



## Unveiling the connection: Impact of economic growth on poverty reduction in Angola (1990-2020)

Amílcar Sawindo Sanjimbi<sup>1</sup>

### ABSTRACT

This article, titled "Unveiling the Connection: Impact of Economic Growth on Poverty Reduction in Angola from 1990 to 2020," aims to analyze the relationship between economic growth and the reduction of poverty rates in the Angolan context over three decades. Methodologically, the article employed the ARDL (Auto-Regressive Distributed Lag) model based on historical data to capture the short- and long-term dynamics between the variables. The methodological approach utilized allowed for the estimation of the error correction coefficient, which presented a value of -0.746, indicating a rapid convergence towards equilibrium after economic shocks. It was found that the short-term and long-term impact of GDP\_PC is not statistically significant ( $p > 0.05$ ), suggesting that the benefits of economic growth did not robustly translate into poverty reduction. The analysis of the control variables, shows divergence between short and long-term impacts for education spending. It demonstrates that while the immediate effects of education spending on poverty are ambiguous or even negative, its sustained, long-term impact is powerful and highly effective in reducing poverty; Health spending has, to date, been an ineffective strategy, requiring urgent reform, and unemployment remains a key structural barrier, confirming that a pro-poor growth strategy must be, by definition, a pro-employment strategy. Finally, this article, shows that Angola's economy is not simply failing to connect growth to poverty reduction by accident; it is structurally hardwired to do so.

**Keywords:** Economic Growth; Angola; ARDL.

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<sup>1</sup> Amílcar Sawindo Sanjimbi is an Angolan economist and a PhD candidate in Economics at Agostinho Neto University. He concurrently serves as a Macroeconomics Lecturer at Mandume ya Ndemufayo University.



## Introduction

The intersection between poverty and economic growth is an increasingly relevant topic in discussions about sustainable development, especially in African contexts. Angola, a petro-dependent country rich in natural resources but facing significant challenges in terms of inequality and poverty, makes understanding this relationship fundamental for formulating effective policies. Since its independence on November 11, 1975, Angola has undergone profound economic transformations, especially after the civil war, which culminated in 2002. However, the consolidation of robust economic growth has not proportionally translated into poverty reduction, raising questions about the effectiveness of public policies implemented over the last three decades.

The period under analysis is of utmost importance, as it reveals significant nuances about how structural, social, and political factors interact within the Angolan context. Economic growth, which is generally driven by the oil sector, has not necessarily benefited all social layers equitably. The oil sector is the heart of the Angolan economy, being responsible for a significant share of exports, tax revenues, and foreign investments. According to<sup>2</sup>, Angola ranked among the major producers on the African continent, moving billions, which largely sustain the public budget.

The almost exclusive dependence on oil directly impacts the social structure of the country. Despite the relevance of oil revenues to the national economy, the concentration of wealth and the lack of robust investments in essential sectors such as health, education, and infrastructure have contributed to the maintenance of high poverty rates. Data from the World Bank (2024)<sup>3</sup> indicate that 33% of the Angolan population lives below the poverty line, demonstrating the disparity between the economic potential derived from natural resources and the actual benefits distributed among citizens.

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<sup>2</sup> BP. (2020). BP statistical review of world energy 2020. BP plc. <https://www.bp.com/statisticalreview>

<sup>3</sup> World Bank. (2024). Strengthening community resilience and combating poverty in Angola. Available at: <https://www.worldbank.org/pt/newsfeature/20224/11/11building-community-resilience-and-fighting-poverty-in-afe-angola-through-cash-transfers>.



According to updated data released in 2024 by the National Institute of Statistics of Angola<sup>4</sup>, the poverty rate in the country stands at 40%, which differs from the data from the World Bank, as the latter refers to November 2024 while the former refers to December. Amartya Sen<sup>5</sup> proposes that poverty should be understood as a deprivation of basic freedoms and capabilities. For Sen, the emphasis is not limited to monetary income but rather on individuals' capacity to make fundamental choices for a dignified life. This perspective highlights the importance of considering not only access to financial resources but also the quality of opportunities available for full participation in social and economic life.

In turn, Peter Townsend<sup>6</sup> emphasizes the relative nature of poverty. In his analysis, the condition of poverty is intrinsically linked to social exclusion and the inability to achieve living standards that are considered normative within a specific cultural and historical context. Thus, even if an individual has apparently sufficient income to meet basic needs, their limited insertion into socially defined standards can characterize them as poor. This approach emphasizes the importance of comparisons between social groups and the symbolic and cultural dimensions that surround the concept of deprivation.

