

Impact of Insurance on Unemployment - A Standard Study 2000/2022 -**YAHIAOUI Fatima¹, DJILALI Lalia², LARIFI Awda³**¹ IBN KHALDOUN University - Tiaret (Algeria), fatima.yahiaoui@univ-tiaret.dz² IBN KHALDOUN University - Tiaret (Algeria), lalia.djilali@univ-tiaret.dz³ IBN KHALDOUN University - Tiaret (Algeria), awda.larifi@univ-tiaret.dz

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Abstract:

In this study, we sought to determine the impact of the insurance sector on unemployment level in Algeria. Using annual data for the period (2000/2022), we analysed the correlation between employment within the insurance industry and unemployment rates in Algeria. The analysis was conducted through the application of the simple linear regression model based on the outputs of the Eviews software program.

This study yields numerous key results, the most significant among them being the existence of an inverse relationship between the number of employees in the insurance sector and the unemployment rate in Algeria.

Keywords: Insurance, Unemployment, Unemployment Insurance.

JEL Classification Codes: G220. J6

ملخص:

حاولنا من خلال هذه الدراسة تحديد أثر قطاع التأمين على البطالة في الجزائر، حيث قمنا بتحليل العلاقة بين التوظيف في قطاع التأمين ومعدلات البطالة في الجزائر، وذلك من خلال استخدام البيانات السنوية للفترة (2000/2022) وبتطبيق نموذج الانحدار الخطي البسيط بالاعتماد على مخرجات برنامج Eviews. وقد توصلنا من خلال هذه الدراسة إلى جملة من النتائج أهمها وجود علاقة عكسية بين عدد الموظفين في قطاع التأمين ومعدل البطالة في الجزائر.

كلمات مفتاحية: التأمين، البطالة، التأمين على البطالة.

تصنيفات JEL: J6.G220

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1. Introduction

The insurance sector is a fundamental part of any country's economic infrastructure, contributing to providing financial security for both individuals and companies, safeguarding them against a wide range of risks. In addition to its crucial role in risk management, insurance has a profound impact on numerous economic variables, including financial stability, stimulating economic growth, encouraging investment, and creating employment opportunities within an economy.

Insurance plays a critical role not only in providing protection against financial losses but also in stimulating investment opportunities and driving economic growth. For instance, by collecting premiums and strategically investing them, the insurance sector contributes to the mobilisation of savings and directing them towards productive and profitable investments. Furthermore, insurance enhances economic stability by reducing financial volatility and offering a safety net for both individuals and businesses, thereby boosting their confidence in effectively managing financial risks. Consequently, the effects of insurance on economic variables are evident across various dimensions, including fostering economic growth through savings mobilization and investments, achieving financial stability by alleviating financial risks, and promoting savings and investment by providing financial protection.

- Research Issue

Despite the multifaceted economic contributions it offers, the specific mechanisms through which insurance affects unemployment remain inadequately explored, especially in Algeria. Thus comprehending the intricacies of these dynamics is essential for both policymakers and economists seeking effective strategies to tackle unemployment through economic mechanisms such as insurance.

To what extent does the insurance sector contribute to reducing unemployment?

- Study Hypotheses

In addressing the research question at hand, we will adopt the following set of hypotheses:

- The impact of the insurance sector on unemployment is contingent upon the level of economic development of the country under examination.
- The impact of insurance extends far beyond merely increasing the workforce.
- There is a statistically significant correlation between the number of individuals working in the insurance sector and unemployment levels in Algeria at a 5% significance level.

- **Research aims**

This research endeavours to:

- Investigate and understand the correlation between the growth of the insurance industry and unemployment rates in Algeria.
- Evaluate and examine both the direct and indirect effects that the insurance sector has on unemployment.

- **Research Importance**

This study holds significance as it provides valuable insights into how insurance practices can potentially mitigate unemployment pressures and challenges within Algeria's economic landscape. Moreover, by employing rigorous statistical methods and analyzing historical data, the research seeks to offer significant contributions to the understanding of insurance's role in maintaining economic stability and fostering job creation.

- **Study methodology:**

In our research, we employed both the descriptive and analytical approaches by describing the various variables under investigation, We also used a statistical approach to study the correlation between the dependent variable and the independent variable, relying on the simple linear regression model, which allows us to conduct a detailed examination on the relationship between variations in employment levels within the insurance sector and the resulting impact on overall unemployment figures.

- **Previous studies**

- **(2016 بالي،) Contribution of insurance sector to growth of the national economy**

In this study, the researcher tried to evaluate the influence of insurance on economic growth. However, the findings revealed that the Algerian insurance sector is hindered by technical and financial limitations, leading to low level of investment.

As a result, research findings suggest that the insurance sector has not relatively contributed to the economic growth. Therefore, the correlation between the two concepts is notably weak in Algeria, indicating a necessity for in-depth analysis and potential reforms in the insurance sector to boost its contribution to the national economy.

