Determinants of performance of insurance companies in Tunisia: the case of life insurance

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ABSTRACT: Business performance has attracted researchers' attention in the literature of corporate finance over the past decades. However, in the context of the insurance sector, they have given some attention. There are many factors to consider when looking at insurance companies. More than anything, consumers and investors should be concerned about the financial strength of the insurer and its ability to meet its ongoing obligations to holders of insurance policies. The insurance sector is one of the fundamental elements in the financing of the Tunisian economy and contributes to the effort of the State to support the development of the countries. According to experts of the insurance sector in 2011 was difficult for insurance companies. In this study, we examine the impact of firm-specific characteristics (size, leverage, tangibility, risk, growth, liquidity and age) on the performance of eight insurance companies in Tunisia a period of 8 years (2005-2012). The analysis of the results from a regression on panel data indicates that the variables height, age and premium growth are the most important determinants of the performance of insurance companies measured by ROA ratio (Return on Asset). Then, the performance of insurance companies is not statistically significant with leverage, tangibility, liquidity and risk.

KEYWORDS: Performance, characteristics specific to insurance companies, life insurance, ROA, Panel data.

1   INTRODUCTION

Insurance companies reveal an importance for businesses and because individuals compensate losses and put them in positions where they were before they occur. In addition, insurers provide economic and social benefits for companies such as, loss prevention and reduction of anxiety.

Insurance can be defined as a service that provides a benefit upon the occurrence of a risk. Delivery, usually financial, may be for an individual, association or business in exchange for a perceived contributions or premiums. Thus, insurance is economic sector which includes the design, production and marketing of this type of service.

Given the rapid development of financial markets, banks and insurance companies are facing intense competition. Traditional performance management appears to be insufficient to meet the needs of strategic development financial institutions [1].

The performance is an association between the functional efficiency and strategic effectiveness. Thus, functional performance is to improve the products, services, production processes and marketing and human resources management. Then, the strategic performance is ahead of the competition by positioning itself on a growing market [2].

The problem of measuring the performance of insurance companies has been well developed in the literature of financial theory. Thus, the profitability of insurance companies can be influenced by external factors and internal factors [3].

In our study, we will examine the impact of specific features at the enterprise level on the performance of insurance companies in the case of life insurance. In this alignment, it begs the question: what are the main determinants of profitability of life insurance companies in Tunisia?

To answer this question, first, we begin our dissertation with a review of literature on the determinants of the performance of financial institutions mainly banks and insurance companies. Then we will analyze empirically the determinants of performance of life insurance companies in Tunisia, based on our sample selected, all analyzing the descriptive statistics for the explanatory variables and interpret the results of the estimation of the model chosen.

2   LITERATURE REVIEW

In general, the majority of studies on banking performance have been established on samples of U.S. banks and some parts of some European banks such as; [4], [5], [6]. We note that there are other works that have studied the performance of banks in other countries such as the case of Colombia [7], Brazil [8], Malaysia [9] and Tunisia [10], [11].

Determinants of performance have been widely studied in the literature of finance company in recent decades. In 1995, Berger conducted a survey on a sample of U.S. banks to determine the impact on the capital return on equity. He used in his study the ratio ROE (Return on Equity) to measure the performance of banks. He concluded that this ratio reveals the existence of a positive impact on the capital return on equity. The impact of the characteristics of banks in the United States on the net interest margin is examined. The results showed that the net interest margins of banks have a positive relationship with leverage, the opportunity cost, the risk of default and management efficiency [4].

In 1997, we studied the determinants of the profitability of commercial banks. They found that profitability is positively related to changes in the gross domestic product (GDP) per capita [6]. In fact, other study relates to the measurement of the performance of Tunisian commercial banks. The empirical data used in this work were extracted from the database of the BCT (Central Bank of Tunisia). The sample included the largest commercial banks in Tunisia (10 banks) during the period 1980-2000 [11].

In order to study the impact of bank characteristics, financial structure and macro-economic indicators, net interest and performance of Tunisian banks for the period concerned margins.

It should be remembered that the different characteristics of banks account for a substantial part of the variation in net interest margin and the performance of the bank. The net interest margin and high performance tend to be associated with banks that hold a relatively large amount of capital.

