Determining Factors in Financial Performance of Publicly Traded Insurance Companies at Istanbul Stock Exchange

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Abstract

The insurance sector has a privileged place inside the finance sector because the insurance sector facilitates the way society's risks are transferred and dispersed, while also playing an active role in capital and money markets through the funds it channels into securities. With the added value and labor it thus creates, the insurance sector is capable of influencing the entire economy. This study aims to identify the factors affecting the performance of insurance companies publicly traded at Istanbul Stock Exchange. Various suggestions were made for many insurance companies yet to be publicly traded so that they can improve their performances. Panel data analysis was used to study the eight-year period between 2008 and 2015. As a result of this analysis, a positive relationship was found between the performance of insurance companies and their numbers of agents, technical profit/earned premiums ratio and financial assets investment profit, while a negative correlation was identified between performance of insurance companies and loss ratio.

Keywords: financial performance, Turkish insurance sector, loss ratio.

1. Introduction

Both individuals and enterprises generally live intermingled with risks. Exposure to risk is not only part of getting a job done, but catastrophic risks may inflict disruptions in the lives of individuals and firms. Therefore, insurance activities are important for different kinds of risks and can help individuals or firms have confidence regarding the future. Under the agreement made between the insurer and the insured regarding the obscurity of the future, the insurer is responsible for compensating the loss arising from the realization of the hazard covered (Turkish Commercial Code, Article 1409). In the first section of the study, general information is provided on the Turkish insurance sector and its place in the global insurance sector using the selected data. In the second and third sections, the performance of the insurance sector is examined. In the fourth section, the variables affecting the performance of the publicly trade insurance companies in Turkey are identified.

2. General Information on the Turkish Insurance Sector

The role insurance companies have in society is important in terms of their contribution both to the sector in particular and economy in general. However, the share insurance has in the country's overall financial sector (with regard to total assets) has been restricted to 3% over the years. The share insurance and reinsurance companies have within the financial sectors in terms of total assets rose to 3.68% in 2015, while this figure was 88% in the same year. The number of companies operating in the insurance sector increased to 60 in 2015 up from 54 in 2008. The sector's development should be assessed as regards the premiums produced within the sector in addition to the total assets. As seen in Table 1 below, the increase in the premium production of developing countries in real terms is higher than the increase in real premium production in developing countries. Turkey stands out from developing countries in terms of real premium production in some years. While this differentiation from the developing countries was negative due to the financial crisis in 2008 and 2009, it took a positive turn in 2011, 2012, 2013 and 2015. In 2014, however, the premium production declined sharply, setting Turkey further away from developed and developing countries.

Table 1: Comparison of Developed and Developing Countries in terms of Premium Production

Premium Production	2008	2009	2010	2011	2012	2013	2014	2015
GDP change in Turkey (%)	2.42	-5.93	9.03	8.77	2.13	4.19	2.87	3.98
CPI change in Turkey (%)	10.06	6.53	6.4	8.58	6.79	6.17	8.53	7.47
Real premium change in developed markets (%)	-3.4	-1.8	1.4	-1.1	1.7	0.3	2.9	2.5
Real premium change in developing markets (%)	11.1	3.5	10.9	1.3	6.8	7.4	7.4	9.8
Real premium change in Turkey (%)	-1.85	-0.98	6.54	11.88	8.61	14.99	-1.5	11.17
Premium per capita in developed markets (US dollars)	3,655	3,405	3,527	3,712	3,677	3,621	3,666	3,440
Premium per capita in developing markets (US dollars)	89.4	91.5	110	118	120	129	136	135
Premium per capita in Turkey (US dollars)	106.2	113	125	135	144	163	149	141
Premium per capita / GDP in developed markets (%)	8.81	8.61	8.6	8.58	8.59	8.27	8.15	8.12
Premium per capita / GDP in developing markets (%)	2.72	2.89	3	2.73	2.65	2.72	2.71	2.92
Premium per capita / GDP in Turkey (%)	1.24	1.3	1.28	1.3	1.37	1.52	1.45	1.55

Source: Created using Sigma and Turkish Treasury Undersecretariat data.

