

Impact the added value of small and medium-sized enterprises on economic growth outside the hydrocarbon sector in Algeria from 2002 to 2022

ALAOUI Zakaria¹, BELLAL Boudjemaa²

¹ PhD student, University of Adrar (Algeria), alaoui.zakaria@univ-adrar.edu.dz

² Professor, University of Adrar (Algeria), bou.bellal@univ-adrar.edu.dz

Received on: 12/10/2024

Accepted on: 10/12/2024

Published on: 20/12/2024

Abstract :

The small and medium-sized enterprises sector is one of the ways to raise economic growth due to its flexibility and ability to adapt to economic conditions, along with its significance to providing jobs and absorbing unemployment rates; in this study, we used the ARDL model to measure the relationship between the added value of SMEs and GDP outside of hydrocarbons sector the results have shown a cointegration between the two variables and a positive impact of the added value of these enterprises on GDP outside of hydrocarbons in Algeria from 2002 to 2022.

Keywords: Small and medium enterprises, Economic growth outside of hydrocarbons, ARDL model

JEL Classification Codes: K10, O43, C190.

Introduction:

The SME sector plays a crucial role in the modern economy, emerging as one of the most dynamic and innovative systems. Its significant contribution to economic development is widely acknowledged and recognized. SMEs' positive economic and social impacts have highlighted their importance, leading to the recognition of this sector as a strategic area of interest for national economies. (Bilal MECHAALI Salah Mahrez, 2020)

The role of SMEs in promoting economic growth has garnered increasing attention globally, especially in developing countries where large-scale, capital-intensive industries have often failed to produce sustainable results. In Algeria, a nation historically dependent on the oil and gas sector, SMEs are increasingly viewed as key players in driving economic diversification and job creation. Despite facing several challenges, such as limited access to financing, bureaucratic barriers, and insufficient infrastructure, SMEs hold significant potential to contribute to the country's broader economic transformation.

In recent years, the Algerian government has introduced a series of reforms and policies designed to support the growth of SMEs, recognizing their capacity to reduce the country's dependence on oil exports, stimulate local economies, and promote a more diversified and resilient economy. As Algeria moves beyond its reliance on the oil sector,

understanding the role of SMEs in the country's economic development becomes vital for policymakers, business owners, and other financial stakeholders.

This research aims to explore the diverse role of SMEs in Algeria's economic growth and contributions to job creation, focusing on measuring the impact of the added value of SMEs on Economic growth outside the hydrocarbon sector in Algeria. It will investigate both the opportunities and challenges faced by SMEs in Algeria and assess the effectiveness of government policies in fostering SME growth; the study seeks to provide valuable insights into how Algeria can better harness the potential of its SME sector to achieve sustainable and inclusive economic development.

The study's structure includes a review of theoretical frameworks related to SMEs and economic growth, followed by an in-depth examination of the SME landscape in Algeria. This research aims to address the reality of SMEs and examine the contribution added value of SMEs in GDP outside hydrocarbons in Algeria using statistical methods. It also offers key recommendations for future policy.

In this regard, we have raised the following problematic:

Content To what extent does the added value of SMEs affect the economic growth outside of hydrocarbons in Algeria?

Two sub-questions fall under this problem:

- 1 - What is the reality of SMEs in Algeria?
- 2 -is there a relationship between the added value of SMEs and economic growth outside of hydrocarbons?

To address this issue, we have formulated the following hypothesis:

1-Many SMEs are concentrated in the services sector, while their presence in the industrial and agricultural sectors—key areas for economic development—remains limited.

2- There is a cointegration and statistically significant positive relationship between the added value of SMEs and economic growth outside the hydrocarbon sector in Algeria (2002-2022).

The study's significance is that it will help determine the relationship between the added value of SMEs and economic growth outside the hydrocarbon sector in Algeria.

To address the main problem, we have adopted the descriptive approach to describe and analyze the evolution of SMEs in different sectors and the extent of their contribution to

employment. We have also adopted the econometric approach using the ARDL model for the period (2002-2022) to measure the impact of the added value of SMEs on GDP outside the hydrocarbon sector.

Study difficulties:

One of the main challenges faced in this study is the need for more sufficient statistics related to the study, which are sometimes conflicting due to different sources. Selecting the most accurate, closest to actual, and most reliable data required considerable effort and time.

- Literature Review

Mohamed Nasser's study aimed to highlight the status of medium, small, and micro-enterprises within a new perspective represented by the dimension of sustainable local development. The study concluded that micro SMEs play a vital role in promoting sustainable development in Algeria through their effective contribution to creating jobs and added value, as well as in internal output and external exchanges (Mechri Mohamed Nasser, 2011).

