Exploring the Linkages between Insurance Receivables and Economic Development: Evidence from Egyptian Insurance Sector

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Abstract:

Using a multiple linear regression model, this study examines the link between the Egyptian insurance market and economic development from 2000/2001 to 2020/2021. The analysis comprises Egypt's 25 non-life insurance businesses and 16 life insurance companies. Insurance receivables are assessed by life investment, non-life investment, life premiums, and non-life premiums. Egyptian economic growth (GDP) is the dependent variable. The findings indicate that non-life investments and life premiums have a statistically significant positive association with GDP, but life investments and non-life premiums do not. The regression model accounts for 99.8% of GDP fluctuations, demonstrating a strong link between the dependent and independent variables. These findings imply that the Egyptian insurance market has a substantial influence on the country's economic growth. The recommendations are that the government should develop measures that guarantee the enforcement of more insurance policies and promote the benefits of such policies to people. Additionally, the government administration should take procedures that might improve insurance investment returns to support the insurance sector's role in economic development.

Keywords: Economic development; Insurance premiums and investments; GDP; Insurance receivables.

JEL Classification: G22, O16.

Introduction:

Insurance receivables are amounts owing by policyholders or clients to an insurance firm. This covers any premiums paid in advance for coverage by policyholders, as well as any claims made but not yet paid out (Nwani, 2019). Insurance receivables are included as an asset on an insurance company's balance sheet since they represent a future source of income for the firm. When premiums are received and claims are paid out, the value of insurance receivables might change over time.

Gross Domestic Product is the total monetary worth of goods and services generated by a country during a specific period of time. It is regarded as a critical economic statistic widely used to assess the country's overall performance (Goossens et al., 2007). The importance of GDP can be tangible in its ability to assess a country economic well being and to be as a baseline for gauging economic growth. Consequently, GDP is a useful tool for politicians, investors to make judgements for a country economic policies and development initiatives.

GDP has various advantages that are critical for the development and prosperity of every civilization. One of the most important advantages of GDP is that it gives a consistent means of measuring a country's total economic performance. GDP may also be used to assess a country's residents' level of life. People usually have more access to products and services when GDP rises, which can contribute to a higher standard of life. This is evident in nations with strong economic growth, where individuals frequently have access to improved healthcare, education, and employment possibilities. A greater GDP can also assist to lower poverty rates since it frequently leads to more job possibilities and higher earnings. Also, GDP is important in international commerce. Countries with greater GDPs are frequently regarded as more economically stable and appealing for investment (Van den Bergh, 2009). This can lead to increasing foreign investment, which can help drive economic expansion even further. Furthermore, nations with larger GDPs may frequently negotiate better trade accords, which can assist enhance their overall economic performance.

Insurance receivables have the potential to impact a country's GDP (GDP). If an insurance firm receives premiums and has outstanding insurance receivables, this might add to GDP since it reflects domestic economic activity. Furthermore, if the insurance firm invests the premiums received in

other areas of the economy, such as stocks, bonds, or real estate, this can boost GDP since the investments produce extra economic activity and money (Muda, 2020). Similarly, if the insurance business pays out claims to policyholders, this will have an effect on GDP. Because claim payments might make a transfer of money from the insurance firm to policyholders who can then use the funds for consumption or investment.

Insurance receivables can play an important role in the calculations of GDP and might have an impact on the overall economic activity of a country. This research aims to introduce the relationship between insurance receivables and Egypt's GDP then provide insights about the potential benefits and challenges of further develop of the insurance sector in the country.

Literature Review:

Insurance receivables are important for financial systems and can have an impact on the economic growth. We hope to present a good idea of current research on the linkage between insurance receivables and economic growth in the following literature review. With a particular emphasis on GDP as a measure of economic growth.

One study by Ul Din et al. (2017) analyzed the connection between insurance and economic growth in 20 countries from 2006 to 2015. The insurance sector was evaluated using three different metrics: net written premiums, penetration, and density. The study found a positive relationship between life insurance and economic growth in developed countries when measured through net written premiums. Fashagba (2018) also examined the relationship between insurance and economic growth. The study found a positive but not significant relationship between non-life insurance and economic growth and a negative but significant relationship between life insurance and economic growth.

