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Original Research Article

Determinants of the Profitability of Insurance Companies in Saudi Arabia

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Abstract

The study aims to identify the determinants of profitability in Saudi insurance companies. For this purpose, the data were collected about the study variables (company size, debt ratio, loss ratio, retention ratio, investment income) as independent variables. To measure its impact on the profitability of insurance companies, expressed as return on assets (ROA) and return on equity (ROE). Using Panel Data for 25 insurance companies in Saudi Arabia during (2010-2016), the random-effects model (REM) was used to examine the relationship between the profitability of insurance companies and the independent variables. The study concluded that the profitability of insurance companies is significantly associated with the size of the insurance company, debt ratio, and the rate of actual loss. The results also showed that the volume of written premiums is the most influential variable on the profitability of insurance companies, followed by the indebtedness rate and then the actual loss.

Keywords: Insurance, profitability, panel data, random effects.

1. INTRODUCTION

The insurance activity has witnessed an important development and widespread in recent years, and it has become one of the most important sectors that support the economic activity of countries. Both individuals and institutions find that insurance is a protective shield for their economic activity by protecting the property and invested capital from the expected risks (Tarqu, 2012). Despite this, we note at the Arab level that there are many problems related to this activity, including the low average annual expenditure per capita on insurance service, and thus the weak contribution of this sector to the gross domestic product. This may be due to the lack of awareness of the importance of insurance and the poor marketing of insurance products, especially with the prevailing belief in Saudi society that insurance is prohibited in general. There is also a lack of awareness of the importance of the Islamic alternative represented in cooperative insurance (takaful), which is applied in some Arab countries, including Saudi Arabia. Also, the weak organizational structures of Arab insurance companies make them unable to bear the higher and more profitable risks such as energy, aviation and ship hulls. This pushes these companies to export insurance through the so-called reinsurance of large foreign companies, which may negatively affect the economy from the leakage of foreign currencies in the form of invisible exports and imports in the balance of payments. In Saudi Arabia, competent authorities have recently realized the importance of insurance and its role in moving the wheel of economic growth. Accordingly, the insurance sector has given great attention since 2004. This is evident through the establishment and establishment of the Saudi Monetary Agency's insurance company control system, which made a qualitative leap in the reality of the sector in Saudi Arabia. Since then, it has been working with rapid steps to create the appropriate conditions for the expansion and development of the insurance sector. Through enacting laws and legislation regulating work and conducting periodic market surveys, which made the Saudi insurance sector occupy advanced positions regionally. It is also a successful experience that attracts researchers and those interested in this field. An insurance company is a financial institution that seeks to maximize its profits by aligning its revenues with the costs of its various activities. To ensure its survival and

continuity, it must monitor its financial performance by looking at its profitability rates in the context of the fierce competition witnessed by the insurance market locally and globally.

Through its economic path represented by Vision 2030, Saudi Arabia seeks to move the Saudi economy from a rentier economy dependent on oil to achieving economic diversification and balanced growth for all economic sectors. Undoubtedly, the insurance sector is one of the emerging sectors that represents one of the pillars on which the 2030 vision rests. This sector will witness growth parallel to the growth of all other targeted sectors, as it is considered when setting economic policies as a factor that achieves stability in the business environment. Currently, the vision has helped create a strict regulatory environment for the business environment, including insurance, which will produce strong and stable insurance companies models. Hence, the study problem arose in identifying the role of the insurance industry in achieving the development goals of Saudi Arabia by reviewing the performance of this sector. Profitability is one of the most important performance measurement indicators used by financial management to reach its primary goal of maximizing the wealth of the enterprise and ensuring its continuity (Hifza, 2011). In light of the competition witnessed by the insurance market in Saudi Arabia, insurance companies seek to maximize their market share to achieve a competitive advantage and high concentration in the local and regional market. Therefore, it is important to know the most important factors that affect the profitability of insurance companies.

The importance of the research emerges from the importance of the insurance sector, which is one of the alternatives available to achieve economic development in Saudi Arabia. Therefore, it is important to know and identify the most important factors affecting the profitability of insurance companies, which will enable these companies to formulate their future policies on a clear and accurate scientific basis. This ensured that it strengthened its presence in the local market and maximized its contribution to achieving economic development. In addition to motivating these companies to make more efforts to achieve a competitive advantage that would enable them to keep pace with global progress in the insurance industry.