Other determinants of bank performance on the net interest margin on bank loans have a positive and significant impact. Thus, the size has negative coefficient significance on net interest margins. This finding may simply reflect inefficiencies in the balance.

In addition, macro-economic indicators such as inflation and growth rates have no impact on net interest margins and bank profitability.

Finally, the financial structure has an impact on bank performance and the net interest margin. In fact, the concentration is less beneficial to commercial banks Tunisian competition. In addition, the stock market development has a positive effect on the performance of banks. This reflects the complementarities between bank performance and stock market growth, these complementarities is probably a factor of economic growth. Furthermore, the development of disintermediation of the Tunisian financial system supports the performance of the banking sector in particular and economic management.

The determinants of performance of Malaysian banks over the period of 10 years (1986-1995) are studied. At this point, they chose two features at the micro and macro level. The results showed that inflation and effective expenditure management have a negative impact on profitability, as the interest rate has a positive impact on profitability [9].

Other authors developed a study of the determinants of profitability financial institutions. The results indicated that the credit risk and intensity loans are proportional inversely to profitability. Thus, financial institutions and large sizes that have a level of significant expenses tend to a high profitability ratio [12].

But, in other studies we noted that liquidity, capital and investment are important determinants of bank profitability [13].

In addition, the growth of the money supply has a negligible effect on profitability, while GDP and the capitalization of assets on the stock market have a negative relationship with ROA (Return on Asset). Then, the profitability is positively affected by the size, sales growth and investment. On the other hand, current assets and leverage are negatively correlated with profitability. Several studies have been conducted to measure the performance of insurance companies. For example the functional status of insurers has no impact on the profitability to be provided by public coverage, but have a significant impact on the profitability of insurance companies. However, the size, the investment and the liquidity are the main determinants of the financial viability of insurance companies.

For the role of consolidation and deregulation in the insurance sector in Spain, we focuses on estimating the effect of EU directives on insurance (1994) and the policy of the Spanish Government in 1980 on changes in the market structure of the Spanish insurance. The authors also determined that the consolidation has eliminated inefficient and poorly performing companies in the market. In the Spanish insurance sector, the role of organizational form is analyzed by comparing the stock and mutual insurers.

Then, other authors studied the impact of characteristics for insurance companies in Pakistan on the performance thereof. They selected a sample of five insurance companies for a period of seven years (2001-2007). In their study, the performance is expressed by the ratio of economic profitability (ROA) based on seven variables. They made an estimate by the method of OLS (Ordinary Least Square) to justify the most important determinants of the performance of insurance companies. These authors concluded that performance is positively influenced by the level of risk and the size of the firm. But this performance was negatively impacted by the debt ratio (leverage) [12].

In addition, insurance companies must diversify their investment techniques and use an effective hedge for them to create adequate financial income. Since diversification minimizes the risk level.

3   RESEARCH METHODOLOGY

3.1   SAMPLE

Currently, there are nineteen insurance companies in Tunisia. According to the annual report published in 2013 by the Tunisian Federation of insurance companies we can notice the increase generated by the insurance companies in Tunisia income. This report has enabled us to draw the following conclusions:

- ❖ The premiums of the insurance sector totaled 1 026.223 961.921 MD in 2012 against MD in 2011, an increase of 6.68%.
- ❖ The paid claims registered an increase of 18.69% from 505.709 in 2011 to 600.250 MD MD in 2012.
- ❖ Management fees totaled an amount of 181.415 167.351 MD in 2012 against MD in 2011, an increase of 8.40%.
- ❖ Technical reserves recorded an increase of 12.35% in 2012 from 1 820.791 MD 2011-2 045.696 MD in 2012.
- ❖ Investment amounts entered in balance sheet assets totaled 243.374 2 2 MD in 2012 against 005.227 MD in 2011, a growth rate of 11.88%.
- ❖ The technical result for the year deteriorated in 2012, it recorded a surplus of 125.529 132.061 surplus against MD MD in 2011.
- ❖ The consolidated balance sheets were cleared in 2009 to a profit of 129.448 MD against a profit of 117.083 MD in 2008.