Abdullah Taibi's study aimed to analyze the impact of SMEs on economic growth in Algeria from 2001 to 2016. The results concluded that small and medium-sized enterprises contribute positively to economic growth, but their contribution is weak compared to developed countries, and some institutions practice their activities in non-wealth-producing sectors (P. Abdallah Tayebi Dr. Dounya Kerzabi, 2019)

Bilal MECHAALI's study aimed to identify the role of small and medium enterprises (SMEs) in economic development, specifically the Algerian experience. The results concluded that the sector's contribution to employment, exports, GDP, and value-added remains below expectations. The study highlights the need for more vigorous efforts and a new strategy to address challenges related to financing, technology, and marketing (Bilal MECHAALI Salah Mahrez, 2020).

- A study by Farid Belgoum and others this study aimed to assess the contribution of small and medium-sized enterprises (SMEs) to value-added in Algeria from 2000 to 2022 through an econometric analysis. The findings reveal a significant long-term relationship between value-added and public and private SMEs in Algeria. Specifically, the study shows that the growth of value-added is positively correlated with the expansion of SMEs, indicating that the development of this sector plays a key role in enhancing the country's overall economic output.. (Farid Belgoum:Hadj Kelifa:Hadia Kebir:Ahmed Brahim Bahbah, 2023)

The first axis: the conceptual framework of small and medium enterprises and economic growth.

Section I: Definition of SMEs.

SMEs are defined in various ways across different countries, with definitions differing based on the criteria each country employs and its level of economic development.

1- Definition of small and medium enterprises by some organizations:

1.1-The definition of the World Bank: The World Bank defines this type of SME in accordance to the number of workers (Mechri Mohamed Nasser, 2011), namely:

- Mini-enterprise: the enterprise employs at least ten (10) workers.
- Small enterprise: employs less than (10) to fifty (50) workers.

A medium enterprise is defined as one that employs between 50 and 100 workers.

1-2- Definition of small and medium enterprises by European Union: The European Union defined micro, small, and medium enterprises As follows:

- **Mini-enterprise:** It employs a maximum of 9 workers.
- **Small enterprise:** is defined as one that employs fewer than 50 workers, with an annual turnover not exceeding 7 euros million or a yearly total budget of up to 5 euros million.
- **Medium enterprise:** It employs less than (250) workers, and its annual Turnover is capped at 40 euros million, or its total yearly budget does not surpass 27 euros million. (Levreto, 2009).

1-3-Algerian definition of small and medium enterprises:

The Algerian legislature defines SMEs under Law 17/02, which includes the directive law on the development of SMEs. An SME, regardless of its legal form, is an enterprise that produces goods and/or services (The directive law on the development of SMEs, 2017).

- **Micro-enterprise:** These enterprises employ between 1 and 9 people and have a turnover of at most 20 million dinars.
- **Small enterprises:** These enterprises employ 10 to 49 workers and have a maximum turnover of 200 million dinars.
- **Medium Enterprises** are businesses that employ between 50 and 250 workers and have a turnover ranging from 200 million to 2 billion dinars.

Table (02): Criteria for classifying small and medium enterprises in Algeria.

Type of Enterprise	Number of Employees	Annual Turnover (in dinars)	Annual Budget (in dinars)
Micro Enterprise	1-9	Less than 40 million	Less than 20 million
Small Enterprise	10-49	Less than 400 million	Less than 200 million
Medium Enterprise	50-250	Between 400 million and 4 billion	Between 200 million and 1 billion

Source: prepared by researchers based on the directive law for small and medium enterprises 17/02.

Based on the above, SMEs are defined as businesses that produce goods and services, employ fewer than 250 workers, and fulfill the criteria of financial and legal independence.

The second section is the economic importance of SMEs.

The importance of SMEs lies in their capacity to drive both economic and social development through their contribution to changing economic variables (Aziz Samia, 2011)

- 1- providing job positions and reducing unemployment rates.
- 2- Achieving social stability.
- 3- Contribute to the lifting of exports.
- 4- Achieving industrial integration between them and between large enterprises.
- 6- contribute to achieving food security and self-sufficiency.
- 5- Raising the percentage of community members ' contribution to the national economy.
- 6- Reducing inflation by reducing non-productive financial transfers and directing them towards economic investments.

Section III: Economic growth.

Economic growth is one of the key financial indicators that reflects a country's economic activity and development over a period.