- **(بن عمارة و غفصي، 2021) A Record Study of the Relationship of Insurance Penetration Rate to Unemployment and Gross Domestic Product in Algeria During the Period1980-2018**

This study aimed to elucidate the relationship that lies between both Gross Domestic Product (GDP) and unemployment, as well as analyse how they collectively impact the rate of insurance penetration in the short and long term within a given market. To achieve this, the research used a series of yearly data spanning from 1980 to 2018 and implemented a common integration methodology known as the Vector Error Correction Model (VECM). Notably, the study findings indicate that, in the long term, both unemployment and Gross Domestic Product (GDP) positively affect the penetration rate of insurance. In contrast, in the short term, the penetration rate of insurance is not affected by Gross Domestic Product. However, it is positively impacted by its value from the previous year and the unemployment rate in the period (t-2). Furthermore, the results of this study indicate that the penetration rate of insurance remain unaffected by shocks and fluctuations in both unemployment and Gross Domestic Product, as well as in the variable itself.

2. The impact of insurance on economic variables

2.1 The impact of insurance on GDP

Insurance penetration is a critical metric because it helps in evaluating the development and effectiveness of the insurance sector within an economy. Specifically, the penetration rate is defined as a "country's total insurance premiums as a percentage of its gross domestic product (GDP) and indicates how much the insurance sector contributes to the national economy. (Maalila, 2022, p. 345)

This metric provides insights into how deeply the insurance sector has penetrated the economy and the extent to which individuals and businesses utilize insurance services" (International Association of Insurance Supervisors, 2017, p. 2)

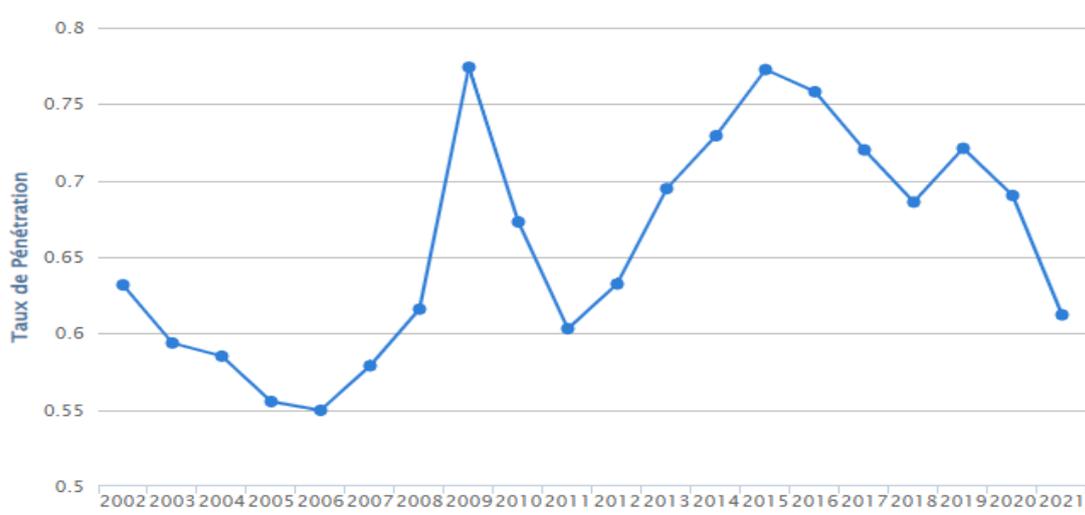
This ratio plays a key role in comprehending the scale of insurance relative to the economic size of a country. In particular, higher insurance penetration indicates a more advanced insurance market, thereby demonstrating increased adoption and usage among the population.

Insurance penetration varies significantly across different regions and economies. For example, developed countries generally exhibit higher insurance penetration compared to developing or emerging economies. Specifically, in 2022, the United States experienced a growth rate of 12.1%, surpassing the growth rate of 11.4% observed in the United Kingdom during the same year" (Insurance indicators). This demonstrates that these advanced countries have high insurance penetration rates, reflecting well-established insurance markets and a strong understanding of insurance benefits. Conversely, many developing countries in Africa, Asia, and Latin America have lower penetration rates due to factors such as limited awareness, lower disposable incomes, and inadequate regulatory.

The following figure shows the development of the insurance penetration rate in

Algeria

**Figure01: The development of the insurance penetration rate in Algeria
2002-2022**



Source : (Evolution du taux de pénétration)

2.2. Insurance as an investment and savings Tool:

In the subsequent discussion, we will provide further detail and explanation regarding this particular point:

- Impact on Savings

- **Encouraging Long-Term Savings:** The savings policies are products specifically intended for individuals interested in long-term saving and investing. In particular, the savings and investment policy products are designed to achieve a return accumulating on the saved sum or at providing security in the event of death. Furthermore, pension insurance policies provide additional security in view of a comfortable and worry-free retirement (Life insurance, savings policies and investment policies)
- **Financial Discipline:** By adhering to regular premium payments, individuals cultivate a sense of financial discipline. As a result, this regular savings habit can lead to higher personal savings rates, thereby providing a financial cushion and reducing reliance on social safety nets and programmes.
- **Security and Peace of Mind:** Insurance provides individuals with a heightened sense of financial security. As a result, knowing that they are protected against unforeseen events, individuals may find it easier to allocate a portion of their income to savings instead of holding onto it as readily available liquid cash for emergencies. Consequently, this shift in behaviour can result in a higher savings rate across the board.
- **Savings Mobilisation:** Insurance companies strategically pool the premiums collected from policyholders and consequently invest them in various financial

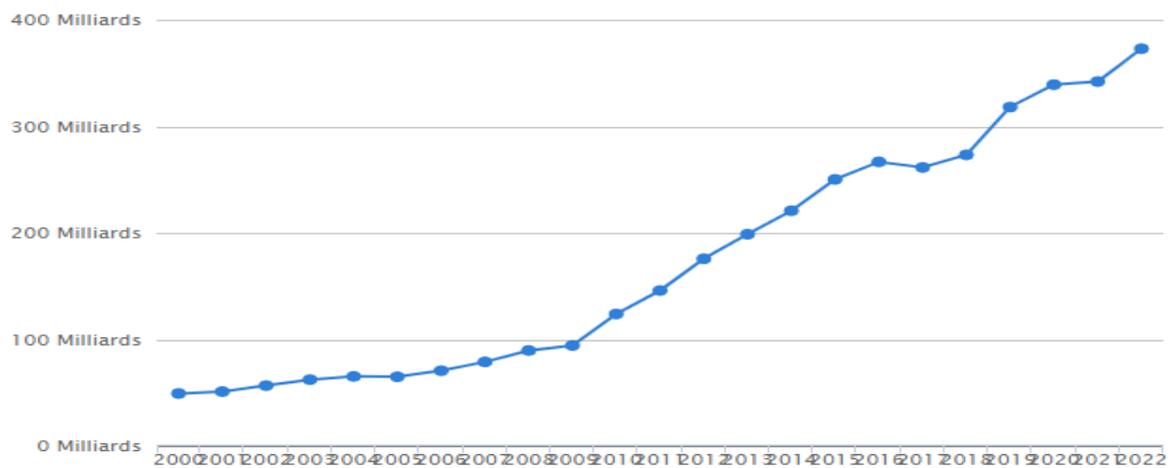
instruments to maximise returns. This process of savings mobilisation helps convert personal savings into large pools of capital that can be utilised for significant investments ventures.

- **Impact on Investment**

- **Capital Formation:** Insurance companies are major institutional investors in various financial fields. Specifically, they collect large sums of money in the form of premiums and allocate these funds towards investments in stocks, bonds, real estate, and other financial assets. As a result, this capital formation plays a leading role in supporting economic development by providing funding for businesses and infrastructure projects.
- **Long-Term Investments:** The nature of insurance liabilities, which are often long-term, affords insurance firms the opportunity to invest in long-term projects. This encompasses investments in infrastructure, real estate, and other projects demanding significant capital and having extended gestation periods. Moreover, these investments are crucial for continuous economic growth.
- **Stabilizing Financial Markets:** Insurance companies contribute to the stability of financial markets by making large-scale investments. In particular, their investment strategies frequently focus on diversified portfolios, which aim to stabilise asset prices and reduce market volatility. This stability is advantageous for both investors and the broader economy .For further details, see the following reference (European Central Bank, 2009)
- **Risk Management and Economic Stability:** By providing risk management solutions, insurance supports entrepreneurial activities and fosters business expansions within the market. In addition, companies are more likely to invest in new projects and technologies when they have the assurance that potential risks are reduced through insurance coverage. As a result, this fosters innovation and leads to significant economic growth. For more information, see the following reference (Vladimir, 2018)

The following figure shows the development of insurance companies' investment in Algeria

Figure02: The development of insurance companies' investment in Algeria 2002-2022



Source : (Evolution des placements)

2.3. The Impact of Insurance on the Balance of Payments

The balance of payments (BOP) is a comprehensive record of a country's economic transactions with other countries across the globe. It includes the trade balance foreign investment, and financial transfers. In this context, insurance serves as a critical factor in these transactions, exerting a significant impact on both the current and financial accounts of the BOP. **For example:** Reinsurance, a common practice in the insurance industry, involves insurers transferring portions of their risk portfolios to other (often on an international scale) insurers (Gerard M., 1977). Specifically, when domestic insurers cede premiums to foreign reinsurers, it leads to a financial outflow (debit) in the current account. On the other hand, if domestic insurers receive claims from foreign reinsurers, it results in an inflow (credit). (Erike & Gustika, 2022)

2.4. Insurance Density

Insurance density is a key metric used to measure the average amount of money spent on insurance per capita in a designated country or region. It is calculated by dividing the total amount of insurance premiums collected by the overall population of that area (Elsayed & Hebatalla, 2020, p. 926)

Importance of Insurance Density

- **Market Development Indicator:** Insurance density serves as a crucial indicator of the development and maturity of the insurance market in a specific country. Higher insurance density usually reflects a well-established insurance sector with a broad reach and high acceptance among the population.
- **Economic Health:** It can also serve as an indicator of economic health and stability of a nation. For instance, in countries with higher disposable incomes, both individuals and businesses are more likely to purchase insurance products. As a result, this trend leads to increased insurance density within these regions.

