Econometric analysis of the effect of financial inclusion on non-oil GDP growth in Algeria

Dr. ZEMIRLI Radhia, University of Tizi-Ouzou, (Algeria) radhia_zemirli@hotmail.fr

Received: 29/11/2022 *Accepted: 29/03/2023* *Published:31/03/2023*

Abstract:

Financial inclusion requires special attention from policymakers for its considerable role in boosting economic growth, reducing poverty and preserving financial stability. Thus, given the importance of financial inclusion in the policy of economic and social cohesion, this paper aims to empirically analyze the impact of financial inclusion on non-hydrocarbon economic growth in Algeria to identify it as a possible determinant of the diversification process of the Algerian economy. The linear regression method will be used to analyze the interaction between these two variables in the long run. We expect a positive correlation between financial or banking inclusion and non-oil GDP growth in Algeria.

Keywords: Financial inclusion; Financial system; Economic growth; Algeria; Linear regression.

JEL Classification Codes: O16; P34; P43.

1. INTRODUCTION

The financial sector has a fundamental interest in economic development. Indeed, the adoption of financial liberalization programs has shown over the years its direct effect on economic growth.

International institutions use financial inclusion in their estimates as an indicator to measure the level of financial development. Financial inclusion refers to the ease of access, availability and use of the formal financial system by economic agents. It allows access to basic financial services such as savings, payment instruments, credit, deposits, insurance, etc.

For this reason, the development of financial inclusion has become one of the major concerns of policy makers and regulators (central banks) who have become aware of the need for an inclusive financial system to support economic growth and preserve financial stability.

Several studies have shown a positive correlation between the rate of access to banking and financial services and a country's growth rate, including those by Demirguc-kunt et al. (2017), Fouillet and Morvant Roux (2018), Kabikissa (2020), etc. But not only that, financial inclusion can also play a role in macroeconomic stabilization as well as in strengthening household financial independence. Erlando et al. (2020) show that households and firms that have access to financial services are more resilient to episodes of financial shocks than others.

To this aims, Algeria has implemented programs and reforms to modernize the financial sector as part of the transition to a market economy. The objective of these reforms was to build a more efficient and stable financial system that will ensure stabilization and effective mobilization of capital to support economic growth and help reduce poverty by ending financial exclusion. However, since the 1990s, financial inclusion has continued to lag behind despite reforms that have not yet helped to advance the rate of banking among the population. Indeed, according to Global Findex data (2021), Algeria is still among the countries where financial inclusion remains relatively low despite the improvement of some indicators. To be precise, the number of bank branches is 1690 in 2021, i.e.

1 branch for every 26000 inhabitants, a sparse and very insufficient network given the enormous need for financing in our country. The level of credit provided to the private sector represents only 29.69% of GDP in 2020 against 24.40% in 2017 compared to 58.84% recorded in the MENA region and 56.79% in the Arab world. As for the holding of current accounts by the Algerian population, statistics also reveal a low level compared to the average rate at the global level, with only 44% in 2021 of adults (who are over 15 years old) having an account in a formal financial institution, compared to 52% in the MENA region and 70% in middle-income countries. It should be noted that the lack of access to financial services in a formal institution deprives the most vulnerable populations of social welfare and exposes them to poverty.

Thus, given the importance of the issue of financial inclusion in economic and social life, this article aims to empirically analyze the impact of financial inclusion on non-hydrocarbon economic growth in order to identify it as a possible determining factor in the diversification process of the Algerian economy.

This work will be based on a central problem, namely:

What is the contribution of financial inclusion to non-oil GDP growth in Algeria?

This relationship has certainly aroused the interest of researchers on the issue of financial inclusion especially in developed countries, however, the work is scarce for developing countries. Certainly, Algeria has not been the subject of empirical study with respect to the increased importance of financial inclusion as a lever for economic growth.

Thus, this study is original and aims to extend the literature by focusing on the analysis of the impact of financial inclusion on non-hydrocarbon economic growth in Algeria following an econometric approach. This will allow us to identify the impact of the penetration of banking services on the economic activity carried out independently of the oil rent over a relatively long period from 1999 to 2021.

This work will be structured as follows: First, we will provide an overview of the literature on the relationship between financial

development, financial inclusion and economic growth. Second, we will present stylized facts about financial inclusion in Algeria. In the last section, we will empirically analyze the long-run impact of financial inclusion on non-hydrocarbon economic growth in Algeria, while presenting the data and approach and finally, the empirical results and their interpretation.