2. LITERATURE REVIEW

Previous studies in measuring the level of profitability of insurance companies varied between traditional methods such as financial ratios and financial performance indicators, and modern methods that use statistical programs for measurement. We find that this topic is of great interest on both levels - developed and developing countries - where those studies agreed to identify the most important determinants that affect the profitability of insurance companies, which are represented in: the size of the insurance company, financial leverage, level of risk, the growth rate in written premiums, and the rate of indebtedness. While it excluded the influence of other factors that were tested such as tangibility, age of the company, and the level of liquidity. these studies, despite their intensity, did not confirm the impact of some variables such as the debt rate, retention rate, and growth rate on the profitability of insurance companies and the lack of detail about them. Hence, the role of the study is to focus on measuring the impact of these variables on the profitability of insurance companies. Through the application to insurance companies in Saudi Arabia, while agreeing on its importance as a determinant of the profitability of insurance companies. This research is also the second study applied to the insurance sector in Saudi Arabia using Panel Data, which is considered a qualitative addition to those studies.

Using the data of 20 insurance companies in Saudi Arabia during (2009-2017) and analyzing them using the generalized potential method. Ben Dhiab (2021) concluded that there is a positive relationship between the profitability of insurance companies, the growth rate of written premiums, the tangible ratio and the fixed assets ratio. There is also a negative relationship between profitability, loss ratio, liabilities ratio and financial leverage ratio. Bhattarai (2020) using the data of 10 Nepalese companies for the period (2012-2017) concluded that the most important factors affecting the profitability of insurance companies are the financial leverage and the size of the company (assets). Derbali, (2014) aimed to study the impact of the characteristics of the insurance company "size, influence, tangibility, risks, growth rate, liquidity, and age" on the performance of eight health insurance companies in Tunisia during (2005-2012). The results showed that age and growth in the size of premiums are the important factors in the performance of insurance companies, which is measured by the return on assets (ROA). Burca and Batrinca (2014) aimed to know the determinants of financial performance in the Romanian insurance market for the period (2008-2012). The study was based on the data of 21 insurance companies operating in the Romanian insurance market. The study concluded that the determinants of financial performance in the Romanian insurance market are financial leverage, company size, growth in gross written premiums, underwriting risk, retention ratio, and solvency margin. Mehari and Amiro, (2013) discussed the impact of some factors and internal characteristics of insurance companies on the performance of 9 insurance companies in Ethiopia during (2005-2010). The results revealed that the loss ratio, tangibility, influence and company size are among the most important determinants of the performance of insurance companies. While the growth rate in written

premiums, the company's age, and the level of liquidity have a weak relationship with the return on assets.

3. DATA AND METHODOLOGY

The research uses a longitudinal data regression model to express the linear relationship between the research variables. The model consists of a dependent variable representing the profitability of insurance companies in Saudi Arabia, measured once using the rate of return on assets (ROA) and once using the rate of return on equity (ROE). On the other hand, a set of explanatory variables that affect profitability are: the size of the insurance company (FS) measured by the volume of written premiums after taking the logarithm, the insurance company's debt ratio (DR), the ratio of losses (risks) in the insurance company (LR), the retention ratio (RR), and investment income as a percentage of Net Earned Premium (INVI). The model includes data for 25 insurance companies in Saudi Arabia as cross-sectional units over a 7-year time series (2010-2016). The beginning of the series was determined to coincide with the emergence of most insurance companies in Saudi Arabia and the beginning of data availability in 2010. This means that we have several observations equal to 175 for each variable in the model since the presence of a large number of observations increases the degrees of freedom. This feature leads to more efficient estimators compared to other models with fewer observations. In general, the study model can be expressed by the following relationship:

$$\boldsymbol{Y}_{it} = \alpha_0 + \sum_{j=1}^{k} \boldsymbol{\beta}_j \boldsymbol{X}_{j(it)} + \varepsilon_{it} \qquad i = 1,2,\dots,N \quad t = 1,2,\dots,T$$

$$j = 1,2,\dots,K$$

Where: K: is the number of explanatory variables, N: the number of companies, T: years, X: represents the determinants of profitability. The study model can be written in detail as follows:

$$\boldsymbol{ROA}_{it} = \boldsymbol{\alpha}_0 + \boldsymbol{\beta}_1 \boldsymbol{l}\, \boldsymbol{FS}_{it} + \boldsymbol{\beta}_2 \boldsymbol{DR}_{it} + \boldsymbol{\beta}_3 \boldsymbol{LR}_{it} + \boldsymbol{\beta}_4 \boldsymbol{RR}_{it} + \boldsymbol{\beta}_5 \boldsymbol{INVI}_{it} + \boldsymbol{\varepsilon}_{it}$$

