International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

Taxation And Economic Growth In The DRC: An Empirical Study Based On The ARDL Model

Ibrahim YERO KANDE

Doctoral student and researcher at the Faculty of Economics and Management, University of Kinshasa
Corresponding Author: Ibrahim YERO KANDE. E-mail: kandeyero2@gmail.com

Résumé : Cette étude analyse l'impact des recettes fiscales sur la croissance économique en République Démocratique du Congo (RDC) sur la période 1980–2023. En utilisant une approche ARDL (AutoRegressive Distributed Lag), nous examinons les effets à court et à long terme des recettes fiscales, des investissements publics et privés, des investissements directs étrangers (IDE) et de l'inflation sur le taux de croissance économique. Les résultats montrent que les recettes fiscales n'influencent pas significativement la croissance à court terme, mais exercent un effet positif à moyen et long terme. Les investissements publics présentent un impact négatif, tandis que les investissements privés et les IDE influencent positivement la croissance à long terme. L'inflation apparaît faiblement positive. Les tests de stationnarité et de cointégration confirment la validité du modèle ARDL. Ces résultats soulignent l'importance d'une gestion efficiente des recettes fiscales et d'un choix judicieux des investissements publics pour stimuler la croissance.
Mots clés : fiscalité, croissance économique, ARDL, RDC, recettes fiscales, investissements, cointégration.
Abstract: This study examines the impact of tax revenues on economic growth in the Democratic Republic of Congo (DRC) over the period 1980–2023. Using the ARDL (AutoRegressive Distributed Lag) approach, the research assesses short- and long-term effects of tax revenues, public and private investments, foreign direct investment (FDI), and inflation on the economic growth rate. The findings reveal that tax revenues do not significantly affect growth in the short term but have a positive impact in the medium and long term. Public investment shows a negative effect, while private investment and FDI positively influence growth in the long run. Inflation appears slightly positive. Stationarity and cointegration tests validate the ARDL model. These results highlight the need for efficient management of tax revenues and prudent public investment choices to foster sustainable growth in the DRC.

Keywords: taxation, economic growth, ARDL, DRC, tax revenues, investments, cointegration.

INTRODUCTION

In every country in the world, taxation is an essential source of government revenue. In modern states, it represents the main source of funding for public spending and constitutes a major instrument of economic policy, as it allows the economy to be regulated according to current needs and the aspirations of the population [1], [2]. The Democratic Republic of Congo cannot escape this reality; it must address significant challenges of reconstruction and development, particularly after successive conflicts and their devastating effects [3].

Taxation is a lever for development, as it finances development and poverty reduction objectives and creates a favorable legal environment for economic activities such as production, consumption, trade, and investment [4], [5]. Congolese economic policies aim to readjust the national economy and reduce the gap with developed countries. However, the DRC faces a problem in financing its economic activities, as domestic resources are insufficient. Taxation therefore remains a determining factor in growth: when productive activity increases, tax revenues follow significantly, while stagnation leads to the search for exceptional revenues or an increase in the tax burden [6].

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/ Vol. 55 No. 2 February 2026, pp. 589-603

The concept of a "tax system" refers to all the taxes applied at a given time in a country. This system often results from a historical accumulation of disparate elements rather than a coherent design [7]. It reflects the state of society and depends on political choices, but also on social, economic, and psychological factors [8]. Every tax system comprises two components: a normative structure (rates, tax base, unit of taxation, etc.) and exemptions (incentive measures aimed at regulating economic and social development), which can be described as "tax expenditures" [9].

In recent years, national tax systems have undergone significant reforms, particularly under the influence of international competition [10]. Tax reforms cannot be directly transposed from one country to another, but they offer avenues for improvement [11]. Many countries have opted for partial reforms, sometimes resulting in a fundamental reorganization of taxation. At the same time, investment has become a priority of public policy, and states are constantly adjusting their incentive tools to attract economic activities that generate jobs and wealth [12]. In this context, tax and financial engineering has developed, and states compete to offer an attractive tax environment [13].

1. GENERAL INFORMATION ON TAXATION

1.1. Origin of the tax

Taxation, whose etymology derives from the Latin *fiscus* (basket for receiving money), encompasses all the rules relating to the definition, determination, and methods of collection of taxes levied for the benefit of the State and local authorities (regions, departments, municipalities) [1]. In addition to these taxes, there are social security contributions, which constitute parafiscal levies and are paid primarily to social security organizations. In most European countries, the level of taxes and social security contributions has increased since the early 1980s [2]. Some economists with a liberal orientation believe that taxation has reached a critical threshold, potentially hindering the regulation of economic activity [3].

Tax collection dates back to very early periods in history. In Roman antiquity, tax collectors traveled with wicker baskets to receive contributions offered in the name of Emperor Caesar. These baskets were called fiscus Caesares (Caesar's treasury), from which the French term fisc now refers to the administration responsible for calculating and collecting taxes for the benefit of the State [4].