2. Literature review

The purpose of this literature review is to provide an overview of previous empirical studies on financial inclusion and its interaction with the economy. Specifically, we will identify work on the impact of financial inclusion on macroeconomic fundamentals, the results of which remain divergent and sometimes controversial.

The economic literature began to develop, first, on the existing relationship between finance and economic growth. The pioneers were McKinnon and Shaw (1973), who initiated the main current in the literature concerning this causal relationship through the theory of financial liberalization by asserting that financial development is an essential vector of economic development. Other authors, including Demirguc-kunt (2000), Beck (2000), Allegret (2012), Erlando (2020) also support the positive causal effect between financial development and economic growth. On the other hand, others like Deidda and Fattouh (2002), Mougani (2012), argue that a financial system can only positively impact the growth of economies if it reaches a certain level of development, and that it is rather economic growth that leads to financial development and not vice versa.

As for the impact of financial inclusion on the economy, Demirguc-kunt and Leora klapper (2013) pioneered the analysis of the scope and scale of financial inclusion around the world. They conducted a study of 148 countries and found that 50% of adults worldwide have an account at a formal financial institution, although account penetration varies considerably by region, income group, and individual characteristics. And at least 35% are unbanked and report barriers to account use that could be

addressed by public policy. Among the most frequently reported barriers are high cost, physical distance, and lack of appropriate documentation.
Sarma and Pais (2011) showed that human development and financial inclusion move closely with each other and that financial inclusion is important for improving the living conditions of certain social groups. For Neaime and Gaysset (2018) financial inclusion reduces income inequality in the MENA region, however, it does not have an impact on poverty, which depends mainly on population size, inflation, and trade openness.

Furthermore, Kabikissa (2020) looked at the impact of financial inclusion on economic growth in Congo using an ARDL approach to highlight the short and long term impact. The results of this study revealed a significant and positive influence of financial inclusion on non-oil GDP with a non-inverse relationship between these two variables in the short and long term in Congo. This author specifies that the level of financial inclusion is crucial and must be improved, notably by lowering bank fees, popularizing financial culture and developing new technologies. Abbes (2022) attempted to identify the socioeconomic determinants of financial inclusion of individuals in MENA countries. Abbes (2022) attempted to identify the socioeconomic determinants of financial inclusion of individuals in MENA countries and concluded from the results that the socioeconomic context has a strong influence on the level of financial inclusion of populations in MENA countries as women, youth, the poor, the low educated, and inactive adults are disadvantaged compared to other categories in terms of access to financial services.

In addition, another line of work has focused on analyzing the impact of financial inclusion on firm activity and/or the entrepreneurial environment. Lee (2020) studied the effect of financial inclusion on firm sales growth in developing countries and how this effect varies across different sub-samples (during a crisis versus a non-crisis, small and medium-sized firms versus large and medium-sized firms). Ajide (2020) showed that financial inclusion can reduce poverty levels, inequality, and encourage business start-ups in African countries. Zhang and Fan (2017) specified that the development of financial inclusion can alleviate credit constraints on entrepreneurial activities by reducing information asymmetry in financial transactions, and furthermore this effect is greater in industries with lower barriers to entry. Lyons and Contreras (2017) studied the dual relationship between entrepreneurship and financial inclusion among young

workers in 21 developing countries. The results of this study indicate that there is dual causality, but the direction of causality is likely from financial inclusion to entrepreneurship, not from entrepreneurship to financial inclusion.