 Similarly, Raji and Omojola (2019) investigated the impact of insurance on the Nigerian economy using data from 1991 to 2017. The study found that life insurance and non-life insurance have a significant positive impact on GDP, while total insurance investment does not. Raji et al. (2023) investigates how insurance companies contribute to reducing economic recession. The study finds that insurance investment, asset, and performance are effective tools in mitigating economic recession.

Singhal et al. (2022) This study investigates the relationship between insurance market growth and economic factors in Asia using data from 37 countries over 16 years. The study employs the Generalized Method of Moments and panel Granger causality tests. The findings suggest that the drivers of insurance market growth differ across Asian regions, highlighting the importance of understanding regional differences. Osei-Bonsu et al. (2022) conducted a study on the impact of insurance on economic growth, which has a significant transformation in the insurance industry over the past few decades. The findings suggest a positive and significant relationship between insurance and economic growth, and long-run effects of innovations in insurance on economic growth.

Apergis and Poufinas (2020) examined the contribution of insurance growth to economic growth by studying the benefits of insurance, which include income, life and property protection, and income accumulation. The study finds that gross claims payments, gross operating expenses, gross premia, and insurance penetration are significantly and positively related to economic growth, both before and after the 2008 financial crisis. Peleckienė et al. (2019) also investigated the relationship between insurance and economic growth in European Union countries that belong to the European Insurance Federation. The study found a positive statistically significant relationship between insurance penetration and economic growth in Luxembourg, Denmark, The Netherlands, and Finland, while a negative statistically significant relationship was identified in Austria, Belgium, Malta, Estonia, and Slovakia.

Yıldırım (2015) analyzed the development and economic effects of the insurance sector. The researcher analyzes the data using the Granger Causality Test and VAR Model, using quarterly data from 2006 to 2014. They find a positive relationship between economic development and the insurance sector, particularly in terms of life premium product, non-life premium product, and total premium product. Similarly, Ionescu (2012) investigated that insurance is essential for long-term progress in the 21st century, citing natural disasters and acts of terrorism as examples of events that have caused economic losses and suffering. Countries with well-developed insurance industries tend to have stronger economies and greater prosperity.

Olayungbo and Akinlo (2016) conducted a study on the impact of insurance penetration on economic growth in eight African countries for the period of 1970-2013. Insurance penetration is used to measure insurance demand, and a Bayesian Time Varying Parameter Vector Auto regression (TVP-VAR) model with stochastic volatility is used to analyze the short and long-term relationships between the variables of interest. The findings indicate a positive relationship between insurance penetration and economic growth in Egypt. Finally, Victor (2013) investigated the impact of insurance on economic. The findings suggest a significant positive relationship between insurance premium and economic growth, with recommendations for policy efforts to grow the insurance industry.

Overall, the literature suggests that insurance receivables have a positive impact on economic growth, with varying degrees of significance depending on the sector and country in question. However, more research is needed to better understand the mechanisms through which insurance receivables promote economic growth and to account for other factors that may influence this relationship.

Data and Methodology

The statistics in this article are for the Egyptian insurance market for life and non-life from 2000/2001 to 2020/2021, and they include investments for life, investments for nonlife, premiums for life, premiums for nonlife, and gross domestic product acquired from the Financial Regulatory Authority (FRA).

This analysis included all 25 Egyptian non-life insurance firms and 16 Egyptian life insurance companies. The analysis relied on secondary data from annual statistical books from 2000/2001 through 2020/2021. Following that, we applied the linear multiple regression analysis model.

There are two variables in this study: independent and dependent variables. Insurance receivables are the independent variable, and they are measured by life investment, nonlife investment, life premiums, and nonlife premiums. The dependent variable, on the other side, is Egyptian Economic Growth.

Table 1 Total amount of Investment and Premiums for life and nonlife insurance Egyptian market and gross domestic product. In Thousands (EGP)

