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# The role of the insurance sector and financial services in increasing economic growth rates as an alternative to the hydrocarbon sector in Algeria during 2000-2018

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**Abstract**: The importance of the study is that the economic position of Insurance is through the role it plays, as it works to provide insurance coverage for individuals and institutions from the results of the various risks they face. Thus it contributes to providing enterprise stability, which returns to society with economic and social benefits. We used a model of regression Multiple to identify significant Impact of Insurance and financial services on Growth economic in the period 1990-2017. The results of this study concluded that 88.67% of the study variables explain the GDP in the Algerian economy, that is, Economic Growth. As there was a positive and significant effect of Broad money (BM) and Market capitalization (MC) on the GDP, and a positive but not significant effect of Insurance and Financial Services (IFSEXP) on the GDP. Neglecting some variables may have affected the results of the study; if other variables take, it would have given better results. Also, decision-makers in Algeria can benefit from these results, and embody them on the ground. The study period and the method of estimating the Model for the case of Algeria considered as a gap that can add new to the subject of Insurance in Algeria.

**Keywords**: Economic Growth; Broad money; Insurance and Financial Services; Market capitalization; Regression Multiple Model; Algeria Economy.

JEL classifications codes: F23; F43; O21; F34.

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#### **I- Introduction:**

The problem of financing development is considered one of the most critical problems facing the third world because development requires vast resources, and developing countries should not neglect any means by increasing the amount of invested capital. After all, the demand for capital governed by desire and ability to save. Moreover, as long as incomes are low as a result of a decrease in production. The ability to save is also low.

There are two primary sources of capital, which are external resources and local resources. The latter consists of two essential compulsory savings such as taxes and fees, and optional savings, which is voluntary and voluntary work by individuals, bodies and institutions, including Insurance. Where in the latter we find a unique place for activity Economic, Insurance was not a recent activity. However, it arose out of date with the idea of cooperation and developed with the progress of human life until it reached the image that it is in our modern era, in addition to considering it a means of protection from danger, as it positively affects many economic variables.

Insurance has a vital role in developing the economies of countries. No one ignores its importance in advancing the economic and social development of the state. As it works to increase the productive capacities of countries, and raise the rate of economic growth and improve the economic situation. Through its dual role. In addition to introducing safety and stability in the life of The human being is daily and practical, giving him self-confidence and freeing his mind from thinking about the dangers that he might take if he wanted to undertake a productive project or accomplish a work. After independence, Algeria chose a model of development in record time. It is the state's monopoly on economic transactions, including the insurance sector. Whose role does not differ significantly due to its actual contribution to economic activity in implementing the development plans that the Algerian state seeks to achieve? So it has gained significant importance with the establishment of

many national companies that work to secure all the risks in economic life. With Algeria entering economic reforms, it was necessary to reorganize in the insurance sector.

The insurance sector in Algeria is one of the sectors that have been debated in recent years, especially after the two natural catastrophes that shook the Algerian north at the beginning of this century, namely the Bab El Oued floods in November 2001 and the Boumerdes earthquake in May 2003. Covering the losses caused by the two disasters, and for this reason the country found itself the only one in the face of these significant losses that insurance companies could not afford.

# How do Insurance and financial services affect the Growth of the Algerian economy during the period 2018-2018?

The importance of the study is that the economic position of Insurance is through the role it plays, as it works to provide insurance coverage for individuals and institutions from the results of the various risks they face. Thus it contributes to providing enterprise stability, which returns to society with economic and social benefits.

This study attempts to contribute to the literature on inward FDI determinants in four different and simultaneous aspects. **First**, Introduction; **Second**, Background, Literature review and hypotheses; **Third**,Data and methodology. **Fourth**, Empirical Results and Discussion is the essential part of the study, and **in Fifth**, Conclusion Focus on Implication, Limitation and the future of research.

# II- Background, Literature review and hypotheses

Before dealing with previous studies and hypotheses, we give a snapshot of the subject of the study.

