

Life Insurance and Economic Growth Nexus: Evidence from The MENA Region

Mouna Zerriaa¹

¹ Univ. Manouba, ESCT, LARIMRAF LR21ES29, Campus Universitaire Manouba, 2010, Tunisie

Correspondence: Mouna Zerriaa, Univ. Manouba, ESCT, LARIMRAF LR21ES29, Campus universitaire Manouba, 2010, Tunisie. Tel: 216-2276-7539. E-mail: mouna.zerriaa@gmail.com

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Abstract

This paper conducts an empirical analysis of the relationship between life insurance market development and economic growth in the Middle East and North Africa (MENA) region. The study examines data from 15 countries over the period from 1999 to 2023. This is accomplished by employing panel unit root tests, panel cointegration inquiries and pooled mean group (PMG) estimation to uncover potential causal relationships. The results pertinently demonstrate a substantial and positive long-term relationship between the life insurance sector and economic growth in the MENA region. They reveal that there is evidence in support of supply-leading hypothesis rather than the demand-following hypothesis. This long-term connection suggests that advancements and expansions within the life insurance industry are significantly associated with, and potentially contribute to, overall economic growth in the region. Enhancing the life insurance sector may be a proactive strategy to promote economic development, rather than a reaction to economic growth. Therefore, policymakers should promote insurance literacy, establish a supportive regulatory framework and provide tax incentives so as to enhance the uptake of life insurance. Furthermore, promoting financial inclusion, deploying digital platforms, and encouraging public-private partnerships can enhance the growth of life insurance, thereby contributing to broader economic development.

Keywords: economic growth, life insurance, MENA region, panel cointegration, supply-leading hypothesis

1. Introduction

The role of the financial system in fostering economic growth is a prominent and remarkable topic in financial economics literature. Efficiently functioning financial markets can significantly contribute to economic development. While much of the empirical research has focused on the effects of the banking sector and capital markets, highlighting their crucial role to attain economic prosperity, the impact of the insurance sector on economic growth has received relatively little attention. Despite this, the development of the insurance sector is also vital as it requires further exploration.

Life insurance is a contract between a policyholder and an insurer in which the insurer commits to paying a predetermined benefit to a designated beneficiary upon the death of the insured individual. In return for this assurance, the policyholder pays regular premiums to the insurance company. The primary purpose of life insurance is to offer financial security to the insured person's dependents or beneficiaries. This coverage helps to alleviate financial burdens such as funeral expenses, mortgage payments, and loss of income, ensuring that the financial stability of loved ones is maintained after the insured's death.

Life insurance offers substantial financial advantages by providing economic security for dependents and beneficiaries upon the death of the insured individual. It acts as an essential safety mechanism, compensating for lost income and addressing critical expenses such as mortgage obligations, educational fees, and everyday living costs. This form of financial assurance is instrumental in preserving the family's standard of living and stability during challenging periods. Additionally, life insurance is pivotal to estate planning, enabling the systematic transfer of wealth and assets to heirs while potentially reducing estate tax liabilities. In the realm of business, it ensures operational continuity by funding buy-sell agreements and offsetting the impact of losing key employees. Furthermore, some life insurance policies build cash value over time, serving as a tax-advantaged savings option that can be utilized for supplementary retirement income or as a reserve for emergencies.

Exploring the relationship between life insurance and economic growth in the MENA region is extremely intriguing, given its distinctive socio-economic environment. This area is marked by a wide range of economic development levels, differing financial market maturity, and unique cultural perspectives on insurance. The MENA region encompasses both affluent and wealthy nations with significant oil revenues and lower-income countries with alternative economic frameworks, creating an excellent opportunity to analyze how life insurance can impact economic growth in such diverse contexts. Additionally, the region's rapid urbanization, evolving financial sectors, and ongoing economic reforms present a dynamic environment for exploring the potential of life insurance to mobilize savings, enhance financial stability and support long-term investments, thereby fostering sustainable economic growth. Understanding this relationship can offer valuable insights for policymakers aiming to leverage financial instruments to stimulate economic growth in the region.