Complementing these perspectives<sup>7</sup>, offers an analysis of poverty from the standpoint of sustainable development and structural challenges. Sachs argues that the persistence of poverty is directly associated with institutional barriers and a lack of access to essential services—such as health, education, and basic infrastructure—which are fundamental for promoting inclusive economic development. Thus, Sachs's approach emphasizes the need for integrated policy interventions that break cycles of exclusion and promote social inclusion through strengthening institutional frameworks.

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<sup>4</sup> National Institute of Statistics. (2024). Anuário estatístico 2024. NIS. <https://www.ine.gov.ao/pub/anuario-estatistico-2024>.

<sup>5</sup> Sen, A. (1999). *Development as freedom*. Oxford University Press.

<sup>6</sup> Townsend, P. (1979). *Poverty in the United Kingdom*. Penguin Books.

<sup>7</sup> Sachs, J. D. (2005). *The end of poverty: Economic possibilities for our time*. Penguin Press.



It should also be noted that the theme of freedoms was addressed much earlier by John Stuart Mill<sup>8</sup>, according to whom citizens' freedom was fundamental for the development of society and overall well-being. Therefore, this study aims to empirically explore the relationship between economic growth and poverty in Angola, providing insights that can inform future strategies and interventions aimed at inclusive development.

This article is structured into sections: Section I - Introduction; Section II - Literature Review; Section III - Data and Methodology; Section IV - Results and Discussion; Section V - Conclusions and Recommendations.

### Literature Review

The debate on poverty, inequality, and economic growth is longstanding; inquiries into the conditions under which economic growth alone can substantially reduce poverty, whether it is important to prioritize growth, or identifying what type of growth is necessary to alleviate poverty, are some central questions that have been addressed over time.

The discussion regarding the relationship between economic growth and poverty in developing economies has gained prominence in contemporary literature, especially in the African context. According to<sup>9</sup>, economic growth, when accompanied by inclusive policies, can lead to poverty reduction.

However, the authors emphasize that the effectiveness of this growth depends on a series of factors, including the labor market structure, the quality of institutions, and the implementation of social policies.

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<sup>8</sup> Mill, J.S. (1983). Principles of political economy. J.M. Dent & Sons. (Original work published 1848).

<sup>9</sup> Ferreira, F., Ravallion, M., & Chen, S. (2020). Growth and Poverty reduction: Evidence from 20 years of integrated suvey data. *World Development*, 135,105123 <https://doi.org/10.1016/j.worlddev.2020.105123>.



In the Angolan context, studies such as that of others authors<sup>10</sup> shows that despite robust growth driven by the oil sector, regional and socioeconomic disparities persist, highlighting the need for a deeper analysis of how growth can effectively benefit the most vulnerable populations. According to<sup>11</sup>, the lack of an integrated approach that considers local specificities can result in economic growth that does not reach the most needy communities. In Angola, the research<sup>12</sup>, suggests that the government's capacity to implement appropriate structural and social reforms is crucial to ensure that the benefits of economic growth are distributed equitably.

Thus, a critical analysis of the literature emphasizes not only the relationship between growth and poverty but also the role of public policies in promoting inclusive economic development. Various quantitative analyses have shown that, under certain conditions, economic growth can effectively contribute to poverty reduction. For example, empirical studies provide evidence that increases in gross domestic product (GDP) are associated with decreases in poverty rates, especially when accompanied by appropriate redistributive policies. This relationship, however, is not linear, as the effectiveness of growth in reducing poverty will depend on factors such as labor market structure, the quality of public services, and the degree of social inclusion.<sup>13</sup>

From a theoretical perspective, the literature presents models that seek to explain how economic growth can enhance or limit poverty reduction. Endogenous growth models, for example, emphasize the importance of human capital and technological innovation in promoting sustainable development<sup>14</sup>. In this sense, the literature suggests that a low poverty environment can favor investment in education and health, reinforcing the foundations for more robust and self-sustained economic

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<sup>10</sup> Santos, J., & Almeida, M. (2021). Economic growth and social inequality in Angola: A critical review. *Review of African Political Economy*, 48 (2), 245-262. <https://doi.org/10.1080/03056244.2021.1894901>

<sup>11</sup> Chitambara, P. (2022). The role of public policies in poverty alleviation and economic growth in Africa. *African Journal of Economic Studies*, 29 (3), 145-162.

