Impact of Export Diversification on Economic Growth in Algeria

CHENNOUF Sadok [1], DJAMANE-SEGUENI Nadjat[2]

[1]University of Oran 2 - LARAFIT (Algeria), chennouf.sadok@univ-oran2.dz
[2]University of Oran 2 - LAMEOR (Algeria),
seguenidjamane.nadjat@univ-oran2.dz

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Abstract:

Export diversification is determined by several factors such as the weight of non-hydrocarbon exports, trade openness, market size, population and investment. This paper aims to analyse the impact of export diversification on economic growth in the Algerian economy. For this purpose, a growth equation is estimated by the ARDL method applied on annual data from 1974 to 2020. The results of the study show a significant positive relationship in the short term between export diversification and economic growth (GDP). However, this relationship becomes negative and significant in the long run.

Keywords: Export diversification; economic growth; ARDL method; structural transformation; Algeria.

JELClassificationCodes:C13, C32, F13, F16, F43, O24.

***Correspondingauthor**: DJAMANE-SEGUENI Nadjat, **e-mail:**nadjat_sd@yahoo.fr*

1. INTRODUCTION

Currently, the international competitiveness of an economy is assessed through its competitive insertion in international trade. Therefore, export diversification is one of the drivers of growth that can create and accelerate the expansion of all economic sectors.

In this regard, hydrocarbon exports play a key role in the economic growth of most producing countries. For Kayati (2019), this situation is

discriminatory, as dependence on hydrocarbon exports generally affects other industries and can generate the "Dutch syndrom". In the same vein, Bouklia-Hassane (2013) concludes that hydrocarbon-dependent economies, such as Algeria, conceive of economic diversification as an important dimension of their development policies because this dependence on natural resources is perceived as carrying risks.

An analysis of the structure of the Algerian economy shows that the hydrocarbon sector is the mainstay of this economy (Chabane, 2010). It alone accounts for almost half of GDP. The fall in the price of oil from mid-2014 onwards has highlighted the vulnerability of this economic model (CNUCED, 2017). As a result, economic growth has been impacted, falling from 3.7% in 2015 to 0.7% in 2019. Algeria cannot remain on the sidelines of export diversification, which has become a major reality that cannot be avoided.

In this respect, non-hydrocarbon exports represent the most important financial windfall of foreign trade as they have the capacity to influence economic growth and reduce poverty (Kpemoua, 2016). For Sannassee et al (2014), expanding exports through diversification helps to maintain stable export earnings, thereby stimulating long-term economic growth.

Some researchers postulate that economic growth and development is apparent in a diversified economy (Eko, Utting, & Onun, 2013).However, theoretical and empirical research establishes that export diversification could have a positive effect on economic growth (Kouassi Dèdjé Sylvestre, 2020).

In the light of this overview, our research aims ***to verify the impact of export diversification on Algeria 's economic growth***. To answer this question requires an empirical examination of the link between the determinants of diversification and economic growth.

In this sense, we seek in the framework of this paper, first to distinguish the determinants of export diversification in the literature review. Then the evolution of Algerian foreign tradewill be analysed, focusing mainly on non-hydrocarbon exports. Finally, through a growth equation, the diversification of exports and its components, in Algeria during a period from 1974 to 2020, will be estimated.

2. Review of the literature

There are several works in the literature that have examined the contribution of export diversification to economic growth. Brenton et al (2017) argue that export diversification makes countries less sensitive to adverse terms of trade shocks by stabilising export earnings. Acemoglu and Zilibotti (1997) argue that diversification contributes to economic growth by increasing investment opportunities and reducing investor risk. Sunday et al (2013) argue that diversification promotes growth and development by mobilising savings from surplus sectors for use in developing deficit sectors of the economy. Labys and Lord (1990) argue that export diversification provides a means by which countries can combat the uncertainty of earnings when these earnings come from a few primary products and, at the same time, can increase their investment income in the production of products with market growth potential.