This article seeks to empirically investigate the potential causal link between the development of the life insurance sector and economic growth within the MENA region. To achieve this, we utilize panel data analysis, focusing on annual data spanning from 1999 to 2023.

This study adds significant value to the current body of research by highlighting the pivotal role of life insurance in fostering economic growth within MENA countries. To our knowledge, there have been no empirical investigations addressing this region until now. In reality, the impact of life insurance remains largely unexplored.

The structure of this article is delineated as follows: Section 2 provides a succinct examination of the life insurance markets within the MENA region. Section 3 analyses the current literature pertaining to the relationship between insurance and economic growth. Section 4 outlines the research methodology utilized in this investigation. Section 5 discusses the empirical results, while Section 6 offers a conclusion that encapsulates the principal findings.

2. Overview of Life Insurance Markets in the MENA Region

The life insurance markets within the MENA region are regarded as significantly less developed in comparison to their global counterparts (Zerriaa & Noubbigh, 2016). In 2020, the region had 603 operating insurance companies, averaging only 35 licensed insurers per country. In contrast, OECD countries have an average of 233 insurers per country underscoring the underdevelopment of the life insurance industry in the MENA region.

Data published by Swiss Re reveals that in 2020, life insurance gross premium income reached US\$21,573 million reflecting a compound annual growth rate of 8.03 per cent over the 1999–2020 period. Life insurance gross written premiums make up nearly 30 per cent of the total insurance business in the MENA region, yet they represent just 0.73 per cent of the global life insurance market.

Moreover, in the MENA region, life insurance density (premiums per capita) and penetration (premiums as a percentage GDP) stand at US\$128 and 0.55 per cent respectively compared to the global averages of US\$379 and 3.35 per cent, respectively. These indicators are significantly lower than those in developed markets, falling short of the European Union's figures (US\$2591 and 4.8 per cent), the OECD's averages (US\$1764 and 4.4 per cent). They are relatively close to those in Eastern Europe (US\$124 and 0.85 per cent) and Latin America and the Caribbean (US\$115 and 1.43 per cent). The life insurance industry has developed differently in each of the MENA countries. For example, life insurance penetration rates are as low as 0.1% in Algeria, Saudi Arabia, and Qatar. The only countries with rates higher than 1% are Morocco and Israel, where the life premium as a percentage of GDP is 2.69 percent in Israel and 1.75 percent in Morocco. In terms of life insurance density, Israel ranks first with US\$1246, followed by the United Arab Emirates with US\$272 and Bahrein is third place with US\$97.

3. Literature Review

The relationship between life insurance sector and economic growth could be classified in terms of causality with respect to four hypotheses (Alhassan, 2016; Pradhan et al., 2016):

- **Supply-leading hypothesis:** it suggests that a unidirectional causality from life insurance development to economic growth is present (Arena, 2008; Haiss & Sumegi, 2008). In fact, this hypothesis assumes that the development of life insurance sector is the driver of economic growth. It implies that the expansion of life insurance services can lead to overall economic development. This relationship can be explained in several ways. First, through capital accumulation, since life insurance companies collect premiums from policyholders and invest these funds in various financial instruments, such as stocks, bonds, and real estate. This accumulation of capital can then be channelled into productive investments, thereby contributing to economic growth. Second, life insurance provides individuals and businesses with a means of risk management. By offering financial protection against the uncertainties of life, such as death, disability, or illness, life insurance enables policyholders to undertake more investments and entrepreneurial activities,

knowing they have a safety net. This increased economic activity can stimulate growth. Third, life insurance products often encourage long-term savings. Policyholders commit to paying premiums over a long period, leading to a steady accumulation of funds. These savings can be mobilized for long-term investments in infrastructure, industry, and other sectors, promoting economic development.

