Relationship between Domestic credit provided by financial sector and economic growth in Algeria since 1970-2018

العلاقة بين القروض المحلية الممنوحة من النظام المصرفي والنمو الاقتصادي في الجزائر بين 1970 و2018

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Abstract:

The objective of this paper is exam the impact of Domestic credit provided by financial sector and Domestic credit to private sector by banks on economic growth in Algeria. The results of estimated model are significantly accepted and that the impact of Domestic credit provided by financial sector has a negative impact on economic growth, a result that does not correspond to the theoretical and empirical studies conducted. in this area, as regards appropriations intended to finance the private sector. They have a positive impact on economic growth, as a result of Algeria's transition to a market economy and the facilities given to the private sector for production and investment.

Keywords: economic growth; GDP; Domestic credit provided by financial sector; Domestic credit to private sector by banks.

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1. Introduction :

Economic growth is one of the most important economic indicators given by various countries and governments. To achieve the desired economic growth, States and Governments pursue several policies based primarily on their economic potential and capabilities, their concerns and priorities, as well as their intellectual orientations.

Loans directed to the national economy are among the most important reasons for achieving economic growth, because of its obvious impact in stimulating economic activity and directing it to the productive and profitable sectors. Economic dealers through intermediation between surplus and deficit holders, ie the conversion of bank deposits into loans directed to finance various economic activities, or through the financial market that works to finance the national economy by offering various types Securities for subscription at their level.

Various theoretical and applied studies have unanimously underscored the role and contribution of the banking sector in achieving economic growth (Ananzeh, 2016, p54) .The development and stability of financial institutions will lead the economy of any country to develop and grow (ARMEANU, PASCAL, POANTA, & DOIA, 2015, p7), through channeling bank loans. To enable various economic dealers to acquire the machinery and equipment they need and to help them cover their operational costs and counter their rising working capital (MWALUNGO, 2011, p2).

The relationship between economic growth and Domestic credit provided by financial sector has been spurred by many applied studies, both in developed and developing countries, since the development of Schumpeter's innovation theory 1911 (Rashmi Umesh, 2009, p87), loans directed to the economy is the total amount of credit provided by banks and financial institutions in the country to various economic dealers (individuals, institutions and government), each as needed,

individuals use credit in consumption and investment The institutions use it in factories, machinery and others, and the government directs it for its repeated use.

And Algeria, like other countries of the world, seeks to achieve the desired economic growth, despite the huge financial amounts that were allocated to finance the national economy through the various available channels, including the banking system that did not rise to the required level, but the achieved growth rates do not reflect the amount of money allocated and directed to finance the economy In general, or those amounts of money intended for private sector financing in particular.

This paper examines the relationship between bank loans to the national economy, bank loans to the private sector and economic growth in Algeria, and how the impact of both bank loans destined to finance the national economy and bank loans directed to private sector finance on the growth rates achieved in Algeria.

1.1. Problematic study:

This paper can be answer the following key question: How impact loans to the national economy impact economic growth in Algeria?

1.2. Sub questions:

To simplify the main question, the following sub-questions can be:

- The extent to which Algeria achieved acceptable growth rates during the period 1970-2018.
- What is the contribution of bank loans?

1.3. Hypotheses :

As a preliminary answer to the main problem and sub-questions, the following hypotheses can be presented:

- Loans to the national economy have had a positive and significant impact on the economic growth in Algeria.
- Algeria has achieved acceptable growth rates in recent years thanks to the stance of the fuel prices in the world market.

- Loans granted to the private sector positively and significantly affect the economic growth rates in Algeria.

1.4. Objectives of the study.

This study aims to:

- Determining the general relationship between loans directed to the national economy and economic growth in Algeria.
- Identify the development of loans directed to finance the national economy and the private sector during the study period.
- Identify the growth rates achieved during the study period, as well as the main reasons leading to them.

1.5. Empirical review.

The subject studied many studies, both theoretical and practical, including.