<sup>12</sup> Martins, J., Silva, A. & Costa, R. (2023). Governance and economic growth: Na analysis of Angola's development policies. *Journal of African economies*, 32(1), 78-95. <https://doi.org/10.1093/jae/ejac001>

<sup>13</sup> Dollar, D., & Kraay, A. (2002). Growth is good for the poor. *Journal of Economic Growth*, 7(3), 195-225.

<sup>14</sup> Romer, P. M. (1994). The origins of endogenous growth. *Journal of Economic Perspectives*, 8(1), 3-22



growth. At the same time, high levels of poverty can create a vicious cycle of low productivity and insufficient investment in human capital, compromising growth potential<sup>15</sup>.

When comparing studies conducted in different contexts, it becomes evident that the relationship between economic growth and poverty reduction can vary significantly between regions and countries. For example, in a comparative analysis of developing countries,<sup>16</sup> found evidence that, although growth makes poverty reduction possible, its effectiveness largely depends on governments' capacity to implement policies that promote an equitable distribution of growth's benefits. In contrast, in countries where inequality is markedly high, economic growth may occur alongside persistent levels of poverty, highlighting gaps in income transfer and access to essential services<sup>17</sup>.

However, despite the extensive literature on the subject, clear conclusions about the impact of economic growth on poverty have not been reached. In the 2022 World Bank report on Poverty and Shared Prosperity, it was noted that although many developing countries have recorded economic growth, this has not yet translated into poverty or inequality reduction due to weak internal policies and governance mechanisms<sup>18</sup>. The situation highlighted by the World Bank constitutes a true challenge for researchers in emerging countries, as it becomes crucial to seek explanations.

Different studies have investigated the connection between poverty and economic growth and confirmed that there is a negative correlation between the two variables. For instance,<sup>19</sup> utilized the VECM model to analyze data from 1960 to 2016

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<sup>15</sup> Sen, A. (1999). *Development as Freedom*. Oxford University Press

<sup>16</sup> Barro, R. J. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106(2), 407–443.

<sup>17</sup> Easterly, W. (2001). *The elusive quest for growth: Economists' adventures and misadventures in the tropics*. MIT Press.

<sup>18</sup> World Bank. (2022). *World development report 2022: Data for better lives*. World Bank Publications.

<sup>19</sup> Garza-rodriguez, J. (2004). *Poverty and Economic Growth in Mexico*, p. 2018, <https://doi.org/10.3390/socsci7100183>.





and found that a 1% increase in economic growth would result in a 2.4% decrease in poverty.

In the same direction,<sup>20</sup> utilized the ARDL model and found that a 1% increase in economic growth causes a 0.94% decrease in the poverty rate. This study<sup>21</sup> also reached the same conclusions in their study conducted in Indonesia.

While there is a consensus that economic growth may help reduce poverty (see Forbes, 2000; Scholl and Klasen, 2018<sup>22</sup>; Heshmati, 2004; Janvry and Sadoulet, 2000; Magalhães and Turchick, 2022<sup>23</sup>), some authors argue that growth is necessary but not sufficient to alleviate poverty (see Aghion and de Aghion, 2006<sup>24</sup>; Bourguignon, 2004<sup>25</sup>; Kraay, 2006<sup>26</sup>; Dollar and Kraay, 2003, 2004; Ravallion, 2001).

On the other hand, there are authors who found an opposite relationship between these variables (see Bourguignon, 2004; Kuznets, 1995; Ravallion, 2001; Todaro, 1997). The work developed by<sup>27</sup> suggests that inequality increases with economic growth in the early stages of development; however, after a certain level, inequality will begin to decrease, and individuals' well-being will improve, leading to the emergence of Kuznets' inverted U-shape.

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<sup>20</sup> Murjani, A. (2019). Short-Run and Long-Run Impact of Inflation, Unemployment, and Economic Growth Towards Poverty in Indonesia: ardl Approach 2 (1).

<sup>21</sup> Suryahadi, A., Hadiwidjaja, G., & Sumarto, S.(2012). Economic Growth and Poverty Reduction in Indonesia before and after the Asian Financial Crisis, June.

<sup>22</sup> Scholl, N., & Klasen, S., (2018). Re-estimating the relationship between inequality and growth. *Oxf. Econ. Pap.* 1-24. <https://doi.org/10.1093/oep/gyp059>.

<sup>23</sup> Magalhaes, G., & Turchick, D., (2022). Growth and inequality under different hierarchical education regimes. *Econ. Modell.* 116, 105992.