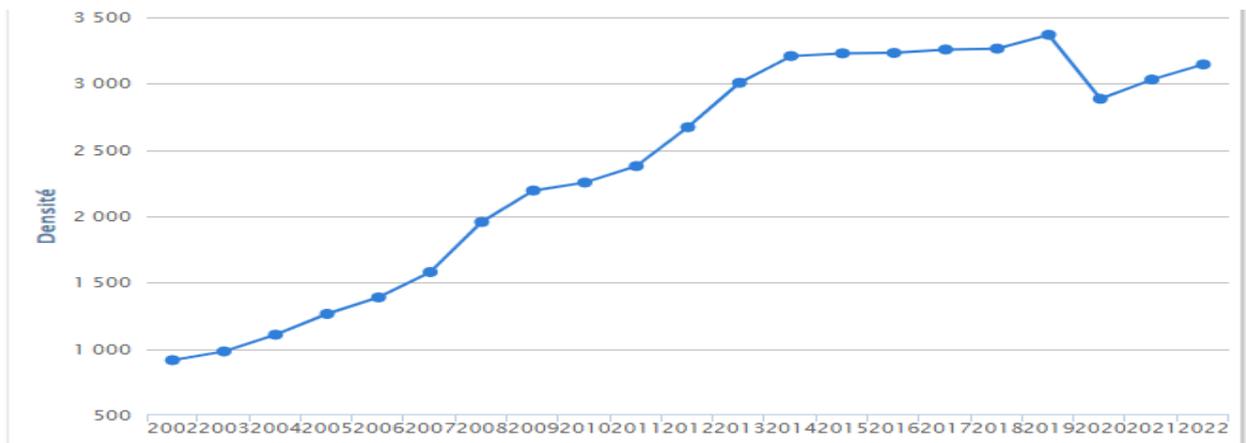
- **Risk Management:** Higher insurance density suggests that a higher percentage of the population is utilising insurance as a tool for risk management purposes. Consequently, this can contribute to enhanced financial stability and reduced vulnerability to unforeseen circumstances.
- **Policy Making:** For policymakers and regulators, insurance density serves as a valuable tool that can help identify gaps and deficiencies in the insurance market, as well as areas where further development and additional enhancement are required. It also aids in the assessment of the effectiveness of current insurance policies and regulations in place.

Insurance density varies significantly across diverse regions and economies:

- **Developed Countries:** These countries typically exhibit elevated insurance density due to well-established insurance markets, advanced financial literacy, and greater disposable income levels.
- **Developing Countries:** Many developing countries have lower insurance density compared to more developed countries. This is primarily due to factors such as lower income levels, lack of awareness and knowledge about insurance products, and insufficient regulatory frameworks and structures. For example, countries in Africa, parts of Asia, and Latin America are some instances to consider.

The following figure shows the development of insurance density in Algeria

Figure03: The development of insurance density in Algeria 2000-2022



Source : (Evolution de la densité)

3. Impact of Insurance on Unemployment and Its Determinants

The insurance sector is a key player in modern economies. It goes beyond just providing financial protection and risk management. It also serves at contributing to overall economic stability and growth. Moreover, one of the indirect yet significant impacts of the insurance sector is its influence on unemployment levels in a given economy. This document, therefore, delves into the intricate ways in which the insurance industry can affect employment rates, offering a multifaceted perspective

on the dynamics of this relationship.

In order to comprehend the employment landscape in Algeria, it is necessary to explore the intricacies and complexities of its current state and historical evolution

3.1. Unemployment in Algeria

The table presented below illustrates the progression of unemployment rates in Algeria spanning from the year 2000 to 2020.

Table1: The Progression of Unemployment Rates in Algeria 2000 – 2020

Years	2000	2001	2002	2003	2004	2005	2006
Unemployment Rate%	29.77	27.3	27.2	23.7	17.7	15.3	12.3
Years	2007	2008	2009	2010	2011	2012	2013
Unemployment Rate%	13.8	11.3	10.2	10	10	11	9.8
Years	2014	2015	2016	2017	2018	2019	2020
Unemployment Rate%	10.6	11.2	10.5	11.7	11.82	11.14	13

Source: (الفصل-2- التشغيل، 2022)

At the onset of the new millennium, Algeria faced significant economic obstacles and challenges on the economic front. In particular, the high unemployment rate of 29.77% recorded in 2000 reflects the aftermath of the economic and political instability experienced during the 1990s. This period was marked by a noticeable decrease in economic activity. However, through implementing economic reforms and increasing investments in critical sectors such as energy and infrastructure, the unemployment rate showed a gradual decline, reaching 12.3% by 2006.

