The Determinants of Profitability of Insurance Companies in Palestine

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Abstract

This study aimed to examine the factors that affect the profitability of insurance companies in Palestine. Balanced panel data was utilized from seven insurance companies operating in Palestine from 2010 to 2017 to estimate a linear model between determinants theoretically determined to affect performance and the profitability of insurance firms. Findings revealed that age and size of the company significantly affect insurance firms' profitability positively, claims ratio significantly affect insurance company's profitability negatively, whilst liquidity, leverage, expense ratio and growth of premiums do not have an effect on profitability of insurance firms. This study recommended that insurance companies should increase their investments and they should manage their expenses wisely to positively affect their profitability.

Keywords: Insurance companies profitability, claims ratio, Palestine.

1. Introduction

The profitability of insurance companies is one of the most important objectives that it seeks. The achievement of high profits enables the firm to maintain its continuity and survival and to increase its ownership rights. In addition, profitability enhances firm's solvency, which increases its ability to meet the risks and obligations it faces that, otherwise, leads to the deterioration of the financial conditions of insurance companies, the erosion of their ownership rights, the exposure to financial difficulties, and may lead to liquidation (Westall, 2002). Finally, profitability is an important tool for measuring the efficiency of management in exploiting available resources (Greene, Segal, 2004). However, profitability is influenced by many firm specific factors such as the size of the company, age of the company, liquidity, leverage and growth in premiums.

This research aims to study the firm level determinants of profitability of insurance companies operating in Palestine. Specifically, this paper aims to study the impact of company's size, age, liquidity, leverage, premium growth, expenses and claims on the profitability of insurance companies operates in Palestine.

The insurance sector in Palestine is relatively new with paucity in studies dealt with while there are contradicted findings of previous studies from other countries. This study may help decision makers to avoid poor performance and provide them with recommendations to achieve higher rates of profits and hence, improve financial and administrative performance determining the factors that affect profitability. It may also help other researchers to make comparative studies between profitability determinants in Palestinian insurance companies and other insurance companies in different countries.

In Palestine, the insurance legislative framework has passed through many changes due to the multiplicity of authorities that ruled the country. Insurance began in Palestine since the Ottoman rule through the law of 1845 and this law was related to the insurance of damages and losses that affect the funds and named this law by the law of the guarantee contract. Regulations and laws are changed under the British mandate, the Jordanian period, and during the Israeli occupation until 1994 when the Palestinian Authority became the authorized body to supervise and control the enactment of laws for the insurance sector. This sector remained overlooked till the issuance of the Insurance Act in 2005 which regulated the insurance sector until today. Currently, ten insurance companies are now operating in Palestine, two of which operate according to the Islamic Takaful system (Palestine Economic Policy Research Institute, 2016)

2. Literature Review

What determines the profitability of a firm? Several studies attempt to answer this question by examining the determinants of profitability of firms in general or for a specific sector i.e. financial institutions, banks...etc. However, the determinants of profitability for insurance companies are under studied with some exceptions.

Few researchers have examined the determinants of profitability in insurance companies whether conventional or Islamic. The study of Almajali, Alamro and Al-Soub (2012) aimed to investigate the factors that mostly affect financial performance of Jordanian Insurance Companies by studying a sample of twenty-five insurance companies listed in Amman Stock Exchange. This study used five independent variables (Age of company, Size, Leverage, Liquidity, Management Competence Index) and investigate their effect on the dependent variable, return on assets, using multiple regression analysis, they find that leverage, liquidity, size, and management competence index have a positive effect on the financial performance of Jordanian Insurance Companies. Malik (2011) disclosed slightly different results. He studied the effect of five determinants namely age of company, size, capital, leverage, and loss ratio on the return on assets using data of 35 listed life and non-life insurance companies in Pakistan. He found no relationship between profitability and age of the company but significant positive association between size and capital of the company and profitability while loss ratio and leverage ratio exhibited a negative relationship with profitability.