On a religious level, taxation also finds references in several traditions, notably Christianity. In the New Testament, a famous passage recounts Jesus' response to the question of paying taxes to Caesar: "Render unto Caesar the things that are Caesar's, and unto God the things that are God's" (Matthew 22:15-22; Mark 12:13-17) [5]. In the Old Testament, the tribes of Israel are also called upon to contribute to the support of the Levites (Numbers 18:21-24) [6]. These biblical texts are often used to emphasize the idea of fiscal responsibility and contribution to the community, thus justifying the legitimacy of taxation in Christian societies.

1.2. History of the tax system of the Democratic Republic of Congo

The tax system in the Democratic Republic of Congo has its origins in ancestral practices of collection, primarily in the form of in-kind contributions. During the pre-colonial era, village chiefs benefited from the proceeds of hunting or harvesting. When receiving a distinguished visitor, they would mobilize their subjects to collect chickens, eggs, or goats, necessary to cover the expenses associated with the visit. In return, they were also expected to provide banquets, feed judges and soldiers, and support certain needy members of the community [1].

Beyond these practices, the chiefs were tasked with finding solutions to problems that could affect public health, the safety of people, and the protection of property. The effectiveness of these responsibilities depended on the participation of the entire population, which implied a collective mobilization of resources [2].

With the arrival of colonial authority, the Congolese tax system underwent a major transformation, marked by the introduction of the poll tax. Derived from the Latin word caput (head), this tax consisted of an individual levy, collected from each person regardless of their resources or ability to pay. The main objective of this tax was to generate revenue for the colonial state, but also to combat idleness by compelling the population to seek income in order to pay the tax. This mechanism thus forced the indigenous population to move away from a subsistence economy and gradually integrate into the market economy [3].

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/ Vol. 55 No. 2 February 2026, pp. 589-603

Over time, some Congolese developed commercial and artisanal activities, and thanks to their business acumen, they were able to create successful companies. Moreover, some of them, through their wealth and competence, gained access to positions previously reserved for Europeans [4].

1.3. Role of taxation

1.3.1. The financial role

Taxation plays a fundamental financial role by ensuring the coverage of public expenditures necessary for the functioning of society. It constitutes the main source of funding for public services, enabling the state to meet collective needs and maintain budgetary balance. Thus, the primary role of taxation is to mobilize financial resources to fund community expenditures, such as infrastructure, education, health, security, and other essential services [1].

1.3.2. The economic role

Taxation plays a crucial role in the functioning of the economy at several levels, notably as a tool for financing, redistribution and economic regulation [1], [2].

i. Financing of public spending: Tax revenues are used to finance public spending, including infrastructure, education, health, research and development, and social services. They also constitute the resources necessary for the functioning of government institutions [1], [3].
ii. Resource allocation: Taxes can be used to distribute resources more equitably. Through the funding of social programs, the state can provide a safety net for vulnerable populations and support initiatives aimed at reducing economic inequalities [2], [4].
iii. Regulation of economic activity: Fiscal policies, such as investment incentives or the taxation of behaviors deemed undesirable (e.g., pollution), help to guide economic activity. They serve to encourage certain activities and discourage others, according to development objectives [1], [5].
iv. Economic stabilization: Tax revenues can be used to stabilize the economy, particularly by financing stimulus programs during periods of economic slowdown [3], [6].
v. Promoting investment and growth: Tax measures, such as research and development tax credits, can promote private investment and stimulate economic growth [5], [7].
vi. Protection of domestic industries: Taxes can also be used to protect local industries, by making imports more expensive and thus promoting domestic production [4], [6].

These economic roles demonstrate the importance of fiscal policies in economic dynamics, ranging from wealth redistribution to growth stimulation and the regulation of economic behavior. In this sense, taxation constitutes an instrument of economic regulation, allowing the government, through Parliament, to increase taxes on certain sectors and reduce the tax burden on others in order to promote their development [1], [3].

1.3.3. The social role

Taxation plays a major social role in building a more just and equitable society. Indeed, taxation is based on the principle of ability to pay, according to which each taxpayer contributes to public expenses based on their income. This logic is reflected in particular by progressive taxation, which taxes high incomes more heavily than low incomes, unlike proportional taxation, which taxes all taxpayers at the same rate.

Thus, tax law, as a key instrument of state economic policy, must aim for social justice and fairness, both in its intent and its application. It must prevent taxes from indiscriminately impacting categories of citizens in vastly different economic situations (rich and poor, wage earners and farmers, childless households and large families, able-bodied people and people with disabilities). Consequently, taxation constitutes a tool for income redistribution and social cohesion, enabling the reduction of inequalities and the support of vulnerable groups [1].

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

2. Methodological approach

In time series analysis, the choice of estimation technique depends primarily on the results of the unit root test. Indeed, the order in which the series are integrated is crucial for selecting the appropriate econometric model. Based on the results presented below, we chose the AutoRegressive Distributed Lag (ARDL) model. This is a dynamic model [1].