In 2007, the unemployment rate experienced a slight rise to 13.8%, likely due to the initial impacts of the global financial crisis. Nevertheless, Algeria's continued economic policies, with a significant emphasis on the energy sector, helped the country swiftly regain stability. As a result, the unemployment rate steadily declined to 9.8% by the year 2013. In particular, the energy sector, especially oil and gas industries, played a critical role in boosting the national economy and decreasing unemployment rates during this specific timeframe.

From 2014 onwards, the unemployment rate began to rise again, peaking 13% in 2020. Where it still faces several challenges linked to the significant levels of labour market segmentation. Moreover, in recent times, the local economy has been affected by the coronavirus (COVID-19) crisis, fluctuating oil prices. Consequently, these repercussions negatively impacted the Algerian job market landscape. (Employment in Algeria - Statistics & Facts, 2024)

3.2. Direct Employment in the Insurance Sector

Job Creation: The insurance industry serves as a major source on employment on a global scale. It offers a wide range of job opportunities, ranging from sales agents and underwriters to claims adjusters and actuaries. Furthermore, as the industry grows, it generates more direct employment opportunities.

Table2: Growth in the number of employees in the insurance sector in Algeria 2000 – 2020

Years	2000	2001	2002	2003	2004	2005	2006
Employment volume	7513	7708	7802	8499	8449	8691	8854
Years	2007	2008	2009	2010	2011	2012	2013
Employment volume	9424	9747	10463	10955	11261	11860	14116
Years	2014	2015	2016	2017	2018	2019	2020
Employment volume	14860	14855	14902	14284	14482	14181	14228

Source: (Evolution globale de l’effectif du secteur)

From the previous table, we can observe the progression of the number of employees in the insurance sector as follows:

Period 1: 2000-2006

Analysis: At the beginning of the millennium, the number of employees in Algeria's insurance industry stood at around 7,513. Over the years, this number steadily increased, reaching 8,854 employees by the year 2006. This growth reflects the expansion of the insurance sector and the rising demand for insurance services, which, in turn, necessitated hiring more skilled individuals to fulfil these requirements.

Period 2: 2007-2013

Analysis: During this timeframe, there was a significant growth in the number of employees, rising from 9,424 in 2007 to 14,116 in 2013. Several factors may account for this substantial increase:

First, increased Awareness of Insurance: As the recognition of the pivotal role of insurance grew, so did the demand for insurance offerings: products and services, leading to more hires.

In addition, company Expansion: Insurance companies expanded their operations and opened new branches across different regions. This strategic move has lead to additional employment opportunities in these areas.

Finally, legal reforms and government policies supported the growth of the

insurance sector.

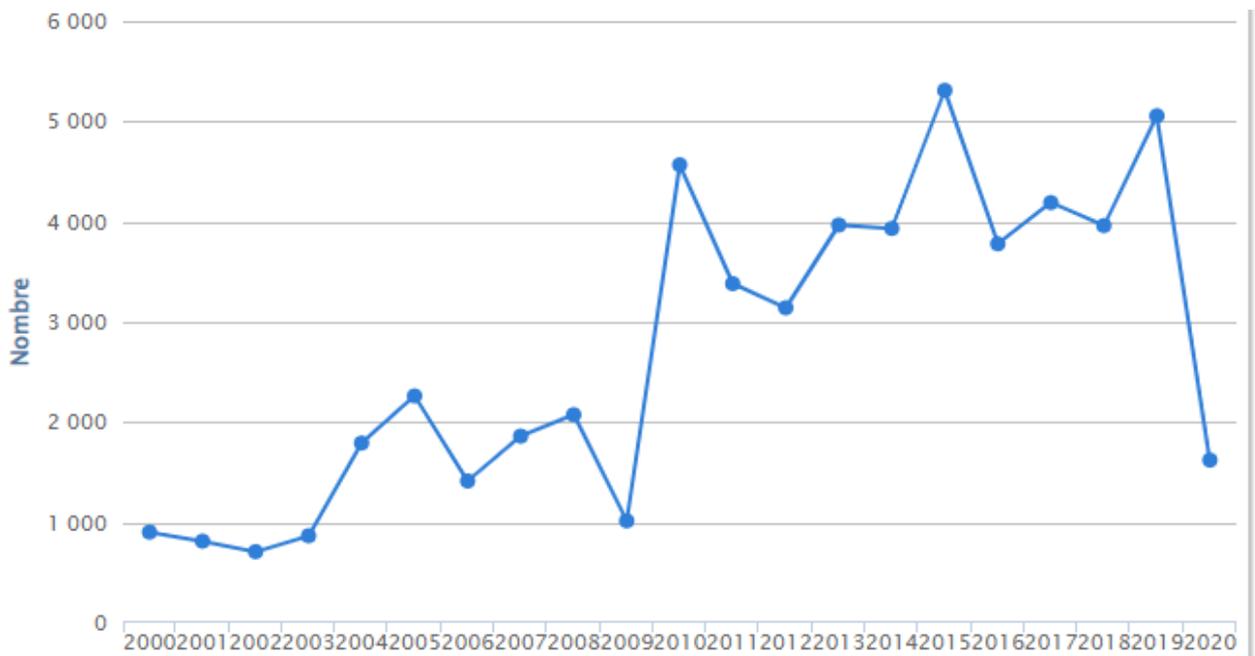
Period 3: 2014-2020

Analysis : During this period, there was a consistent increase in the number of employees until 2014, peaking at 14,860. However, it then fluctuated and saw a slight decrease to 14,228 by the year 2020. The fluctuation observed could be due to several influencing factors:

- **Efficiency Improvements:** Insurance companies have improved efficiency by leveraging the strategic utilisation of technology.
- **Economic Changes:** Economic conditions in the country could have influenced the insurance sector, potentially resulting in some job reductions.
- **COVID-19 Pandemic:** The global pandemic in 2020 likely affected the sector, leading to further reductions in employment rates. For more information, see the following reference(2022، جبلي و حوشين)
- **Professional Development:** The sector often provides extensive training and professional development opportunities, which helps employees acquire specialised skills that are valuable across diverse industries. Consequently, this strategy can reduce structural unemployment by enhancing the employability of the workforce.

The following figure illustrates the development of the number of employees trained in the insurance sector

Figure 04: The development of the number of employees trained in the insurance sector 2002-2022



Source: (Evolution des effectifs formés)

3.3. Indirect Employment Effects

- Supporting Other Industries

The insurance industry is a key player in supporting other sectors such as healthcare, automotive, and construction through the provision of necessary coverage. For instance, health insurance plays a critical role in facilitating the smooth functioning of the healthcare sector's operations. On the other hand, auto insurance stands as a pivotal element within the automotive industry. As a result, the stability and growth of these sectors can lead to increased employment prospects within them.

- Facilitating Business Continuity

Insurance is a fundamental component in the realm of risk management for businesses. It enables them to manage risks effectively, thereby facilitating continuity and stability within the organisation. As a result, when companies are shielded from potential financial losses, they are more likely to invest and expand in growth opportunities. Consequently, this in turn can lead to the generation of job creation.

- Unemployment Insurance

Specific types of insurance, including unemployment insurance, directly support individuals experiencing job loss. In fact, this financial assistance is a key driver that helps unemployed individuals sustain their purchasing power. This, in turn, supports overall economic demand and indirectly contributes to job retention and creation of new employment opportunities. For more details, see the following reference (What Is Unemployment Insurance(UI)?)

3.4. Challenges and Considerations

Despite the multifaceted impact insurance can have on unemployment sector, its critical role in this field is associated to a variety of factors, including:

- Regulatory Environment

The regulatory framework that governs the operations of the insurance industry can influence its ability to impact unemployment rates within an economy. For instance, overregulation poses a risk of stifling economic growth and limiting the creation of job opportunities. On the other hand, a well-balanced regulatory environment has the ability to enhance the sector's positive impacts and contributions. For more information, see the following reference(2023، علمي)

- Market Penetration

In areas with low insurance penetration, the potential positive impacts on employment might be constrained. Therefore, efforts to increase awareness and improve accessibility of insurance products are essential in maximizing the sector's benefits on job opportunities.

- Technological Advancements

Automation and digital transformation within the insurance sector carry the possibility of resulting in job displacement. However, they also create opportunities

for new types of jobs that demand diverse skill sets. Therefore, managing this transition is crucial to ensuring that technological advancements lead to positive impact on net job creation rather than job loss or displacement. For further details, see the following reference (Insurance Digital Transformation: Disrupting and Innovating, 2023) (Employment Impact of Digitalisation)

- Bancassurance

It is a term used to describe the strategic partnership between a bank and an insurance company, whereby the insurance company uses the bank's distribution channels to promote and offer insurance products to customers. In this arrangement, both parties benefit: the bank earns additional revenue by diversifying its offers with a broader range of services to its clients, while the insurance company extends its market reach by gaining access to the bank's extensive customer base, facilitating a wider reach for its products and offerings. For more information, see the following reference(دردر، 2007)

In this model, banks act as intermediaries by providing their clients with a range of insurance products such as life insurance, health insurance, and other types of insurance policies alongside their standard banking services.

In this scenario, it is worth noting that, in this case, the insurance company provides its services in a manner where there is no physical presence of employees. For instance, a notable example of this approach is seen in the Cardiff Company, which is considered the first insurance company with foreign investment capital in Algeria. Initially, the expectation was for the company to contribute to absorbing part of the workforce. This could have happened through the creation of employment opportunities by establishing multiple branches in different districts in Algeria; however, this anticipation was not realised in reality. Instead, Cardiff Company opted to offer its services through forming a partnership with a bank.