In Turkey, the premium per capita production increased in parallel to the developing countries. As for the comparison of premium per capita with the GDP, the premium per capita produced was, in general, approximately 8% of the GDP in developed countries and 2.7% in developing countries, while it remained below the standard for the developing countries in Turkey (approximately 1.5%).

As seen in Table 2 below, the rate of increase in actual loss was higher than the rate of increase in premiums earned. This, in turn, was reflected in the technical profit.

Table 2: The Effect of Real Changes in Premiums and Incurred Losses on Technical Profit

Years	Real Change in Premiums (%)	Real Change in Incurred Losses (%)	Technical Profit Adjusted for Inflation (000 TL)
2008	-1.85	15.20	447,763
2009	-0.98	17.53	211,116
2010	6.54	-0.12	185,242
2011	11.88	9.95	233,600
2012	8.61	26.47	-290,414
2013	14.99	10.76	1,054,199
2014	-1.5	11.70	1,357,198
2015	11.17	24.87	-115,198

Source: Calculated using the Turkish Treasury Undersecretariat data.

As seen in Table 3, the ratio of the insurance sector's financial assets within its total assets declined gradually. The financial assets in question are blocked on behalf of the Treasury Undersecretariat in a free manner at varying rates over the years and partially as pledges for their contractual commitments.

Table 3: Financial Asset Investments

Years	Financial Assets / Total Assets (%)	Government Bonds and Treasury Bills within Total Financial Assets (%)
2008	31.37	86.56
2009	31.60	86.0
2010	28.90	83.3
2011	25.20	81.2
2012	21.60	75.4
2013	21.20	75.5
2014	18.30	74.0
2015	16.70	72.8

Source: Turkish Treasury Undersecretariat Annual Reports.

The majority of the companies' financial assets were invested in government bonds and treasury bills, as these instruments are low-yield and risk-free, and the financial assets are among the assets whose technical reserves are appraised. The part of the financial assets not invested in government bonds and treasury bills consisted of stocks, mutual funds and other securities. While insurance companies invested the majority of their financial assets in government bonds and treasury bills, the returns from those financial assets ensured that insurance companies' technical losses were converted into financial profit in certain years.

3. Performance of Insurance Companies

Performance is the ability of an enterprise to manage the resources available in the best way. Businesses frequently use performance measurements as a management tool. In publicly traded enterprises in particular, performance is an important indicator in terms of accountability toward stakeholders and responsibilities (Elitas and Agca, 2006). Performance measurements provide company managers with comparable results (with the company's previous years and with other companies) and the new results encourage managers to draft new action plans (Peker and Baki, 2011). Thus, with the targeted or comparable performance measures, businesses or insurance companies will attach greater importance to successful performance factors in their decisions for the future (Elitas and Agca, 2006).

To measure or assess their performance systematically and at regular intervals, businesses need to identify their purposes, evaluation methods, and required criteria/standards. It is of utmost importance to draft standards, collect data, and make measurements in an objective manner so that this assessment can be done impartially (Elitas and Agca, 2006).

Financial performance is directly related to the data in financial reports. Corporate performance can be accessed from three perspectives: the company's productivity (the why inputs are processed in an effective manner), profitability (the company's ability to have earnings that are higher than the costs) and market premium (the firm's market value being greater than the book value) (Almajali et al., 2012).

In literature, company performance is classified as either financial or non-financial performance or as financial or economic and innovative performance. Financial or economic performance is generally measured in terms of growth of sales, turnover, employment or stock prices, whereas innovative performance is expressed as a percentage of expenditures, patents and innovative sales (Almajali et al., 2012).

Although they propose a number of models for the analysis of financial performance, the researchers in the field of strategic management fail to agree in the set of appropriate performance criteria. Therefore, the studies on financial performance tend to employ analysis methods that make use of multiple performance criteria. This multi-dimensional nature of performance calls for diverse models of the relationship between a firm's performance and its performance criteria, and for a number of combinations accounting for the relationships between independent and dependent variables in the models estimated (Ostroff and Schmitt, 1993).