ARDL models are distinguished by their ability to integrate temporal dynamics (adjustment lag, expectations, lagged effects, etc.) into the explanation of an endogenous variable. This characteristic improves the quality of forecasts and the effectiveness of public policies, unlike static models that only account for an immediate, partial, and instantaneous effect on the explained variable.

Within the family of dynamic models, three main categories are generally distinguished, according to the structure of the delays and the objective of the analysis.

1.1. Model presentation

In the ARDL bound testing approach, both lagged endogenous and lagged exogenous variables can be introduced into the model. The term "autoregressive" means that the lagged dependent variable can determine the present dependent variable, while the term "distributed lag" refers to the lag of the explanatory variables. Thus, this technique can be used even if the independent variable does not cause an instantaneous change in the explained variable as predicted in the theoretical model (Hechmy, 2016).

However, to apply the ARDL bound testing method, it is necessary to ensure that there are no I(2) variables. Indeed, according to Ouattara (2004), the critical F-statistics are not valid in this approach in the presence of an I(2) variable.

Similarly, caution is necessary when using critical values with small sample sizes. The critical values of Narayan (2004) will be used in this study due to the small sample size.

The ARDL approach is preferred over other cointegration techniques for a variety of reasons:

- First, according to Pesaran et al. (2001), this approach is better suited for small sample sizes. However, Johansen's cointegration technique requires a large sample to obtain a valid result (Ghatak and Siddiki, 2001).
- Next, this methodology can be applied if the variables used are all I(1), are all I(0), or are mixed.
- The ARDL model concedes a convergent estimator of the long-run coefficients regardless of whether the underlying regressors are purely I(0), I(1) or mutually Cointegrated according to Pesaran et al. (2001).
- According to Pesaran and Shin (1995), the ARDL approach requires a simple reduced form of the equation, whereas in other techniques, a system of equations is required.▪The ARDL Bound test allows the use of different delays for regressors as opposed to VAR cointegration models where mixed delays for variables are not allowed (Pesaran et al, 2001).

If we consider the dependent variable $Y_t$and the independent variableX_tNote:

- Autoregressive (AR) models are dynamic models where the lagged dependent variable (its past values) is found among the explanatory variables. In general, they are presented as follows (implicit form):

$$Y_t = f(X_t, Y_{t-p}) \dots (1a)$$

The term "autoregressive" refers to the regression of a variable on itself, that is, on its own lagged values (Kibala, 2018).

- Distributed Lag (DL) models: these are dynamic models whose explanatory variables are:$X_t$and its past or shifted values. Generally, their form is:

$$Y_t = f(X_t, X_{t-q}) \dots (1b)$$

The term "staggered delays" shows that the short-term effects of [the substance] are different from its long-term effects. From one point in time to another, the scales of reaction [are different].Y_t at the change of X_t stands out (Kibala, 2018).

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

Autoregressive models with staggered lags (ARDL): these models combine the characteristics of two previous models; among the explanatory variables (X_t), they include the lagged dependent variable (Y_{t-p}) and the past values of the independent variable (X_{t-q}).

They have the following general form:

$$Y_t = f(X_t, Y_{t-p}, X_{t-q}) \dots (1c)$$

These dynamic models generally suffer from autocorrelation problems, with the presence of the lagged endogenous variable as an explanatory factor (AR and ARDL models), and from multicollinearity (DL and ARDL models), which complicates parameter estimation using Ordinary Least Squares (OLS). Here, it is necessary to use robust estimation techniques (SUR method, etc.) to overcome these problems. Furthermore, it is important to remember that the variables considered in these models must be stationary to avoid spurious regressions (Kibala, 2018). In its general (explicit) form, an ARDL model is written as follows:

$$Y_t = \varphi + a_1 Y_{t-1} + \cdots + a_p Y_{t-p} + b_0 X_t + \cdots + b_q X_{t-q} + e_t \dots (1d)$$

$$Y_t = \varphi + \sum_{i=1}^{p} a_i Y_{t-i} + \sum_{j=0}^{q} b_j X_{t-j} + e_t \dots (1d)$$

With :

$e_t \sim iid\ (0, \sigma)$: error term;

"b_0" Translates the short-term effect of X_t on Y_t.

If we consider the following long-term or equilibrium relationship "$Y_t = k + \phi X_t + u$"

can calculate the long-term effect of X_t on Y_t (either "ϕ" as follows:

$$\phi = \sum b_j \Big/ (1 - \sum a_i)$$

As with any dynamic model, information criteria (AIC, SIC, and HQ) will be used to determine the optimal lag (p* or q*); an optimal lag is one whose estimated model provides the minimum value of one of the stated criteria (Kibala, 2018). These criteria are: the Akaike (AIC) lag, the Schwarz (SIC) lag, and the Hannan and Quinn (HQ) lag. Their values are calculated as follows:

$$AIC(p) = \log|\hat{\Sigma}| + \frac{2}{T} n^2 p$$

$$SIC(p) = \log|\hat{\Sigma}| + \frac{\log T}{T} n^2 p$$

$$HQ(p) = \log|\hat{\Sigma}| + \frac{2\log T}{T} n^2 p$$

With :

$\hat{\Sigma}$= variance-covariance matrix of the estimated residuals; T = number of observations; p = lag of the estimated model; and

n = number of regressors.