Within the framework of expanding access to the insurance market for foreign companies to invest in Algeria, the National Fund for Savings and Reserve Bank (CNEP) signed for a partnership agreement with Cardiff Algeria, a subsidiary of BNP Paribas Bank, on 25th March 2008(صفحة 179، 2020، مصداق). Specifically, this collaboration falls under the umbrella of banking insurance initiatives. As a result, this partnership allows the distribution of Cardiff Algeria's insurance offerings through the networks of the National Fund for Savings and Reserve Bank (CNEP). Moreover, during the early stages of its establishment, Cardiff Algeria Company developed insurance products tailored to bank clients, primarily including retirement plans, savings accounts, life insurance policies, as well as a range of products designed for providing coverage for loan insurance related to protection against disability or unemployment.

4. The Standard Study

To find the relationship between the employment size in the national insurance sector and the unemployment rate, we estimate the model using simple linear regression to identify the explanatory variables for the employment size in the national insurance sector in Algeria.

4.1. Identifying the Model Parameters: The mathematical model is described as follows:

- **Dependent Variable:** The number of unemployed individuals, denoted in the model by Y
- **Independent Variable:** The employment size in the national insurance sector, denoted by X

$$Y = \beta_0 + \beta_1 X + \epsilon$$

Where:

- Y: represents the number of unemployed individuals (dependent variable).
- X: represents the workforce size in the national insurance sector (independent variable).
- β_0 : is the intercept (constant term).
- β_1 : is the coefficient that measures the effect of X on Y.
- ϵ : denotes the error term, capturing unexplained factors influencing Y.

This equation serves as the foundation for statistical study of the relationship between unemployment and workforce size in the national insurance sector through the use of statistical methods, specifically linear regression.

Model Estimation: By applying the ordinary least squares (OLS) method using Eviews 9 software, and after entering the data and estimating the function, we obtained the results shown in the table below.

Table 3: Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2692217.	347970.5	7.738912	0.0000
X	-103.5087	30.38332	-3.409008	0.0028
R-squared	0.787515	Mean dependent var		1541864.
Adjusted R-squared	0.735891	S.D. dependent var		488855.2
S.E. of regression	398382.1	Akaike info criterion		28.71472
Sum squared resid	3.17E+12	Schwarz criterion		28.81390
Log likelihood	-313.8619	Hannan-Quinn criter.		28.73808
F-statistic	11.62132	Durbin-Watson stat		2.176697
Prob(F-statistic)	0.002783			

Source: Prepared by the researchers using Eviews 9.

Based on the results from the table above, which illustrate the relationship between the employment size in the national insurance sector and the unemployment rate, the estimated model can be written as follows:

$$Y_i = 2692217 - 103.5087X_i$$

$$R^2_{adjusted} = 0.7358 \quad DW = 2.17 \quad Obs = 22$$

4.2. Statistical and Economic Analysis of the Model

After estimating the model parameters, we now proceed with the statistical and economic analysis of the model, based on the latest estimation and the results presented in the table above.

- Statistical Analysis:

First, we study the model parameters through the lowest level of significance (prob) at a 5% significance level.

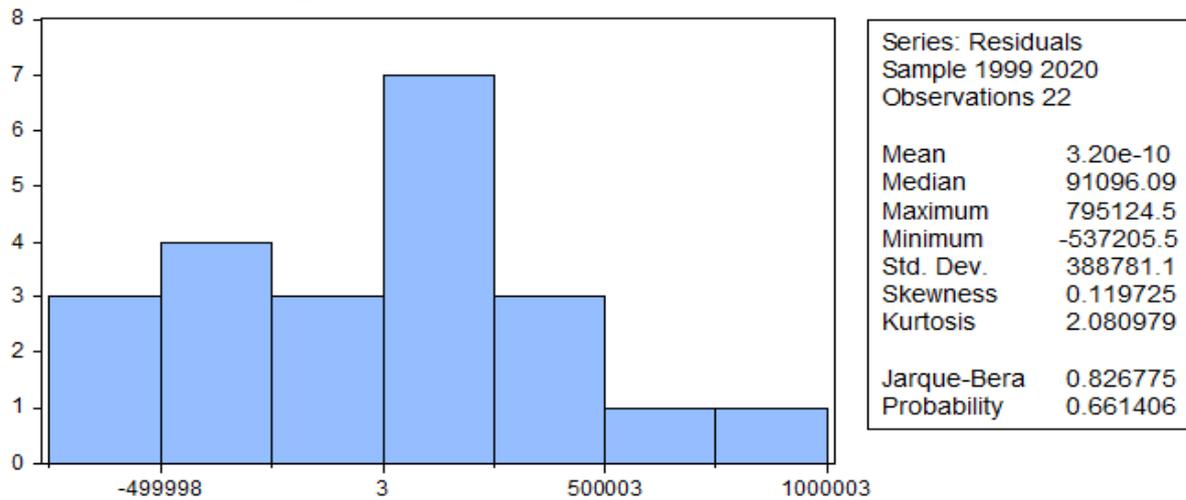
Significance of the Independent Economic Variables: We observe that the prob(t-statistic) for each parameter of the explanatory variables of the dependent variable Y is less than 0.05. This indicates that both the constant (c) and X have statistical significance at the 5% level in explaining the employment size in the insurance sector. Thus, the independent variable affects the dependent variable Y.

