WP 0604 Inflation and Economic Growth in Bangladesh: 1981-2005 Policy Analysis Unit * (PAU) Working Paper Series: WP 0604 Inflation and Economic Growth in Bangladesh: 1981-2005, (December).

Anning, L., Frimpong Ofori, C., & Kwame Affum, E. (2015). The Impact of Government Debt on the Economic Growth of Ghana: A Time Series Analysis from 1990-2015. International Journal of Innovation and Economic Development, 2(5), 31–39.

Ashipala & Haimbodi (2003). The impact of public investment on economic growth in Namibia, Working Paper No. 88, Windhoek, Namibia Economic Policy Research Unit (NEPRU).

Audu, I. (2004). The Impact of External Debt on Economic Growth and Public Investment: The Case of Nigeria. African Institute for Economic Development, 111.

Ayadi, F. O. (2008). The Impact of External Debt On Economic Growth: A Comparative Study of Nigeria and South Africa, 10(3), 234–264.

Azeez, B. A. (2012). Effect of External Debt on Economic Growth of Nigeria. Issn, 3(8), 2222–1700.

Badawi, A. (2005). ―Private Capital Formation and Macroeconomic Policies in Sudan: An Application of a Simple Co-integrated Vector Auto-Regressive Model.‖ Economic Research

Balago, G. S. (2014). An Empirical Analysis of the Relationship Between Government External Borrowing and Economic Growth in Nigeria. International Journal of Finance and Accounting, 3(4), 235- 243.

Barro R. (1989), "The Ricardian approach to budget deficits", Journal of Economic Perspectives, vol.3

Barro, R. J. (1990), Government spending in a simple model of endogenous growth, Journal of Political Economy, vol. 98, no 5, pp. 103-125.

Behera, J. (2014). Inflation and Its Impact on Economic Growth: Evidence from Six South Asian Countries. Journal of Economic and Sustainable Development, 5(7), 145–155.

Bhatta, G. (2003). An Assessment of the Impact of External Debt on Economic Growth of Nepal. Economic Review: Occasional Paper.

Bhattacharya, R., Clements, B. & Nguyen, T. Q. (2003). External Debt, Public Investment, and Growth in Low-Income Countries. IMF Working Papers, 03/249, 555–582.

Cecchetti, S. G., Mohanty, M. S., & Zampolli, F. (2011). The real effects of debt. Review of Financial Studies, 22(September), 25–27.

Cholifihani, M. (2008). A Cointegration Analysis of Public Debt Service and GDP in Indonesia. Journal of Management and Social Sciences, 4(2), 68–81. Cordella, T., Ruiz-Arranz, M., & Ricci, L. A. (2005). Debt overhang or debt irrelevance? Revisiting the debt growth link. IMF Working Papers, 1–55.

Dar, B., & Susan, V. (2013). An International Journal of Arts and Humanities Fiscal Policy as an Engine of Economic Growth in Nigeria, 2(6), 282–298.

Dufrenot, G., Mignon, V., & Tsangarides, C. (2010). The Trade-Growth Nexus in the Developing Countries: A Quantile Regression Approach. Review of World Economics (Weltwirtschaftliches Archiv), 146, 731-761.

https://doi.org/10.1007/s10290-010-0067-5

Dritsaki, C. (2013). Causal Nexus Between Economic Growth, Exports, and Government Debt: The case of Greece. Procedia Economics and Finance, 5(13), 251–259.

Erden, L., & Holcombe, R.G. (2005). The effects of public investment on private investment in developing economies. Public Finance Review, 33(5), 575-602. doi. 10.1177/1091142105277627.

Edo, S. E. (2002). The External Debt Problem in Africa: A Comparative Study of Nigeria and Morocco. African Development Review, 14(2), 221–236.

Egbetunde, T. (2012). Public Debt and Economic Growth in Nigeria: Evidence from Granger Causality. American Journal of Economics, 2(6), 101–106.