All these dynamic models can help capture the short-term dynamics and long-term effects of one or more explanatory variables on a dependent variable. This is only possible if the time series under study are cointegrated, thus allowing the estimation of an error correction model (ECM) (Kibala, 2018). In fact, two series are said to be "cointegrated" if they are integrated of the same order; and a series is said to be "integrated of order d" if it needs to be differentiated "d" times to make it stationary. A stationary series is

$$E(Y_t) = c$$

$$Var(Y_t) = \sigma$$

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/ Vol. 55 No. 2 February 2026, pp. 589-603

stationary in mean and variance if its mean (σ) remains invariant or constant over time and its variance does not increase with time (σ), and the same applies to its covariances (σ). $E(Y_t - c)(Y_{t-p} - c) = \gamma_p$).

We performed various variable selection algorithms. The objective was to identify those variables that contribute most to economic growth within the context of our study. The selection was also determined by the availability and relevance of the data.

Our model is presented as follows:

$LTXCE_t = Ct + \alpha 0\text{LRFSC}t + \alpha 1\text{LINPR}t + \alpha 2\text{LINPUB}t + \alpha 3\text{LIDE}t + \alpha 4\text{LTXINF}t + \epsilon t$ With:

L: Logarithm

TXCE: Economic growth rate;

Ct: the constant;

RFSC: tax revenues;

INPR: Private investment;

FDI: Foreign Direct Investment;

INF: Inflation;

ϵt: the error term.

3.1.2 Presentation of variables

It is worth noting that there are a range of variables that can influence economic growth, including tax revenues, investments, inflation, etc.

As the model described above indicates, our endogenous variable is the economic growth rate. Beyond the range of variables offered by the literature on economic growth, we have selected those most relevant to our study.

These explanatory variables are as follows:

- Tax revenues,
- Private investments,
- Public investments, ▪Foreign direct investment and
- Inflation.

2. Exploratory analysis of the results

This section presents the descriptive statistics of the variables studied. First, we outline the main measures of central tendency and dispersion to characterize the distribution of each variable. Then, we assess the normality of the data series using the Jarque-Bera test. This step verifies whether the distributions of the variables meet the assumption of normality, a necessary condition for certain statistical tests and subsequent econometric analyses.

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

Table 1. Measures of central tendency and dispersion.

Measures	TXCE	RFSC	INPR	INPUB	IDE	TXINF
Mean	1.724412	1025.237	695600.5	2261698.	2.876172	695.2182
Median	3,800,000	20.76800	298594.6	737560.3	2.595644	18.85500
Maximum	9,500,000	23773.13	2203342.	5749457.	12.71601	9796.900
Minimum	-13.50000	0.744000	9.57E-07	1.51E-06	-1.304135	0.850000
Std. Dev.	6.007840	4105.164	769145.1	2551016.	3.371270	1941.603
Skewness	-0.893769	5.236268	0.503575	0.406309	1.374817	3.554086
Kurtosis	2.749086	29.45035	1.576506	1.274083	4.377332	15.85349
Jarque-Bera	4.615849	1146.501	4.307638	5.155446	13.39818	305.6293
Probability	0.099467	0.000000	0.116040	0.075947	0.001232	0.000000
Sum	58.63000	34858.07	23650415	76897717	97.78986	23637.42
Sum Sq.	1191.107	5.56E+08	1.95E+13	2.15E+14	375.0603	1.24E+08
Dev.						
Observations	34	34	34	34	34	34

Source: Authors based on the BCC annual report (2023).

This table shows that the highest average is that given by the INPUB (Nationally Unemployed Public Employees), followed by the INPR (Nationally Unemployed Public Employees), and then the inflation rate. It should be noted that inflation has a higher average, and this is compounded by a significant standard deviation. A high standard deviation therefore reflects the volatility of the inflation rate.

Table 2. Correlation Matrix

Correlation	TXCE	RFSC	INPR	INPUB	IDE	TXINF
TXCE	1.000000					

RFSC	-0.303391	1.000000				
	-1.801131	-----				
INPR	0.593729	-0.229490	1.000000			

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

	4.173962	-1.333787	-----			
INPUB	0.572913	-0.224968	0.963625	1.000000		
	3.954151	-1.306093	20.39622	-----		
IDE	0.632844	-0.215793	0.333980	0.351305	1.000000	
	4.623528	-1.250167	2.004370	2.122571	-----	
TXINF	-0.543064	0.908763	-0.326955	-0.320652	-0.304251	1.000000
	-3.658527	12.31871	-1.957099	-1.914996	-1.806762	-----

Source: Authors based on the BCC annual report (2023).