The theory that exports have a positive effect on a country's economic growth has been and continues to be the focus of several theoretical and empirical debates. The correlation between exports and economic growth dates back to Smith and Ricardo (Kilavuz & Altay Topcu, 2012). Imbs and Wacziarg (2003) find, through an international comparative study, that the relationship between a country's economic growth and export diversification was U-shaped. Several economists (Agosin et al., 2012; Berthélemy, 2005; Cadot et al., 2016; Diop, 2019; Hesse, 2008; Koren&Tenreyro, 2007), following up on the work of Imbs and Wacziarg (2003), have examined the pattern of the relationship between export diversification and economic growth. The latter reported similar findings. In this sense, the effect of export diversification on economic growth is potentially non-linear for developing countries, in contrast to developed countries, which are more successful in export diversification. In the context of our work, export diversification can be understood as a new form of specialisation based on non-hydrocarbon exports.

Within this framework, empirical work has sought to validate the hypothesis of Imbs and Wacziarg (2003), by introducing other factors determining export diversification.

Berthélemy (2005) was interested in answering the question of the relationship between a country's economic growth and export diversification by taking into account the population, to control the effect of market size. Therefore, this author confirms the non-linear effect between economic growth and diversification with a higher transition threshold. Furthermore, the endogenous growth theory confirms the essential role of human capital in the export diversification process (Lukau Matezo, 2020). Even if the results De Benedictis (2009), Ali (2017) show a weak positive effect between human capital and export diversification. The study by Cadot et al (2016) finds a significant negative effect. For Vergne and Antoine (2015), the new theories of international trade consider the size of the market as an obstacle to the diversification of the productive system because it prevents the realisation of economies of scale that characterise modern sectors.

With regard to trade openness as a dimension of export diversification, several theoretical and empirical works (Anan et al., 2012; Amurgo Pacheco et al., 2008; Ben Hammouda et al., 2006) confirm this thesis. According to Agosin et al. (2012), a strong outward orientation stimulates the international specialisation of countries in products in which they have a comparative advantage, and thus reinforces the concentration of exports on a small number of goods. In the same vein, Melitz (2003) and Berthélemy (2005) demonstrate that trade openness is a positive and significant determinant of export diversification.

Investment can also help to improve diversification. However, there is little conclusive evidence on the effect of investments on export diversification. According to activity portfolio models (Acemoglu&Zibilotti, 1997; Kalemli-Ozcan et al., 2003), export diversification can be explained as an endogenous process whose motor is constituted by the investment decisions of the producing agents in diversified activities in order to situate themselves on the optimal frontier. For our part, we align with Ben Hammouda et al. (2009) who consider that there is a link between export diversification and economic growth through local investments.

However, several recent studies (Chia, 2016; Malick, 2019; LukauMatezo, 2020) have identified other explanatory factors of diversification such as the real exchange rate, natural resource endowment in

addition to the weight of non-hydrocarbon exports, human capital, trade openness, and investment.

Moreover, studies on Algeria are abundant, among these studies conducted one can cite: Souman and Ouali (2018) who examined the relationship between economic growth and export diversification for the case of the Algerian economy using the ordinary least squares (OLS) method. The authors find a positive impact of growth, FDI, openness and the real exchange rate on export diversification, in contrast to the other variables, namely, the inflation rate, domestic credit to the private sector, human capital and government expenditure. Bouklia-Hassane (2013), through simulations, analyses the structural economic transformations, the investment required for these transformations as well as the evolution of fiscal resources and exports compatible on the diversification path with the internal and external balances of the economy, by 2030. He concludes that the accelerated diversification of the Algerian economy faces, due to unfavourable initial conditions, the problem of internal and external debt sustainability. Kortel (2019) studies the challenge of economic diversification in Algeria during the period 2011-2017, using the Herfendal Hirschman (HH) coefficient. She infers that the Algerian economy is still rentier, and is not able to achieve diversification and improve macroeconomic indicators outside the hydrocarbon sector.