<sup>24</sup> Aghion, P., & de Aghion, B.A., (2006). A new growth approach to poverty alleviation. In: Mookherjee, Dilip (Ed.), Abhijit Vinayak Banerjee, Roland Benabou, *Understanding Poverty*. Oxford University Press, pp. 73-84

<sup>25</sup> Bourguignon, F., (2004). The poverty-inequality-growth triangle. In: Paper Presented at the Indian Council for Research on International Economic Relations, pp. 1-35. New Delhi.

<sup>26</sup> Kraay, A., (2006). When is growth pro-poor? Evidence from a panel of countries. *J. Dev. Econ.* 80 (1), 198-227.

<sup>27</sup> Kuznets, S., (1955). Economic growth and income inequality. *Am. Econ. Rev.* 45 (1), 1-28.



Other authors have gone further by proposing specific measures and methodologies to study the phenomenon in question. The results of<sup>28</sup> provide two significant contributions to the analysis of this relationship: 1) they criticized previous studies that measured economic growth using GDP per capita but did not consider the inclusion of citizens. To address this limitation, the authors introduced a new measure, GDP per employed person, which accurately captures individual participation and benefits in economic activity; 2) they utilized a reliable dataset covering the period from 1990 to 2018 across 35 sub-Saharan African countries, estimating models of poverty, inequality, and inclusive growth using a new econometric technique: the 2SIV-GMM estimator.

This study concluded that inequality has an adverse effect on poverty and that poverty worsens inclusive growth. It was also found that inclusive growth can help reduce poverty rates, but its impact on inequality depends on the type of inclusion. Thus, this study concluded that inclusive growth moderates the adverse effect of inequality on poverty.

Some authors<sup>29</sup> aimed to assess the causal effect of economic growth on multidimensional poverty. These authors relied on an unbalanced panel of 78 countries for the period from 1999 to 2014 and primarily used a first-difference estimator, observing that growth negatively affects global multidimensional poverty. Different author<sup>30</sup> conducted another study that sought to follow the strategy of<sup>31</sup> with a larger number of countries and over a longer period, from 1990 to 2018.

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<sup>28</sup>Amponsah, M., Agbola, F.W., & Mahmood, A., (2023). The relationship between poverty, income inequality and inclusive growth in sub-Saharan Africa. *Economic Modelling*.126.106415

<sup>29</sup> Santos, M. E., Dabus, C., & Delbianco, F. (2019). Growth and poverty revisited from a multidimensional perspective. *The Journal of Development Studies*, 55(2), 260–277. <https://doi.org/10.1080/00220388.2017.1393520>.

<sup>30</sup> Balasubramanian, P., Burchi, F., & Malerba, D., (2023). Does economic growth reduce multidimensional poverty? Evidence from low-and middle-income countries. *World Development*. 161. <https://doi.org/10.1016/j.worlddev.2022.106119>

<sup>31</sup> Santos, M. E., Dabus, C., & Delbianco, F. (2019). Growth and poverty revisited from a multidimensional perspective. *The Journal of Development Studies*, 55(2), 260–277. <https://doi.org/10.1080/00220388.2017.1393520>





In this study, the authors set the following objectives: 1) to estimate the poverty-growth elasticity; 2) to examine whether this elasticity varies over time based on initial conditions;

Conversely, other authors conducted studies with imprecise results. According<sup>32</sup>, the impact of economic growth on inequality can be positive or negative. However, there is a strong negative trade-off between inequality and economic growth.

### **Data and Methodology**

This research aims to critically analyze the relationship between poverty and economic growth in Angola during the period from 1990 to 2020. Through an empirical and qualitative analysis, the article seeks to identify the impacts of economic variations on poverty levels, considering social, political, and structural factors that may influence this dynamic.

The research adopts a quantitative design, closely aligned with a positivist approach, in that it relies on data presented in time series, which, through an empirical approach, can reflect reality. The study intends to contribute to the understanding of the economic and social policies necessary to promote sustainable and inclusive development in the country, as well as to offer evidence-based recommendations for improving the living conditions of the Angolan population.

It is important to note that the data to be analysed in this article refers to monetary poverty or what is commonly known as general poverty.

### **Data and Description of Variables**

For the present study, we will closely follow the works of Dollar & Kraay (2002) and Murjani (2019). The literature review allowed us to identify the following variables:

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<sup>32</sup> Marrero, G.A., & Servén, L., (2022). Growth, inequality and poverty: a robust relationship? *Empir. Econ.* 63 (2), 725–791.



Dependent Variable: poverty rate;

Variable of Interest: economic growth, which will use GDP per capita as a proxy;

Control Variables: spending on education as a percentage of GDP, spending on health as a percentage of GDP, and the unemployment rate.