RFSC and INF are negatively correlated with the economic growth rate. Meanwhile, INPR, INPUB, and FDI all have a positive effect on growth.

To test the stationarity of a time series (absence of a unit root), several tests are available in most software:

- *Augmented Dickey-Fuller/ADF test,*
- *Philippe-Perron/PP test,*
- *Andrews and Zivot/AZ test,*
- *Ng-Perron, Kwiatkowski, Phillips, Schmidt and Shin/KPSS test,*
- *Ouliaris-Park-Perron test,*
- *Eliott-Rothenberg-Stock test, etc..*

The first three tests are easy to apply and are commonly used. It should be noted that the ADF test is effective in the presence of autocorrelation of errors. The PP test is recommended in the presence of heteroscedastic errors.

The AZ test is suitable for series that are victims of regime change (trend break) identified endogenously, and the KPSS test decomposes a series into three components (deterministic part, random part, white noise) with the null hypothesis of stationarity.

We will retain from the ARDL model that, being part of the family of dynamic models, it allows us to estimate short-term dynamics and long-term effects for Co series integrated or even integrated at different orders as we will see with the boundary test approach of Pesaran et al. (1996), Pesaran and Shin (1995), and Pesaran et al. (2001).

However, for the purposes of our study, we use the Phillippe-Perron (PP) test.

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

Table 3. Unit root test

Variables	Test of PP has level	PP Test First Difference	Decisions
TXCE	-	0.0000	I(1)
RFSC	0.0000	-	I(0)
INPR	0.0000	-	I(0)
INPUB	0.0012	-	I(0)
IDE	0.0100	-	I(0)
INF	-	0.0000	I(1)

Source: Authors based on the BCC annual report (2023).

We can observe that the series of our variables are integrated of order 0 and 1, which makes the use of the ARDL model appropriate. The variables RSFC, INPR, INPUB, and IDE are stationary at level. Meanwhile, TXCE and INF are stationary in first difference.

2.1. Pesaran et al. (2001) Cointegration Test

Cointegration between series assumes the existence of one or more long-term equilibrium relationships between them, which relationships can be combined with the short-term dynamics of these series in an error correction model (vector) that takes the form

$$\Delta Y_t = AY_{t-1} + \sum_{i=1}^{p} B_i \, \Delta Y_{t-i} + U_t \ldots (2a)$$

next

Where:

ΔY_t = vector of stationary variables under study (whose dynamics are explained);

B_i = matrix whose elements are parameters associated with ΔY_{t-i};

A = matrix of the same dimension as ΔY_t (Or $r(A) = nombre\ de\ relations\ de\ cointégration$) ;

Δ = first difference operator.

To test the existence or not of Cointegration between series, the econometric literature provides several tests or approaches including the Engel and Granger test (1987), those of Johansen (1988, 1991) and Johansen and Juselius (1990), and that of Pesaran et al. (1996), Pesaran and Shin (1995) and Pesaran et al. (2001).

The Engel and Granger (1991) cointegration test only helps to verify cointegration between two integrated series (of the same order, i.e., integration order = 1); it is therefore suitable for bivariate cases and thus proves less effective for multivariate cases (Pesaran et al. 1987). A variable is integrated of order "k" if it becomes stationary after being differentiated "k" times.

The Johansen Cointegration Test (1988, 1991) is better suited for verifying cointegration over more than two series and was designed for multivariate cases. However, while the Johansen test, based on vector autoregressive error correction (VECM), addresses the limitations of the Engel and Granger test in multivariate cases, it also requires that all series or variables be integrated of the same order, which is not always the case in practice.

So, when we have several integrated variables of different orders (I(0), I(1)), we can use the Cointegration test of Pesaran et al. (2001) called "bounds cointegration test" or "bounds test to cointegration", originally developed by Pesaran and Shin (1999).

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

If we use Pesaran's Cointegration test to check for the existence of one or more cointegrating relationships between variables in an ARDL model, we will say that we are using the "ARDL approach to cointegrating" or that we are applying the Cointegration test by staggered lags.

It should be noted that, even if a cointegrating relationship exists between the variables, the result will be meaningless if the parameters are not stable throughout the period studied. Instability in a parameter arises due to structural breaks; therefore, it is important to verify whether the parameters are stable to make the inference completely reliable. To perform the parameter constancy test, Pesaran and Pesaran (1997) recommended applying the Cumulative Sum of Recursive Residuals (CUSUM) test of Brown et al.

(1975).

Table 4. Cointegration Test

Statistical Test	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	7.604265	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: Authors based on the BCC annual report (2023).

The table below indicates that the LT relationship exists because the Fisher statistic is greater than the values of the upper bound.