3. Structure of Algerian Foreign Trade

The Algerian economy is built on the role of the state as an agent of production and general regulation of economic activities. The oil shock of 1986 and the debt crisis of the 1980s revealed the inadequacies of such a policy (Ainas, Ouarem, & Souam, 2012), making it clear that it can no longer depend solely on hydrocarbons; this led to a search for another source of wealth, outside of hydrocarbons, which can be sustainable for the national economy.

The liberalisation of foreign trade operations was not achieved in one go. It came about through the structural reforms launched from 1988 onwards, which had the role of suspending the state's monopoly on foreign trade, and encouraged by the implementation of the structural adjustment

plan (SAP) in 1994. This desire to liberalise foreign trade can be seen in the multiplication of agreements that Algeria has signed, which are:

➡**The agreement with the European Union (EU)** that was signed in 2002 and came into force in 2005. It fell within the context of the Barcelona process initiated by the European Union. The objective was to develop cooperation with South Mediterranean countries while, at the same time, aiming to implement a long-term shared prosperity zone (Ministry of Trade and of Promotion of Export, 2021). According to the trade ministry, its implementation was not only limited to the creation of a free trade area; but it also aimed to integrate the economic aspects, as well as the political, social and cultural dimensions that were necessary for a sustainable development. The figures indicate that imports to Algeria have skyrocketed since the association agreement with the EU was signed. That represents a 133% increase between 2003 and 2018 (moving from 9 to 21 million dollars). By contrast, non hydrocarbon exports towards the European market barely reached 1.2 million dollars over the same period.

It therefore appears that the established association agreement has not had any effect on the level and diversification of Algerian non hydrocarbon exports towards the European market.It goes without saying that, considering its current non-reciprocal functioning, the association agreement between Algeria and the EU is in need for an urgent and necessary re- examination.

➡**Membership to the Greater Arab Free Trade Area (GAFTA)** dates back to January 2005. Yet, it was not until 2009 that Algeria officially became a member. For Algeria, integrating the GAFTA, which brought together 18 countries, offered an opportunity for Algerian companies to place their products on foreign markets in a European market that was very difficult to penetrate.However, the statistics provided by the Ministry of Trade, show that Algeria imports more than it exports to the GATFA. Second, exports to the GATFA are largely dominated by hydrocarbons. Third, ten years after Algeria joined the GATFA, the results remain illusory. The incentive and support granted for non-hydrocarbon exports to this zone give unsatisfactory results(Mimouni, 2016).

➡**The Free Trade Agreement with Jordan**was signed on 19 May 1997. That agreement came into force on 31 January 1999. Its objective was

to encourage the exchange of goods between the two countries (Ministry of Trade and Export Promotion, 2021). This agreement provided for the exemption of customs duties and taxes equivalent to customs duties for products of Algerian and Jordanian origins exchanged directly between the two countries. It also provided the exemption of all non-tariff barriers.

➡**Algeria's accession agreement to the World Trade Organisation (WTO).**In 1987, Algeria expressed the desire to join the multilateral trade system previously governed by the General Agreement on Tariffs and Trade (GATT). However, it was not until 1996 that it officially applied to become a member of the WTO. For Abbas (2000), the choice to engage in this process indicated readiness for internal transformations, knowing that accession to the WTO was a multidimensional process involving sectoral and institutional adjustment costs that the applicant had to assume(Abbas, 2008).

Guechairi and Benchikh (2018) argue that Algeria's slow accession to the WTO is due to its internal policy compromises. Furthermore, the question-and-answer process is very time-consuming due to Algeria's institutional weaknesses. This means that significant efforts must be made by the State for Algeria to ensure the implementation of all the agreements administered by the WTO, which affect different areas (Arrouche, 2014).

According to the 2020 economic report "Algérie", published by the Federal Department of Foreign Affairs (FDFA), Algeria's accession to the WTO was not foreseen in the medium term. It justified their position by the measures Algeria imposed to protect itself from foreign competition, such as imposing the Provisional Additional Safeguard Duty (PASD), which went against the procedures required by the WTO, namely, the reduction of customs duties and the limitation of export support.

In conclusion, Algeria must be sufficiently aware of the extent of its membership in this organisation. Indeed, it cannot exclusively rely on the expansion of hydrocarbon exports as a determinant of growth (Abbas, 2008).