- A study of Daniel ARMEANU and others, The Impact of Credit on Economic Growth, Theoretical and Applied Economics, Volume XXII (2015), No. 1 (602), p. 5-14, this study focused on testing the impact of banking on economic activity, will be a determinant of economic growth and globally.

The study was based on data collected from the Central Bank of Romania and covered the period between 2007 and 2013. The study concluded that the literature does not provide a clear answer about the role of bank loans in achieving economic growth, as most studies rely on their studies over relatively short periods of time. On the other hand, on the other hand, the heterogeneity of time periods under study and the economic conditions that countries know are affected by external shocks and crises. Loans granted to the institutions of the largest economic growth of the impact of loans granted to individuals.

-Study of Z. Yakubu and A.Y. Affoi, An Analysis of Commercial Banks' Credit on Economic Growth in Nigeria, Current Research Journal of Economic Theory, Vol 6, N 2, Pp: 11-15, 2014, This study

aims to analyze the impact of the relationship between commercial bank loans on economic growth In Nigeria between 1992 and 2012. The study was based on a model Simple regression through the least-squares method in order to determine the relationship between bank loans directed to the private sector and economic growth.This study shows that there is a positive correlation between loans directed to the private sector and economic growth, where 92% of the changes in the Nigerian national product during the period The study can be explained by the change in the volume of commercial bank loans. This means that increasing the volume of loans directed to the Nigerian economy contributes to the economic growth of the State of Nigeria, This entails working to raise the credit culture of Nigerian citizens in order to increase the capacity of commercial banks to finance the national economy. Moreover, loans should be directed to the most important sectors which are characterized by their significant contribution to economic growth such as agriculture and industry.

-Study of Izz Eddien N. Ananzeh, Relationship Between Bank Credit and Economic Growth: Evidence from Jordan, International Journal of Financial Research, Vol. 7, No. 2; Pp: 53-63, 2016 This study is concerned with the study of the relationship between bank credit and economic growth in Jordan between 1993 and 2014. In this study, the researcher used two different models, the first of which is the Vector Error Correction Model (VECM) and the Ginger causality test. The study concluded that the long term relationship between real GDP and the variables used in the field study are represented in total bank loans, bank loans to the agricultural sector, bank loans to the industrial sector, bank loans to the construction sector and bank loans to the tourism sector. The study also found that the causal relationship has shifted from economic growth to bank loans directed to the agricultural and construction sectors in the Jordanian economy, it was concluded that there is a two-way causal relationship between economic growth and

loans directed to the construction sector, which represents the most important sector in the Jordanian economy. Therefore, the role of the financial sector and its support to the various economic sectors in Jordan should be strengthened through the adoption of more favorable economic policies.

- Study of Milkah kwamboka mwalungo, the effect of credit on economic growth in kenya, master in business administration, school of business, university of nairobi, 2011.This study aimed to determine the impact of bank credit on economic growth in Kenya, the study included a period of 15 years from 1996 to 2010, the study relied on the combination of qualitative and quantitative methods and then using the simple linear regression model to achieve the study objective. The empirical results of this study revealed that bank credit has an impact on the economic growth in Kenya, where the rate of identification of the study reached 90%, which means the great explanatory ability of bank credit to economic growth in Kenya. This requires the Kenyan banks to expand their activities and work to reach various sectors of the Kenyan economy in order to push it to achieve significant growth rates.

- A study. Olowofeso, Emmanuel O .; Adeleke, Abiola O .; Udoji, Anthony O, Impact of private sector credit on economic growth in Nigeria, Journal of Applied Statistics, Vol. 6, Iss. 2, pp. 81-101, 2015, this study focused on studying the impact of loans granted to the private sector on economic growth in Nigeria, and this is by using the joint integration model of Gregory and Hansen. The study was based on the quarterly statements for the period of time from 2000 to 2014, the study found that A statistically significant and significant statistical impact of the impact of bank loans directed to the private sector on economic growth, which supports the ongoing efforts of the Nigerian central bank to establish a sound and appropriate financial system by working to reduce interest rates applied to loans, which encourages the

process of Accept and thus contribute to achieving acceptable growth rates.