Year	Investments for life	Investments for nonlife	Premiums for life	Premiums for nonlife	Gross Domestic Product
2000/2001	7067474	4940675	1450662	664795	358700000
2001/2002	7518523	5326266	1563223	720489	378900000
2002/2003	8148890	5930833	1945011	939377	417500000
2003/2004	8578797	6975112	2464211	1338469	485300000
2004/2005	9379860	7432888	2767061	1521731	538500000
2005/2006	10365597	8329169	2803500	1787533	617700000
2006/2007	11416483	9841127	3273802	2413142	744800000
2007/2008	15732362	13261673	4169950	3277826	895500000
2008/2009	14908950	14001665	4750238	3067760	1042200000
2009/2010	15000125	16710991	5173824	3607811	1206600000
2010/2011	15976681	19493997	5655426	3999723	1371100000
2011/2012	16574426	22109904	6088898	4483066	1674700000
2012/2013	17777787	24605551	6953525	5267312	1860400000
2013/2014	20183450	28399029	7546710	6154558	2130000000
2014/2015	20526474	31943549	8117980	7339332	2443900000
2015/2016	23988847	36452801	9009391	8324850	2709400000
2016/2017	39442129	46116987	12328621	10145598	3470000000
2017/2018	44938106	54419752	15621435	12121200	4437400000
2018/2019	43962100	58031880	18061952	15307834	5322100000
2019/2020	44187220	63537132	20244778	18476067	5855000000
2020/2021	51517205	79949183	21989681	23975571	6341000000

Source: Financial Regulatory Authority (FRA).

Table 1 illustrates the variables used in this research. Based on the above information, the following model is employed:

$$GDP = \beta_0 + \beta_1 LINV + \beta_2 NLINV + \beta_3 LPR + \beta_4 NLPR + \varepsilon$$

Where

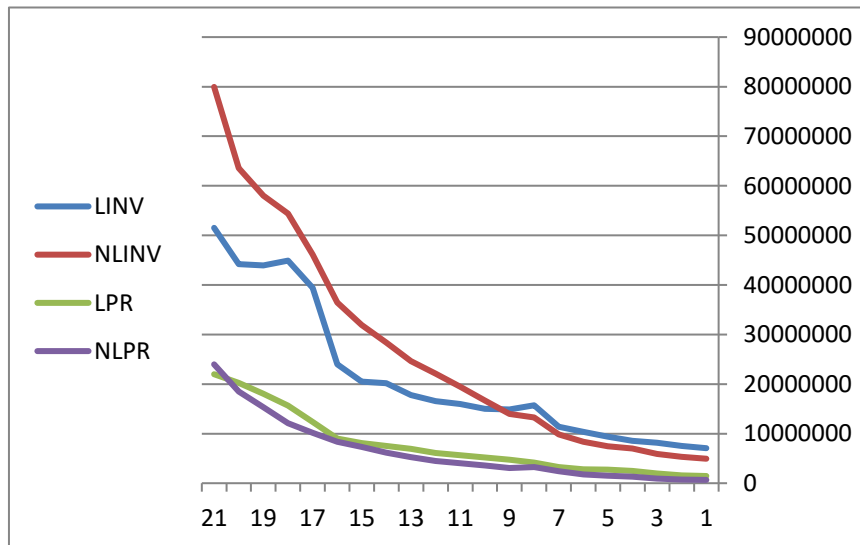Gross domestic product (GDP) represents Y

Insurance receivables (IREC) represents X include:

X1 = life investments (LINV)

X2 = non-life investments (NLINV)

X3 = life premiums (LPR)

X4 = non-life premiums (NLPR)

Figure 1 Independent Variables

The graph depicts the trend of five variables from 2000 to 2021: investments for life insurance, investments for non-life insurance, premiums for life insurance, and premiums for non-life insurance.

The graphic shows that the five factors have increased over time, showing expansion in the insurance business and the economy over the 21 years. Investments in both life and non-life insurance have increased dramatically since 2008. Premiums for both life and non-life insurance have a steady increased over time, with a higher increase between 2017 and 2021.

This study employed a comparative approach assessment with the SPSS software program. We utilized the board's information approach to investigate the impact of insurance receivables on Egyptian economic development. This study used descriptive statistics to calculate the average, range, median, standard deviation, skewness, and kurtosis. The primary reason for descriptive evaluation is to determine the median amounts and standard deviations of both insurance receivables and Egypt's GDP, as well as to identify enterprises that produced the highest and lowest premiums and profits each year. To examine the degree of the association between the variables, the model specified in this study is analyzed using the standard least square panel of regression analysis.