4. Algerian foreign trade state of play

Foreign trade, that is, the whole set of exchanges of goods, services and capital practised between nations, is coming up againstthe effects of globalisation. Faced with the acceleration of the latter and the increase in

international competition, Algeria is compelled to reconsider its dynamics of international exchanges by diversifying its exports (Arrouche & Chitti, 2020).

In order to examine Algeria's foreign trade, the present section will address the evolution of exports in value, as well as the importance of non-hydrocarbon exports. In addition, non-hydrocarbon exports will be explored by product group.

Table 1. Evolution of foreign trade between 2010 and 2020

Unit: Million USD

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Exports	57,053	73489	71,866	64,974	62,886	34,668	30,026	35,191	41,797	35,823	237,96
Imports	40,473	47,247	50,376	55,028	58,580	51,702	47,089	46,059	46,330	41,934	343,91

Source: General Customs Directorate, Ministry of Finance, Algeria's foreign trade statistics (2010-2020)

Algerian exports have been declining annually since 2011. They have dropped considerably from 2015 on, due to the fall in oil prices. In 2020, exports reached a record low of 23, 796 million dollars. That was a 33.5% drop, compared to the figures recorded in the previous year. That downward tendency can be explained, on the one hand, by the slowdown in most economies since the advent of the Covid-19 pandemic in February 2020, and, on the other, by the fall in international oil prices (World Bank Group, 2020).According to the Global Trade Update (2021), world trade has recovered from the health crisis. The increase was particularly significant in the first quarter of 2021, when the figures recorded a 10% increase over the year 2020. According to the World Trade Organisation (WTO), "world trade has weathered the turbulence generated by the Covid-19 crisis relatively well".

Imports, however, have gone through two phases of evolution. The first one spread from 2010 to 2014. It was characterised by an import surplus. The

second spread from 2015 to 2020 and was marked by a decrease in imports. Nevertheless, despite that decrease, imports remained structurally higher than exports. The fact remains that, 2020 was the year when imports reached its lowest level with 34, 391 million dollars, which represents an 18% decrease over 2019. According to the World Bank Group (2020), "This decrease can be explained by the measures implemented by the authorities in response to the decline in hydrocarbon export revenues, with a view to limiting the worsening of the current account deficit. In this regard, the authorities have set a target of reducing the import bill by at least 10 billion US dollars (6% of GDP). Other reduction policies have been introduced, including the extension of import restrictions on vehicles".

4.1 The share of non-hydrocarbon exports

Algerian exports are mainly based on hydrocarbons (see Table 2 below). Clearly, Algeria is still in weak dynamics of non-hydrocarbon exports. Moreover, even though they have been following an upward slope since 2010, they record an evolution barely reaching 48% in 2020.

The analysis of the share of non-hydrocarbon revenues shows a steady improvement in the non-hydrocarbon export effort over the past decade. That indicator has, actually, increased from about 3 to 7% between 2010 and 2019, respectively. However, despite that very shy improvement, non-hydrocarbon export revenues remain modest.

Therefore, it seems important, evenurgent, for Algeria to be focussed on developing non-hydrocarbon exports. As Arrouche (2017) put it, this strategy cannot succeed without the actual implication of all companies regardless of their sector of activity and their legal nature.

Table 2. Evolution of non-hydrocarbon exports

Unit: Million USD

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Exports	57,053	73,489	71,866	64,974	62,886	34,668	30,026	35,191	41,168	35,823	34,391
Non hydrocarbon exports	1,526	2,062	2,187	2,011	2,582	1,969	1,805	1,899	2,926	2,580	2,255
Hydrocarbon Exports	55,527	71,427	69,679	62,963	60,304	32,699	28,221	33,292	38,242	33,243	32,136
Non hydrocarbon income share	3%	3%	3%	3%	4%	5,5%	6%	5%	7%	7%	6,5%

Source: General Customs Directorate, Ministry of Finance, Algeria's foreign trade statistics (2010-2020)

Henceforth, the weakness non hydrocarbon exports in Algeria is interpreted by the dysfunctioning and failures to which the exporting and/or potentially exporting companies are confronted. Those are of an economic, institutional and organizational nature.