1-Definition of economic growth: It is meant to increase productivity or real income in a particular country over a period specified by a year. (A.V.Sakran, 2003)

2-measuring economic growth: Economic growth requires an increase in real output and average per capita income

A-National output: National output is used as an indicator of the volume of economic activity, and its increase is known as the term "economic growth rate." National output can be calculated by measuring the country's total production and dividing it by the national currency unit. Then, it can be compared with the results of previous periods to determine the growth rate. (zakaria messoudi, 2019)

B—Definition of gross product: GDP and gross national product are defined as the value of goods and services produced and sold on the market during a specific time frame, typically one year, within the boundaries of a particular country.

The difference is that gross product indicates the value of goods and services produced and sold in the marketplace by people residing inside the country. At the same time, GNP also includes production and services produced by overseas citizens, with a reduction in workers' remittances (net income of factors of production abroad). GDP is calculated at market prices and also includes costs. (soalili sadr-edin, 2006)

C-per capita income quantifies each individual's average revenue in a country or geographic area. This measure evaluates a region's average income per person and gauges its residents' standard of living and quality of life. Moreover, is calculated by dividing the actual gross product by the number of inhabitants; this measure is used to estimate the extent of economic well-being enjoyed by an individual and is considered a kind indicator of economic growth, as it measures the increase in what an individual spends, growth can also be measured by looking at the purchasing power of one dollar in a particular country, and comparing it with the same value in other countries, which allows classifying countries according to high purchasing power, making them the most economically developed. (zakaria messoudi, 2019)

Types of economic growth: (Melwah Fadila Ali Mekkid, 2020)

1-expanded economic growth: This type of growth consists of increasing per capita income at a growth rate equal to the population growth rate, which means that per capita income remains constant.

2-intensive economic growth: This type of growth increases per capita income at a rate exceeding the population's growth rate.

3- The positive role of SMEs in economic growth:

The impact of SMEs on a country's economic growth can be observed through the growth rate of per capita actual output. Additionally, when institutional performance is strong, it

contributes to higher economic growth rates. This relationship is supported by Edison, whose research findings indicate a significant influence of institutional quality on economic growth. According to his study, financial outcomes improve as institutional policies in a country are strengthened, highlighting the importance of good governance in driving economic progress. Edison saw that institutions are affected more than policies, which means policies are still important. (Bougriba chahinez, 2021).

The second axis is the reality and strategies for supporting and developing SMEs in Algeria.

Section I: the reality of SMEs in Algeria.

1-The development of the number of SMEs in Algeria (2011-2022)

The enterprise sector has experienced a notable rise in numbers since the enactment of Law 17/02, which promotes small and medium-sized enterprises. This growth is illustrated in the Table below:

Table (03): The evolution of the census of public and private SMEs in Algeria (2011 - 2021)

The years	Number of private SMEs.	Number of public SMEs.	Total
2011	658737	572	659309
2012	711275	557	711832
2013	777259	557	777816
2014	656949	542	657491
2015	934037	532	934569
2016	1022231	390	1022621
2017	1074236	267	1074503
2018	1141602	261	1141863
2019	1193096	243	1193339
2020	1230844	229	1231073
2021	1266995	225	1267220

Source:(www.industrie.gov.dz)

Table (03) shows an increase in the number of SMEs, especially private institutions, compared to public institutions. This is due to the state strategies to support and develop this sector through various agencies established for this purpose and others, in addition to the facilities granted to investors.

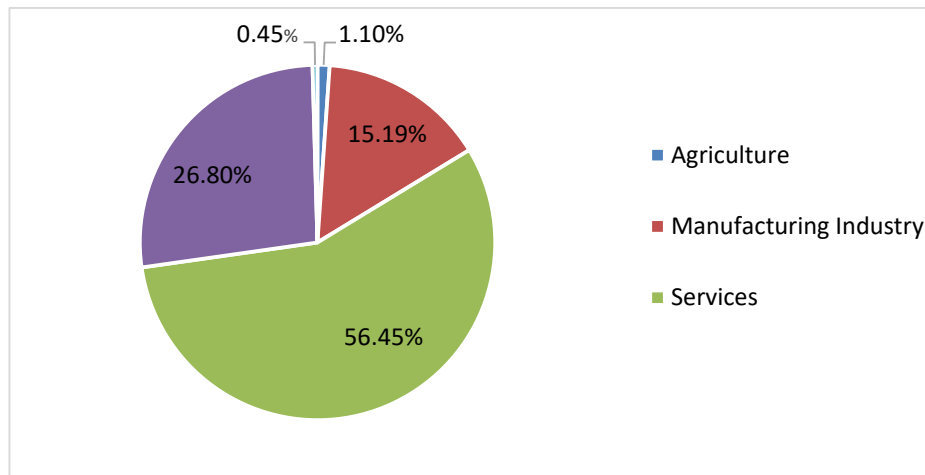
2-classification of SMEs by sector: The number of SMEs varies from sector to sector, as shown in the following Table:

Table (04): Classification by sector activity at the end of 2022.