# 1. Background

Insurance is considered in its simple concept to give safety in order to face the potential danger in the future, in order to avoid its harmful results or at least limit it to the narrowest possible range. It has shown that distributing the harmful results of a particular incident to several individuals reduces its



burden, unlike if these results bore One person, and that is what Insurance does.

#### 1.1 Definition of Insurance:

Insurance is a process whereby a party. Who is the insured gets a pledge in return for the payment of the premium to another party? This insurer is obliged to pay the third party the amount of Insurance if the risk realized.

## 1.2 The economic importance of Insurance

Insurance works to provide insurance coverage for individuals and institutions from the results of the various risks they face, and thus it contributes to providing projects stability.

# Insurance is one of the most important means of saving and investing:

The insurance sector is an essential and distinct tool for collecting savings and then investing in all countries of the world, especially in developing countries. Life insurance enables insurance agencies to form massive capital in the form of sports reserves that can direct to finance economic development plans, increase investment in society and raise Entry level. Even for other insurance branches, even if some technical reserves. Such as the reserve of applicable risks and compensation. Under settlement that seen as short-term, are in practice funds accumulating from one year to another, as a result of increasing the volume of economic activity and thus Insurance. Moreover, it may also use various investments. Or At least the most significant part of it.

# Working to increase production:

Given the insurance risks that provide insurance coverage with many dangers. Which encourages individuals and enterprises to enter into new production areas or expand in their current areas of production without hesitation, and this helps them to access the advantages of large production and works to increase the productive capacity of these projects.

On the other hand, Providing insurance coverage for the employees of the establishments from various dangers. Whether they relate to them or their families, all of this helps their continued work in development. Their practical capabilities, in addition to what provides stability. Safety and

reassurance to them in a way that raises the productive efficiency of these workers.

# Facilitating and expanding credit operations and increasing commercial confidence:

Insurance plays a prominent and essential role in the field of expanding credit operations and increasing commercial confidence. It is known that the owner of the money cannot lend money unless he is satisfied that the subject of guaranteeing this money, whether this subject of security is transferred or fixed and is not threatened with annihilation as a result of a dangerous verification With his money, as the Insurance provides this guarantee if the risk realized concerning the subject of the guarantee above, and from this standpoint the importance of Insurance was in facilitating and expanding the credit, we find that banks do not agree to lend to projects or business people except with the presence of Insurance on their property or the pledged creditor does not agree To borrow on a mortgage For a property unless insurance coverage is available from the fire risk of this mortgaged property.

# Contributing to the expansion of employment and employment:

Insurance in its various sectors (commercial and social) works to absorb a large part of workers. in society so that expansion in Insurance in the commercial sector requires the availability of a minimum level of employment of all kinds, technical, administrative and professional in its various branches of life or general Insurance such as fire, engineering insurance and cars from administrators Clerks, engineers, producers, and workers in the corporate headquarters, branches and agencies.

# Contribute to improving the balance of payments and preserving national wealth:

General features characterize reinsurance, and cooperation in this field required among different countries of the world. We can divide the countries of the world in this field into two types, countries that export Insurance. In it, we find that the sum of premiums and compensation received annually exceeds what pay to other countries as premiums and compensation. Then we find that the results that appear in commercial operations from the balance of payments under the insurance item and by increasing this item, it works to achieve a surplus in the balance of payments or works to reduce its deficit in a way that helps the safety of the national



As for the country importing the insurance service, the differences that the balance of its payments will bear are offset by insurance coverage if these countries hit a major catastrophe in one of the years. The State Department has Insurance for the subject matter of the Insurance for which the disaster occurred.