Where, ROA: the rate of return on assets, FS: the size of the insurance company, DR: debt rate, LR: Loss ratio (risk) in the insurance company, RR: Retention Ratio, INVI: Investment income as a percentage of net premiums earned, ε: the random error of the model and it represents the variables that affect the level of profitability of insurance companies it did not enter the form. The estimation of the previous model using the method of ordinary least squares (OLS) will lead to illogical results, assuming the stability of the model parameters, so the results of the estimation of the model are no value. Therefore, one of the methods used to estimate Panel Regression Model is resorted to, such as: Fixed Effects Model (FEM) and Random Effects Model (REM), as choosing one of them depends on the assumptions of the insurance companies themselves, and these assumptions are:

1. There are differences in the behavior of insurance companies that affect their profitability differently, as three of them hold more than 50% of the market share of the Saudi insurance market. These differences in performance require that the parameters of the model be different according to the insurance companies.
2. Theoretically, the research assumes that there is no linear correlation between the random error $\boldsymbol{\upsilon i}$, which represents the change in the behavior of insurance companies included in the constant, and one or all of the explanatory variables in the model Cov($\boldsymbol{Xit}$,$\boldsymbol{\upsilon i}$) = 0, which is likely to choose the REM model for estimation because it will give unbiased estimates. .
3. The increase in the number of cross-sectional units (N=25) over the time observations (T=7) makes the application of the fixed effects method less efficient, because the use of dummy variables reduces the degrees of freedom.

According to the previous theoretical assumptions, the model will be estimated using the random effects model (REM).

4. RESULT AND DISCUSSION

4.1. Descriptive Statistics

Table 1 indicates through the value of Jarque-Bera that all variables follow a normal distribution. The highest value of the return on assets was 12.73%, which is a relatively weak rate due to the small financial values of companies in their early years, while the lowest value was -18.28. As for the debt ratio, it reached an average of 70.20% during the research period, and the average loss rate was 73.95%. Finally, the average retention rate was about 68.46% for all insurance companies.

Table-1: Description of the variables

	ROA	*ROE*	*LFS*	*DR*	*LR*	*RR*	*INVI*
Mean	0.211976	-0.062635	6.295798	70.20144	73.95617	68.49395	31.24
Median	1.410000	5.380000	6.115185	71.61000	75.71000	69.69000	1.1900
Maximum	12.73000	58.74000	8.994066	93.66000	318.8400	99.89000	2622.2
Minimum	-18.28000	-131.5600	3.207208	7.100000	0.950000	0.680000	-6.02000
Std. Dev.	5.306583	24.51535	1.029513	14.25941	26.72291	18.63713	223.60
Jarque-Bera	38.55776	365.8911	14.54745	109.0601	12362.30	11.82121	85250.
Probability	0.000000	0.000000	0.000694	0.000000	0.000000	0.002711	0.0000
Observations	167	167	167	167	167	167	167

4.2. Correlation Analysis

The following table 2 indicates that there is a positive relationship of the rate of return on assets (ROA) with each of the insurance company's size (LFS) and the retention ratio (RR), while it has a negative relationship with both the debt rate (DR) and the loss rate (LR). We note the strength of the relationship between ROA and both company size (LFS) and actual loss rate (LR) as two of the most important factors that determine the profitability of insurance companies. The same relationship is repeated for the rate of return on equity (ROE) as another measure of the profitability of insurance companies, this confirms the importance of the variables (LFS) and (LR) in explaining the largest percentage of the change in the profitability of insurance companies.