3. Stylized facts about financial inclusion in Algeria

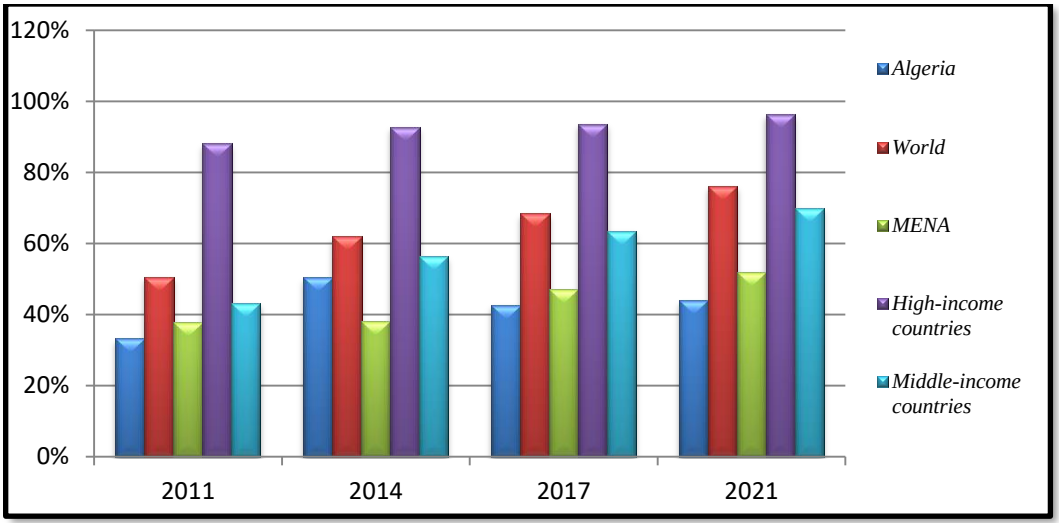
Today, it is widely accepted by experts that financial inclusion plays a crucial role in financial and economic development. In Algeria, it has become the focus of policymakers in order to address the marginalization of the use of financial services and to limit the use of the informal sector as a preferred source of investment for some economic agents.

It is therefore legitimate to wonder about the state of play of financial inclusion in Algeria : What is its scope and its contribution to macroeconomic fundamentals?

To examine the level of financial inclusion in Algeria, it seems important to study the evolution of certain measurement indicators, which the Bank of Algeria identifies according to the availability in terms of supply of financial services and their use in terms of demand, as well as the quality of these services. Thus, we can list the following indicators: the use of a current account, the holding of bank cards, the number of bank branches and ATMs, and the level of credit granted to the private sector.

According to Global Findex (2021), 76% of adults worldwide in 2021 have an account with a financial institution or mobile money provider (figure 01). Note that, the number of people with accounts in the world increased by 50% in the ten years from 2011 to 2021, from 51% to 76% of adults. Between 2017 and 2021, the average account ownership rate in developing economies increased by 8 percentage points, from 63% to 71% of adults.

Fig. 1. Share of people (+15 years old) with a current account in a financial institution



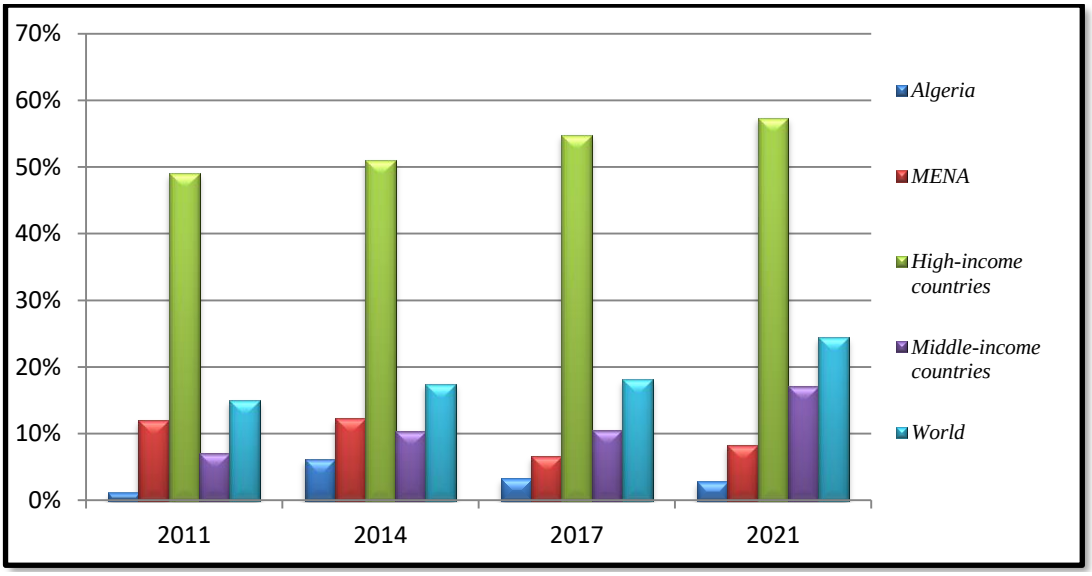
Source: Constructed from the Global Findex database. From the website: https://www.worldbank.org/en/publication/globalfindex/Data.