#### 2. Literature review

The previous studies that dealt with the topic of Insurance, each of which had its area of interest and a different fulcrum, and among the researches we have mentioned see **Outreville**, **J. F. (2013)** and **Taub**, **B. (1989)**, we mention:

Study of Jørgensen, S. L, et al. (2020) entitled "Natural Insurance as a condition for market insurance: Climate change adaptation in agriculture ". The results indicate that in general arable farmers and farmers with low soil quality who have experienced crop damages in the past are more likely to purchase such conditional Insurance. Farmers with good quality soils, who perceive that they have already adapted their practices to climatic risks and who have not experienced losses due to adverse climatic events in the past are less willing to purchase Insurance.

Study of **De Nardi, M., et al. (2020)** entitled "Nonlinear household earnings dynamics, self-insurance, and welfare ". This study estimate two alternative processes for household after-tax earnings and study their implications using a standard life-cycle model. Both processes feature a persistent and a transitory component, but although the first one is the canonical linear process with stationary shocks, the second one has substantially richer earnings dynamics, allowing for age-dependence of moments, non-normality, and nonlinearity in previous earnings and age. Allowing for richer earnings dynamics implies a substantially better fit of the evolution of cross-sectional consumption inequality over the life cycle and of the individual-level degree of consumption insurance against persistent earnings shocks. The richer earnings process implies lower welfare costs of earnings risk.

Study of Berhe, T. A., & Kaur, J. (2017) entitled "Determinants of insurance companies' profitability Analysis of insurance sector in Ethiopia '.'. The results of this study analysis revealed that the size of Insurance, capital adequacy, liquidity ratio and growth rate of GDP were the major factors that significantly affect the profitability of insurance companies. On the other hand, leverage ratio, loss ratio, market share and inflation rate were found to have insignificant effect on insurance companies profitability.

Study of Pradhan, R. P. et al. (2016) entitled "Insurance penetration and economic growth nexus: Cross-country evidence from ASEAN ". This study shows that all the variables are cointegrated and reveal. a network of causal connections, including short-run bidirectional causality between insurance market penetration and economic growth. Recommendations based on this study include establishing a sound regulatory framework for a country's insurance industry, and introducing professional education and certification of insurance personnel to ensure adherence to global best practices and standards. Moreover, opening up a country's domestic insurance market to larger foreign players can ensure a wider choice of cost-effective, quality Insurance.

This study differs from (Ward, D., &Zurbruegg, R. (2000), Soo, H. H. (1996) and Nguyen, Y. N., et al. (2010)) because the study period and the method of estimating the Model for the case of Algeria considered as a gap that can add new to the subject of Insurance in Algeria.

# 3. Hypotheses

To answer the previous problem and achieve the desired research objectives, we propose the following set of hypotheses:

**H1**: There is a positive relationship between Growth Economic, and Insurance and Financial service in Algeria Economic.

**H2**: There is a relationship between Growth Economic and Broad Money in Algeria Economic.

**H3**: There is a positive relationship between Growth Economic and Market Capitalization in Algeria Economic.

**H4**: There is a negative relationship between Growth Economic and inflation in Algeria Economic.



**H5**: There is a negative relationship between the Growth Economic and real exchange rate.

# III- Data and methodology

In this study, we used a model of regression Multiple to identify significant Impact of Insurance a Financial service in growth economic. Moreover, we used the EViews ten software for analysis.

#### 1. Data

All variables used in this study include an Algeria country as well as a times-series component (1980–2017). Data a taken from the World Bank's database for all the variables during the study period and the consolidation of data sources. The variables summarized in **Table 1**.

**Table 1:** Variables used in the panel data regression model and their expected effects

Nature	Variable	Characteristic	Expected sign
Dependent	LNGDP	The logarithm of gross	
variable		domestic product	
		(GDP) (current US\$)	
	LNBM	The logarithm of Broad	Positive (+)
Independent		money (% of GDP)	
variable	LNIFSEXP	The logarithm of	Positive (+)
		Insurance and financial	
		services (% of service	
		exports, BoP)	
	LNMC	The logarithm of Market	Positive (+)
		capitalization of listed	
		domestic companies (% of	
		GDP)	

**Source:** All data are from the World Development Indicators' Data Bank by the World Bank (databank,worldbank,org/wdi).