-Study of Zarihan Mohamed, Algerian banking system and its role in economic development, Master Thesis in Economic Sciences, Faculty of Economic and Commercial Sciences and Management Sciences, University of Oran, Algeria, 2011-2012. This study aims to determine the impact of reforms on the Algerian banking system in mobilizing savings and financing economic development. The study concluded that banks are financial institutions that play the role of intermediary by collecting savings and transferring them from surplus to deficit. Economic, effective tool for financing economic development. However, banks in the Algerian banking system play a very limited role in mobilizing domestic savings, especially private savings, due to the lack of banking services and the inability to absorb the environmental and economic variables affecting the movement of savings deposit, and the lack of a clear and rational savings policy that motivates individuals to deposit Their money in banks and financial institutions, which reduces the ability of banks to finance various sectors of economic activity, which prevents Algeria to achieve the desired growth rates. What is noted from the above is the multiplicity of previous studies that dealt with the impact of loans directed to finance the economy in its various forms (loans to the public and private sector, loans directed to individuals and institutions, loans directed to finance the industrial sector, agriculture, construction, etc.) on the economic growth in Different states. In the case of Algeria, it is noticeable that the absence of standard studies dealing with this subject and the study is limited to a simple analysis of the available data. According to data extending from 1970 to 2018.

1.6. Method of empirical study.

This study focuses on the impact of loans to finance the national economy and private sector loans on economic growth in Algeria. This

study is based on data and data related to the situation of Algeria. The study period lasted from 1970 to 2018.

This study will rely on the descriptive and analytical approach, where the definitions and procedural concepts, mainly related to the concept of growth, loans aimed at financing the national economy and loans to the private sector will be presented. The standard approach will also be used to analyze the relationship between loans directed to finance the national economy and loans directed to the private sector to achieve economic growth in Algeria, using the Eviews program.

To answer the main problem of the study, take note of the topic in all its aspects, and address it through the following axes:

Procedural definitions of the basic terms of the study;

Drafting and analyzing the study model.

2. Procedural definitions of the basic terms of the study

Through this axis, a brief definition of the study variables will be presented, as well as the theoretical relationship between independent and dependent variables as follows:

2.1. Economic growth

Is the increase in the inflation-adjusted market value of the goods and services produced by an economy over time. It is conventionally measured as the percent rate of increase in real gross domestic product, or real GDP.

Growth is usually calculated in *real* terms - inflation-adjusted terms – to eliminate the distorting effect of inflation on the price of goods produced. Measurement of economic growth uses national income accounting. (Bjork & London: Praeger. pp. 2, 1999) Since economic growth is measured as the annual percent change of gross domestic product (GDP), it has all the advantages and drawbacks of that measure. The economic growth rates of nations are commonly

compared using the ratio of the GDP to population or per-capita income.

The "rate of economic growth" refers to the geometric annual rate of growth in GDP between the first and the last year over a period of time. This growth rate is the trend in the average level of GDP over the period, which ignores the fluctuations in the GDP around this trend.

2.2. Domestic credit to private sector by banks

Refers to financial resources provided to the private sector by other depository corporations (deposit taking corporations except central banks), such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises.

2.3. Domestic credit provided by the financial sector

Includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The financial sector includes monetary authorities and deposit money banks, as well as other financial corporation's where data are available (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other financial corporations are finance and leasing companies, money lenders, insurance corporations, pension funds, and foreign exchange companies.

2.4. Theoretical relationship between the study variables.

The study of the relationship between loans directed to the economy and loans to the private sector and their relationship to economic growth has received many theoretical and applied studies. There is an effect relationship between loan size and economic growth. Robinson (1952), Shaw (1967), Goldsmith (1969), Gurly and Shaw (1973) and Spellman (1982) also emphasized that financial sector development would contribute to economic growth by increasing savings and

improving efficiency of use Savings and deposits as well as contributing to capital accumulation (Ananzeh, 2016, p54).