As for the situation in Algeria, the observation of this graph shows a delay in the matter. The Global Findex data also reveals a low level compared to the average rate at the world level, with only 44% in 2021 of adults in Algeria (who are over 15 years old) having an account in a formal financial institution, compared to 52% in the MENA region and 70% in middle income countries. Women remain financially excluded with only 31% having an account in a bank in 2021 compared to 40% in 2014. Thus, women remain vulnerable and deprived of access to basic financial services such as savings, insurance or credit. The level of education is also a key determinant of financial inclusion since the share of account holders who have a secondary level is 46% in Algeria in 2021 and 82% in the world.

Access to this type of financial services still faces obstacles, hence the lower level of current accounts in Algeria compared to the trend at the world level but also in the MENA region. However, the evolution over time of this indicator shows an improvement but insufficient to counteract the low level of use of banking services for the settlement of various transactions strongly suffocated by the extent of the informal sector.

Indeed, the use of electronic money still leaves much to be desired in Algeria since only 03% of the population has a payment card in 2021 (graph 02), while at the world level, the share is 24% and 57% in high income countries. As a result, payment methods in Algeria remain insecure and do not meet international standards.

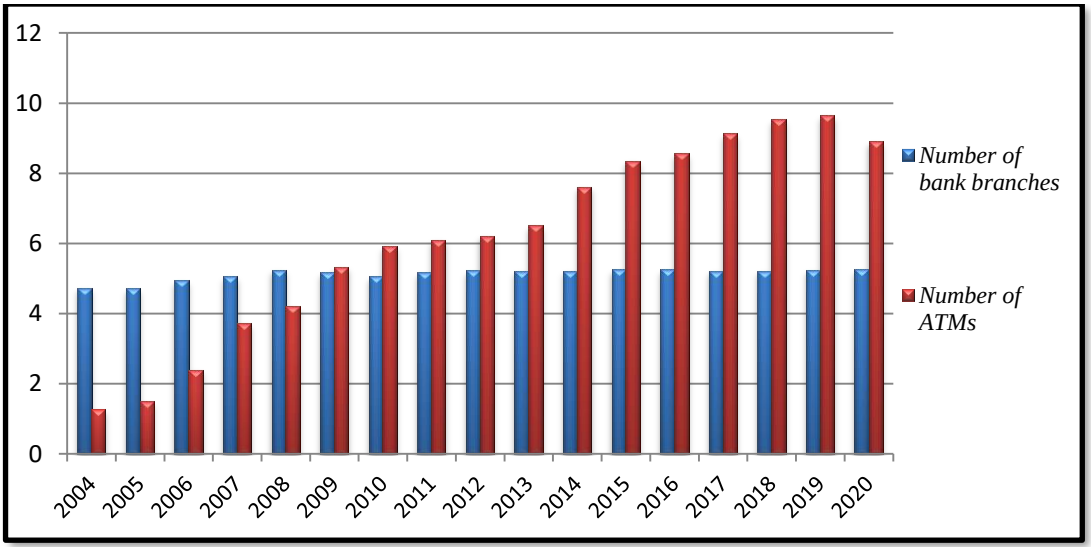
Fig. 2. The share of people (+15 years old) with a bank card



Source: Constructed from the Global Findex database. From the website: https://www.worldbank.org/en/publication/globalfindex/Data.

Moreover, another indicator of financial inclusion can confirm this observation, namely the evolution of the number of bank branches spread over the national territory and the number of ATMs, as shown in the figure 03.

Fig. 3. Evolution of the number of bank branches and ATMs per 100 000 adults in Algeria



Source: Constructed from the Global Findex database. From the website: https://www.worldbank.org/en/publication/globalfindex/Data.

Indeed, the availability of services measured by the number of ATMs per 100000 inhabitants reflects a low coverage of financial services, as it records only 8.9 ATMs per 100000 inhabitants in 2020. According to SATIM (2021), the number of operational ATMs at the national level has reached 3053 ATMs, while the number of electronic payment terminals (EPTs) is 39000 units at the end of 2021. It is important to note in this regard that, the crisis of Covid-19 and the confinement programs have had a positive impact on the use of digital payments that have increased significantly since 2019.