Sector	Public SMEs	Private SMEs	Total
Agriculture	71	8322	8393
Manufacturing Industry	14	115921	115935
Services	02	430719	430721
Construction and Public Works	82	204438	204520
Energy and Mining	54	3369	3423
Total	223	762769	762992

Source: (www.industrie.gov.dz/)

Figure (01): Distribution of SMEs by sector



Source: by researchers based on Table (04).

Table (04) and Figure (01) show a discrepancy in the distribution of the enterprises by sector. The majority, approximately 56.45%, are active in the services sector, 26.80% operate in construction and public works, and 15.45% are involved in manufacturing industries. In contrast, the percentages of SMEs engaged in agriculture, energy, and mining are pretty low, at 1.10% and 0.45%, respectively.

This situation can be attributed to several reasons, the most significant being investors' reluctance toward industrial projects due to a lack of potential and a high-risk ratio, despite the strategies and incentives implemented by the government to encourage this enterprise.

Section II: Strategies for the support and development of SMEs in Algeria.

Like many developing countries, Algeria attaches great importance to the SME sector, as it has established several supporting bodies, among which are:

1 - National Agency for Investment Development: This agency was established in 2001 within the framework of reforms and has undergone several amendments aimed at promoting and developing investments and providing facilities to Algerian and foreign investors; its primary role is to simplify the procedures for establishing businesses and promoting investment, providing long-term loans, in addition to covering tax needs. (Karim Lekhal, 2012)

2-National agency for microloan management: Among the strategies to support and encourage micro-entrepreneurs. The agency provides interest-free mini-loans to SME owners, including loans to purchase raw materials and others to launch new projects. (Bakkat Hanane, 2018)

3-Facilitation Centers for SMEs: It is one of the main structures in supporting and assisting these institutions in Algeria in integrating into the national economy so that these centers carry out their primary role by Executive Decree No. 03-79 issued on February 25, 2003, promote project investments in general by supporting a favorable climate for small and medium-sized enterprises these centers also provide services to receive project files, accompany their owners and guide them towards achieving their desired goals. (Reda Hmidato, 2016).

Section III: challenges and difficulties faced by SMEs in Algeria

Despite the initiatives and support programs established by Algeria to bolster the SMEs, it faces several challenges and obstacles that hinder its effectiveness in promoting economic development, including the following (Sabek Nassima, 2016):

- The difficulty of obtaining bank loans due to the guarantees required by banks as a prerequisite for securing financing.
- High interest rates on loans.

- Small and medium-sized enterprises have no tax incentives and high tax burdens. -

Administrative challenges such as bureaucracy, corruption, and delays in approving SME projects exist.

Section IV: The role of SMEs in creating job opportunities.

SMEs play a crucial role in creating employment opportunities in developed and developing countries. Algeria, in particular, is actively seeking solutions to address the steadily increasing unemployment rate in recent years. The SME sector offers a viable path to

tackling this issue, as it is highly labor-intensive and relies on simple technologies, making it a significant source of employment.

Table (05): from 2010 to 2022.

The years	The number of job positions created by SMEs.
2010	1625686
2011	1724197
2012	1848117
2013	2001898
2014	2157232
2015	2371020
2016	2540698
2017	2655470
2018	2724264
2019	2885651
2020	2920769
2021	3134968
2022	3307821

Source: (www.industrie.gov.dz)

As shown in Table (05), the number of jobs created by SMEs increased from 2010-2022 due to government facilities granted to investors and entrepreneurs. However, more effective mechanisms must be found to absorb the high unemployment rates, especially in recent years.

Figure (02): Job creation from 2010 to 2022.



Source: prepared by researchers based on Table (05).

Through Table (05) and Figure (02), we note a continuous increase in employment positions from about 1,625,686 jobs in 2010 to 3,307,821 in 2022. This increase is estimated at 103.40% between 2010 and 2022, a significant percentage that confirms the effective role of small and medium-sized enterprises in absorbing unemployment rates in Algeria.