Through some empirical studies (Economica, 2008; Si lakhal et. al., 2013; Bouadam, 2014; Company Head Forum, 2011; ECO, 2012), Arrouche (2017) identifies the most frequent barriers faced by exporting or potentially exporting companies:

Table 3. Difficulties faced by exporting companies

	Difficulties
Administrative level	➢ Administrative delays at all stages of the export process ➢ Slow VAT recovery by the operators
Customs level	➢ Very long delays of customs clearance. ➢ That leads to additional costs and, consequently, the deterioration of the international competitiveness of the company
Bank level	➢ Limits & comlexities of the financial framework of export operations (financing phase, currency risk management) ➢ Absence of real advisory services or support of incentive financing products for exporters
Transport & logistic level	➢ Insufficient means of transport, particularly maritime transport ➢ The air transport poses the problem of flight delays generating completely damaged cargos
Storage level	➢ Inappropriate storage area ➢ Lack of cold chain
Non hydrocarbon supporting agency level	➢ Weak incentive to export

Source: Compiled by the present authors fromArrouche, 2017

4.2Evolution of non-hydrocarbon exports by product groups

In this section Algeria's non-hydrocarbon exports by type of product tradedwill be looked at.

Table 4. Evolution of non-hydrocarbon product groups exported

Unit: Million USD

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Food product	315	355	313	402	323	235	327	348	373.77	407.86	442.59
Raw products	94	161	167	109	109	106	84	73	92.39	95.95	71.52
Semi-finished products	1,056	1,496	1,660	1,453	2,121	1,597	1,321	1,384	2,335.58	1,956.92	1,611.18
Agricultural capital equipment	1	0	1	0	2	1	0	0	0	0	0
Industrial capital goods	30	35	30	29	16	19	54	74	90.1	82.97	90.81
Consumer goods	30	15	16	17	11	11	19	20	33	36.42	39.06

Source: General Customs Directorate, Ministry of Finance, Algeria's foreign trade statistics (2010-2020)

In terms of structure, the hydrocarbon sector is still dominant. It has accounted for an average of 96% of the total volume of exports since the opening of the national economy. However, various oil-producing countries (like Indonesia and Malaysia) have understood the importance of limiting their dependence on natural resources. They have, thus, moved towards export diversification (Aoun, 2008). Imbsand Wacziarg's (2003) empirical work revealed that export diversification helped limiting the macroeconomic effect of a shock on a specific sector.

Like most other economies, Algeria witnessed the majority of its export-targeted non-hydrocarbon products slowing down between 2019 and 2020.Exports were held back by the pandemic recession, with the exception of food and industrial equipment goods, which grew by 8.5 and 9.4%, respectively, in 2020.

The analysis of exports of goods and services has revealed a significant improvement in the export effort over the last decade. The category of semi-finished products have constituted the largest share of products targeted for export, representing between 70% and 80% of non-hydrocarbon exports. In second position, comes the export of food products, which has continued to grow steadily, to reach a record high of 442,59 million dollars in 2020 (that is 19% of non-hydrocarbon exports). Next, followed the industrial equipment goods, with a share ranging between 3 and 4%. Then, the "consumer goods and raw products" group has remained almost constant at 1% of non-hydrocarbon exports. Onenotes that there has been no export of agricultural equipment goods since 2016.

5. Methodology

5.1 Choice of variables:

In order to analyse the relationship between export diversification and economic growth an empirical approach based on the use of the Autoregressive Distributed Lags (ARDL) method was adopted, which allows the authors to test the impact of different indices of export diversification on growth. In this study on the Algerian context, annual data were usedfrom the World Bank and the Ministry of Trade covering the period 1974-2020, i.e. 46 observations.

Indeed, the dependent variable is represented in this study by the gross domestic product (GDP) that is used as a proxy for economic growth. This choice is motivated by the importance of the latter to really situate the economy in the economic cycle.