Guendouz and Ouassaf (2018) studied the determinants of Saudi Takaful companies' profitability for a sample of six Islamic companies. Determinants taken into consideration are age of company, size, risk level, written premium growth, rate of retention, and loss ratio. Results indicate that age, size, written premium growth rate and loss ratio significantly affect profitability. Kripa and Ajasllari (2016) studied the factors that affect the profitability of insurance companies in Albania on a sample of 7 insurance firms using a descriptive and correlation analysis, where they chose six independent variables namely fixed assets, liability, liquidity, growth rate, size, volume of capital and investigate their effect on the dependent variable (Return on

Assets). The study found that the growth rate is positively associated with profitability, while liabilities, liquidity and fixed assets are negatively related to profitability. Boadi, Antwi and Lartey (2013) studied the determinants of profitability of insurance firms in Ghana on a sample of 16 insurance companies in Ghana using the same independent variables of Kripa and Ajasllari study in addition to a risk variable. They found that apart from tangibility, which has a negative relationship, there is a positive relationship between leverage and liquidity, from one side, and profitability of insurance firms in Ghana, from the other.

In India, Charumathi (2012) studied the determinants of profitability of Indian Life Insurers for a sample of all the 23 Indian life insurers (including 1 public and 22 private firm). Six independent variables namely leverage, size, liquidity, premium growth, underwriting risk, and capital are investigated. Charumathi found that profitability of life insurers is positively and significantly influenced by the size and liquidity. The leverage, premium growth and logarithm of equity capital have negatively influenced the profitability of Indian life insurers while no evidence exist for the relationship between underwriting risk and profitability.

In Zimbabwe, Mazviona, Dube and Sakahuhwa (2017) studied the factors that affects the performance of insurance companies in Zimbabwe in a sample of 20 insurance companies. They used nine independent variables namely leverage, growth, expense ratio, inflation, retention, size, liquidity, equity and claims ratio. Using multiple linear regression and factor analysis on the panel data, they found that expense ratio, claims ratio, retention ratio, size of company and equity capital have a negative significant effect on the profitability of insurance companies while liquidity has a positive significant effect on the profitability of the insurance companies.

In Poland, Kozak (2011) studied the determinants of profitability of non-life insurance companies for a sample of 25 non-life insurance companies through the years 2002 to 2009, and he found that reduction in the share of motor insurance of the company's portfolio, with simultaneous increase of other types of insurance, has a positive impact on profitability. GDP growth also has a positive effect on profitability.

As noticed from previous papers, most studies have highlighted the internal determinants of profitability which are under the control of management (Ayele, 2012). Most studies which examined the determinants of profitability in insurance companies focused on factors such as age, size, liquidity, leverage, investments, growth and some other internal factors. This study follows this trend and investigates the following hypotheses:

- H1: There is a positive relationship between age and profitability of insurance companies in Palestine.
- H2: There is a positive relationship between size and profitability of insurance companies in Palestine.
- H3: There is a positive relationship between growth and profitability of insurance companies in Palestine.
- H4: There is a negative relationship between leverage and profitability for Palestinian insurance companies.
- H5: There is a positive relationship between liquidity and profitability of insurance companies in Palestine.
- H6: There is a negative relationship between Expenses ratio and Profitability of insurance companies in Palestine

H7: There is a negative relationship between claims incurred and profitability of insurance companies in Palestine.

3. Research Methodology

This part of the research deals with the data collection method, sampling design, research model, measurement of variable and analysis techniques.

3.1 Data

The number of insurance companies as of the end of 2017 was nine. Data are collected manually from annual reports (statement of financial position and income statement) of insurance companies disclosed on the Palestine Stock Exchange website for the eight years period from 2010 to 2017 based on the availability of data. Companies with inappropriate disclosures for the period were not included, resulted in seven companies being used for the period. The final data set is balanced panel data of 56 observations.

3.2 Measurement of variables

Measurement of variables of this study followed previous literature as follows:

Profitability: Many measures of profitability such as Return on Assets (ROA), Return on Equity (ROE) and Return on Invested Capital (ROIC) (Damodaran, 2007) are usually used to measure performance. This study used ROA measured by dividing profit before tax by total asset. ROA is used as the dependent variable in the regression model.