#### 2. Definition a variable

**Insurance and financial services (IFSEXP)** (% of commercial service exports): Insurance and financial services cover freight insurance on goods exported and other direct Insurance such as life insurance; financial intermediation services such as commissions, foreign exchange transactions, and brokerage services; and auxiliary services such as financial market operational and regulatory services.

**Broad money (BM):** Broad money is the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveller's checks; and other securities such as certificates of deposit and commercial paper.

Market capitalization (MC): Market capitalization (also known as market value) is the share price times the number of shares outstanding (including their several classes) for listed domestic companies.

## 3. Statistic descriptive

The **Table 2** shows that the most important statistical indicators of the variables used in the Model, which are related to the Algeria Economic for the 19 years of the study period; this means 19 observations that are acceptable primarily to the nature of this study.

	_		_	
	GDP	MC	IFSEXP	BM
Mean	1.58E+11	0.161466	9.523821	66.87196
Median	1.56E+11	0.098392	8.491973	67.95313
Maximum	2.01E+11	0.520745	21.02114	82.1197
Minimum	1.10E+11	0.053401	4.290172	37.83261
Std. Dev.	2.86E+10	0.120405	4.025428	11.40123
Skewness	-0.052567	1.566885	1.765331	-0.601525
Kurtosis	1.909428	5.176003	6.371657	3.303328

**Table 2: Descriptive Stats Individual Sample** 

Jarque-Bera	0.950317	11.52311	12.9099	1.218644
Probability	0.621787	0.003146	0.001573	0.543719
Sum	3.00E+12	3.06785	123.8097	1270.567
Sum Sq. Dev.	1.48E+22	0.260953	194.4488	2339.786
Observations	19	19	13	19

Source: Output of EViews 10.

In **Table 3**, which represents the correlation matrix between variables, we observe that there is no correlation between the variables of the Model. This indicator increases the accuracy of the Model, which uses the best linear unbiased estimators.

Table 3: Correlation of the variables in the study

	GDP	MC	IFSEXP	BM
GDP	1			
MC	0.58558554	1		
IFSEXP	0.05551729	0.38462413	1	
BM	0.91169486	0.35189714	-0.07983023	1

**Source:** Output of EViews 10.

# 4. Methodology

#### Model

The functional form of the Model is as follows:

$$LnGDP_t = \alpha_1 + \alpha_2 LnBM_t + \alpha_3 LnIFSEXP_t + \alpha_4 LnMC_t + \varepsilon_t \dots (1)$$

Where:

 $LnGDP_t$ : The logarithm of GDP in Algeria at time t.

 $LnBM_t$ : The logarithm of Broad money in Algeria at time t.

 $LnIFSEXP_t$ : The logarithm of Insurance and financial services in Algeria at time t.

**LnMC**<sub>t</sub>: The logarithm of Market capitalization in Algeria at time t.

 $\varepsilon_t$ : Error term.

 $\alpha_1\alpha_2\alpha_3\alpha_4$ . The Parameter of Model.

## 3.2.2 Stability of the time series

the stability of the time series should be studied. Then, the Model should test, obtained, and explained by following these by Unit Root Tests. **Table 4** shows the results of the integration tests of the study variables using the Zivot Andrews test **Waheed, M., Alam, T., &Ghauri, S. P. (2006)** and **Rahman, A., &Saadi, S. (2008)**. For the unit root. The results show that the dependent variable (LnGDP) integrated into the level I(0). whereas the independent variables: LnBM, LnIFSEXP, LnMC using the Augmented Dickey-Fuller test (ADF) and the Phillips—Perron test (PP) **Said, S. E., & Dickey, D. A. (1984)** and have integrated a level I(0).