Measuring a firm's performance contributes to the improvement both of a firm's market value or profitability and to the growth of the sector and the entire economy. Intermediaries like insurance companies not only ensure risk transfer, but also provide for methods supporting their activities based on their funds. Insurance companies perform the basic function of compensating for individual and corporate losses arising from certain events while also playing a crucial role in preventing losses, minimizing fears and anxiety and boosting employment (Ahmed, 2011). Therefore, the role of insurance companies in society and economy and their performance are considerably important.

To measure their performance, insurance companies use profitability, as profit has emerged as a prerequisite for competition in global markets. Additionally, profitable companies tend to attract the interest of investors. Also, profitability improves a firm's solvency level, boosting consumer confidence (Burca and Batrinca, 2014).Studies have linked the performance of insurance companies to a number of potential factors, including size, loss ratio, investment ratio, capital structure and the size of the premium underwritten (Malik, 2011). These factors are derived from the relationship among the direct criteria measuring various aspects of a firm's activities, and are expressed in terms of an index, a ratio, a measure per unit or any other comparison.

4. Literature Review on Performance of Insurance Sector

Studies that analyze the performance of insurance companies generally employ panel data regression analysis, data envelopment analysis, and gray relational analysis methods.

Malik (2011) studied the factors affecting the profitability of insurance companies in Pakistan and demonstrated the relationship between internal factors and profitability of insurance companies. Malik took return on assets (ROA) representing profitability as the dependent variable, while treating age, size, leverage ratio, loss ratio and book value of a company as independent variables. She found no correlation between a firm's profitability and its age, a positive correlation between profitability and size and equity and an inverse relationship between profitability and leverage ratio and loss premium ratio.

Focusing on Asian insurance companies, Chen and Wong (2004) concluded that size, investment performance, liquidity ratio, surplus growth, combined ratio (combined ratio is the ratio of incurred losses to earned premiums plus incurred expenses to written premiums) and operating margin (operating margin is defined as the ratio of net operating income to premiums earned) significantly affected insurance companies. The financial success of life insurance companies in particular were influenced by variables of firm size, investment performance and change in asset mix (change in asset mix variable is the average of the percentage change in assets accounts).

Almajali et al. (2012) sought to identify the variables that affect the financial performance of 25 insurance companies in Jordan's Stock Exchange. In their multiple regression analysis, they took return on assets (ROA) as a performance measure, i.e., as an independent variable while picking leverage ratio, liquidity ratio, size, age and management success index (profit/total number of professional managers) as independent variables. They found that the variables in question generally have statistically significant effects on the financial performance of Jordanian insurance companies. They concluded that the variable "age" does not have any statistically significant effect on performance. The researchers were convinced that an increase in a firm's assets would boost that firm's financial performance, and a firm should employ experts among its top level managers.

Peker and Paki (2011) studied the performance of three Turkish insurance companies from a financial perspective using the variables liquidity, leverage and profitability ratios with gray relational analysis. They concluded that the higher a firm's liquidity ratio, the higher its performance. Also, they indicated that studies similar to theirs found profitability ratio to be the best representative of a firm's performance.

Adams and Buckle (2003) sought to determine the variables affecting the financial performance of insurance companies in Bermuda. Using data for the period between 1993 and 1997, they conducted a panel data analysis. They defined the dependent variable, i.e., performance, as the difference between net investment income/net premiums earned and annual operating expenses (including commissions)/net premiums underwritten. Thus, they used a single ratio summing up two basic activities as a firm's performance. As independent variables, they used size, underwriting risk, leverage, liquidity, company type (insurance or reinsurance) and the firm's operation center (whether the firm is multinational). They observed that financial performance of the firms with higher leverage ratios and lower liquidity ratios as well as reinsurance companies are better compared to the firms with lower leverage ratios and higher liquidity and that are normal insurance companies. Contrary to their hypothesis, they established a positive correlation between financial performance and underwriting risk. However, they failed to demonstrate a firm's size and its area of activity as major explanatory factors.