Despite these results, Algeria's unemployment problem remains a major socio-economic challenge, affecting a large part of the population, especially the youth. Despite the country's natural resources and growth in some sectors, the labor market remains underdeveloped, which has led to high levels of unemployment, underemployment, and a disconnect between workers' skills and labor market requirements.

The third axis measures the impact of the added value of SMEs on GDP outside hydrocarbon sectors from 2002 to 2022 in Algeria.

1-definition of added value: The added value in the enterprise is defined as that wealth or value that the project adds with other projects in the formation of internal output through the combination of production factors in various fields of enterprise activity, and it is possible to differentiate between two concepts of added value. (Majed izat abda, 2012).

2-definition of variables

2-1 The dependent variable in this study is represented by the GDP excluding hydrocarbons, which reflects economic growth outside the hydrocarbons sector. It is symbolized in this research as (PIBH), measured in billions of dinars.

2-2 The independent variable: Value added for small and medium enterprises: We have used this variable to reflect the total added values of the following sectors outside of hydrocarbons (agriculture, construction, and Public Works, Transport and communications, services provided to enterprises, agro-food industries, leather and leather industry, hotels and restaurants, trade and distribution) at the national level and coded them with the symbol (VA.PME) is united by one billion dinars.

3- Time series stability testing: This is a crucial condition for examining the cointegration of study variables to avoid false correlations. In this study, we use the Dickey-Fuller test to test a unit root, as shown in this Table:

Table (06): Results of the Dickey-Fuller test:

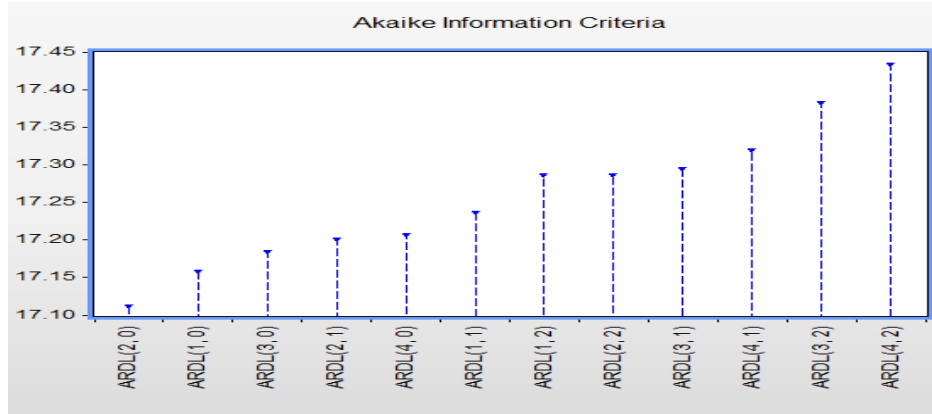
	At the level			The first difference			Degree of integration
	intercept	trend and intercept	None	intercept	trend and intercept	None	
Critical values at 5%	3.020	3.65	1.96	3.029	3.67	1.96	-
(PIBH)	0.87	2.02	1.59	4.51	4.44	3.69	I(1)
(VA-PEM)	0.083	2.19	4.27	5.27	5.10	2.36	I(1)

Source: prepared by researchers based on Eviwes10

According to Table (06), which presents the unit root test results, the time series data for both variables are unstable at the zero level but stable at the first level of differences. This finding supports the validity of using the bounds test method and the ARDL model, which determine the long-term integration between variables when stability is at the zero or first level of differences, as long as they are not integrated to the second degree.

5- Lag structures

Figure. (02): shows deceleration intervals



Source: results of the EVIEWS10 program.

The figure number shows that the optimal deceleration intervals are (2,0).

6- Bounds cointegration test:

Table (07): Bounds Test results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.006395	10%	2.44	3.28
k	1	5%	3.15	4.11
		2.5%	3.88	4.92
		1%	4.81	6.02

Source: evIEWS10 program results

Based on Fisher's results, we observe that the calculated Fisher F-statistic of 6.00 exceeds the critical values of both the upper and lower limits at significance levels of 2.5%, 5%, and 10%. Consequently, we reject the null hypothesis, which posits that there is no cointegration among the model variables, and accept the alternative hypothesis, indicating the presence of cointegration in a long-term (equilibrium relationship between the model variables).

7- Estimation of the model using the ARDL methodology.

Table (08) shows the results of the ARDL model estimation.