Table-2: Correlation matrix

	ROA	*ROE*	*LFS*	*DR*	*LR*	*RR*	*INVI*
ROA	1	0.8354	0.3261	-0.045	-0.3870	0.1043	-0.2208
ROE		1	0.2373	-0.1469	-0.2864	0.0895	-0.0819
LFS			1	0.42602	0.19329	0.46555	-0.2695
DR				1	-0.0610	-0.0112	-0.3942
LR					1	0.3149	0.3238
RR						1	-0.1286
INVI							1

4.3. Regression Analysis

The following are the results of estimating the two research models according to the previously mentioned random effects method, using the dependent variables (ROA) and (ROE).

Table-3: Random Effects Model - dependent variable ROA

Variable	*Coefficient*	*Standard Error*	*T-Ratio*
LFS	3.123	0.493	6.3226
DR	-0.125	0.030	-4.0754
LR	-0.101	0.014	-7.0989
RR	-0.0006	0.024	-0.0252
INVI	-0.0001	0.001	-0.0989
C	-3.124	2.838	-1.1007

** Significant at 10%

According to this model, there are differences in behavior between insurance companies that make the transactions differ according to the company, so this effect falls within the constant in the model. From Table 3, we find that profitability, expressed in the rate of return on assets, is greatly affected by the size of the insurance company, as measured by the total written premiums, where the impact factor reached 3.12 with a positive sign, where the coefficient indicates the importance of this variable in determining the profitability of the company. Since this variable is in the logarithmic formula, the value of the coefficient can be considered as elasticity to measure the change in profitability as a result of the change in the size of the company. The results also indicate that there is an inverse relationship to profitability with both the debt rate and the actual loss rate with transactions amounting to -0.12 and -0.10, respectively. We also notice from the model the weak contribution of both the retention ratio and the investment income in explaining the change in profitability.

Table-4: Random Effects Model - dependent variable ROE

Variable	*Coefficient*	*Standard Error*	*T-Ratio*
LFS	11.54	2.0957	5.5093
DR	-0.62	0.1407	-4.4411
LR	-0.37	0.0716	-5.2913
RR	-0.006	0.1086	-0.0624
INVI	0.004	0.0088	0.4750
C	-0.50	12.466	-0.0408

Looking at the results of Table 4, we note the same results that we obtained using the dependent variable ROA, where we find the largest effect of the size variable in explaining the change in the profitability of insurance companies, with an elasticity coefficient of 11.54. In addition, there is an inverse relationship to profitability with both debt and loss rates. Also, looking at the results of examining the model, we find it significant through the F=12.72 statistics and it is also free from measurement problems such as Autocorrelation and Multicolinearity as in the following table:

Table-5: Model Examination Tests

Test	*Value (ROA)*	*Value (ROE)*
R-squared	0.37	0.28
Adjusted R-squared	0.35	0.26
$\boldsymbol{Durbin-Watson\ stat}$	1.54	2.2
$\boldsymbol{Normality\ JB(2)}$	57.42	563.87
$\boldsymbol{F(6,167)}$	19.16 ***(0.000)***	12.72 ***(0.000)***

5. CONCLUSION

The research aims to determine the most important factors that affect the profitability of insurance companies in Saudi Arabia. Panel data for (25) insurance companies have been used. Since Saudi Arabia had a distinguished position and a successful experience in the field of insurance at the Arab level, the need arose to identify the most important factors affecting the profitability of insurance companies in Saudi Arabia. This is to help define the policies of those companies that represent an important financial sector for the development of the Saudi economy. Through the results of the analysis of the research data, the following results were reached. The relationship between the size of the company's premiums and its profitability is a direct relationship, the more the company's premiums increase by 1%, the company's profitability increases by 3.12%. The inverse relationship between the profitability of the insurance company and the indebtedness ratio. There is a negative relationship between the profitability of the insurance company and the losses ratio. The volume of written premiums is the most influential variable on the profitability of insurance companies, followed by the company's indebtedness rate and then the claims paid. The increase in the volume of written premiums and their high growth rates reflect the accelerated and excessive growth in the size of these companies, with poor performance structure efficiency. This leads to increased underwriting risk and the need to increase the volume of technical reserves, which are called negative economies of scale. In light of the findings, perhaps the most important thing that should be taken into account by policy makers in these companies is to focus more on increasing the efficiency of performance in absorbing the premiums collected, and directing them towards profitable investments rather than the investment and excessive expansion of growth itself.

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