5. Empirical Results

Table 2 Descriptive Statistics: - Variables of Analysis

Variable	Range	Mean	Median	Std. Deviation	Ske-wness	Kurt-osis
LINV	44449731	21294832.7	15976681	14332939.5	1.05	-0.35
NLINV	75008508	26562388.8	19493997	22031006.8	1.06	0.18
LPR	20539019	7713327.6	5655426	6304935.7	1.18	0.28
NLPR	23310776	6425430.7	3999723	6349797.9	1.52	1.84
GDP	5982300000	2109557142.9	1371100000	1901827207.6	1.15	0.15

Source: Authors' calculations based on SPSS software package

Table 2: shows the descriptive statistics for study variables: Life Investments (LINV), Non-life Investments (NLINV), Life Premiums (LPR), Non-life Premiums (NLPR), and Gross Domestic Product (GDP) based on 21 observations of all the 25 Egyptian non-life insurance companies and 16 Egyptian life insurance companies operating in the market. It may be noted that the investments for life, the the investments for non-life, the premiums for life, the premiums for non-life and gross domestic product all have a positive mean. Life investments (LINV) averaged 21294832.67 and ranged from 7067474 to 51517205. Non-life investments (NLINV) averaged 26562388.76 and ranged from 4940675 to 79949183. Life premiums (LPR) averaged 7713327.57 and ranged from 1450662 to 21989681. Non-life

premiums (NLPR) averaged 6425430.67 and ranged from 664795 to 23975571. Gross domestic product (GDP) averaged 2109557142.86 and ranged from 358700000 to 6341000000. The skewness values are higher for Non-life Premiums, suggesting a greater degree of asymmetry in the data. The kurtosis value for GDP is close to zero, indicating a fairly normal distribution.

Table 3: correlation between selected variables

	LINV	NLINV	LPR	NLPR	GDP
LINV	1.000	0.982	0.983	0.958	0.979
Sig. at the 0.01 level (2-tailed)		0.000	0.000	0.000	0.000
NLINV		1.000	0.992	0.987	0.993
Sig. at the 0.01 level (2-tailed)			0.000	0.000	0.000
LPR			1.000	0.987	0.998
Sig. at the 0.01 level (2-tailed)				0.000	0.000
NLPR				1.000	0.986
Sig. at the 0.01 level (2-tailed)					0.000
GDP					1.000
Sig. at the 0.01 level (2-tailed)					

Source: Authors' calculations based on SPSS software package

Table 3 shows the correlation coefficients and significance values for all variables. Looking at the table, the correlations between the insurance variables and GDP are strong. LINV, NLINV, NLPR, and LPR show a positive correlation with GDP. The results suggest that the insurance variables are strongly associated with each other and with GDP.

Table 4: ANOVA

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	7.22E+19	4	1.8E+19	1799.484	0
Residual	1.6E+17	16	1E+16		
Total	7.23E+19	20			

Source: Authors' calculations based on SPSS software package

The ANOVA table indicates how well the first linear model understands the data. The F-value =1799.484 implies that the linear regression model explains a significant portion of the data and that random changes are minimal. When the model has more than one independent variable, the significance of the F-test is underlined. In this example, the F- test checks all of the model's parameters.

H_0:$\beta_1 = 0$; $\beta_2 = 0$;.......; $\beta_k = 0$

H_1:$\beta_1 \neq 0$; $\beta_2 \neq 0$;.......; $\beta_k \neq 0$

If the null hypothesis is rejected, we proceed to test the model's parameters, testing the significance of each parameter separately from the others. It is also feasible to compute the coefficient of determination, which equals

$$R^2 = \frac{SSR}{SST} = \frac{7.22E+19}{7.23E+19} = 0.998$$

Consequently, the model interprets 99.8% of the changes in dependent variable values, whereas the remaining 0.2% are attributable to random causes.

Table 5: Coefficients for GDP

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-168818306.9	51388395		-3.285	0.005
LINV	-22.971	10.93	-.173-	-2.102	0.052
NLINV	28.806	10.293	0.334	2.799	0.013
LPR	295.815	37.345	0.981	7.921	0

Source: Authors' calculations based on SPSS software package

The previous table estimates of the parameters of the model with t tests for the significance of the model parameters, where

(β_0 = -168818306.854, β_1 =-22.971, β_2 = 28.806,

β_3 = 295.815, β_4 = -43.473)

Accordingly, the estimated model is

GDP = -168818306.854 -22.971x_1+ 28.8061x_2+ 295.815x_3- 43.473x_4

Table 5 presents the results of a multiple linear regression analysis where GDP is the dependent variable and four independent variables (LINV, NLINV, LPR, NLPR) are used to predict GDP. The estimated coefficient for the constant is -168818306.854, which indicates the predicted value of GDP when all independent variables are equal to zero. The p-value of .005 show that the constant is statistically significant at the 0.05 level. The estimated coefficient for LINV is -22.971 and the p-value of .052 indicate that the relationship between LINV and GDP is insignificant at the 0.05 level.