The model chosen for this research is based on the work of Berthélemy (2005), Agosin et al. (2012); Malick et al. (2019) for whom the diversification of exports follows the theories of international trade, which leads us to define four (04) independent variables including:

The variable weight of non-hydrocarbon exports (PXHH) represents the weight of non-hydrocarbon products in the exports of these countries. In the context of the present work, this indicator will be calculated as follows:

$$PXHH = \frac{RXHH}{X_T} * 100$$

PXHH: weight of non-hydrocarbon exports; RXHH: income from non-hydrocarbon exports; XT: total exports.

The market size variable (POP) will be assessed on the basis of population. Foreign Direct Investment (FDI) will determine the variable trade openness. Finally, we find the investment variable, which will be measured through fixed capital formation (GFCF).

Thus, our model will be estimated during this study as follows:

$$\boldsymbol{PIB = f(PXHH, POP, IDE, FBCF)}$$

Therefore, we proceeded to transform the variables of the model into logarithms in order to linearise the growth equation and to obtain the elasticities.

$$\boldsymbol{LPIB = C + \alpha 1.LPXHH + \alpha 2.LPOP + \alpha 3.LIDE + \alpha 4.FBCF + \xi}$$

This model was analysed using Eviews 12.0 software for empirical modelling.

5.2Preliminary tests:

In order to confirm the feasibility of the model, and to choose the appropriate estimation method for it, it is necessary to carry out a certain number of tests beforehand. First, the Jarque-Bera test reveals that all the variables in our model follow a normal distribution (probability greater than 5%) under the null hypothesis.

In a second step, we examine the stationarity of the model variables based on the Augmented Dickey-Fuller (ADF) method. The results of this test are summarised in the following table:

Table 5. Results of the Augmented Dickey-Fuller (ADF) test

	Variables in level (P-value)	**Variables in 1st difference (P-value)**	**Order of integration**
PIB	0.36	**0.03**	I(1)
PXHH	0.38	**0.00**	I(1)
POP	**0.00**	0.43	I(0)
IDE	**0.00**	0.00	I(0)
FBCF	0.93	**0.00**	I(1)

Source: Prepared by the author using EVIEWS 12.0 software

The stationarity test reveals that all the variables in the model are stationary variables. However, it emerges that the variables GDP, PXHH, GFCF are stationary in first difference and are integrated of order 1, I(1). On the other hand, the variables POP and FDI are stationary in level, integrated of order I(0).

Preliminary tests confirm the possibility of using the Autoregressive Distributed Lags (ARDL) method to examine the proposed empirical model. The ARDL method requires checking the cointegration of the model. In our work, we did not perform a Johansen-type cointegration test since the variables in our model are not of the same order. In this case, bounds test is more suited for analysis.

Table 6. Bounds test results

F-Statistic = 4,69		
Critical Values		
UpperLimit	LowerLimit	Significancelevel
3,09	2,20	10%
3,49	2,56	5%
3,87	2,88	2,5%
4,37	3,29	1%

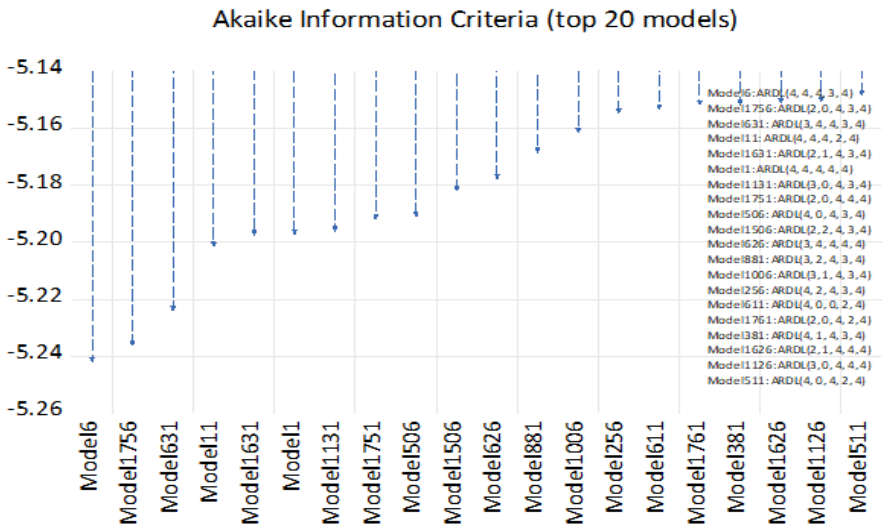
Source: Prepared by the author using EVIEWS 12.0 software