- ***Demand-following hypothesis:*** It stipulates that the growth in the real economy stimulates the life insurance sector (Ward & Zurbruegg, 2000). According to this hypothesis, as an economy grows, the demand for life insurance products increases. This relationship may be explained as follows: Firstly, Economic growth often leads to higher incomes and greater wealth for individuals and businesses. As people become wealthier, they are more likely to purchase life insurance policies to protect their accumulated assets and provide financial security for their families. Secondly, Economic development is usually accompanied by improvements in education and enhanced financial literacy. Thus, as individuals become more financially literate, they better understand the benefits of life insurance, leading to increased demand for these products as shown by Zerriaa and Noubbigh (2016). Thirdly, economic growth often results in urbanization and industrialization. As more people move to urban areas and participate in the formal economy, they are more likely to seek life insurance to mitigate the risks associated with modern, urban life and to comply with employer-provided benefits and pension plans. Fourthly, with economic growth, businesses expand, and the need for corporate insurance products, including group life insurance policies for employees, increases. This growth in business activity drives the demand for life insurance services. Finally, economic development is often associated with improvements in healthcare and increases in life expectancy. Zerriaa and Noubbigh (2016) note that, as people live longer, they are more likely to consider life insurance as part of their long-term financial planning, increasing the demand for such products.
- ***Feed-back hypothesis:*** It posits that causality operates bidirectionally (Kugler & Ofoghi, 2005; Chang et al., 2014), suggesting a mutually reinforcing relationship between life insurance and economic growth. This hypothesis can be substantiated in several ways. Specifically, life insurance companies, by mobilizing savings from policyholders, direct these funds into investments in infrastructure, businesses, and other economic ventures, thereby stimulating economic growth. In return, economic growth generates more savings and disposable income, some of which are directed into life insurance products, creating a larger pool of investable funds. Moreover, life insurance provides a safety net that encourages individuals and businesses to undertake investments and entrepreneurial activities, knowing they have protection against certain risks. This can lead to increased economic dynamism and growth. Meanwhile, as the economy grows, businesses expand, and more people enter the formal workforce, the demand for life insurance products to manage risks and provide employee benefits increases, further strengthening the life insurance sector.
- ***Neutrality hypothesis:*** suggesting no causal relationship between life insurance development and economic growth (Guochen & Wei, 2012). According to this hypothesis, the development of the life insurance sector does not significantly influence economic growth, nor does economic growth significantly drive the development of the life insurance sector. The neutrality hypothesis suggests that life insurance and economic growth operate independently of each other. Life insurance development is seen as a result of demographic and cultural factors, regulatory environments, and individual preferences rather than a driver of economic growth. Similarly, economic growth is driven by factors such as technological advancements, capital accumulation, labor productivity, and government policies, without significant contributions from the life insurance sector. Life insurance might have a limited impact on the broader economy because it primarily serves as a risk management tool for individuals rather than a catalyst for large-scale economic change. While life insurance can provide financial security and support long-term savings, its direct influence on investment and economic activities may be minimal. On the other hand, economic growth can occur independently of the development of the life insurance sector. Countries with varying levels of life insurance penetration can still experience significant economic growth driven by other sectors like manufacturing, services and technology.

Several studies analyse the link between insurance sector development and economic growth based on different samples. Outreville (1990) examines the relationship between insurance development and economic growth in developing countries. He uses a cross-section data of 55 developing countries and OLS method to evaluate the link between property-liability insurance premium written and economic growth. It shows a positive relation between the logarithm of property-liability premium per capita and GDP per capita.

Ward and Zurbruegg (2000) examine the relationship between insurance growth and economic growth, based on a data of 9 OECD countries from 1961 to 1996. Through cointegration analysis, the authors find a unidirectional causality to run from insurance consumption to economic growth in Canada and Japan whereas a bidirectional relationship was found for Italy. However, for the other countries, there was no evidence of causality.