Many economists also believe since the beginning of the nineteenth century that the banking and banking system is the best option for mobilizing savings and directing them towards good investments in a way that contributes to achieving economic growth, as it ensures sound institutional oversight, especially in the early stages of economic development in fragile and weak environments (Korkmaz, 2015, p60)

3. Formulating and analyzing the study model.

The variables that will be relied upon in the study model are the gross domestic product of Algeria, denominated in US dollars as a dependent variable, as well as the value of loans to the economy and loans to the private sector as independent variables, as it was dependent on the time period from 1970 to the year 2018.

The study data was collected from the World Bank database and the International Monetary Fund database. Where the least squares method was used to estimate the linear regression model of multiple regression, which will allow us to determine the impact of all loans to the economy and loans to the private sector on economic growth in Algeria during the time period between 1970 and 2018.

The study was launched from the following theoretical model:

$$Y = F(X)$$

Which can be formulated according to the current study variables as follows?

$$GDPi = \alpha + \beta * CEi + \gamma * CSPi + \varepsilon i$$

Where:

GDPi: represents the gross domestic product in US dollars.

α: represents the constant and the lump part of the equation.

β: represents the constant that determines the nature of the relationship between loans to the economy as a whole and GDP in Algeria.

CEi: represents the ratio of loans to the economy as a whole to GDP.

y: represents the constant that determines the nature of the relationship that exists between loans to the private sector and GDP in Algeria.

CSPi: represents the ratio of private sector loans to GDP.

The objective of formulating the mathematical model above is to test the following two hypotheses:

The first hypothesis:

The first hypothesis relates to the effect of loans directed to the economy in general on Algeria's GDP, and can be formulated as follows:

H0: Loans directed to the economy do not affect Algeria's GDP during the period 1970-2018.

H1: Economic loans affect Algeria's GDP during the period 1970-2018.

The second hypothesis:

The second hypothesis relates to the effect of private sector loans on Algeria's GDP, and can be formulated as follows:

H0: Loans directed to the private sector do not affect Algeria's GDP during the period 1970-2018.

H1: Loans directed to the private sector affect the GDP in Algeria during the period 1970-2018.

These hypotheses will be confirmed to be true or false at the significance level 05%, and this is based on the World Bank database of the above-mentioned variables for the period from 1970 to 2018, where all data were entered into the 8EVIEWS program, and after statistical treatment based on the least squares method, The following results were reached:

Table No. 01: Results of the standard study for the period 1970-2018

Dependent Variable: GDPUS

Method: Least Squares

Date: 11/22/19 Time: 12:09

Sample: 1970 2018

Included observations: 49

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.29E+11	1.42E+10	9.128398	0.0000
CE	-1.21E+09	3.78E+08	-3.199614	0.0025
CSP	1.32E+08	4.94E+08	0.267169	0.7905
R-squared	0.300348	Mean dependent var		7.80E+10
Adjusted R-squared	0.269928	S.D. dependent var		6.17E+10
S.E. of regression	5.28E+10	Akaike info criterion		52.27486
Sum squared resid	1.28E+23	Schwarz criterion		52.39069
Log likelihood	-1277.734	Hannan-Quinn criter.		52.31881
F-statistic	9.873486	Durbin-Watson stat		0.084314
Prob(F-statistic)	0.000271			

Source: Eviews8 output

Depending on the output of the 8EVIEWS program, the final form of the study can be written as follows:

$$GDP=1.29E+11-1.21E+09\ CE\ 1.32E+08\ CSP+\varepsilon i$$

We note through the correction factor and the correction factor that the explanatory capacity of the model is estimated at 30 percent and 26 percent, respectively, and this is because economic growth is governed by a large group of variables, of which loans to the economy represent only a small portion, in addition to this the composition of GDP Algeria, which accounts for 90 percent of hydrocarbon revenues.