2.2. Model validity tests

This range of tests will allow us to support the content of our results. Beyond the fact that cointegration exists, it gives us a presumption of the effectiveness of the estimations. Indeed, the cointegrated variables are superconvergent (BOFOYA, 2024).

Table 5. Robustness Test

Tests	Test Type	Probability
Normality	Jarque-Bera	0.0700
Homoscedasticity	DW	3.3404
Autocorrelation	LM test	0.3844
Specification	Ramsey	0.7833

Source: Authors based on the BCC annual report (2023).

Reading these results shows us that the majority of our tests were successful, as the probability of each test is greater than the 5% threshold. And the Durbin-Watson test, close to 2, gives us a presumption of no autocorrelation of the errors.

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

Table 6. Default ARDL estimation and optimal lag

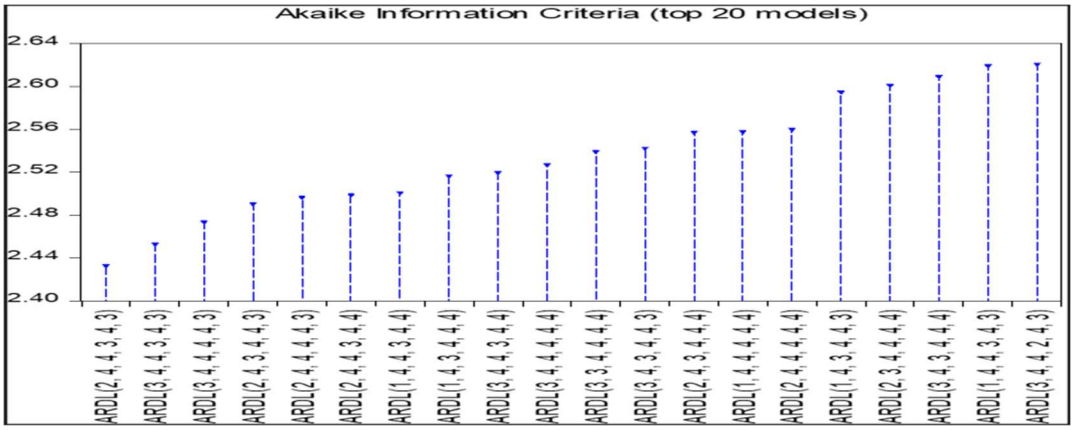
Variable	Coefficient	Standard Error	t-Statistic	Prob.*
TXCE(-1)	0.215489	0.172333	1.250417	0.2793
TXCE(-2)	-0.185269	0.172545	-1.073746	0.3434
LRFSC	0.616798	0.384985	1.602135	0.1844
LRFSC(-1)	2.115454	0.498661	4.242264	0.0132
LRFSC(-2)	0.120733	0.360107	0.335269	0.7543
LRFSC(-3)	0.446608	0.260808	1.712399	0.1620
LRFSC(-4)	0.340776	0.240887	1.414670	0.2301
LINPR	5.088844	1.032936	4.926583	0.0079
LINPR(-1)	2.897902	0.698749	4.147272	0.0143
LINPR(-2)	2.422095	0.664844	3.643101	0.0219
LINPR(-3)	2.872604	1.260440	2.279049	0.0849
LINPR(-4)	0.832928	0.580127	1.435768	0.2244
LINPUB	-8.318877	1.913823	-4.346733	0.0122
LINPUB(-1)	-1.954226	1.618632	-1.207331	0.2938
LINPUB(-2)	-1.345876	0.998630	-1.347722	0.2490
LINPUB(-3)	-1.662264	1.358977	-1.223173	0.2884
IDE	0.199654	0.124827	1.599441	0.1850
IDE(-1)	-0.279064	0.112450	-2.481679	0.0681
IDE(-2)	0.364668	0.155492	2.345257	0.0789
IDE(-3)	1.057638	0.241946	4.371382	0.0120
IDE(-4)	0.567640	0.146151	3.883919	0.0178
TXINF	0.001854	0.000565	3.279486	0.0305
TXINF(-1)	-0.000195	0.000505	-0.386784	0.7186
TXINF(-2)	0.000274	0.000286	0.958250	0.3922
TXINF(-3)	-0.001462	0.000408	-3.582599	0.0231
C	-6.317410	5.556560	-1.136928	0.3191

Source: Authors based on the BCC annual report (2023).

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

Chart 1Optimal offset



Source: Authors based on the BCC annual report (2023).

The lag (2,4,4,3,4,3) is optimal, at the expense of nineteen others. This is because this model provides us with low AIC values.

3.2.1. Model stability test

32.1.1. Short-term and long-term effects of tax revenues on economic growth

Research on the impact of tax revenue mobilization on economic growth is not new; these questions have always been at the forefront of current events. The problem has been analyzed and has yielded various results, in line with the research of different authors such as:

MAHTOUT Samir PhD student at the Faculty of Economic, Commercial and Management Sciences (2018). University of Bejaia.