M. O. F. (2017). National Budget Financial Year 2015-16, (May). Finance, M. O. F. (2017). National Budget Financial Year 2015-16, (May).

Financialization in the WAEMU | TWN Africa. (n.d.). http://twnafrica.org/wp/2017/wp-content/uploads/2019/06/WAEMU.pdf

Fincke, B., & Greiner, A. (2013). On the relation between public debt and economic growth: An empirical investigation on the relation between public debt and economic growth: An empirical investigation, 4(24), 137–150.

Fosu, A. (1996). The Impact of External Debt on Economic Growth in Sub-Saharan Africa". Journal of Economic Development, Cilt 21, Sayi 1, ss. 93-118 (58837).

Fosu, A. K. (1999). The external debt burden and economic growth in the 1980s: Evidence from sub-Saharan Africa. Canadian Journal of Development Studies, 20(2), 307–318.

Ghali, K. (1989).—Public investment and Private capital formation in a vector error correction model of growth.‖Applied economics 30:837-844.

Gokal, V.,& Hanif, S.(2004).Relationship between Inflation and economic growth.Economics Department, Reserve Bank of Fiji.

Gómez-puig, M., & Sosvilla-rivero, S. (2015). Short-run and long-run effects of public debt on economic performance: Evidence from EMU countries.

Hansen, H. (2001). Aid and growth regressions. Journal of Development Economics, 64(2), 547–570.

Hassan, A. F. M. K. (2005). Trade Openness and Economic Growth: Search for a Causal Relationship. Does Openness Reduce Poverty? South Asian Journal of Management, 12, 38-51.

Huchet-Bourdon, M., Le Mouël, C., & Vijil, M. (2018). The Relationship between Trade Openness and Economic Growth: Some New Insights on the Openness Measurement Issue. The World Economy, 41, 59-76.

https://doi.org/10.1111/twec.12586.

Hye, Q. M. A., & Lau, W.-Y. (2015). Trade Openness and Economic Growth: Empirical Evidence from India. Journal of Business Economics and Management, 16, 188-205.

https://doi.org/10.3846/16111699.2012.720587.

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, 17,281-290.

https://doi.org/10.33736/ijbs.525.2016.

Karagöl, E. (2002). The Causality Analysis of External Debt Service and GNP: The Case of Turkey. Central Bank Review, 39–64.

Keho, Y. (2017). The Impact of Trade Openness on Economic Growth: The Case of Côte d'Ivoire. Cogent Economics & Finance, 5,1-14.

https://doi.org/10.1080/23322039.2017.1332820.

Kempa, B. (2016). Government debt and economic growth in the G7 countries: are there any causal linkages ?, 23(6), 440–443.

Klein T.M. (1994), "External debt Management", World Bank Technical paper No 245. Washington DC

Kneller, R., Bleaney, M. F., & Gemmell, N. (1999). Fiscal policy and growth: Evidence from OECD countries. Journal of Public Economics, 74(2), 171–190. https://doi.org/10.1016/S00472727(99)00022-5.

Khan & Kumar, "Public and Private Investment and the Growth Process in Developing Countries," Oxford Bulletin of Economics and Statistics, Vol. 59, No. 1, 1997, pp. 69-88.

Kourtellos, A., Stengos, T., & Ming, C. (2013). The effect of public debt on growth in multiple regimes. Journal of Macroeconomics, 38, 35–43.

Krugman, P. (1988). Financing vs. forgiving a debt overhang. Journal of Development Economics, 29(3), 253–268.

Lee, Y., & Gordon, R. H. (2005). Tax structure and economic growth. Journal of Public Economics, 89(5–6), 1027–1043.

Li, Y., Chen, Z., & San, C. (2010). Research on the Relationship between Foreign Trade and the GDP Growth of East China—Empirical Analysis Based on Causality. Modern Economy, 01(02), 118–124.

Lin, S. (2000). Government Debt and Economic Growth in an Overlapping Generations Model. Southern Economic Journal, 66(3), 754.