Haiss and Sumegi (2008) explore the causality between insurance activity and economic growth in Europe based on a sample of 29 European countries for the period 1992-2005. The study emphasises the effect of insurance sector as a provider of risk transfer and as an institutional investor. Results show a positive impact of life insurance on economic growth in the EU-15 countries, Switzerland, Norway and Iceland.

The link between insurance and economic growth has been underexplored in the context of African economies. Alhassan (2016) examines the causality between insurance market development and economic growth in 8 selected African countries from 1990 to 2010. Causality is observed in all eight countries. Specifically, a unidirectional causal relationship is identified, where insurance market development drives economic growth in Algeria, Madagascar, Kenya, Mauritius, Nigeria and South Africa. The results support the ‘supply-leading’ hypothesis. In Gabon, causality runs from economic growth to aggregate insurance penetration rates.

In the same vein, Asongu and Odhiambo (2019) investigate the impact of insurance on economic growth across a panel of forty-eight African countries from 2004 to 2014, using the Generalized Method of Moments for empirical analysis. The findings demonstrate that life insurance contributes to economic growth, while non-life insurance does not have any significant impact. Moreover, increasing both life insurance and non-life insurance results in negative net effects on economic growth.

Finally, a recent article by Dawd and Benlagha (2023) employs linear dynamic panel-data methods to explore the relationship between insurance (life, non-life, and total insurance) and economic growth in 16 OECD countries from 2009 to 2020. The findings indicate a positive association between insurance development and economic growth. Specifically, the relationship between life and non-life insurance premiums and economic growth is non-linear. The data analysis reveals an inverted U-shaped relationship. This suggests that while insurance premiums initially boost economic growth, beyond a certain point, they may hinder it. This supports the hypothesis in the literature that financial development’s impact on economic growth is non-linear, where excessive finance can eventually harm growth.

4. Methodology and Data

4.1 Model Specification

The following model is deployed so as to examine the relationship between life insurance and economic growth for the MENA region countries:

$$\Delta GDP_{it} = \eta_0 + \eta_{1i} PEN_{it} + \varepsilon_{it} \quad (1)$$

Where:

ΔGDP is the annual percentage change in gross domestic product, PEN is life insurance penetration, the subscripts i and t denote to the countries and years, respectively, while ε_{it} represents the error term.

4.2 Data

Our sample includes 15 countries covering the period from 1999 to 2023. It includes the following countries: Algeria, Bahrain, Egypt, Iran, Israel, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, Turkey and United Arab Emirates. The selection of countries in the sample is based on the availability of life insurance premiums data from 1999 to 2023.

We utilize annual aggregate data gathered from multiple sources, including life insurance penetration figures sourced from various editions of Sigma, a publication by Swiss Re.

Economic growth indicator is obtained from the World Bank database. We employ an unbalanced panel data set due to the absence of some annual data for the selected countries.

5. Empirical Results

We might recall that the aim of this article is to detect a potential causal relationship between life insurance development and economic growth in the MENA region.

Tables 1 provides summary statistics for the variables. The average economic growth rate is 3.97% for all 15 countries considered. Concerning the average penetration rate of life insurance, it represents 0.47% of GDP.

Table 1. Descriptive statistics

Variable	Mean	Median	Std.dev.	Min.	Max.	Observations
Economic growth	3.9770	1.8528	3.9506	-4.4445	12.1702	314
Life insurance penetration	0.4739	0.25	0.9297	0.01	3.06	314

By using the specification (1), we examine the existence of a causal relationship between life insurance penetration and economic growth in the MENA region. The estimation procedure involves three phases.

First, unit root tests are conducted for each variable. Second, the long-run cointegration relationships between these variables are tested. Based on the results from the unit root and cointegration tests, the third phase involves estimating a panel vector error-correction model in order to determine the Granger causal relationship between the variables.