Ozcan (2011) studied the technical efficiency of non-life insurance companies in Turkey for the period between 2002 and 2009 using the data envelopment method. He used fixed assets, number of agents, and number of employees as efficiency factors. He concluded that insurance companies should lower the number of their agents by 21%, their fixed assets by 12% and the number of their employees by 15% in order to improve their efficiency. Girginer et al. (2007) studied insurance companies' performance using both data envelopment and clustering analysis and came to the same conclusion with both methods.

Ahmed et al. (2011) analyzed the data belonging to five selected companies operating in the Pakistani life insurance sector for the period between 2001 and 2007 using the least squares method. They took the ratio profit before interest and taxes to total assets as a performance measure, i.e., the dependent variable. They used leverage, tangibility, size, liquidity, age, risk, and growth variables as independent variables. As a result of the regression analysis, they found leverage, size, and risk to be the most significant variables affecting performance in life insurance companies. In addition, they established no statistically significant relationship between performance (ROA) and profitability, growth, tangibility and liquidity.

Classing the firms in the Turkish insurance sector as life and non-life, Ciftci (2004) sought to assess the performance of the Turkish insurance sector using the data envelopment analysis on their efficiency levels between 1998 and 2002.

Of 41 non-life insurance companies, Ciftci found 11 to be efficient and 30 to be inefficient. On the other hand, 12 life insurance companies were determined to be efficient while 9 were deemed inefficient in their activities. Ciftci used various criteria for analysis to explain the factors for lack of inefficiency of insurance companies.

Burca and Batrinca (2014) analyzed the financial performance of 21 insurance companies selected from the Romanian insurance sector. They used financial leverage, company size, age, growth of gross written premiums, equity, total market share, diversification, underwriting risk, investment ratio, reinsurance dependence, retained risk ratio, solvency margin, and growth of GDP/capita as independent variables. As the dependent variable, they used return on total assets ratio as the measure of financial performance. As a result of the analysis, the researchers found financial leverage, company size, growth of gross written premiums, underwriting risk, and risk retention ratio and solvency margin as determinants of financial performance.

5. Performance Measurement of Insurance Companies Publicly Traded in Istanbul Stock Exchange

In this section, we identify the factors affecting the performance of the insurance companies publicly traded in Istanbul Stock Exchange (BIST). Determination of the factors in question will provide guidance both for the insurance companies who are not publicly traded on getting started in the stock exchange and for the publicly traded insurance companies to improve their performance. For the insurance companies whose shares are traded on the stock exchange and those who intended to start with a public listing, attention was drawn to the factors affecting their performance or success and the points they should improve on were explained in the following analysis.

When its economic and financial structure becomes ripe, a company should consider a public listing. Considering the share of insurance in the financial system, it can be argued that contribution of the publicly traded insurance companies has yet to mature. Clearly, investors and other stakeholders will treat the publicly traded insurance companies differently from the perspective of corporate governance principles.

5.1 Study Population and Sample

All of the publicly traded life and non-life/pension companies are used in the analysis. The analysis covers the eight-year period between 2008 and 2015.

Despite there being 60 companies, specifically 36 non-life, 19 life and pension (L/P), four life insurance companies and one reinsurance company in the insurance sector in 2015, only six insurance companies (four life and two L/P companies) were publicly traded. The public listing of Avivasa Life and Pension Company started in 2014. Therefore, it was not included in the sample population.

Summary information on the publicly traded companies as of 2015 is given in Table 4 below.