The results of the Bounds test show that the Fisher statistic which takes the value of (4.69) is higher than the upper limit (4.37) as well as the lower limit (3.29), which leads us to reject the null-hypothesis of the absence of a cointegrating relationship, and consequently to accept the alternative hypothesis of the existence of a cointegrating relationship between the variables in our model. This evidence of the existence of a cointegrating relationship indicates the existence of a long-term relationship between the variables and validates the feasibility of the ARDL model.

6. Results and interpretations

The evaluation of the economic growth equation previously established concludes with an ARDL model (4,4,4,3,4). This model was selected according to the Akaike info Criterion (AIC), which maintains the minimum of the minima for establishing the number of lags.

Figure 1. Selection of the ARDL model



Source: EVIEWS 12.0 software

The model is significant with a coefficient of determination R2=0.99 indicating that the model explains 99% of the variations in GDP. The F-statitsitc is equal to 955.05 with a probability of 0.00, lower than 0.05 indicating that the exogenous variables really impact the endogenous variable. The Durbin-Watson coefficient is equal to 2.21, around 2,

indicating the absence of heteroskedasticity problems in the residuals. The error correction term (ECT) is negative and significant (less than 0.05), equal to -0.82, which indicates that the return to equilibrium takes place after 15 months.

Table 7. Estimation results

R2-Adjusted	F-Statistic	Probability (F-stat)	Durbin-Watson
0,99	955,05	0,00	2,21

Source: Prepared by the author using EVIEWS 12.0 software

The values of the estimates for each long- and short-term variable are summarised in the following table:

Table 8. Coefficients values

Long-termelasticities			Short-termelasticities		
Variable	Coefficient	P-Value	Variable	Coefficient	P-Value
LFBCF*	**0,17***	**0,02***	D(LFBCF)	0,00	0,56
LIDE	-0.02	0,05	**D(LIDE)***	**0,01***	**0,00***
LPOP*	**1,20***	**0,00***	**D(LPOP)***	**98,48***	**0,00***
LPXHH	**-0,05***	**0,03***	**D(LPXHH)***	**0,06***	**0,00***
C	0,59	0,71	**TCE(-1)**	**-0,82***	**0,00***

Source: Prepared by the author using EVIEWS 12.0 software

We found that the coefficients of the population variable are positive and significant, 98.48 in the short run and 1.20 in the end. These results indicate that the size of the market is advantageous for economic growth in Algeria.

The weight of non-hydrocarbon exports is positive and significant (less than 0.05) in the short term, while it becomes negative and significant in the long term. This confirms the fundamental work of Imbs and Wacziarg (2003) and the empirical work of several researchers (Agosin et al. 2012; Berthelemy, 2005; Cadot et al., 2016; Diop, 2019) who postulate that the effect of export concentration on economic growth is U-shaped. In other words, the weight of non-hydrocarbon exports contributes first in an increasing and then in a decreasing way to economic growth.