Regarding the number of bank branches in Algeria reached 1690 in 2021, a very low number compared to international standards, as specified by the Minister of Finance (February 2021). The average in relation to the number of inhabitants is 1 agency/10000 inhabitants, while in Algeria this average is 1agency/26000 inhabitants or less than 6 agencies per 100000 inhabitants (figure 03), thus occupying the 120th place far behind Egypt and Mauritania.

4. Econometric analysis

4.1 Data and methodological approach

This study focuses on the Algerian case and attempts to highlight the contribution of financial inclusion to economic growth, but outside of hydrocarbons, in order to identify the impact of the penetration of banking services on the economic activity carried out independently of the oil rent. The period of analysis is from 1999 to 2021, a time sample selected based on data availability.

We estimate a multiple regression using a dependent variable which represents economic growth in Algeria measured by the variation of non-oil gross domestic product (N-O-GDP). As for the explanatory variables, the key variable concerns the level of credit to the private sector in %GDP, the proxy for financial inclusion[*]. It is important to note in this regard that the financial system in Algeria is bank-based, so this study is limited to the analysis of financial inclusion through the penetration of banking services, particularly through the granting of bank loans. The other explanatory variables are chosen rather as control variables, their significance is summarized in the following table 1.

Table 1. Presentation of variables and expected signs

Variables	***Designation***	***Data source***	***Expected signs on N-O-GDP***
	Dependent variable		
N-O GDP	Represents economic growth measured by the annual variation in gross domestic product excluding hydrocarbons (Non-Oil GDP growth)	*The National Office of Statistics*	

[*] For clarification, the most widely used indicator for measuring financial inclusion in the literature is the number of bank accounts (per 1000 people). The reason for not using this variable in this study is that data is not available for the period of analysis selected here, but is only available for Algeria for the years 2014-2017-2021 according to the World Bank's Global Findex reports.

	Independent variables		
FI	Represents financial inclusion as measured by the level of credit in %GDP	*World Bank*	+
PE	Represents public expenditure in %GDP, it is the main source of growth of the Algerian economy	*The National Office of Statistics*	+
INV	Represents public investment, one of the main driving forces of economic growth in Algeria	*The National Office of Statistics*	+
FC	Represents final consumption, one of the main components of GDP in Algeria. Its dynamics influence the variation of growth in Algeria	*The National Office of Statistics*	+
TB	Represents the trade balance, the difference between exports and imports excluding hydrocarbons	*The National Office of Statistics*	+

Source: Designed by authors

Therefore, we will estimate the following equation:

$N\text{-}O\text{-}GDP = \alpha i + \beta 1\ FI + \beta 2\ PE + \beta 3\ INV + \beta 4\ FC + \beta 5\ TB + \varepsilon i,t$

Before analyzing the results of the regressions, it is important to respect a number of conditions, namely: overall and partial significance of the model, stationarity of the variables, heteroskedasticity, autocorrelation, and normality of the residuals. The omission of this step, which remains a sine qua non condition in a time series, can lead to estimation bias and distort the coefficients given by the regressions.

First, we start by analyzing the table of descriptive statistics in order to understand the information contained in the data and to describe them in a synthetic way to better analyze them.

Table 2. Descriptive statistics

Variables	*Mean*	*Std. Dev.*	*Min*	*Max*	*Skewness*	*Kurtosis*	*Obs*
N-O-GDP	8846.269	5223.832	2347.3	17287.1	0.239364	1.557407	23
FI	16.17732	6.740889	5.388089	29.69491	0.3522888	2.133903	23
PE	36.01532	5.095709	27.10796	45.81149	0.0437204	2.11693	23
INV	5063.517	3152.98	134.6	9669.6	-0.050148	1.53053	23
FC	6921.787	3899.937	2214.3	13756.1	0.2886322	1.624793	23
TB	-3219.13	1824.051	-5841.7	-151.4	0.1491245	1.56602	23

Source: Constructed from database exploitation under Stata 15 software.

It appears from this table, which briefly describes the variables, that we have a number of observations of 23 and the difference between the minimum and maximum is considerable, due to the peak recorded by the N-O-GDP. The kurtosis, the indicator of kurtosis of the distribution, is less than 3 indicating a non-leptokurtic distribution. Skewness is less than 1, indicating that the distribution is skewed to the right.