In the first step, this study checks the order of integration of each variable by conducting Augmented Dickey-Fuller-Fisher Chi-square unit root test (ADF). There are many unit root tests for panel data to choose from. These tests are: Levine-Lin-Chu test, Breitung test, Im-Pesaran-Shin test and Augmented Dickey Fuller-Fisher Chi square test. The choice of the latter test (Augmented Dickey Fuller Fisher type test) is justified by the fact that this test is recommended for unbalanced panels and small data sets, which is our case.

The null hypothesis for this test is that all panels contain a unit root. Table 2 presents the results of panel unit root tests for each variable. While in levels our variables are non-stationary, they become stationary at the 1% significance level in their first differences. This implies that the considered variables are integrated of order 1.

Table 2. Results of panel unit root tests (ADF Fisher type test)

Variable	Statistics	Level	First difference	Order of integration
ΔGDP	P	32.8449	407.3717***	I (1)
	Z	0.0837	-16.5600***	
	L*	0.0785	-27.3848***	
	Pm	-0.1401	45.2780***	
PEN	P	44.5818	322.6244***	I (1)
	Z	-0.5698	-13.2446***	
	L*	-0.7346	-21.6046***	
	Pm	1.2832	35.0008***	

Note. The symbols (*), (**), and (***) indicate the rejection of the null hypothesis of the existence of unit root at the 10, 5 and 1%, respectively.

In the second step, this study deploys Pedroni's (1999) panel cointegration tests to investigate the presence of a long-term relationship between economic growth and the advancement of life insurance markets. The results of panel cointegration test, based on these seven statistics, are presented in Table 3. Out of seven statistics, five are significant at 1%, 5% and 10% significance levels. Thus, the null hypothesis of no cointegration can be rejected. This suggests that there is indeed a long-run relationship between economic growth and life insurance development in the MENA region.

In the final step, we utilize Pooled Mean Group (PMG) estimators (Pesaran et al., 1999) to test causality between life insurance development and economic growth in the MENA region. We use Autoregressive Distributed Lag Cointegration technique: ARDL (1,1,1).

$$\Delta GDP_{it} = \Phi_i(GDP_{i,t-1} - \theta_{0i} - \theta_{1i}PEN_{i,t-1}) + \theta_{2i}\Delta PEN_{it} + \varepsilon_{it} \quad (2)$$

Table 3. Panel cointegration test results (Pedroni test)

	Calculated value	P-value
Panel v-statistic	1.239	0.39
Panel ρ-statistic	-3.966**	0.07
Panel PP-statistic	-6.745***	0.00
Panel ADF-statistic	-1.559*	0.10
Group ρ-statistic	-1.778	0.61
Group PP-statistic	-6.966***	0.00
Group ADF-statistic	-1.829***	0.00

Note. The symbols (*), (**), and (***) indicate statistical significance at the 10, 5, and 1% level, respectively.

Table 4 reports estimates obtained from the Pooled Mean Group model. The findings prove the significance of the long-run relationship between life insurance penetration rate and GDP per capita growth rate at the 5% level. Therefore, the positive effect of the development of life insurance branch on economic growth in MENA region is proven, suggesting the validity of the 'supply-leading hypothesis'.

Our findings are in line with Ching et al. (2010) and Haiss and Sumegi (2008) which prove the existence of long-run positive relationship between the development of life insurance and economic growth, respectively, in Malaysia and the European Union countries.

However, in the short-run the significant effect of life insurance on economic growth is not validated given that the coefficient associated to the variable penetration is insignificant. This result may be due to several factors. Firstly, the economic benefits of life insurance, such as increased savings and investments, typically require time to materialize, creating a lag before any positive impact is observed.

Additionally, the life insurance market may still be developing in many economies, lacking the necessary infrastructure, regulatory frameworks, and consumer awareness to drive significant economic growth immediately. Initial costs and premium outflows associated with life insurance can also temporarily divert funds from other economic activities, potentially reducing immediate economic output.