Our sample consists of eight life insurance companies, In order to measure their performance over a period of eight years (2005-2012). This choice is justified by the availability of data. Therefore, the financial data were collected from the annual financial statements (balance sheet, income statement and statement of cash flows) of the life insurance companies that have been published by them.

3.2   MODEL

In this study we used the model who studied the impact of specific variables of a firm (size, leverage, tangibility, risk, premium growth, liquidity and age) on the performance of companies Insurance in Pakistan. This study focused on five insurance companies for a period of 7 years (2001-2007). They used the ratio ROA (Return on Equity) as a measure of performance that will be regressed in terms of the explanatory variables [14].

In this context, the model used in our study is represented as follows:

$$PR_{it} = \beta_0 + \beta_1(LG_{it}) + \beta_2(TA_{it}) + \beta_3(SZ_{it}) + \beta_4(LQ_{it}) + \beta_5(AG_{it}) + \beta_6(RC_{it}) + \beta_7(GR_{it}) + \varepsilon_{it}$$

Where:

❖ PR_{it} = Performance (ROA) = (earnings before interest and taxes divided by total assets).
❖ LG_{it} = Leverage (Leverage) = (total debt / total assets).
❖ TA_{it} = Tangibility (Tangibility) = (capital / total assets).
❖ SZ_{it} = Size (Size) = Ln (premiums).
❖ LQ_{it} = Liquidity (Liquidity) = (Current Assets / Current Liabilities).
❖ AG_{it} = Age (Age) (The difference between the current year and the year of establishment of the company).
❖ RC_{it} = Risk (Risk) = (Standard deviation of the ratio of total applications premiums).
❖ GR_{it} = (Growth) = (Percent change in premiums).
❖ ε_{it} = The error term.

4   EMPIRICAL RESULTS

4.1   DESCRIPTIVE STATISTICS

In Table 1 we present a descriptive analysis of the different variables associated with insurance companies' life in Tunisia obtained using the STATA software. In fact, in this study we considered the performance as a dependent variable expressed in terms of specific characteristics of insurance companies such as Tunisian, leverage, size, growth, tangibility, liquidity, risk and age (independent variables).

Table 1.   Descriptive Statistics

Stats	N	Average	Max	Min	Standard deviation	Median
Leverage	64	0.1687585	0.4365028	0.0305468	0.1033324	0.1428552
Tangibility	64	0.6951185	0. 90702	0.4352791	0.1279787	0.7162244
Size	64	17.57351	19.44382	14.04266	1.457735	17.94376
Liquidity	64	4.965466	40.99003	0.2161963	8.514908	2.397961
Age	64	33,125	60	13	12.45955	33
Risk	64	10.41076	35	0.2435627	9.588427	8.432577
Growth	64	0.0698127	0.4741729	-0.5520006	0.1971104	0.0766451

The analysis in Table 1 indicates that the minimum value of the debt ratio (Leverage) is (0.030), while its maximum value is (0.436). Based on the value of the median, we noticed that 50% of Tunisian life insurance companies have an average value (0.1428), which shows us the importance of debt in the activity of these firms.

Thus, we noticed that 50% of life insurance companies have a ratio of Tunisian tangibility (Tangibility) of (0.716) (the median value) so the assets have a large enough value in the composition of the assets of those thereof. During the study period we found that half of the life insurance companies have an average value of the variable size (Size) of (17.94) which is

expressed by the natural logarithm of the premiums received by them it from the insured. In addition, we noticed that 50% of the population in our sample age (Age) 33 years over the study period.

In this context, it fits the importance of age in the business of life insurance companies as may affect the market share and the performance thereof. Indeed, among the life insurance companies in our sample, those with a growth rate (Growth) premiums received is equal to 0.0766. Therefore, changes in premiums may largely influence the profitability of life insurance companies as premiums are the main resources for this type of service business.

Table 2. Pearson Correlation

	Leverage	Tangibility	Size	Liquidity	Age	Risk	Growth
Leverage	1						
Tangibility	-0.0483	1					
Size	-0.5256	0.1183	1				
Liquidity	-0.2338	0.1914	-0.0109	1			
Age	-0.2659	0.3293	0.3414	0.0466	1		
Risk	-0.2036	0.4023	0.1058	0.4541	0.1150	1	
Growth	-0.1237	-0.0634	0.2042	-0.3703	0.0097	-0.1539	1

In addition, the results show no coefficient exceed the tolerance limit (0.7), which does not cause problems during the regression of performance (ROA). The results for these tests are given in Table 2.