Table 4: Publicly Traded Insurance Companies

Insurance company's name and specialty	Market share in the sector (%)*	Market share by specialty (%)	Foreign share (%)	Free float rate (%)	Age (years)	Date ofinitial public offering
Anadolu Insurance (non-life)	10.67	11.94	0	31.36	91	1993
Aksigorta (non-life)	6.59	7.38	36	28	56	1994
Günes Insurance (non-life)	3.13	3.51	30	12.64	58	1994
Ray Insurance (non-life)	0.98	1.09	94.96	5.04	58	1997
Anadolu Life/ Pension (L/P)	1.08	10.06	0	17	26	2000
Avivasa Life/ Pension (L/P)	0.60	4.66	40	19.87	9	2014

*Market shares were taken from www.tsb.org.tr/Document/.../3%20Prim%20Üretimleri%20Sıralama%202015-01.xlsx.(August 6, 2016)

As for the foreign shares of the publicly traded insurance companies, Anadolu Insurance Company and Anadolu Life/Pension Company do not have foreign partners, while Ray Insurance Company, whose market share is the lowest, is predominantly a foreign-owned company.

Also, Anadolu Insurance Company had the highest free float ratio among the companies in question. Non-life companies have been around for at least half a century. Anadolu Insurance Company dates back to around 100 years ago.

5.2 Methods and Variables

Panel data analysis was employed for the purposes of identifying the factors affecting the performance of exchange-traded companies. In the panel analysis, the data set has both a time dimension and a cross-section dimension.

$$\text{Model: } ROA_{it} = \beta_{it} + \beta_2 LOSS_{it} + \beta_3 AGENCY_{it} + \beta_4 LnFINANCIAL_{it} + \beta_5 PROFIT_{it} + e_{it}$$

Model Variables

The dependent variable (ROA): The dependent variable was selected as return on assets (ROA). ROA is a commonly used performance measure that indicates the rate of net profit from the investment on assets or whether assets are efficiently used (Okka, 2009).

Return on Assets (ROA) = After-tax net profit / Total assets

Independent variables

Loss/premium ratio (LOSS): LOSS is found by dividing the paid and pending claims by earned premiums and indicates the rate by which earned premiums cover the paid loss. If the loss/premium ratio increases, technical profits of insurance companies are adversely affected (Doğan, 2013).

Number of agents (AGENCY): Insurance agents play a major role in premium production in Turkey. For instance, private agents accounted for 59% of the premium production in 2015, while banking agents, brokers and companies accounted for 23%, 11% and 5.5%, respectively (Turkish Treasury Undersecretariat, 2015). In the final analysis, insurance companies can reach out to their existing or potential customers via their agents. It follows that the agents play a significant role on the profitability of insurance companies. However, this assumption is contested in the literature. The literature has indicated that too many inefficient agents and employees may adversely affect the company's profitability. With this variable, the nature and existence of the effect of agents on technical profitability is questioned. Ozcan (2011) found that the number of agents has an adverse effect on profitability. The number of agents excluding banks was used for the data in this study.

Financial asset investment profit (FINANCIAL): One of the variables affecting the performance of insurance companies is their income from financial asset investments. If insurance companies diversify their financial asset investments and implement the hedging methods in the best way, this will make a positive impact on profitability (Ahmed, 2011). Given the fact that there has been no technical profit in the Turkish insurance sector in recent years, the income from better management of financial asset investments would largely contribute to insurance companies' profitability.

Technical profitability/earned premiums (PROFIT): PROFIT is a ratio describing the relationship between technical profit and premiums of insurance companies. It indicates the effect of premium income obtained on technical profit.

βit= constant
$e it$= error term

Hypotheses:

H_1 = There is a negative relationship between loss/premium ratio and profit of insurance companies.
H_2 = There is a negative relationship between agents and profitability.
H_3 = There is a positive relationship between income from financial investments and profitability.
H_4 = There is a positive relationship between the rate by which income from earned premiums is reflected on technical profit and profitability.