Table 4. Pooled mean group (PMG) estimation results

	Pooled mean group (PMG)
<i>Error correction coefficients</i>	0.6886*** (8.05)
<i>Long-run coefficients</i>	
PEN	2.0223** (2.34)
<i>Short-run coefficients</i>	
PEN	-3.6973 (-0.36)
Constant	-0.1045 (-0.19)
Log likelihood	-543.3668
Number of countries	15
Number of observations	314

Note. The symbols (*), (**), and (***) indicate statistical significance at the 10, 5, and 1% level, respectively. Standard errors are in parentheses.

Furthermore, low market penetration in the short run denotes that only a small percentage of the population may be purchasing life insurance, insufficient to impact the broader economy substantially. Economic conditions, such as recessions, can overshadow any short-term benefits, and consumer hesitation to invest in life insurance due to trust or understanding issues which further slows down its potential impact.

The results in Table 4 also show that the error correction term is significant at the 1% level and positive. This confirms the positive effect of the development of life insurance on economic growth in the long-run.

Finally, the issues related to regulations and the structure of the financial and insurance industries, combined with short-term fluctuations in the market that impact investment returns on premiums, can impede the immediate benefits of life insurance on economic growth.

Therefore, insurers should increase public awareness of the benefits of life insurance through effective information dissemination. Moreover, these countries might consider developing the “takaful” industry (a form of Islamic insurance based on mutuality and Islamic investment principles), as religious barriers limit the growth of conventional life insurance in the MENA region (Zerriaa & Noubbigh, 2016). By applying these recommendations, policymakers may intensify the contribution of life insurance sector in economic growth.

In addition, policymakers should promote insurance literacy by implementing educational programs to raise public awareness and understanding of life insurance benefits and integrating insurance education into school curricula and community outreach programs.

Moreover, it is recommended to establish a regulatory framework that fosters a competitive and transparent insurance market. Policy makers should ensure regulations so as to protect consumers while encouraging innovation and product diversity in the insurance sector.

Lastly, we recommend that regulators encourage the development of microinsurance products to cater to low-income households and small businesses. They may also promote digital platforms for insurance services to increase accessibility, especially in remote areas.

By implementing these recommendations, policymakers can create a supportive environment that boosts the growth of the life insurance sector, while insurers can effectively meet market demands, both of which can contribute to sustained economic growth under the supply-leading hypothesis.

6. Conclusion

This paper examines the causal relationship between life insurance market development and economic growth in the MENA region based on a sample of 15 countries over the period 1999–2023. We utilize life insurance penetration rates as an indicator of life insurance sector development. This article applies panel unit root, panel cointegration tests and pooled mean group estimation to demonstrate the possible causal relationship.

The findings reveal that the development of life insurance market does not seem to have an impact on economic growth in the short-run. However, in the long-run, the impact becomes significant and positive supporting the validity of the ‘supply-leading’ view. Thus, the MENA region countries should focus attention on developing their life insurance sectors in order to sustain economic growth in the long-run.

In this context of the supply-leading hypothesis, where life insurance development is a catalyst for economic growth, policymakers should implement a multifaceted strategy to bolster the life insurance sector. This includes promoting insurance literacy through educational programs and integrating insurance education into school curricula to enhance public understanding and participation.

Additionally, creating a robust regulatory framework that encourages competition, transparency, and innovation in the insurance market is quite essential. Providing tax incentives and deductions on life insurance premiums can make policies more attractive and affordable, thereby increasing uptake.

Policymakers should also focus on financial inclusion by supporting the development of micro- insurance products and leveraging digital platforms to reach underserved populations. Furthermore, fostering public-private partnerships can help develop tailored insurance products that address specific public needs, such as pension plans and health insurance, and integrate life insurance into broader social safety nets. By adopting these measures, policymakers can create a conducive environment for life insurance growth, thereby driving sustained economic development.

To conclude, the research indicates that although the growth of the life insurance market in the MENA region may not significantly influence economic growth in the short term, it does have a notable and positive impact over the long term. This finding aligns with the supply-leading hypothesis. This suggests that life insurance development is crucial for sustained economic growth over time. Policymakers in the MENA region should therefore focus on enhancing the life insurance sector by promoting insurance literacy, creating a robust regulatory framework, and offering tax incentives to encourage greater participation in the market. This long-term approach can help secure economic stability and growth in the region.