The following table (table 1) provides descriptive statistics for the key variables included in this study.

Table 1: Summary Statistics

|              | GASTED | GASTSAU | PIB_PC | TAX_POB | TAXDES |
|--------------|--------|---------|--------|---------|--------|
| Mean         | 32.66  | 3.20    | 5.87   | 49.53   | 28.04  |
| Median       | 6.47   | 2.90    | 4.90   | 46.80   | 26.00  |
| Maximum      | 87.00  | 8.68    | 15.00  | 68.40   | 48.00  |
| Minimum      | 1.05   | 1.91    | -5.60  | 27.40   | 15.00  |
| Std. Dev.    | 149.30 | 1.23    | 5.73   | 15.05   | 8.45   |
| Observations | 31     | 31      | 31     | 31      | 31     |

An examination of the mean values in table 1 offers a foundational understanding of the economic and social landscape of Angola during 1990-2020 period. The average poverty rate (TAX\_POB) of 49,54% and the mean unemployment rate (TAXDES) of 28.04% starkly illustrate the severe and persistent structural challenges confronting the nation.

## Empirical Model

In this article, the ARDL model will be used, as it follows a procedure that captures the short- and long-term relationships of the variables in a situation where the variables have different orders. This model allows for the application of the error correction mechanism—error correction model (ECM)—explained by the explanatory



variables. Authors such as<sup>33</sup> have resorted to this approach to investigate the relationship between these two concepts.

The ARDL model has the advantage of requiring integrated series of different orders I(0) and I(1), the ability to provide robust estimates in small samples, and it also addresses the problem of endogeneity. In this study, we will closely follow the work of<sup>34</sup>; below we present equation (1) of the ARDL model in its functional form.

$$y_t = \alpha_0 + \sum_{i=0}^p \delta_j y_{t-1} + \sum_{i=0}^q \theta_i x_{t-i} + y_t + u_t$$

Where  $Y_t$  is the dependent variable as a function of the lagged term  $y_{(t-1)}$  and other explanatory variables  $x_{(t-1)}$ ,  $p$  and  $q$  denote the lag orders for the lagged variables in the model. Furthermore, the coefficients of the vectors for the independent and dependent variables are captured by  $\delta_j$  and  $\theta_i$ , respectively.  $\gamma$  represents the slope at time  $t$ , and finally, we have the error term  $u_t$  distributed around a mean of zero with constant variance.

Next, we present equation (2) that represents the long-term ARDL model, already incorporating the variables involved in the present study.

It is assumed that the poverty rate is the dependent variable of the system, so the long-term model can be represented as follows:

$$Pob_t = \delta_0 + \sum_i \alpha_i Pob_{\{t-i\}} + \sum_j \beta_j GDP_{\{t-j\}} + \sum_l \theta_l EDU_{\{t-l\}} + \sum_m \lambda_m Sau_{\{t-m\}} + \varepsilon_t$$

<sup>33</sup> Murjani, A. (2019). Short-Run and Long-Run Impact of Inflation, Unemployment, and Economic Growth Towards Poverty in Indonesia: ardl Approach 2 (1).