The third row presents the coefficient and other statistics for the variable NLINV. The estimated coefficient for NLINV is 28.806, which means that a one-unit increase in NLINV is associated with an increase in GDP of 28.806 units, holding other independent variables constant. The standardized coefficient is .334, which shows that NLINV has a positive and moderate relationship with GDP. The t-value of 2.799 and the p-value of .013 indicate that the relationship between NLINV and GDP is statistically significant at the 0.05 level. LPR p-value of .000 indicate that the relationship between LPR and GDP is highly statistically significant at the 0.05 level. NLPR -1.489 and the p-value of .156 indicate that the relationship between NLPR and GDP is not statistically significant at the 0.05 level.

The results show that two independent variables, NLINV and LPR, have statistically significant positive relationships with GDP. The other 2 independent variable, NLPR and LINV is not statistically significant in predicting GDP.

Conclusion:

Based on a multiple linear regression examination of Egyptian insurance market data from 2000/2001 to 2020/2021, it was discovered that there is a substantial positive link between Egyptian economic development (GDP) and two independent variables: non-life investments (NLINV) and life premiums (LPR). Non-life premiums (NLPR) and life investments (LINV), on the other hand, were shown to be insignificant in forecasting GDP. The model explained 99.8% of the changes in the dependent variable values.

The recommendations are that the government should develop measures that guarantee the enforcement of insurance policies and promote the benefits of such policies to people. Additionally, the government administration should take procedures that might improve insurance investment returns to support the insurance sector's role in economic development.

Insurance companies are advised to allocate their investments in different sectors to maximize their investment income and meet their claims settlement obligations. It is also recommended that they create awareness that is easily comprehensible to individuals of varying levels of education and literacy. The insurance industry presents a unique opportunity for development and growth if the mentioned recommendations are adopted.

Overall, the findings demonstrate that the Egyptian insurance sector contributes significantly to the country's economic growth, primarily through non-life investments and life premiums. Egypt's policymakers should explore expanding investment in non-life and life insurance firms because these variables have been demonstrated to possess a substantial positive link with economic growth. This might contribute to an increase in the country's GDP.

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استكشاف العلاقة بين مطالبات التأمين والتنمية الاقتصادية: بالتطبيق على قطاع التأمين المصري

د. محمود السيد؛ د. إسلام صيام

المستخلص :

تهدف هذه الدراسة، باستخدام نموذج الانحدار الخطي المتعدد، إلى دراسة الارتباط بين سوق التأمين المصري والتنمية الاقتصادية في الفترة من ٢٠٠٠/٢٠٠١ إلى ٢٠٢٠/٢٠٢١. يتألف التحليل من ٢٥ شركة تأمين ممتلكات و١٦ شركة تأمين حياة في مصر. يتم تقييم مطالبات التأمين عن طريق قيمة الاستثمار وقيمة الأقساط المكتسبة وتم تقسيم كل منها إلى ممتلكات وحياة. يشكل الناتج المحلي الإجمالي المصري (GDP) المتغير التابع. تشير النتائج إلى أن استثمارات الممتلكات وأقساط الحياة لديها ارتباط إيجابي ذو دلالة إحصائية مع الناتج القومي الإجمالي، بينما أشار البحث إلى عدم وجود دلالة إحصائية على ارتباط الناتج القومي الإجمالي باستثمارات الحياة وأقساط الممتلكات. أستطاع النموذج الاحصائي تفسير ٩٩,٨٪ من التغير في الناتج القومي الإجمالي كمتغير تابع، مما يدل على وجود رابطة قوية بين المتغيرات المستقلة والمتغير التابع. تشير هذه النتائج إلى أن سوق التأمين المصري له تأثير كبير على النمو الاقتصادي للبلاد. وتتلخص التوصيات في ضرورة وضع إجراءات حكومية لضمان تطبيق مزيد من سياسات التأمين وتعزيز فوائدها للمستأمنين، بالإضافة إلى اتخاذ إجراءات لتحسين عوائد الاستثمار في التأمين لدعم دور القطاع التأميني في التنمية الاقتصادية.

الكلمات المفتاحية: التنمية الاقتصادية، الأقساط والاستثمارات في التأمين، الناتج المحلي الإجمالي، مطالبات التأمين.