One limitation of this study is its reliance on life insurance penetration rates as the sole indicator of life insurance sector development, potentially overlooking other factors like product diversity and market efficiency that may also influence the relationship between life insurance and economic growth. Future research might explore the role of institutional quality and governance in strengthening the relationship between life insurance development and economic growth in the MENA region.

References

- Alhassan, A. L. (2016). Insurance market development and economic growth: Exploring causality in 8 selected African countries. *International Journal of Social Economics*, 43(3), 321-339. <http://dx.doi.org/10.1108/IJSE-09-2014-0182>
- Arena, M. (2008). Does insurance market activity promote economic growth? A cross-country study for industrialized and developing countries. *The Journal of risk and Insurance*, 75(4), 921-946. <https://doi.org/10.1111/j.1539-6975.2008.00291.x>
- Asongu, S. A., & Odhiambo, N. M. (2019). Insurance policy thresholds for economic growth in Africa. *The European Journal of Development Research*, 1-18. <https://doi.org/10.1057/s41287-019-00234-2>
- Chang, T., Lee, C. C., & Chang, C. H. (2014). Does insurance activity promote economic growth? Further evidence based on bootstrap panel Granger causality test. *The European Journal of Finance*, 20(12), 1187-1210. <https://doi.org/10.1080/1351847X.2012.757555>
- Ching, K. S., Kogid, M., & Furuoka, F. (2010). Causal relation between life insurance funds and economic growth: Evidence from Malaysia. *ASEAN Economic Bulletin*, 27(2), 185-199. <https://doi.org/10.1355/ae27-2c>

- Dawd, I., & Benlagha, N. (2023). Insurance and economic growth nexus: New Evidence from OECD countries. *Cogent Economics & Finance*, 11(1), 2183660. <https://doi.org/10.1080/23322039.2023.2183660>
- Guochen, P., & Wei, S. C. (2012). The relationship between insurance development and economic growth: A cross-region study for China. In *China International Conference on Insurance and Risk Management*, July.
- Haiss, P., & Sümegi, K. (2008). The relationship between insurance and economic growth in Europe: A theoretical and empirical analysis. *Empirica*, 35(4), 405-431. <https://doi.org/10.1007/s10663-008-9075-2>
- Kugler, M., & Ofoghi, R. (2005). Does insurance promote economic growth in Europe: A theoretical and empirical analysis. *Empirica*, 35(4), 405-31. <http://repec.org/mmfc05/paper8.pdf>
- Outreville, J. F. (1990). The economic significance of insurance markets in developing countries. *Journal of Risk and Insurance*, 487-498. <https://doi.org/10.2307/252844>
- Pedroni, P. (1999). Critical values for cointegration tests in heterogeneous panels with multiple regressors. *Oxford Bulletin of Economics and Statistics*, 61(1), 653-670. <https://doi.org/10.1111/1468-0084.0610s1653>
- Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Statistical Association*, 94(446), 621-634. <https://doi.org/10.1080/01621459.1999.10474156>
- Pradhan, R. P., Arvin, B. M., Norman, N. R., Nair, M., & Hall, J. H. (2016). Insurance penetration and economic growth nexus: Cross-country evidence from ASEAN. *Research in International Business and Finance*, 36, 447-458. <https://doi.org/10.1016/j.ribaf.2015.09.036>
- Ward, D., & Zurbrugg, R. (2000). Does insurance promote economic growth? Evidence from OECD countries. *The Journal of Risk and Insurance*, 489-506. <https://doi.org/10.2307/253847>
- Zerriaa, M., & Noubbigh, H. (2016). Determinants of Life Insurance Demand in the MENA Region. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 41(3), 491-511. <https://doi.org/10.1057/gpp.2016.1>

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