Return on Assets = Net Income Before Tax / Total Assets

Liquidity: Insurance company's liquidity reflects the ability of insurance company to pay for short-term liabilities and claims including operating expenses and payment of compensations. Liquidity is represented by current ratio measured by dividing current assets by current liabilities.

Current Ratio = Current Assets/Current Liabilities

Leverage: is an indicator to the degree to which business is utilizing borrowed money. In this study leverage is defined as total liabilities divided by total equity.

Leverage = Total Debts/Total Equity

Company Size: the size of insurance companies is found to affect its financial performance. Company size was proxied by the logarithm of Total Assets.

Company Age: it is the number of years since the company was established which reflect maturity and experience of the firm. Age was measured by the logarithm of the number of years since the company was established.

Growth: For insurance firms, growth rate is usually proxied by the percentage change in the gross premiums of the insurance firm (Kripa & Ajasllari, 2016)

Company's Growth = percentage change in Gross Written Premium

Claims Ratio: This ratio measures the amount of compensation incurred plus commission paid by the company in comparison to the amount of its premiums earned in addition to commissions received from reinsurers.

Claims Ratio = Claims Incurred Expense / (Net Earned Premium + Commissions Received)

Expenses Ratio: This ratio measures the volume of administrative and general expenses compared to the amount of premiums earned in addition to the commissions received from reinsurers.

Expenses Ratio = General and Administrative Expenses / (Net Earned Premium + Commissions Received)

3.3 Research Model

The following linear model was estimated to test the hypotheses of the research:

$ROA = c + b_1Liq + b_2Lev + b_3Size + b_4Age + b_5G + b_6ExR + b_7ClR + e$

Where: ROA: Return on assets, Liq: Liquidity ratio, Lev: Leverage Ratio, Size: Size of the company, Age: Age of the company, G: Growth of the company, ExR: Expense ratio for the company, CIR: Claims ratio for the company, c: Constant, e: error, and b_i: coefficient to be estimated.

3.5 Estimation Methods

To analyze the data, descriptive analysis, correlation analysis and panel data multiple linear regression with fixed effects were employed.

4. Findings

This section presents the results of this investigation. Descriptive statistics and correlation analysis are presented first; regression diagnosis and estimation of the model are discussed later.

4.1 Descriptive statistics

Table 1 presents the descriptive statistics indicators (mean, median, maximum, minimum and standard deviation) for the dependent variable (return on assets) and independent variables (age of the companies, premiums growth, claims ratio, expenses ratio, size of the company, leverage and liquidity).

	ROA	SIZE	Growth	LIQUIDI TY	LEVERA GE	EXPEN SE RATIO	CLAIM S RATIO	AGE
Mean	0.033	7.627	0.239	0.880	2.895	0.319	0.616	1.120
Median	0.034	7.650	0.166	0.831	2.219	0.291	0.640	1.279
Maximum	0.148	8.058	2.803	1.625	45.557	0.842	0.816	1.398
Minimum	-0.182	7.039	-0.843	0.364	-19.014	0.162	0.253	0.000
Std. Dev.	0.051	0.256	0.510	0.258	7.501	0.112	0.111	0.342
N	56.00	56.00	56.000	56.000	56.000	56.000	56.000	56.00

Table 1: Descriptive indicators of Variables

The descriptive indicators in table 1 are calculated for the 56 observations for the period 2010 to 2017. We can note that ROA for Palestinian insurance companies ranges from minimum -0.1821 to maximum of 0.1478 with a mean of 0.0327 and median of 0.0344. The high liquidity ratio is eye catching. It ranges from 0.3635 to 1.6249 with an average of 0.88 which is very high. Growth of the premiums is also high with a mean of 0.239 which indicate the prospects of this industry.

4.2 Correlation analysis

The correlation coefficient is the bivariate relationship between each two variables as presented in Table 2. From Table 2, ROA has a positive relationship with size of the company, growth of premium, liquidity and leverage, and a negative relationship with expense ratio, claims ratio and age of the company. The high correlation between independent variables can be problematic in the regression analysis but the strongest relationship between independent variables is -0.45 between liquidity and age, which is usually acceptable. However, a more accurate investigation of the multicollinearity problem is performed later.