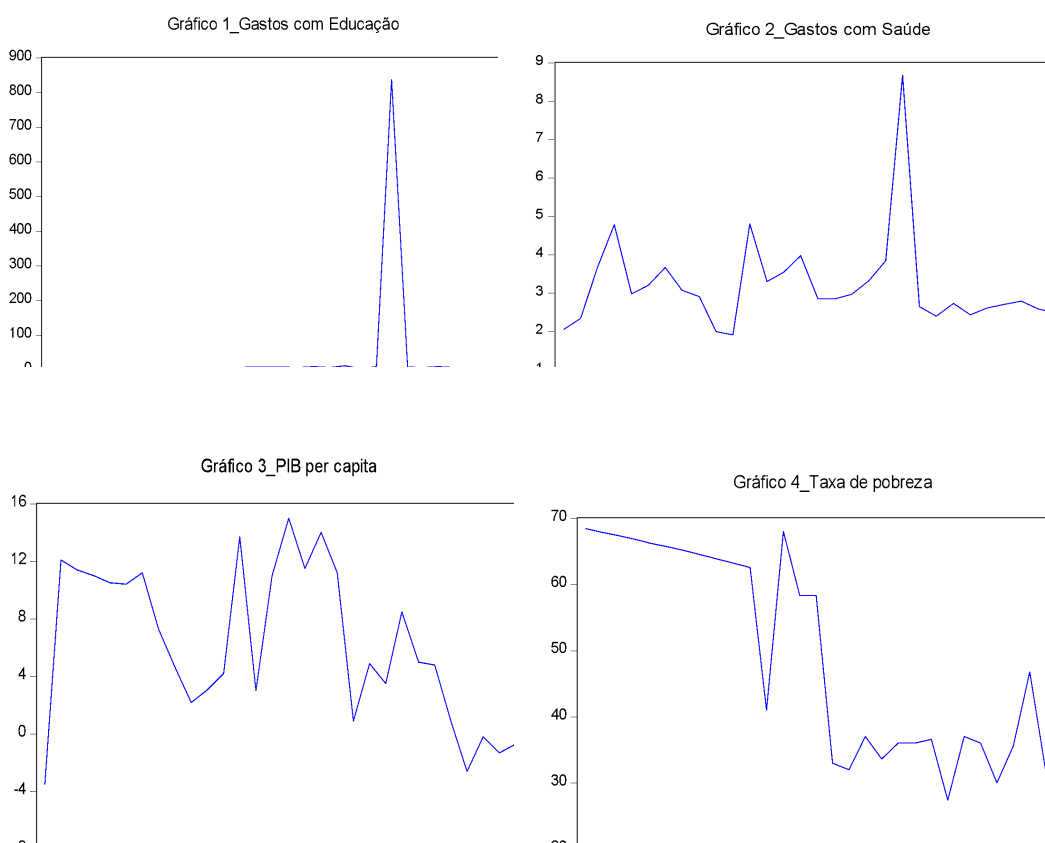
<sup>34</sup> Ngubane, M.Z., Mndebele, S., & Kaseeram, I., (2023). Economic growth, unemployment and poverty: Linear and non-linear evidence from south Africa. *Heliyon* 9. <https://doi.org/10.1016/j.heliyon.2023.e20267>





## Results and Discussions

To estimate the results, Eviews 10 software was used, and the data were obtained from the databases of the International Monetary Fund, World Bank, and the National Institute of Statistics of Angola. As can be observed in the graphs, not all series are stationary; therefore, it was necessary to apply the augmented Dickey-Fuller unit root test, resulting in series I(0) and I(1).



Through the bound tests, it was possible to verify that the variables Poverty Rate and GDP per capita have a long-term relationship, meaning they are cointegrated. This not only allowed for the determination of the short-term coefficients but also enabled the assessment of the long-term dynamics.



### Short-term Dynamics (Error Correction Model – ECM)

Table 2 - Estimation of Short-term Coefficients and Error Correction Model according to Akaike info criterion (AIC)

| Variable        | Coefficient | Std. Error | t-Statistic | Prob.  |
|-----------------|-------------|------------|-------------|--------|
| C               | 59.47077    | 11.36214   | 5.234118    | 0.0001 |
| PIB_PC          | -0.430804   | 0.318199   | -1.353883   | 0.1925 |
| D(GASTEDUC)     | -0.190315   | 0.950587   | -0.200208   | 0.8436 |
| D(GASTEDUC(-1)) | 3.664892    | 1.136875   | 3.223655    | 0.0047 |
| D(GASTSAUD)     | -1.426690   | 1.133509   | -1.258649   | 0.2242 |
| D(GASTSAUD(-1)) | 4.128658    | 1.217404   | 3.391361    | 0.0033 |
| D(TAXDES)       | -0.104072   | 0.235361   | -0.442179   | 0.6636 |
| ECM(-1)*        | -0.746373   | 0.140072   | -5.328507   | 0.0000 |

From the reading of the table above, it highlights that, the contemporaneous effect of education spending D(GASTEDUC) is insignificant. However, the lagged one-period effect (D(GASTEDUC(-1))) is positive and highly significant ( $p=0.0047$ ). This result suggests that an increase in education spending in previous year is associated with an increase in poverty in the current year. This could be attributed to several factors, such as long implementation lags for educational projects, initial capital costs that divert funds from more immediate social relief, or policies that initially benefit non-poor populations.

The lagged effect of health spending (D (GASTSAUD (-1))) is positive and significant ( $p=0.0033$ ), while the contemporaneous effect is insignificant. This again points to potential issues with implementation lags or the initial diversion of resources.



The short-term coefficient for the change in unemployment (D(TAXDES)) is statistically insignificant, indicating that fluctuations in the unemployment rate do not have an immediate, reliable impact on the poverty rate within the same year.

The estimation of the error correction model also showed an expected sign of (-0.7463), which indicates that approximately 74% of the deviation from the long-term equilibrium is corrected in the following period. Thus, if the system experiences a deviation (an unexpected increase or decrease in poverty that moves it away from the expected equilibrium), convergence to equilibrium will occur rapidly, given that nearly  $\frac{3}{4}$  of the deviation is adjusted immediately.