Dependent Variable: PIBHH
Method: ARDL
Date: 03/08/24 Time: 20:40
Sample (adjusted): 2004 2022
Included observations: 19 after adjustments
Maximum dependent lags: 3 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): VA_PME
Fixed regressors:
Number of models evaluated: 6
Selected Model: ARDL(2, 0)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PIBHH(-1)	0.640804	0.237717	2.695657	0.0159
PIBHH(-2)	-0.416815	0.251232	-1.659082	0.1166
VA_PME	1.012712	0.332454	3.046172	0.0077
R-squared	0.940793	Mean dependent var		10016.96
Adjusted R-squared	0.933392	S.D. dependent var		4220.184
S.E. of regression	1089.169	Akaike info criterion		16.96816
Sum squared resid	18980642	Schwarz criterion		17.11728
Log likelihood	-158.1975	Hannan-Quinn criter.		16.99340
Durbin-Watson stat	2.003978			

Source: evIEWS10 program results

From the above Table, we note that the determination coefficient equals ($\bar{R}^2 = 0.9333$), indicating the model has strong explanatory power. Regarding the independent variable, the value added of SMEs represented by (VA_PME) explains the dependent variable GDP outside the hydrocarbons sector represented by (PIBH). About 93.33% of the results are random errors or explained by other factors.

8-Estimation of the long-run ARDL model.

Table (09) shows the estimated results.

ARDL Long Run Form and Bounds Test
Dependent Variable: D(PIBHH)
Selected Model: ARDL(2, 0)
Case 1: No Constant and No Trend
Date: 03/08/24 Time: 20:49
Sample: 2002 2022
Included observations: 19

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
PIBHH(-1)*	-0.776011	0.270786	-2.865778	0.0112
VA_PME**	1.012712	0.332454	3.046172	0.0077
D(PIBHH(-1))	0.416815	0.251232	1.659082	0.1166

* p-value incompatible with t-Bounds distribution.
** Variable interpreted as $Z = Z(-1) + D(Z)$.

Levels Equation Case 1: No Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
VA_PME	1.305023	0.051758	25.21411	0.0000

EC = PIBHH - (1.3050*VA_PME)

Source: evIEWS10 program results

We note from the above Table that the added value of small and medium enterprises has a positive and significant moral impact on the gross domestic product outside of hydrocarbons at the critical value level of 5%. Therefore, it can be said that there is a direct relationship between the added value of SMEs and economic growth outside of hydrocarbons during the study period; the higher the added value by one unit leads to an increase in economic growth outside of hydrocarbons by 1.012 units, and this corresponds to the economic theory.

9- Estimation of the error correction model (ECM).

Table (10): Shows the test results:

ARDL Error Correction Regression				
Dependent Variable: D(PIBHH)				
Selected Model: ARDL(2, 0)				
Case 1: No Constant and No Trend				
Date: 03/08/24 Time: 22:07				
Sample: 2002 2022				
Included observations: 19				
ECM Regression				
Case 1: No Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PIBHH(-1))	0.416815	0.197253	2.113100	0.0507
CointEq(-1)*	-0.776011	0.217211	-3.572617	0.0025
R-squared	0.283816	Mean dependent var		626.0526
Adjusted R-squared	0.241687	S.D. dependent var		1213.408
S.E. of regression	1056.650	Akaike info criterion		16.86289
Sum squared resid	18980642	Schwarz criterion		16.96231
Log likelihood	-158.1975	Hannan-Quinn criter.		16.87972
Durbin-Watson stat	2.003978			

Source: evIEWS10 program results

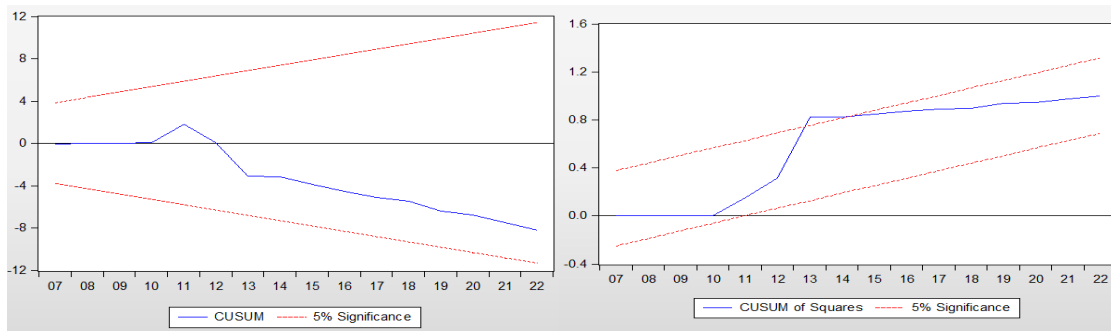
Based on the ECM error correction results, we observe that the error correction parameter (**CointEq(1) * =-0,7760**) has a negative signal and a significant significance. This explains why 77.60% of short-term errors can be corrected within one unit of time, represented in one year, to return to the long-term equilibrium position.