Furthermore, it is imperative to determine in a time series whether the variables are stationary, as in all empirical analyses that consider strictly stationary processes. We will demonstrate the stationarity by means of specified test, namely the test of the unit root, in this case, the test of Dickey-Fuller Augmented (ADF).

Table 3. Results of the unit root test (ADF test)

Variables	*At the level*	*At first difference*
N-O-GDP	0.9967	0.045**
FI	0.7420	0.0001***
FC	0.9963	0.0072***
INV	0.7869	0.0015***
PE	0.3634	0.0001***
TB	0.6866	0.0000***

Source: Constructed from database exploitation under Stata 15 software.

N.B: If the P-values are less than 0.01; 0.05; 0.1. This means that the variables are stationary at the 1% ***, 5% **, 10% * threshold, respectively.

Through the Dickey-Fuller Augmented stationarity test, we find that the variables are all non-stationary at level but become stationary after first differentiation. Therefore, we will estimate a model by a stationary process taking into account this transformation of the variables.

Note that after checking stationarity, it is necessary to continue the diagnosis of the test results, especially the diagnosis on the residuals in order to check if:

- The residuals are normally distributed;
- The residues are not heteroscedastic;
- The residuals are not auto-correlated.

First, to determine if the errors are normally distributed, the Jarque-Bera test will be applied. This test will determine if the data follow a normal distribution or not and will test the following hypotheses:

H_0: the residuals are normally distributed

H_1: the residuals are not normally distributed

Table 4. Normality test of residuals in time series

	Jarque-Bera test
Chi2	0.31
Prob-Chi2	0.8555

Source: Constructed from database exploitation under Stata 15 software.

The Jarque-Bera probability is 0.8555, i.e. greater than 0.05, we accept the null hypothesis. Therefore, we can conclude that the residuals are normally distributed, which can satisfy the first condition.

Secondly, the existence of the heteroscedasticity phenomenon is analyzed, which reveals whether the variance-covariance matrix of the errors are constant or not. In a test of heteroskedasticity, the null hypothesis states that all coefficients of the squared residuals regression are zero, so there is homoskedasticity. The alternative hypothesis states that there is heteroscedasticity. Thus, if the P-value is less than 5%, the null hypothesis is rejected, and it can be understood that heteroscedasticity is present (Ouellet et al., 2005).

Table 5 gives the results of the most commonly used heteroskedasticity test in time series econometrics, namely the Breusch-Pagan test.

Table 5. Test of heteroscedasticity in time series

	Breusch-Pagan test
Chi2	0.95
Prob-Chi2	0.3288

Source: Constructed from database exploitation under Stata 15 software.

These results show the absence of heteroscedasticity since the probability is above the significance levels.

In addition to heteroscedasticity, it is also traditional to check for autocorrelation, i.e. the existence of correlation between the error terms. The results reveal the absence of autocorrelation, since the probability calculated by the test applied here, in this case that of Breusch Godfrey, is greater than 5%.

Table 6. Autocorrelation test in time series

	Breusch-Godfrey test
Chi2	1.719
Prob-Chi2	0.1899

Source: Constructed from database exploitation under Stata 15 software.

In view of the results of this preliminary analysis, the main conditions are met, which will allow the coefficients of the multiple linear regression that will be estimated in what follows to be validated without question.

3.2 Results and Discussion

As a reminder, the aim is to examine the impact of financial inclusion on non-hydrocarbon economic growth in order to determine its contribution to the Algerian economy. The empirical results from the regressions are presented in the following table 7.

Table 7. Multiple linear regression estimation results

Variables	*N-O-GDP*
FI	51.69771**
	(17.3985)
FC	1.063777***
	(0.0476434)
INV	0.2408944**
	(0.063567)
PE	1.669168**
	(16.80129)
TB	0.6375951
	(0.4941531)
Constant	-633.1902
	(550.9069)
Observations	23
R-squared	0.9977
Adj R-squared	0.9972
Prob > F	0.0000

Robust standard errors in parentheses
*** p<0,01, ** p<0,05, * p<0,1
Source: Constructed from database exploitation under Stata 15 software.

The results of the regression are appreciable since the Fisher statistic is significant at the 1% level, which indicates that the overall significance of the model is good. In addition, the coefficient of determination (R-squared) is 99%, which means that the variability of the dependent variable is almost totally explained by the estimated explanatory variables. This confirms that the explanatory power of the estimators is relatively high.