The interpretation of this indicator suggests that the high poverty rates in Angola can be explained by structural and institutional factors that limit the effectiveness of redistributive policies and the effects of economic growth, such as: inequality in income distribution, concentration of resources in specific sectors, particularly the oil sector, and the fragility of institutions, among others. The economic system actively and quickly resists deviations, ensuring a swift return to a long-run equilibrium where the fruits of economic growth are not shared with the country's most vulnerable citizens.

### Diagnostic Tests

Autocorrelation (LM) tests, White's heteroscedasticity test, Jarque-Bera normality test, and model stability tests were all employed, and they revealed perfect results, as can be seen in the table below:

Table 3 - Results of Diagnostic Tests

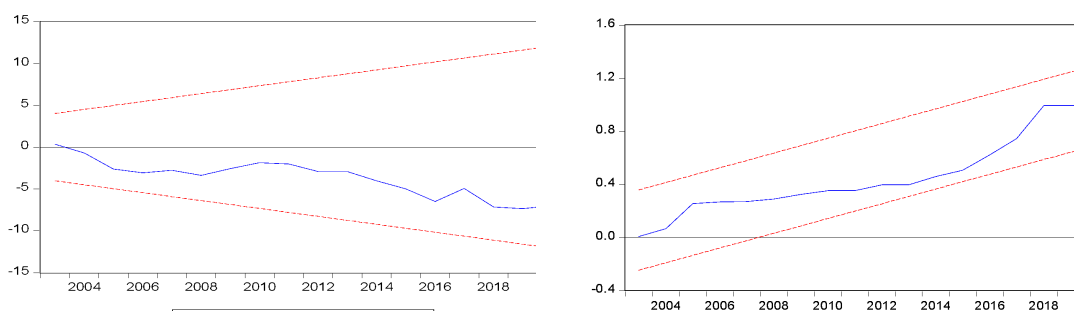
| Diagnostic tests              | P_Value  |
|-------------------------------|----------|
| LM test                       | 0.0169   |
| Test of Breusch-Pagan-Godfrey | 0.4119   |
| Test of Normality             | 0.561715 |

Source: Own elaboration, with data from Eviews 10



## Model Stability

CUSUM and CUSUM of Squares tests demonstrate that the model is structurally stable over the analyzed period.



## Estimation of Long-Term Coefficients

The estimation of the ARDL model confirms that economic growth—represented by GDP per capita—exerts a negative and statistically insignificant effect on the poverty rate. This result is consistent with the literature that points to an inverse relationship between growth and poverty, as observed in studies such as those by Dollar and Kraay (2002) and Murjani (2019). However, the fact that it is statistically insignificant implies that there is insufficient empirical evidence to confirm that, in the long term, an increase in GDP per capita directly leads to a reduction in poverty in Angola.

In light of theories of economic development and poverty reduction policies, this result may point to the complexity of Angola's internal mechanisms. As noted in the error correction model, structural measures are essential. The literature emphasizes that in economies with high inequality and dependence on volatile sectors (such as oil), economic growth measured by GDP per capita does not necessarily translate into improved social conditions, a fact corroborated by the indicator for health expenditures mentioned later. Given the unavailability of more granular data, this analysis relies on an aggregate indicator.



Thus, even though the negative effect is theoretically expected, its insignificance may reflect the interference of institutional factors, income concentration, and inefficiency in the implementation of redistributive policies.

The following table illustrates other estimated coefficients. The data indicate that although the indicator for education expenditures is significant, health services—indicative of social investments—have not improved much, and unemployment has not decreased significantly, thereby contributing to a worsening of the poverty rate.

In the long-term, the coefficient for education expenditure is negative and highly significant. It demonstrates that while the immediate effects of education spending on poverty are ambiguous or even negative, its sustained, long-term impact is powerful and highly effective in reducing poverty. The policy implication is that education spending is a vital long-term strategy for poverty alleviation in Angola, but its benefits are not immediate and require consistent, patient investment.

The long-run coefficient for health expenditure is negative (-3.717) and statistically insignificant ( $p > 0.05$ ), which is the expected direction. This is a significant finding that suggests a failure in policy efficacy. According to the literature investments in health reduce poverty by improving productivity and reducing the burden of out-of-pocket medical expenses, the model provides no statistical evidence that they have achieved this goal in Angola over the long run. The lack of a significant long-term impact implies that health expenditures may be inefficient, poorly targeted, or insufficient to overcome the structural barriers faced by the poor in accessing quality healthcare. This findings points to a critical need to review not just the quantity, but also its quality, efficiency and equity.