Table 4: unit Root Tests results (ADF & PP)

	At Level			At Fi	rst Diffe	erence	Order of
		ı				ı	Integration
		PP	Zivot	ADF	PP	Zivot	
	ADF Test	Test	Test	Test	Test	Test	
LNGDP	-	-	-4.58**	-	-	-	I(0)
	2.2.2						
LNBM	-5.27***	-4.25**	-	-	-	-	I(0)
	2.2.2						
LNIFSEXP	-7.12***	-5.64	-	-	-	-	I(0)
		-					
LNMC	<b>-</b> 4.48***	4.13***	-5.28**	-	-	-	I(0)

**Note**: \*, \*\*, and \*\*\* indicate rejection of the null hypothesis at 1%, 5%, and 10 % levels, respectively.

# IV- Empirical Results and Discussion

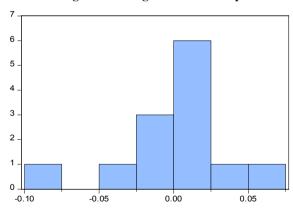
#### 1. Quality and stability of the Model

After estimating the Model shown in equation (1), it became clear to us that it is acceptable in its general form according to the statistics of Fischer and Durban Watson, so it was necessary to test it for its absence of common mistakes, by performing the following tests:

# 1.1. Histogram-Normality Test

According to Figure 1, which takes the form of a bell as an indication that the residual is normal distribution, in addition to the fact that the Jarque-Bera statistic is acceptable, and its probability is higher than 5% (P=0.224 >0.05), we accept the null hypothesis, which says that residual is a normal distribution.

Figure 1.Histogram and descriptive statistics of the residuals



Series: Residuals Sample 2005 2017 Observations 13 Mean -1.93e-15 Median 0.002801 Maximum 0.052394 Minimum -0.083197 Std. Dev. 0.033224 -0.953108 Skewness Kurtosis 4.371772 Jarque-Bera 2 987518 Probability 0.224527

**Source:** Output of EViews 10.

#### 1.2 Serial Correlation LM Test

According to the Breusch-Godfrey Serial Correlation LM Test, we notice that the square Prob. Chi-Square is 0.58, that is, more significant than 0.05 (P Chi-Square=0.58>005), which means rejecting the null hypothesis that says there is an Autocorrelation between errors. ÷is means that there is No-Autocorrelation between errors in the studied Model see Table 5.

Table 5: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.313048	Prob. F(2,7)	0.7409
Obs*R-squared	1.06729	Prob. Chi-Square(2)	0.5865

**Source:** Output of EViews 10.

## 1.3 Heteroskedasticity Tests

According to the Heteroskedasticity Test: ARCH, we notice that the square Prob. Chi-Square is 0.65, that is, more significant than 0.05 (P Chi-Square=0.65>005), which means rejecting the null hypothesis that says there is a Heteroskedasticity error. It means that there are No Heteroskedasticity errors in the studied Model see Table 6.

Table 6: Heteroskedasticity Test: ARCH

F-statistic	0.167366	Prob. F(1,10)	0.6911
Obs*R-squared	0.197533	Prob. Chi-Square(1)	0.6567

**Source:** Output of EViews 10.

#### 2. Results

The results through the Model indicate that it is acceptable according to the statistics of DW and AIC. Moreover, 88.67% of the variables of the Model explain GDP in Algeria. In addition to having a positive and significant effect for both the Broad money (BM) and Market capitalization (MC). Moreover, effect positive but not significant for Insurance and financial services (IFSEXP), see **Table 7.** 

$$LnGDP_t = 22.97 + 0.074 * LnMC_t + 0.0034 * LnIFSEXP_t + 0.71 * LnBM_t$$

$$(2)(0.0000)^{***}(0.0264)^{**} (0.9213) (0.0000)^{***}$$

**Table 7: Results of model estimation** 

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	22.97***	0.4085	56.24758	0.0000
LOG(MC)	0.074**	0.028034	2.652867	0.0264
LOG(IFSEXP)	0.0034	0.033468	0.101584	0.9213
LOG(BM)	0.71***	0.08802	8.130341	0.0000

Vol.	:	Nu.:	••••

R-squared	0.915039
Adjusted R-squared	0.886719
F-statistic	32.3105
Prob(F-statistic)	0.000038
DW stat	2.016275

**Note:** Probabilities are in parentheses. \*, \*\*, and \*\*\* show significance at the 10%, 5%, and 1% levels, respectively.