	ROA	SIZE	GROWTH	LIQUIDIT Y	LEVERA GE	EXPENSE RATIO	CLAIMS RATIO	AGE
ROA	1							
SIZE	0.379	1						
GROWTH	0.204	-0.158	1					
LIQUIDITY	0.456	0.180	0.234	1				
LEVERAGE	0.123	-0.075	0.003	-0.056	1			
EXPENSE RATIO	-0.115	-0.389	0.070	-0.004	0.111	1		
CLAIMS RATIO	-0.305	0.186	-0.428	-0.283	-0.099	-0.237	1	
AGE	-0.049	0.417	-0.336	-0.451	0.068	-0.188	0.182	1

Table 2: Correlation Coefficients

4.3 Estimation Results

Table 3 presents the regression results of this research model. The model explains 64.1% of the total variability in the profitability (R-squared) of insurance companies. The remaining 35.9% of the variation in the profitability is not explained this model and included in the error term.

An F-statistic of 12.136 implies that the null hypothesis that the model is not adequate should be rejected since the p-value of the f-statistic is 0.001 which is sufficiently low indicating the model is well fitted at 1% level of significant.

	Dependent Variable: RC	DA			
Variable	Coefficient	t-Statistic	Prob.		
SIZE	0.3111	3.4706	0.0014		
GROWTH	0.0025	0.1809	0.8575		
LIQUIDITY	0.0466	0.9837	0.3320		
LEVERAGE	0.0006	0.7464	0.4604		
EXPENSE RATIO	-0.0065	-0.0992	0.9216		
CLAIMS RATIO	-0.1395	-2.1671	0.0371		
AGE	-0.2277	-2.7249	0.0100		
С	-2.0406	-3.1329	0.0035		
R-squared	0.64187				
Adjusted R-squared	0.43722				
Durbin-Watson stat	1.85588				
F-statistic	12.13645				
Prob(F-statistic)	0.00150				
observations (balanced)	56				
Panel Least Squares with Cross-section fixed and Period fixed effects					

Table (3) Estimation results

4.4 Diagnostic Tests

Diagnosis of the regression was carried out to determine the validity of the model assumptions. The diagnostic tests including normality, autocorrelation, heteroscedasticity and multicollinearity tests are presented below.

4.4.1 Normality test

The Jaque-Bera test of the normality of residuals is intended to establish whether the mean of the residuals is equal to zero. Figure 2 displays the histogram of residuals which is bell-shaped and the p-value of the test which is greater than 0.05. These results indicate that the residuals are normally distributed.



4.4.2 Autocorrelation

The residuals of the model should be uncorrelated with each other for an estimation to be efficient. The Durbin-Watson test is designed to check for autocorrelation. The result of the test has a value of 1.86 which indicates no evidence for the presence of autocorrelation.

4.4.3 Heteroscedasticity

The Harvey test was used to check for heteroscedasticity. According to Table 4 the p-value is greater than 0.05 for both F-test and Chi-Square test meaning that heteroscedasticity is not present at the 0.05 level of significant.

Estatistic	1 672	Duch $E(7.49)$	0.120
F-statistic	1.072	P100. F (7,48)	0.139
Obs*R-squared	10.978	Prob. Chi-Square (7)	0.140

4.4.4 Multicollinearity Test

To examine the multicollinearity between variables, the variance inflationary factor (VIF) is used. Values greater than 10 indicate that multicollinearity problem is sever and estimation can be biased. The VIF in the table 5 indicated that there is no multicollinearity between variables.

Table 5: Multicollinearity Test using Variance Inflation Factor

Variable	Coefficient Variance	Centered VIF
SIZE	0.0010	2.0700
GROWTH	0.0002	1.4129
LIQUIDITY	0.0009	1.8982
LEVERAGE	0.0000	1.0363
EXPENSE_RATIO	0.0032	1.2343
CLAIMS_RATIO	0.0040	1.5087
AGE	0.0006	2.3062
С	0.0492	NA

4.5 Testing of Hypotheses

Based on the estimation model, the relationships between independent variables and the dependent variable were established as discussed following. The first hypothesis is that there is a positive relationship between the age of the company and its profitability, referring to regression analysis there is a negative relationship between age and profitability with a coefficient of -0.2277 and significance of 0.01. Therefore, there is a significant negative relationship between age and profitability of insurance companies in Palestine. This result is consistent with Malik (2011) in Pakistan but differs from Guendouz and Ouassaf (2018) who find a positive relationship between age and profitability in Saudi Arabia. It also differs from Almajali, Alamro and Al-Soub (2012) who find no relationship between age and performance (ROA) of the insurance companies in Jordan.