The long-run coefficient for unemployment rate is positive and statistically significant ( $p < 0.05$ ). The result confirms that, in the long run, higher unemployment is directly and significantly associated with higher poverty. In the context of Angola economy, this result reinforces the argument that the country's economic growth



reliant on a capital-intensive oil sector that creates few jobs, fails to alleviate poverty precisely because it does not generate sufficient employment opportunities for the broader population.

Table 4: Long Run estimation

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| PIB_PC   | -0.577196   | 0.450076   | -1.282442   | 0.2160 |
| GASTEDUC | -5.461374   | 1.015193   | -5.379642   | 0.0000 |
| GASTSAUD | -3.717815   | 3.015710   | -1.232816   | 0.2335 |
| TAXDES   | 0.581583    | 0.273156   | 2.129123    | 0.0473 |

Source: Data from Eviews 10

## Conclusions

This study set out to unveil the connection between economic growth and poverty reduction in Angola from 19990 to 2020. The estimated ARDL model for Angola (1990–2020) shows that economic growth, measured by GDP per capita, has a negative and statistically insignificant effect on the poverty rate.

The resilience of this dynamic is paradoxically underscored by the high error correction coefficient. This finding does not suggest economic health but rather demonstrates the efficiency of the Angolan economic system in rapidly reverting to a long-run equilibrium where growth and poverty coexist without a virtuous relationship.

The analysis of the control variables enriches the study’s main conclusion. Education expenditure emerges as the sole policy lever with a powerful, statistically significant long-term impact on poverty reduction, validating investment in human capital as a fundamental strategy, even if its benefits are not immediate. In sharp



contrast, the long-term insignificance of health expenditure points to critical challenges of policy efficacy and efficiency, suggesting that investment alone has been insufficient to mitigate poverty.

Finally, the unemployment rate was confirmed as a direct and significant determinant of poverty, reinforcing the argument that Angola's growth model-concentrated in capital-intensive, low-employment sectors like oil-is a central barrier to inclusive development.

Therefore, this paper does more than reveal the tenuous link between growth and poverty reduction in Angola; it illuminates the divergent paths of public policy. It offers a clear diagnosis that without structural reforms and effective social investments, economic growth will remain a distant mirage of prosperity for the majority of its population.

### **Recommendations**

- Establish continuous monitoring and evaluation mechanisms for public policies, using econometric models (like ARDL) to adjust policies according to the effects observed over time.
- We recommend that future studies disaggregate the analysis by distinguishing between the oil and non oil sectors GDP\_PC to test the robustness of these findings.



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## Desvendando a Conexão: Impacto do Crescimento Económico na Redução da Pobreza em Angola (1990 - 2020)

**Resumo:** Este artigo, tem como objectivo analisar a relação entre o crescimento económico e a redução das taxas de pobreza no context angolano ao longo de três décadas. Metodologicamente, o artigo empregou o modelo ARDL (Auto-Regressivo com Atrasos Distribuídos) baseado em dados históricos para capturar as dinâmicas de curto e longo prazo entre as variáveis. A abordagem metodológica utilizada permitiu a estimação do coeficiente de correção de erros, que apresentou um valor de  $-0,746$ , indicando uma rápida convergência para o equilíbrio após choques económicos. Verificou-se que o impacto de curto e longo prazo do PIB per capita não é estatisticamente significativo ( $p > 0,05$ ), sugerindo que os benefícios do crescimento económico não se traduziram de forma robusta na redução da pobreza. A análise das variáveis de controlo mostra uma divergência entre os impactos de curto e longo prazo dos gastos em educação. Demonstra que, embora os efeitos imediatos dos gastos em educação sobre a pobreza sejam ambíguos ou até negativos, o seu impacto sustentado e a longo prazo é poderoso e altamente eficaz na redução da pobreza; os gastos em saúde têm, até à data, sido uma estratégia ineficaz, requerendo uma reforma urgente, e o desemprego continua a ser uma barreira estrutural chave, confirmando que uma estratégia de crescimento favorável aos pobres deve ser, por definição, uma estratégia pró-emprego. Finalmente, este artigo demonstra que a economia de Angola não está simplesmente a falhar em conectar o crescimento à redução da pobreza por acaso; está estruturalmente programada para fazê-lo.

**Palavras-chave:** Pobreza; Crescimento Económico; Angola; ARDL.

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