4.2 ANALYSIS OF THE RESULTS OF THE ESTIMATION

After interpreting the results from the table of descriptive and statistical correlation table, we present the results of the estimation of our model that measures the performance of life insurance companies.

First, we present a regression on panel data (double dimension: individual and temporal). In this case, there is a problem in the estimation. That is to say, we will choose between the estimate of the fixed effects or random effects by. Our choice is justified by the probability of the Hausman test which must be compared to a value of 10%.

Table 3. Results of the estimation model for measuring the performance

Pr	Coeff	Std. Err.	Student's t	P> | t |	[95% Conf. Interval]
Constant	0.010267	1.959826	1.54	0137	-1.02607 7.046603
Leverage	-0.1033798	0.8500967	-0.12	0904	-0.5327734 0.5607563
Tangibility	0.0139914	0.2654793	0.05	0958	-0.5419053 -0.0136733
Size	-0.2777893	0.1282404	-2.17	0040 **	-0.0022039 0.0227791
Liquidity	0.0102876	0.0060652	1.70	0102	0.0222604 0.090817
Age	0.0565387	0.0166437	3.40	0002 *	-0.0061138 0.0072396
Risk	0.0005629	0.0032418	0.17	0864	0.0625603 0.5070237
Growth	0.284792	0.1079036	2.64	0014 **	-1.02607 7.046603
Significant at a threshold value (*) 1% (**) and 5% (***) 10%.					
R^2 = 0.6213 Adjusted R2 = 0.6544 F (7.25) = 2.79 P> F = 0.0273 Hausman test: P> chi2 = 0.0002					

Based on the results shown in Table 3 we note that although the probability of Hausman test is equal to (0.0002). This probability is less than 10%, so we chose the fixed effects model.
In fact, the likelihood is equal to Fisher (0.0273) is less than 5%. So the estimated model is globally significant.

The value of R² is (0.6213) indicating that the performance of insurance companies in Tunisia depends almost 62.13% of independent variables namely, leverage, size, growth, tangibility, age, risk and liquidity.

Therefore, the performance of insurers is defined mainly by these seven variables insurers during the study period. Table 3 indicates that the variable size is inversely proportional to the performance of Tunisian life insurance companies.

The results show that the coefficient on Size (size) is negative (-0.2777893). Thus, this variable is statistically significant negative (-2.17) the 5% threshold. For this, life insurance Tunisian small size companies are more efficient than those of larger sizes.

The coefficient on age is positive (0.0565387). Thus, this variable has a significant and positive depending on the value of the Student's t which is equal to (3.40) at the 1% impact. Therefore, the age of an insurance company may affect its performance. This is explained through the age of the life insurance companies and their presence on the Tunisian insurance market.

The positive coefficient on the variable Growth (premium growth) indicates positive relationship between growth and yield. Thus, the variable Growth has a positive coefficient (0.284792). This variable is statistically significant positive (2.64) at 1%. Thereafter, the increase in premiums received positively affects the level of performance of insurance companies in Tunisia. In this case, premiums may be an important variable and admits a direct impact on the profitability of insurers.

However, other variables have no influence on the levels of performance of life insurance companies. In this context, the performance of a company, regardless of their type of activity depends on several internal and external factors which are connected with the activity performed by each type of firm.

5 CONCLUSION

This study examines the impact of the characteristics of life insurance Tunisian firms on the level of performance the insurance sector in Tunisia during a period of 8 years (2005-2012). To this end, the debt ratio, size, age, risk, liquidity, growth and tangibility are selected as explanatory variables while the ROA variable is taken as a dependent variable.

The results of the estimation of a regression model on panel data show that three variables, Size (size), age (age) and Growth (growth) are the most important determinants of the performance of the sector of insurance in Tunisia during the period going from 2005 until 2012.

Thus, the two variables Age and Growth have a positive impact on performance while the Size variable has a negative impact on the level of performance. Then, the other variables (Leverage, Tangibility and Liquidity Risk) are insignificant in relation to the performance of life insurance Tunisian firms.

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