Source: Output of EViews 10.

#### 3. Discussion

The finding of this study there is a positive and significant effect of Broad money (BM) and Market capitalization (MC) on the GDP. As every 1% increase in Broad money (BM) leads to a 71% increase in GDP. Moreover, every 1% increase in Market capitalization (MC) leads to a 7.4% increase in GDP. This results supported the study of (Cristea, M., Marcu, N., &Cârstina, S. (2014), Kugler, M., &Ofoghi, R. (2005, September)). Furthermore, a positive but not significant effect of Insurance and Financial Services (IFSEXP) on the GDP, because most foreign and multinational companies given discounts in the Insurance. They directed to, within the framework of encouraging foreign direct investment (see Louail, B. (2019), Louail, B. (2015, June)andZouita, MS, et al. (2019)), and compensate them with large sums in the event of a risk to these companies. This findingInconsistent with (Akinlo, T., &Apanisile, O. T. (2014), Adams, M., Andersson, J., et al. (2009)).

We can also conclude that insurance companies have a significant role in advancing economic development. Through what they contribute to financing and providing financial needs for various economic activities. It is in addition to its Impact on many variables, as it is a way to encourage exports, facilitate credit, reduce inflation, and bring in hard currency and thus Contributing to alleviating the deficit of payments or achieving a surplus.

Furthermore, the insurance companies played an important role in revitalizing the money market through the reforms introduced in this market. It also contributed to the establishment of the financial market. Through intermediaries in the stock market operations, in addition to that, it is considered one of the primary subscribers to stocks and bonds in the financial market, the latter remains a narrow field due to the lack of institutions active in it and the weak trust in it in general... It reflects the state of the Algerian economy Interspersed with the recession.

#### V- Conclusion

The idea of Insurance is limited to precaution against future risk. Caused by disasters to which a person is exposed. He thus needs a system that carries this burden and gives him peace of mind and reassurance. The purpose of Insurance or from the presence of insurance companies. Is not limited to reducing the losses to which the insured is exposed and what follows. From providing security and stability to the individual, the institution and the economy in general, but insurance companies play an essential role in contributing to economic development, and this is by providing financial resources and developing and encouraging savings awareness among the public...

Were it not for participation in bearing losses resulting from the risks to which individuals are exposed; it would have been necessary to keep these sums in the form of idle cash, which would reduce the efficient use of the financial resources of the economy.

The insurance sector, like other sectors of the national economy, has undergone extensive transformations following the recent political, economic and social developments by raising the allocation of insurance company activities in 1990 and then lifting the state monopoly in 1995.



All these transformations. That fall within the framework of the transition. Moreover, the national economy, from the directed economy to the market economy and competition. Have led to the creation of a new environment open to investment and innovation. Furthermore, thus opening the insurance market to new national. Moreover, foreign private dealers (where accreditation granted to several companies) to exploit it competitively alongside companies The public sector, which in light of these new conditions must demonstrate its ability to reorganize and modernize its structures according to the requirements of the market economy and thereby increase its competitiveness and integration into the global market for Insurance, in addition to establishing oversight bodies such as the National Insurance

The results of this study concluded that 88.67% of the study variables explain the GDP in the Algerian economy, that is, Economic Growth. As there was a positive and significant effect of BM and MC on the GDP and a positive but not significant effect of Insurance and financial services on the GDP.

Neglecting some variables may have affected the results of the study; if other variables take, it would have given better results. Which is among the deficiencies in this research. Moreover, it may be left to the research as a horizon for this study. Also, decision-makers in Algeria can benefit from these results, and embody them on the ground.

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