10- Stability diagnostics

Two tests are employed to confirm the ARDL model's results and reliability. They verify that no structural changes in the data could result in errors affecting the stability and consistency of the short-term model parameters relative to the long-term model parameters.

Figure (04): CUSUM test results

Figure (05): CCUSUMSQ test results



Source: evIEWS10 program results

Figures 04 and 05 indicate that the estimated parameters of the two tests are within the critical limits of 5%, which allows us to conclude that the model's parameters are stable and harmonious in the short and long term. These results indicate that the model is statistically and economically acceptable.

Second: evaluating the model statistically:

We evaluate the model statistically to verify that the estimated model is the best.

1- Residual Diagnostics using Breusch-Godfrey Serial Correlation Lm Test

Table (11): Shows the test results.

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.057579	Prob. F(2,14)	0.9443
Obs*R-squared	0.155010	Prob. Chi-Square(2)	0.9254

Source: evIEWS10 program results

The Table shows that the statistical significance equals 0.9443, which is more significant than 0.05. Therefore, we accept the null hypothesis H_0 , indicating no autocorrelation among the residuals of degree greater than 1.

Heteroskedasticity Test:

Table (12): Shows the test results.

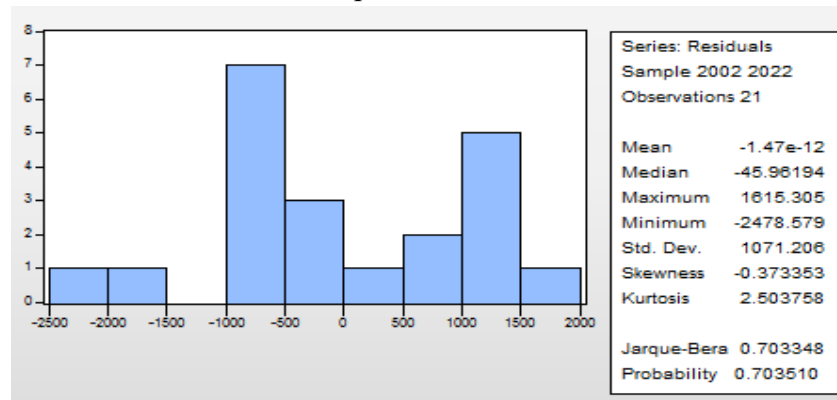
Heteroskedasticity Test: ARCH			
F-statistic	0.083060	Prob. F(1,16)	0.7769
Obs*R-squared	0.092960	Prob. Chi-Square(1)	0.7604

Source: evIEWS10 program results

From the Table, we note that the statistical significance is more significant than 0.05, and therefore, we accept the null hypothesis H_0 that the variance of errors is homogeneous.

2- Normality Test

Table (13): Shows the results of the Jarque –Bera test.



Source: evIEWS10 program results

From the above Figure, we note that the statistical significance equals 0.70, more significant than 0.05. We accept the null hypothesis H_0 , indicating that the residuals are normally distributed.

Conclusion:

SMEs are more than just economic contributors; they are essential drivers of sustainable and inclusive growth. By fostering innovation, creating employment, and supporting economic diversification, SMEs can play a pivotal role in building resilient, self-sustaining economies that can thrive in the face of external challenges and ensure long-term prosperity.

In this study, to answer the posed formality, we tried to conduct an analytical study of the reality of small and medium-sized enterprises in Algeria and then an econometric study using the ARDL model to highlight the impact of the added value of these enterprises on GDP outside of hydrocarbons during the period from 2002 to 2022.

1-the results of the study:

Algeria has seen a significant increase in the number of small and medium-sized enterprises in recent years.

- There needs to be a more balanced distribution of enterprises across sectors. Most SMEs are concentrated in the service sector, followed by SMEs in the construction and Public Works sector, with a smaller percentage involved in manufacturing. By comparison, few small- and medium-sized enterprises are active in agriculture, energy, and mining despite being among the most vital sectors.
- This study demonstrates the significant contribution of SMEs to job creation.
- From 2002 to 2022, a long-term cointegration and statistically significant positive correlation between the study variables were found, confirming the validity of the second hypothesis.
- The added value of SMEs explains the GDP outside the hydrocarbon sector by 93.33%.
- The added value of SMEs positively impacts GDP outside the hydrocarbons sector. Specifically, for every additional unit of added value, GDP outside of hydrocarbons increases correspondingly: 1.01 units, which is consistent with economic theory.