In this work, the author empirically assessed the effects of fiscal policy on economic growth in Algeria, as measured by real GDP per capita. The study concluded that government tax revenues (ordinary and oil) are not responsible for short-term economic growth. However, they do have a positive and significant impact on medium- and long-term growth.

D'POLA KAMDEM, Economist & Senior Policy Analyst (Taxation and economic growth in Cameroon: empirical evidence over the period 1989-2018) 2022.

These results show that in the long term, taxation has a significant and negative impact on economic growth in Cameroon, while in the short term, its impact is positive. Similarly, both in the long and short term, private investment positively influences economic growth in Cameroon.

Joseph G. Attila(2010), Corruption, taxation and economic growth in developing countries.

Econometric results support the inverse relationship between government revenue and growth. Analysis of the interaction with institutional variables shows that in cases of corruption, tax revenue will have a stronger negative impact on growth.

BENRABOUH, Fatma Zahra The impact of public spending on economic growth in the Maghreb (Algeria, Tunisia, Morocco)

Overall, the study concludes that public spending in the Arab Maghreb countries (Algeria, Tunisia, Morocco) have an impact on long-term economic growth (1988-2022). That is to say, for every 1% increase in public spending, the economic growth of the Arab Maghreb countries increases by 0.79%.

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

Table 7. Short-term effects of tax revenues on economic growth

Variable	Coefficient	Standard Error	t-Statistic	Prob.
D(TXCE(-1))	0.185269	0.071737	2.582620	0.0612
D(LRFSC)	0.616798	0.157835	3.907862	0.0174
D(LRFSC(-1))	-0.908116	0.195252	-4.650996	0.0097
D(LRFSC(-2))	-0.787383	0.121975	-6.455276	0.0030
D(LRFSC(-3))	-0.340776	0.097745	-3.486364	0.0252
D(LINPR)	5.088844	0.507214	10.03293	0.0006
D(LINPR(-1))	-6.127628	0.852678	-7.186336	0.0020
D(LINPR(-2))	-3.705532	0.708170	-5.232546	0.0064
D(LINPR(-3))	-0.832928	0.285229	-2.920211	0.0432
D(LINPUB)	-8.318877	0.776642	-10.71134	0.0004
D(LINPUB(-1))	3.008140	0.757547	3.970895	0.0165
D(LINPUB(-2))	1.662264	0.568336	2.924790	0.0430
D(IDE)	0.199654	0.049613	4.024219	0.0158
D(IDE(-1))	-1.989945	0.198124	-10.04396	0.0006
D(IDE(-2))	-1.625277	0.154459	-10.52235	0.0005
D(IDE(-3))	-0.567640	0.074986	-7.569916	0.0016
D(TXINF)	0.001854	0.000234	7.931181	0.0014
D(TXINF(-1))	0.001188	0.000136	8.761838	0.0009
D(TXINF(-2))	0.001462	0.000123	11.88666	0.0003
CointEq(-1)*	-0.969781	0.084067	-11.53580	0.0003
R-squared	0.988405	Mean depende nt var		0.611000
Adjusted R-squared	0.966374	SD dependen t var		3.241877
SE of regression	0.594477	Akaike info cr iterion		2.032453
Sum squared resid	3.534034	Schwarz criterion ion		2.966585
likelihood	-10.48680	Hannan-Quin n criter.		2.331290
Durbin-Watson stat	3.340395			

Source: Authors based on the BCC annual report (2023).

The corrected R-squared is 97%, demonstrating that the model is well-specified. The restoring strength indicates the return of variables to equilibrium in the event of an exogenous shock after one year, four months, and eleven days.

At the 5% threshold, we realize that tax revenues have an effect on economic growth in the immediate period, meaning the current period has an impact. Last year's tax revenues don't significantly influence economic growth because they are considered revenues

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 55 No. 2 February 2026, pp. 589-603

already spent, which is why the effect isn't truly significant from this perspective. However, in the immediate period, tax revenues do affect economic growth because the government will spend based on the revenues it has collected, and these revenues will still have a negative impact next year. It's like the revenues we've already spent; next year's economic growth won't utilize them, which explains this negative effect. In other words, mobilizing this year's revenues doesn't have an effect; on the contrary, relying on them will have a negative impact because, in reality, a significant effort will still be required to mobilize those revenues. So the fact that we use the recipes, these recipes become less and less useful in growth in the lag period.

Instead of being limited to the direct effects of tax revenues, these effects can also be channeled through public investment; the government can use these revenues to boost public investment. As we have seen above, public investment has a positive effect on economic growth, and this effect remains significant even in the lagged period, as it is below the 5% threshold.

While private investment has a significant but negative effect on economic growth—in other words, when we expect investments to have a positive effect and ultimately observe a negative one—it suggests that we are not investing in the sectors where we should normally be investing. Take the case of the DRC: we observe that the DRC invests heavily in the mining sector, a sector that does not create jobs and even destroys our economic growth rate; that is, it slows growth instead of boosting it. In the lagged period, the effects of public investment become positive, which shows that even roads built last year begin to help next year. Therefore, despite these investments having negative short-term effects, in the long term they still manage to improve economic growth. This means that in both lagged periods, we observe that the effects remain significant and improve economic growth.