Indeed, it appears that all the explanatory variables have a significant impact on the dynamics of N-O-GDP. In particular, the key variable relating to financial inclusion is significant at the 5% level, with a positive impact that likely indicates its contribution to non-hydrocarbon economic growth. The causal effect of financial inclusion as measured by the level of credit extended shows that a 1% increase in this variable leads to an increase of (51.69771) in N-O-GDP growth, a significant impact. This result is consistent with expectations and is in line with previous work

(Demirguc-kunt et al. (2017), Fouillet and Morvant Roux (2018), Kabikissa (2020), Hadefi and Bensaid (2020), ...etc.).

This result confirms that the performance of the Algerian financial system, which is essentially banking-oriented, drives the growth of economic activity independently of hydrocarbon revenues.

It should be noted that there is a linear relationship between these two variables, hence the need to improve the size of the financial sector insofar as a high penetration of the banking system, better use of financial services, and a wide range of financial products will inevitably lead to a better contribution of financial inclusion to non-hydrocarbon growth in Algeria, a condition for achieving the ultimate goal of diversifying the Algerian economy.

The public expenditure variable has a positive and significant impact at the 10% threshold, when this variable increases by 1%, the growth of N-O-GDP will increase by (1.669168). Public spending has a role of macroeconomic stabilization but also of leveraging economic growth by acting directly on aggregate demand. In Algeria, it is the main instrument of state intervention in economic and social life, with a direct effect on the pace of GDP growth. Thus, the positive correlation between public spending and N-O-GDP growth is in line with expectations and is in line with theory.

The investment and consumption variables have a positive and significant impact on non-hydrocarbon growth. This significant impact is obvious since these two variables are two essential components of GDP in Algeria.

The variable on the trade balance is not significant. This counter-intuitive result can be explained by the low diversification of exports in Algeria with the predominance of oil exports. Thus, the reaction of economic growth is weak to the variation of non-hydrocarbon trade.

5. CONCLUSION

Financial inclusion is seen as a catalyst for financial development, which in turn stimulates economic growth and macroeconomic stability. This stability becomes inconceivable as long as the majority of households and businesses remain financially excluded from the economic system. Algeria, like all countries in the world, has been hit by economic shocks exacerbated by the Covid-19 pandemic, as a result, digital transformation seems to be one of the main development objectives and a key element of the country's recovery.

In this paper, we have attempted to empirically analyze the relationship between financial inclusion and non-hydrocarbon economic growth in Algeria in order to highlight its importance in the development process of the financial system and as a potential vector of wealth creation. Indeed, the empirical results revealed the influence of the financial inclusion proxy on the dynamics of non-oil GDP in the long run. There is likely a positive correlation between these two variables, hence the need for public authorities to promote an inclusive financial system to support economic growth and reduce the high dependence of the Algerian economy on oil revenues.

Indeed, the observation of the evolution of certain indicators measuring financial inclusion has shown a timid improvement and/or a poor performance due to a limited offer of financial services which can be explained in particular by the insufficiency of the proximity network and unfavorable regulations. Added to this is the lack of enthusiasm and reluctance of the population to hold a bank account due to mistrust, lack of financial culture and religious considerations. All these factors are intertwined, leading to increased financial exclusion, which inevitably leads to social exclusion. In addition, Algerians make little use of electronic means of payment, as specified by the Bank of Algeria (2022), the majority of holders of the Interbank Card or Edahabia card use their cards only for withdrawal, whereas that they prefer to use cash in their payment transactions, i.e. 80% of electronic transaction operations in Algeria are

cash withdrawals, while the rate of use of bank cards for payment does not exceed 06%.

To achieve this, governments must create the conditions for a more inclusive financial system and financial development must be an imperative and a priority for prosperous economic growth. Thus, State support must be directed towards the relaxation of banking regulations, the densification of the bank branch network for better proximity to customers, an accessible and diversified financial services offer for better promotion of the use of banking services and the reduction of bank charges, in particular those related to the issue and holding of bank cards, in order to encourage the population to use electronic banking (e-money) for the settlement of their commercial transactions. Indeed, digital financial services, enabled by fintech, have the potential to reduce costs, increase speed, security and transparency, and enable safer financial services. Better access to digital payments would be the gateway to digital financial services for Algerians less familiar with the financial sector, as specified by international institutions such as the World Bank (2021). Digital payments will help reach vulnerable people with social transfers and other financial support, especially when transport and mobility are limited. Advances in technology are therefore essential to the development of digital financial services. In this sense, digital identification, launched in 2016 in Algeria, has enabled financial institutions to effectively onboard customers in accordance with anti-money laundering and other "know your customer" requirements. Thus, the already open application programming interfaces, which allow digital financial service providers to access data from different public and private systems, need to be enhanced in order to improve the speed and reduce the cost of financial services without compromise safety and reliability.