As for the general morale of the model, we note that it has significant significance, because the statistical probability of Fischer is estimated at 0.000271 which is smaller than the critical value of 05 percent,

which confirms theoretical studies that confirm the existence of an impact relationship between the size of loans directed to the economy with its various types and the GDP.

With regard to loans to the private sector, they have a positive impact on the GDP, i.e. the greater its value relative to the GDP is one unit that leads to an increase in the GDP of 1.29, but it has no significance for the model, due to the fact that the statistical potential Its own is equal to 0.7905 and it is greater than the critical value 5 percent, and this can be traced back to the fact that loans to the private sector represent less than 20 percent of the total loans destined for the economy, taking into account that the Algerian economy is a rentier economy, and therefore its impact on domestic product Raw It is almost zero.

As for the effect of loans directed to the economy as a whole, it has a negative impact on the gross domestic product, as the larger the volume of loans directed to the economy in relation to the gross domestic product by one unit leads to a decrease in the gross domestic product by 1.21, knowing that this variable has a significant in the model, because the probability Student statistic is 0.0025 which is smaller than the critical value of 5 percent, where this negative impact can be explained by the inefficiency of the lending policy, as well as the result of unconventional financing directed to the public treasury as well as some investment loans that have not been recovered for the nature of their long-term And its low yield.

Based on the results of the estimated model, it can be said that the results related to the case of Algeria do not match the theoretical results and empirical studies conducted in many countries, which have concluded in their entirety to the positive impact of loans directed to finance the economy on the GDP, and the results related to the case of Algeria can be traced back to the many changes That Algeria experienced during the study period (1970-2018), The banking and banking system in particular witnessed fundamental changes in Algeria,

and the period before 1990 was marked by Algeria's adoption of a targeted economy policy, which is based on supporting industries and public institutions, which were often benefiting from huge financial loans, often directed to return Its structure and wiping off its debts in order to prevent it from being declared bankrupt, which has a negative impact on economic growth, which changed with the issuance of the Monetary and Loan Law No. 90/10 issued on 04/14/1990.

In order to improve the estimated model, it will be limited to the time period from 1990 to 2018, as follows:

Table No. 01: Results of the standard study for the period 1990-2018

Dependent Variable: GDP

Method: Least Squares

Date: 11/24/19 Time: 00:16

Sample: 1990 2018

Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.20E+11	1.72E+10	6.999574	0.0000
CE	-1.46E+09	3.84E+08	-3.793699	0.0008
CSP	2.20E+09	8.72E+08	2.518394	0.0183

R-squared	0.382541	Mean dependent var	1.08E+11
Adjusted R-squared	0.335045	S.D. dependent var	6.27E+10
S.E. of regression	5.11E+10	Akaike info criterion	52.25087
Sum squared resid	6.80E+22	Schwarz criterion	52.39231
Log likelihood	-754.6376	Hannan-Quinn criter.	52.29517
F-statistic	8.054046	Durbin-Watson stat	0.230382
Prob(F-statistic)	0.001896		

Source: Eviews8 output

Depending on the output of 8EVIEWS, the new form function can be formulated as follows:

$$GDP= 1.20E+11 --1.46E+09 *CP +2.20E+09 CSP$$

Through the above table, we note the following: The explanatory ability of the model has improved in general, as the determination factor and the correction factor for the estimated model for the time period from 1990 to 2018 increased by 0.38 and 0.33, respectively, which means a greater explanation for changes in Algeria's gross domestic product depending on the study variables represented in the loan ratio Directed to the economy as a whole and the ratio of loans to the private sector to GDP.

The estimated model has a statistical significance, as Fisher's statistical value is estimated at 8.05, which is a value that corresponds to a probability of 0.0018, which is less than the critical value estimated at 05 percent, and therefore the model is statistically acceptable, and has the interpretative power necessary for the study variables.