The second hypothesis is about the positive relationship between size of the company and its profitability. The results of the regression analysis indicate a positive relationship between size and profitability with a coefficient of 0.3111 and significance of 0.0014 concluding a significant positive relationship between age and profitability of insurance companies in Palestine. This result is consistent with Almajali, Alamro and Al-Soub (2012) in Jordan, Guendouz and Ouassaf (2018) in Saudi Arabia, Malik (2011) in Pakistan, Boadi, Antwi and Lartey, (2013) in Ghana, and Charumathi (2012) in India.

The third hypothesis is about the positive relationship between the growth of the company and its profitability. The regression analysis indicates no relationship between growth and profitability since the coefficient is 0.0025 but significance is 0.8575. This result indicates insignificant relationship between growth and profitability of insurance companies in Palestine. It differs from Charumathi (2012) who find a negative relationship between premium growth and profitability in India, and Kripa and Ajasllari (2016) who find appositive relationship between growth and profitability in Albania.

The fourth hypothesis is about the negative relationship between the leverage of the company and its profitability. Regression results indicate an insignificant relationship between leverage and profitability with a coefficient of 0.0006 and significance of 0.4604. This result is similar to Almajali, Alamro and Al-Soub (2012) in Jordan and Boadi, Antwi and Lartey, (2013) in Ghana.

The fifth hypothesis expects a positive relationship between the liquidity of the company and its profitability. Referring to regression analysis there is no relationship between liquidity and profitability since the coefficient is 0.0466 but with significance of 0.3320 which means an insignificant relationship between liquidity and profitability.

The sixth hypothesis expects a negative relationship between the expenses ratio of the company and its profitability. The regression analysis shows a negative but insignificant relationship between expenses ratio and profitability with a coefficient of -0.0065 and significance of 0.9216.

The seventh hypothesis is about the negative relationship between the claims ratio of the company and its profitability. Regression analysis confirms the negative relationship between claims ratio and profitability with a coefficient of -0.1395 and significance of 0.0371. Table 6 summarizes these results.

	Hypothesis	Empirical Result
H1	There is a positive relationship between age and profitability of insurance companies in Palestine	Negative
H2	There is a positive relationship between size and profitability of insurance companies in Palestine	Positive
Н3	There is a positive relationship between growth and profitability of insurance companies in Palestine.	No relationship
H4	There is a negative relationship between leverage and profitability for Palestinian insurance companies.	No relationship
H5	There is a positive relationship between liquidity and profitability of insurance companies in Palestine.	No relationship
H6	There is a negative relationship between Expenses ratio and Profitability of insurance companies in Palestine	No relationship
H7	There is a negative relationship between claims incurred and profitability of insurance companies in Palestine.	Negative relationship

Table 6: Summary of Results

5. Conclusions

In this study, factors affecting the profitability of insurance companies operating in Palestine were analyzed using multiple linear regression analysis. The effect of age, size, growth, liquidity, leverage, expenses ratio and claims ratio on profitability was identified. Results of the study confirm that size, age and claims ratio are the factors that significantly affect the profitability of insurance companies in Palestine. Size affects the profitability positively but claims ratio and age have negative effects on profitability. Growth, liquidity and leverage have insignificant effects on ROA.

The sample of the study is small and not enough to give a strong judgment on the variables and their impact on the profitability of companies operating in Palestine. Future research may overcome this shortcoming by extending the period of the study.

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Appendix

Research Sample from 2010 to 2017

	Insurance Company Name
1	Trust International Insurance Company
2	National Insurance Company
3	Global United Insurance Company
4	Takaful Palestinian Insurance Company
5	Mashreq Insurance Company
6	Palestine Insurance Company
7	Ahlia Insurance Company