6. Bibliography List

- Ajide, F. (2020). Can financial inclusion reduce the presence of corruption? Evidence from selected countries in Africa. *International Journal of Social Economics*, *47*(11), 1345-1362.

- Allegret, J. P. & Azzabi, S. (2014). Intégration financière internationale et croissance économique dans les pays émergents et en développement : le canal du développement financier. *Revue d'économie du développement*, *22*(2), 27-68.
- Abbes, M. A. (2022). Les déterminants socio-économiques de l'inclusion financière dans les pays de la région MENA. *Les Cahiers du Cread*, *38*(1), 5-30.
- Erlando, A., Riyanto, F. D. & Masakazu, S. (2020). Financial inclusion, economic growth, and poverty alleviation: evidence from eastern Indonesia. *Heliyon, 6*, 1-13.
- Beck, T., Levine, R. & Loayza, N. (2000). Finance and the sources of growth. *Journal of Financial Economics, 58*(2), 261-300.
- Banque Mondiale. (2021). Inclusion financière, paiements numériques, résilience à l'ére de la covid-19. Site : https : ///thedocs.worldbank.org.
- Base de données de Global Findex. (2021). Site : https://www.worldbak.org/en/publications/globalfindex/Data.
- Demirguc-Kunt, A. & Klapper, L. (2013). Measuring Financial Inclusion: Explaining Variation in Use of Financial Services across and within Countries. *Brookings Papers on Economic Activity, 44* (1), 279-340.
- Demirguc-Kunt, A., Beck, T. & Levine, R. (2000). A New Database on the Structure and Development of the Financial Sector. *World Bank Economic Review, 14* (3), 597-605.
- Deida, L. & Fattouh, B. (2002). Non-linearity between finance and growth. *Economics Letters, 74* (3), 339-345.
- Fouillet, C. & Morvant Roux, S. (2018). Financial inclusion, a driver of state building in India and Mexico?. *International development policy*, (10), 1-26.
- Hadefi, A. Z. & Bensaid, M. (2020). Indice d'inclusion financière en Algérie: Essai de quantification. *Les Cahiers du MECAS*, *16* (2), 28-38.

- Kabikissa, J. D. (2020). L'incidence de l'inclusion financière sur la croissance économique au Congo. *Revue Congolaise de Gestion*, (29), 14-60.
- Lee, C. C., Wang, C. W. & Ho, S. J. (2020). Financial inclusion, financial innovation, and firms sales growth. *International Review of Economics & Finance*, 66, 189-205.
- Lyons, A. & Contreras, S. (2017). A Simultaneous Model of Youth Entrepreneurship and Financial Inclusion Across Developing Countries. *Conference: 56th Annual Southern Regional Science*, 1-30.
- Mougani, G. (2012). An Analysis of the Impact of Financial Integration on Economic Activity and Macroeconomic Volatility in Africa within the Financial Globalization Context. *Working Paper Series, African Development Bank*, (375), 1-23.
- Neaime, S. & Gaysset, I. (2018). Financial inclusion and stability in MENA: Evidence from poverty and inequality. *Finance Research Letters*, 24 (C), 230-237.
- Prina, S. (2015). Banking the Poor via Savings Accounts: Evidence from a Field Experiment. *Journal of Development Economics*, *115*(1), 16-31.
- Rodrigue, N. K. (2020). Inclusion financière et croissance économique en Afrique sub-saharienne : le rôle de la qualité des institutions. *Global Journal of Management and Business Research*, *20*(12), 10-22.
- Sarma, M. & Pais, J. (2011). Financial Inclusion and Development. *International development*, *23*(5), 613-628.
- Zhang, R. & Fan, Z. (2017). Financial Inclusion, Entry Barriers, and Entrepreneurship: Evidence from China. *Sustainability*, *9*(2), 1-21.