As for loans directed to the economy as a whole, they have an inverse relationship with GDP in Algeria during the period from 1990 to 2018, as is the case for the first estimated model (for the period between 1970 and 2018), and this variable has a statistical significance because the statistical probability of Student is estimated at 0.0008 which is below the critical value of 05 percent. The negative impact of loans directed to the economy in general on economic growth can also be traced back to the way these loans are granted (most of which are directed to public institutions), as they are often directed to restructuring public institutions and clearing their debts, and are not granted on the basis of the return on investment and its contribution to value added, what It makes a negative impact on economic growth, contrary to the findings of theoretical and applied studies across different countries of the world.

As for loans directed to the private sector, they have a positive impact on the gross domestic product during the period between 1990 and 2018, which is a statistically significant variable because the probability of Student is estimated to be 0.0183 which is less than the critical value estimated at 05 percent, and this is in contrast to the first model (from a year 1970 to 2018). This result can be attributed to the fact that Algeria during this period went towards a market economy based mainly on encouraging the private sector and giving it the necessary facilities, which led to the positive impact of loans directed to the private sector on the GDP of Algeria.

4. Conclusion

This study aimed to test the countries of bank loans directed to finance the economy as a whole in general, and loans directed to finance the private sector on the growth of gross domestic product in Algeria, and this using a database obtained from the World Bank, where he used the linear regression model using the least squares method.

The study concluded that there is an inverse relationship between loans directed to the economy as a whole (consisting of 80 percent of loans directed to the public sector) and GDP, which can be attributed to the inefficiency of public institutions in achieving the desired economic growth, which requires moving forward in adopting an economy The market is mainly based on encouraging the private sector more and more, which is the path adopted by Algeria since 1990.

The study also concluded that there is a positive effect between loans directed to the private sector and the growth of gross domestic product during the period between 1990 and 2018, which means the need to direct banks and financial institutions to finance this sector in order to achieve the growth rates to which Algeria aspires.

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6. List of appendices:

Appendix No. 01: Values of study variables between 1970 and 2018.

Years	and Domestic credit to private sector by banks (% of GDP)	Domestic credit provided by financial sector (% of GDP)	GDP in US dollars
1970	27,04	46,14	4863487493
1971	33,64	50,68	5077222367
1972	46,57	55,75	6761786387
1973	48,16	55,03	8715105930
1974	41,40	37,70	13209713643
1975	49,42	50,06	15557934268
1976	53,10	57,05	17728347375
1977	49,52	58,31	20971901273
1978	53,50	69,42	26364491313
1979	51,73	64,26	33243422158
1980	48,30	61,60	42345277342
1981	52,40	58,68	44348672668
1982	62,00	70,87	45207088716
1983	64,92	78,22	48801369800
1984	66,37	82,73	53698278906

1985	68,70	84,97	57937868670
1986	69,28	93,34	63696301893
1987	67,51	95,23	66742267773
1988	68,12	99,35	59089067187
1989	63,17	90,63	55631489802
1990	56,14	78,43	62045099643
1991	46,29	59,63	45715367087
1992	7,25	55,45	48003298223
1993	6,61	59,03	49946455211
1994	6,49	47,23	42542571306
1995	5,20	45,04	41764052458
1996	5,36	38,32	46941496780
1997	3,90	38,59	48177862502
1998	4,55	41,38	48187747529
1999	5,37	45,82	48640574567
2000	5,95	28,27	54790245601
2001	7,98	36,27	54744714396
2002	12,17	37,80	56760288974
2003	11,19	31,24	67863829880
2004	10,97	21,65	85324998814
2005	11,85	7,34	103198000000
2006	12,10	3,65	117027000000
2007	12,97	-3,64	134977000000
2008	12,78	-12,70	171001000000
2009	16,25	-8,95	137211000000
2010	15,19	-6,63	161207000000
2011	13,70	-4,51	200019000000
2012	14,01	-2,11	209059000000
2013	16,48	3,00	209755000000
2014	18,33	18,00	213810000000
2015	21,68	39,97	165979000000
2016	22,84	54,38	160130000000
2017	24,76	67,92	167555000000