Overall Model Significance: By examining the coefficient of determination $R^2_{adjusted}$ and the F-statistic:

- **Coefficient of Determination $R^2_{adjusted}$:** The obtained value of the coefficient of determination is $R^2_{adjusted} = 0.7358$ indicating that the explanatory variables account for 73.58% of the variations in the dependent variable (employment size in the national insurance sector). This suggests a strong correlation between the dependent variable and the explanatory variable. The remaining percentage is explained by other factors not included in the model and contained in the error term.
- **Fisher Test (F-statistic):** We observe that F is significant; implying that there is a relationship between the dependent variable and the explanatory variables, and thus the overall model is significant.
- **Durbin-Watson Test (DW):** The value of DW is within the range indicating the independence of errors $[1.55, 2.35]$, suggesting that the model does not suffer from the problem of autocorrelation among errors, meaning the errors are independently distributed.

Regarding the residual distribution test, we note from the residual tests, as shown in the figure below, that the p-value for the Jarque-Bera test is 0.66, which is greater than 0.05. Hence, the residuals are normally distributed.

Figure 05: Normal Distribution of Residuals



Source: Prepared by researchers using Eviews software.

- Economic Analysis

After confirming the model's validity from a statistical perspective, we now examine the model from an economic perspective:

For the coefficient of the employment size in the national insurance sector in Algeria, it is negative. This implies that there is an inverse relationship: as the employment size in the national insurance sector increases, the unemployment rate decreases, which is economically acceptable.

5. Conclusion

Considering its impact on unemployment, insurance plays both a direct and indirect role in fostering job creation and reducing unemployment rates. On the one hand, it contributes directly by generating job opportunities within the insurance sector itself. On the other hand, it indirectly reduces unemployment rates by promoting economic stability.

Insurance operates as an essential mechanism for both individuals and businesses by providing financial protection against a range of risks. By doing so, it reduces financial volatility and cultivates a more resilient economic environment, which, in turn, boosts trust and confidence in the economy. The presence of such stability within an economy not only promotes sustainable economic growth but also acts as a driver for increasing investment opportunities. This, in turn, leads to the creation of new jobs and a decline in unemployment rates.

Additionally, unemployment insurance programs are indispensable as they provide a financial safety net for workers experiencing job loss. These programs serve to mitigate the negative economic impact of unemployment on both individuals and their families. These initiatives offer temporary financial support to individuals, enabling them to seek new job opportunities or acquire new skills. In doing so, they

help expedite the re-employment process.

Furthermore, economic risk insurance serves as an incentive for companies to invest and grow by reducing potential financial loss costs. consequently, this leads to the creation of new job opportunities and an increase in demand for labour.

In Conclusion, the insurance industry is a key driver in addressing unemployment challenges in Algeria through various means. It contributes significantly to reducing unemployment rates by supporting economic stability and providing financial protection for workers affected by job loss. As a result, the insurance sector's role is crucial in alleviating unemployment pressures within the economic landscape of Algeria.

- **Hypothesis Testing**

- **The first hypothesis: The impact of the insurance industry on unemployment rates varies according to the level of economic development of the country being studied.**

The credibility of this hypothesis stems from the fact that the level of a country's development influences the extent of maturity and reach seen in its insurance sector. In other words, as demand for insurance continues to grow, so does the number of employees in the sector, and vice versa. Therefore, this phenomenon highlights a direct correlation between demand trends and unemployment rates in the insurance industry.

- **The second hypothesis: The role of insurance in the realm of human resources management goes far beyond simply increasing the number of employed individuals.**

The validity of this hypothesis is supported by the fact that the impact of insurance on unemployment can be both direct and indirect. Direct effects encompass increasing the number of employed individuals, while indirect impacts include providing unemployment insurance.

- **Results**

- Insurance has a significant impact on various economic variables, albeit to varying degrees of influence depending on the economic development level of the country being analysed.
- The impact of insurance on unemployment extends beyond just those individuals working directly within the insurance sector. In addition to this immediate impact, there are indirect methods in motion, as demonstrated by the introduction of unemployment insurance as practiced in Algeria via the unemployment fund.
- Through statistical analysis, it has been identified that there is a negative correlation between the workforce size in the insurance sector and the number of unemployed individuals in Algeria. In other words, this means that as the

workforce size increases, the number of unemployed decreases.

- Several factors are important players in influencing the role of insurance in this area, with one of the key considerations being the application of technology in insurance and bancassurance. Consequently, this integration results in a reduction in the required workforce size within the insurance industry.
- Despite the inverse nature of this relationship, it remains relatively low in comparison to that of the developed countries. This can be attributed to several reasons, notably the low level of literacy, understanding and knowledge regarding insurance.

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