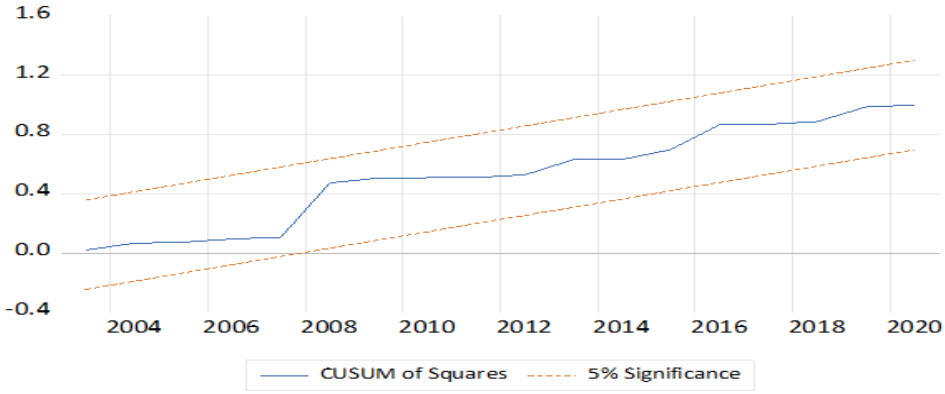
We note that Foreign Direct Investment (FDI) contributes positively (0.01) and significantly (less than 0.05) to Algeria's economic growth only in the short term. This result is justified, on the one hand, by the fact that the

flow of FDI in Algeria is essentially oriented towards the hydrocarbon sectors. This result is justified, on the one hand, by the fact that the flow of FDI in Algeria is essentially oriented towards the hydrocarbon sectors, and consequently does not allow, in the long term, a diversification of exports (Napo & Adjande, 2019). And on the other hand, the weakness of the attractiveness of the provisions concerning FDI, which expresses quite clearly that the country does not have an investment policy, such as: protectionist measures (the 51/49 rule); heavy bureaucracy, the weakness of the financial sector and also legal insecurity in terms of intellectual property rights. According to UNCTAD (2017), trade openness does not automatically lead to development, but development cannot take place without openness.

For the gross fixed capital formation variable used to measure both investments, our results show no short-term impact on GDP growth. These results are contrary to the predictions of economic theories, in this case the endogenous growth theory, which stipulates that investment helps to stimulate economic growth. For Napo &Adjande (2019), this independence between investment and economic growth may be mainly due to the non-stability of the investment rate and the real exchange rate of the country, which affects economic growth. In Algeria, the business climate is less and less conducive to the emergence of new investments. Among the obstacles that investors are generally confronted with, one can cite: access to bank financing (banks are moving away from investment financing whose profitability risk is higher), as well as access to industrial land (the market for economic land is characterised by public ownership and a non-transparent price setting method).

In order to approve our results, the method of CUSUM of squares will be used, which allows to examine the stability of our model, the result is represented in the following figure:

Figure 2. Stability test (CUSUM of squares)



Source: EVIEWS 12.0 software

The CUSUM of squares test indicates a stability of the model and a good ability to forecast economic growth as a function of the variables introduced in the model.

7. CONCLUSION

This work aims to identify the factors of export diversification influencing economic growth by focusing specifically on the Algerian context during the period 1974-2020. Using the ARDL method, the results reveal a significant positive relationship in the short run between export diversification and economic growth (GDP). However, the relationship between diversification and economic growth becomes negative and significant in the end.

The relationship between export diversification and economic growth continues to be a matter of debate. For Bouklia-Hassan (2013), even if the desire to diversify non-hydrocarbon products in Algeria has been unanimously reaffirmed for decades, it remains an unattainable dream. This can be explained by the low share of Algerian manufacturing industry in the development of GDP, three times less than the average of non-oil countries in the region (Bouklia- Hassane, 2013).

According to IMF (2017) ensuring better macroeconomic stability, better access to credit, good infrastructure, conducive regulation and a skilled labour force requires increased diversification of the economy, including exports. Thus, the process of diversification seems to be the exception rather than the rule (Bouklia- Hassane, 2013). One agrees with Berthelemy (2005)

that diversification should not only be the mechanical result of a progression through stages of diversification, as described in the work of Imbs and Wacziarg, but also the consequence of effective strategies for participation in globalisation that allow different countries to develop their advantages, their international trade and their industrial fabric.

Moreover, it would be interesting to introduce other diversification variables, such as the economic variable (inflation, real exchange rate) and certain governance indicators in order to highlight their effects on economic growth.

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