2-Recommendations:

Enhancing the role of this type of enterprise can be achieved by issuing and activating relevant policies and initiatives of laws supporting this vital sector.

- Promoting investment in the industrial sector as an essential part of the economic development process requires providing a favorable climate for investors.
- Facilitating financing procedures and supporting small and medium-sized enterprise owners in purchasing specialized equipment and structures to enhance their ability to grow and compete in the market.
- Finding mechanisms to distribute SMEs' activity in various sectors rather than concentrating solely on the services sector, construction, and works and neglecting other sectors.
- Encouraging the exchange of experiences through international bodies and partnerships with foreign agencies specialized in contracting and supporting small and medium enterprises.

Bibliography List:

➤ **Books:**

- Nadine Levreto, SMEs " "definition, economic and political role, National Library, Paris, France, 1st edition, 2009, p22

➤ **Articles in a scientific journal:**

- A.V.Sakran. (2003). poverty reduction towards sustainable development. Journal of Economics and Management, volume 02, number 01, P 113, University of Tlemcen, (Algeria).).
- Si Lekhal Karim, (2012). The financing of SMEs in Algeria: difficulties and prospective, economic and managerial research, volume 06, number 02, p. 44, University of Versailles Saint Quentin en, (France).
- The official gazette of the Algerian Republic. , (2017, 01-11), number 02, Article 05, Algeria.
- Bakkat Hanan, Salima Hallam, (2018). Organizations for the Support and Promotion of Small and Medium-Sized Enterprises in Algeria, Journal of Advanced Economic Research, Volume 3, Number 05, 50p, University of Elouadi, (Algeria).
- Masoudi, Zakaria, 2019, determinants of economic growth in Algeria using the model's determinants of economic growth in Algeria using the FMOLS and DECM models. Journal of Development and Foresight for Research and Studies, volume 04, Number 07, p.120, University of Elouadi (Algeria).
- malouah Fadila, mekid Ali, 2020, determinants of economic growth in Algeria econometric study for the period (1990-2018), Journal of Applied Economics and Statistics, volume 17, Number 02, p. 128, University of Medea, (Algeria).
- Samia Aziz, (2011). The contribution of small and medium-sized enterprises to Economic and Social Development, Journal of Humanities and Social Sciences, volume 02, Number 02, P.90, University of Ouregla, (Algeria).

- Bilal MECHAALI, Salah Mahrez, (2020). The role of Small and Medium Enterprises (SMEs) in economic development: the Algerian experience, *Journal of Strategy and Development Review*, volume 10, Number 01, pp. 156–170, University of Mostaganem, (Algeria).
- Farid Belgoum, Hadj Khelifa, Hadia Kebir, Ahmed Brahim Bahbah, 2023, the contribution of small and medium enterprises to value added in Algeria: an econometric study, *Journal of Economics and Law*, volume 7, Number 02, P.79–90, University of Mostaganem, (Algeria).
- **Seminar article:**
- Hamidatou Reda, 2016, the role of facilitation centers in driving investment in Algeria, the XVI International Forum on: "legal guarantees for investment in the Maghreb countries," the laboratory of rights and freedoms in comparative systems and the impact of jurisprudence on the movement of legislation, Department of law and political science, University of Biskra (Algeria)
- **Theses:**
- Sabek Nasima, (2016). Doctoral thesis entitled The impact of investment in small and medium enterprises on economic growth, University of El Hadj Lakhdar, Batna(Algeria).
- Aziz Samia, (2014). PhD thesis entitled The Reality of Small and Medium Enterprises in Algeria: A Field Study of Private Institutions in Biskra, Mohamed Khidr University, Biskra (Algeria)., P. 57.
- Boukriba Chahinaz, 2021, institutions and economic growth. PhD thesis, Faculty of Economic Sciences, University of Algiers 3 (Algeria). P. 49.
- Mechri Mohammed Al-Nasser, 2011. Master's, entitled The role of medium, small and micro enterprises in achieving sustainable development, faculty of Economic Sciences, Farhat Abbas University of Setif (Algeria), P.6.
- Sawalili Sadr Eddin 2006, doctoral thesis, entitled Growth and International Trade in Developing Countries, Faculty of Economic Sciences, University of Algiers(Algeria), P .26.
- **Internet websites:**
- <https://www.industrie.gov.dz/wp-content/uploads/documents/bis/BIS-2023-04-42.pdf>,
- <https://www.joradp.dz/FTP/jo-arabe/2017/A2017002.pdf>,