5.3 Analysis Results

Descriptive statistical results for the dependent and independent variables are given in Table 5. In the analysis conducted based on this data, the average ROA of insurance companies was found to be 0.00 with a standard deviation of 0.05. The average financial asset investment profit was 4.80 with a standard deviation of 3.43. The average of the independent variable of technical profit/earned premiums was 0.03 with a standard deviation of 0.10. The average number of agents was found to be 1,348 with a standard deviation of 747.58. The average loss ratio was 0.87 with a standard deviation of 0.21.
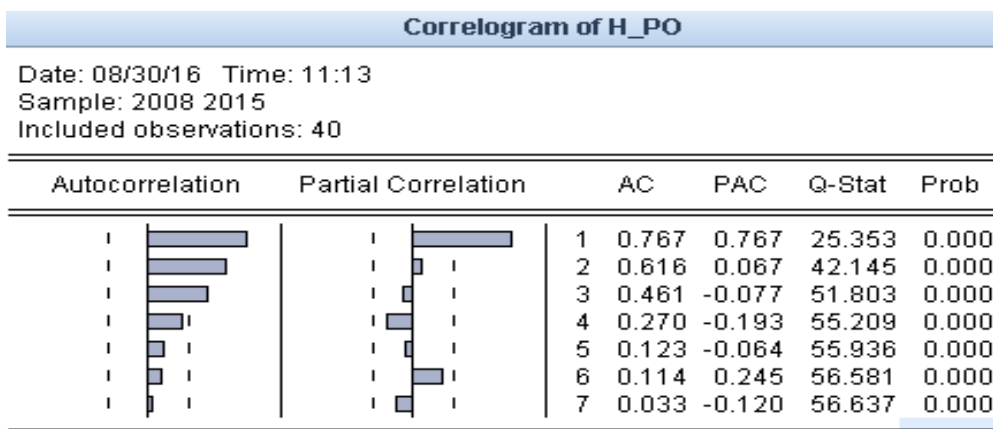
Table 5: Descriptive Statistics

Descriptive statistics	Return on asset	Financial assets investment profit	Technical profit/earned premiums	Number of agents	Loss ratio
Mean	-0.00	4.80	0.03	1,348.03	0.87
Median	0.01	6.81	0.04	1,475.00	0.81
Maximum	0.10	7.90	0.28	2,726.00	1.53
Minimum	-0.18	0.00	-0.30	237.00	0.64
Std. Dev.	0.05	3.43	0.10	747.58	0.21
Observations	40	40	40	40	40

As is seen in Table 6, the Levin, Lin, Chu (LLC) unit root test was performed on the model's independent variable ROA and the independent variables financial asset investment profit/loss, the technicalprofit/earned premiums ratio, the number of agents and loss/premium rate. Trend and constant terms were added to the unit root tests done for each variable. As the probability value was found to be below 0.05 for the variables ROA, number of agents, technical profitability/earned premiums and financial assets profits, there was no unit root and they were stationary at the basic level.

Table 6: Unit Root Test

	Variables	**LLC Stat**	**Prob.**
Basic Level Unit Root Tests - incl. Constant and Trend	Return on Assets	-3.052	0.001
	Log Financial Investment Profit/Loss	-4.838	0.000
	Loss / Premium Ratio	1.056	0.855
	Technical Profit/Earned Premiums	-1.919	0.048
	Number of Agents	-3.020	0.001
Basic Level Unit Root Tests with Constant	Model's Residual	-11.578	0.000

The loss/premium ratio was found to be not stationary at the basic level, and as a result of the correlogram analysis conducted based on this it was concluded that correlation was found to be lifted at the 4th lag.

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Correlogram of H_PO

Date: 08/30/16   Time: 11:13
Sample: 2008 2015
Included observations: 40

 Autocorrelation    Partial Correlation       AC     PAC    Q-Stat   Prob

                                          1   0.767   0.767   25.353   0.000
                                          2   0.616   0.067   42.145   0.000
                                          3   0.461  -0.077   51.803   0.000
                                          4   0.270  -0.193   55.209   0.000
                                          5   0.123  -0.064   55.936   0.000
                                          6   0.114   0.245   56.581   0.000
                                          7   0.033  -0.120   56.637   0.000
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Accordingly, the variables ROA, number of agents, technical profit/earned premiums and financial asset investment profit were included in the model at the basic level, while the variable loss/premium ratio was included with its fourth-lag form.