Mahmoud, L. O. M. . (2015). Consumer Price Index and Economic Growth: A Case Study of Mauritania 1990 – 2013. Asian Journal of Empirical Research, 5(2), 16–23. Retrieved from https://archive.aessweb.com/index.php/5004/article/view/3831

Mamo, F. T. (2012). Economic Growth and Inflation: A Panel Data Analysis. Economics, 1–44.

Prebisch, R., « The Economic Development of Latin America and its Principle Problem », UNECLA, Santiago, 1950.

Rahman, N. H. A. (2012). How Federal Government's Debt Affect the Level of Economic Growth? International Journal of Trade, Economics and Finance, 3(4), 323–326.

Rais, S. I., & Anwar, T. (2012). Public Debt and Economic Growth In Pakistan: A Time Series Analysis From 1972 To 2010. Academic Research International, 2(1), 535–545.

Ramirez, Miguel D. & Nader Nazmi, 2003. Public Investment and Economic Growth in Latin America: An Empirical Test ―Review of Development Economics, Vol. 7(1):115-126.

Ricardo D. (1821),Principes de l'économie politique et de l'impôt, Paris, Flammarion, (eds), Debt Stabilization and Development: Essays in Memory of Carlos Diaz-Alejandro Oxford and Cambridge, MA: Blackwell, 80-102.

Ricardo, D. (1817). On the Principles of Political Economy and Taxation. Edited by Piero Sraffa with the collaboration of M. H. Dobb

Reinhart, C. M., & Rogoff, K. S. (2010). Growth in a time of debt. American Economic Review, 100(2), 573–578.

Saad, W. (2012). Causality between Economic Growth, Export, and External Debt Servicing: The Case of Lebanon, 4(11), 134–143.

Sachs, J. (1984) “Theoretical Issues in International Borrowing,” Princeton Studies in International Finance, no. 54, July.

Schclarek, A. (2004). Debt and Economic Growth in Developing and Industrial Countries ∗. Mimeo, 46(0), 1–37.

Sheikh, M. R., Faridi, M. Z., & Tariq, K. (2010). Domestic Debt and Economic Growth in Pakistan: An Empirical Analysis. Pakistan Journal of Social Sciences(PJSS), 30(2), 373–387.

Spilioti, S. (2015). The relationship between the government debt and GDP growth: evidence of the Euro area countries. Investment Management and Financial Innovations, 12(1), 174–178.

Spilioti, S., & Vamvoukas, G. (2015). The Journal of Economic Asymmetries The impact of government debt on economic growth: An empirical investigation of the Greek market. The Journal of Economic Asymmetries, 12(1), 34–40. https://doi.org/10.1016/j.jeca.2014.10.001.

Sulaiman, L. A., & Azeez, B. A. (2012). Effect of External Debt on Economic Growth of Nigeria. Journal of Economics and Sustainable Development, 3(8), 2222–1700. Retrieved from www.iiste.org.

Toda, H.Y. and Yamamoto, T. (1995). ‘Statistical Inference in Vector Autoregressions with Possibly Integrated Processes’, Journal of Econometrics, vol. 66, pp. 225-50.

Vlastou, I. (2010). Forcing Africa to Open Up to Trade: Is It Worth It? The Journal of Developing Areas, 44, 25-39. https://doi.org/10.1353/jda.0.0086.

Woo, J., & Kumar, M. S. (2015). Public Debt and Growth. Economica, 82(328), 705–739. https://doi.org/10.1111/ecca.12138.

World Bank (2020). World Development Indicators.

http://data.worldbank.org

World Bank. https://www.worldbank.org/en/country/cotedivoire/overview.

World Bank. https://www.worldbank.org/en/topic/debt/brief/hipc.

Zouhaier, H., & Fatma, M. (2014). Debt and Economic Growth. International Journal of Economics and Financial Issues, 4(2), 440–448.