Foreign direct investment (FDI) improves economic growth in the short term. In the immediate period, when investments increase, jobs are created, which is beneficial for economic growth. However, in the long term, FDI shows a negative sign. This can be explained by the fact that while there has been production in the country, these resources benefit foreign investors; in other words, they are repatriated. Therefore, in the short term, we see a positive effect due to the investments and job creation, but in the long term, the negative effect is explained by the repatriation of the resources produced.

Regarding inflation, the effect is positive on economic growth, as we know when there is economic growth inflation is positive.

Table 8. Long-term effects of tax revenues on economic growth

Variable	Coefficient	Standard Error	t-Statistic	Prob.
LRFSC	3.753804	1.470545	2.552662	0.0631
LINPR	14.55419	3.106011	4.685813	0.0094
LINPUB	-13.69510	3.028899	-4.521476	0.0106
IDE	1.970069	0.487931	4.037595	0.0156
TXINF	0.000485	0.000694	0.698977	0.5231
C	-6.514264	6.381346	-1.020829	0.3651

Source: Authors based on the BCC annual report (2023).

Long-term effects inform us that even if the short-term effects of tax revenue are not significant, in the long term, at the 10% threshold, these effects become positive. The same is true for private investments. However, long-term public investments remain significant and negative. Therefore, the state is the serious problem in our work, simply because the tax revenues we obtain for public investments, as analyzed, reveal that the investments the state chooses are not reassuring; they are not good investments because they are impoverishing, less profitable, and budget-draining. Foreign direct investment (FDI), despite its negative effect in the short term, has a positive effect on our growth in the long term simply because our economy is export-oriented, and inflation has the same effect at the 10% threshold.

In general, we conclude that government tax revenues are not responsible for short-term economic growth. However, they do have a positive and significant impact on medium- and long-term economic growth.

Conclusion

Taxation represents a crucial source of funding for public spending and a major instrument of economic policy in the DRC. Faced with the challenges of reconstruction and development, the Congolese state must mobilize sufficient domestic resources to support growth. The Congolese tax system, the product of a complex historical evolution, combines a regulatory structure with incentive measures, but still faces limitations in terms of efficiency and redistribution.

Methodologically, the study used time series and adopted the ARDL (AutoRegressive Distributed Lag) model, which is suitable for small samples and variables integrated at different orders (I(0) and I(1)). The cointegration test at the bounds by Pesaran et al. confirmed the existence of a long-term relationship between the variables, and robustness tests validated the reliability of the model.

The results indicate that tax revenues have no significant effect on short-term growth but contribute positively in the medium and long term. Public investment shows a negative impact, suggesting a misallocation of public spending. Private investment is positive in the long term but negative in the short term due to a focus on sectors that create few jobs. Foreign direct investment (FDI) stimulates short-term growth but can have a negative long-term effect due to profit repatriation. Inflation is positively associated with growth, but its long-term impact remains limited.

References

[1] R. Musgrave and P. Musgrave, Public Finance in Theory and Practice, 5th ed. New York, NY, USA: McGraw-Hill, 1989.

[2] JA Mirrlees et al., Tax by Design: The Mirrlees Review. Oxford, UK: Oxford University Press, 2011.

[3] World Bank, World Development Report 2019: The Changing Nature of Work. Washington, DC, USA: World Bank, 2019.

[4] PB Samuelson and WD Nordhaus, Economics, 19th ed. New York, NY, USA: McGraw-Hill, 2010.

[5] OA Akin, Public Finance and Taxation. London, UK: Palgrave Macmillan, 2012.

[6] Organisation for Economic Co-operation and Development (OECD), Revenue Statistics 2023. Paris, France: OECD, 2023.

[7] AT Peacock and J. Wiseman, The Growth of Public Expenditure in the United Kingdom. Princeton, NJ, USA: Princeton University Press, 1961.

[8] EP Lazear, "Taxation and economic growth," Journal of Economic Perspectives, vol. 22, no. 3, pp. 117–142, 2008.

[9] CE McLure Jr., "Tax expenditures: A review of the literature," National Tax Journal, vol. 45, no. 2, pp. 129–140, 1992.

[10] M. Keen and J. Ligthart, "The fiscal response to financial crises: The case of VAT reforms," IMF Working Paper, 2010.

[11] AB Atkinson, Public Economics in Action: The Basic Income/Stakeholder Grant. Oxford, UK: Oxford University Press, 2015.

[12] R. Bird and E. Zolt, Taxation and Development: The Weakest Link? New York, NY, USA: Routledge, 2005.

[13] KA Clausing, "Tax competition in the 21st century," Journal of Economic Perspectives, vol. 33, no. 1, pp. 131–154, 2019.