Table 7: Correlation

Correlation Analysis	Return on Assets	Number of Agents	Financial Assets Investment Profit	Loss/Premium Ratio	Technical Profit/Earned Premiums
Return on Assets	1.00				
Probability Value	-----				
Number of Agents	0.04	1.00			
Probability Value	0.81	-----			
Financial Assets Investment Profit	0.44	-0.34	1.00		
Probability Value	0.00	0.03	-----		
Loss / Premium Ratio	-0.12	-0.60	0.32	1.00	
Probability Value	0.45	0.00	0.04	-----	
Technical Profit / Earned Premiums	0.82	-0.30	0.44	0.28	1.00
Probability Value	0.00	0.06	0.00	0.08	-----

According to the correlation analysis, no high correlation coefficients were found among independent variables. Based on these results, all independent variables were added to the model for estimation.

Table 8: Regression Analysis Results

Independent Variables	Coefficient	Std. Error	t-statistic	Probability (p)
Constant	0.086	0.059	1.471	0.162
Logarithmic Financial Assets Investment Profit	0.003	0.001	2.314	0.035
Technical Profit / Earned Premiums	0.538	0.008	6.819	0.000
Number of Agents	1.770	8.150	2.171	0.046
Loss / Premium Ratio (-4)	-0.171	0.065	-2.622	0.019
F-statistic	14.67			
Probability (F-statistic)	0.00			
R^2	0.80			

The model's F-test result was found to be 14.67. As the probability value is less than 0.05, the model is generally significant. The R^2 value of the model was found to be 80%, and therefore the ROA variable is accounted for by the independent variable by 80%.

Based on the regression analysis, the following model was mathematically obtained:

$$ROA_{it} = 0,086 + -0,171\ LOSS_{it} + 1,770\ AGENCY_{it} + 0,003\ FINANCIAL_{it} + 0,538\ PROFIT_{it} + e_{it}$$

Accordingly, the **loss/premium ratio** of insurance companies has a negative effect on their ROA. In other words, when the loss/premium ratio increases by 1%, the firm's ROA declines by 17.1%. In this case, H_1 is accepted.
In the literature, varying results were reported on the effect of the number of agents on insurance companies' performance. In our study, the **number of agents** of insurance companies has a positive effect on their ROA; thus, as the number of agents increases, the ROA also increases. In this case, when the number of agents increases by 1%, the firm's performance increases by 177%. H_2 is rejected.

A positive correlation was found between **financial assets investment profit and ROA**. According to the model, as financial asset investment profit increases, the firm's ROA increases as well. In this case, a 1% rise in the profit from financial assets will lead to a 0.3 % increase in the firm's performance. In this case, H_3 is accepted.

The variable **technical profit/earned premiums** of insurance companies has a positive effect on their ROA; thus, when technical profit/unearned premiums increases, ROA increases as well. When the technical profit/earned premiums ratio increases by 1%, the firm's ROA increases by 54%. Therefore, H_4 is accepted.

Table 9: Model's Residual Correlogram Analysis

Lag	AC	PAC	Q-Stat	Prob
1	0.037	0.037	0.0319	0.858
2	0.120	0.119	0.3841	0.825
3	-0.015	-0.024	0.3901	0.942

According to the 3-lag correlogram analysis on the residuals obtained from the model, the probability values were found to be higher than 0.05, and there is no auto-correlation in the model's residual.

6.Findings and Conclusion

In the analysis conducted on publicly traded insurance companies in Turkey, the variables affecting the performance of the companies were identified. The loss/premium ratio, an independent variable used in the model, had a negative effect on the companies' performance. The other variables, i.e., number of agents, financial asset investment profit, technical profit/earned premiums, had a positive effect on performance; thus, as any increase in these variables leads to an increase in performance of insurance companies.

In conclusion, to improve their performance, insurance companies should try to increase the number of agents, their profits from financial asset investments and their technical profit vis-a-vis earned premiums. As the loss/premium ratio has a negative impact on the insurance companies' performance, insurance companies should more meticulously determine their policy risks and correctly price these risks to make a positive contribution to their performance.

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