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RESEARCH ARTICLE

The Impact of Internal Organizational Factors on the Performance of the Insurance Industry: Using the SVAR Approach

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ABSTRACT

The insurance industry, as a key institution in the financial system of any country, plays a significant role in managing risks and ensuring the financial security of individuals and businesses. This study examines the effects of fluctuations in various variables on the profitability of insurance companies over the period from 2011 to 2023 on a quarterly basis, using the Structural Vector Autoregression (SVAR) approach. The findings show that profitability, as one of the main variables, plays a critical role in explaining its own changes. The results of the variance analysis indicate that profitability, especially in the short term, is the largest factor explaining changes, accounting for about 71% of fluctuations, while this share decreases to 53% in the long term. Shocks related to financial leverage and capital adequacy ratio also significantly explain changes in profitability in both the short and long term, respectively. It is recommended that insurance companies use advanced risk analysis tools and establish stricter standards in the underwriting process to reduce unnecessary risks. Additionally, implementing intelligent risk assessment systems and adopting appropriate policies in liquidity management and investment can help improve financial performance and enhance the sustainability of companies. Striking a balance between internal and external financial resources, reducing high-risk debt, and strengthening the capital adequacy ratio will also lead to increased financial stability in the face of economic shocks.

1. INTRODUCTION

The insurance industry, as one of the most important pillars of the economy, plays a crucial role in reducing financial risks and enhancing economic stability (Zhang et al., 2023; MAHDID and BOULFOUL, 2024). This sector not only helps in mitigating economic fluctuations but also fosters public trust and strengthens economic investments (Chiaramonte et al., 2020). Consequently, insurance companies hold a key role in facilitating economic growth and sustainable development by reducing investment risks and providing financial security, thus encouraging economic activities and new investments (Kinyua et al., 2021). Furthermore, insurance indirectly contributes to the stability of other sectors of the economy, including the financial sector (Drobyshevsky et al., 2023). Given the extensive assets held by insurance companies, they play an important role in financial markets, with their investments bolstering capital markets and banks (Nikolić et al., 2023). Through the creation of financial reserves and investments in long-term projects, insurers contribute to national economic development and act as a financial shield against economic shocks (Baruti, 2023). Therefore, the effective and efficient performance of the insurance industry is not only vital for maintaining societal financial security but also for fostering a dynamic and crisis-resistant economy. However, the insurance industry faces multiple challenges and uncertainties. These challenges stem from economic, political, social, and internal organizational factors, all of which can directly or indirectly affect insurance companies' performance and their ability to provide sustainable services. Therefore, for policymakers and executives, it is essential to thoroughly analyze and understand these factors and their impact on the industry's performance.

Given the complexity and interplay of these factors, the use of the Structural Vector Autoregression (SVAR) model serves as a powerful analytical tool to examine the influence of internal organizational factors on the performance of the insurance industry from 2011 to 2023 on a quarterly basis. The SVAR model, by identifying structural shocks and analyzing how variables react to these shocks, reveals hidden relationships and the long-term and short-term impacts of these factors on the performance of insurance companies (Li and Ouyang, 2023). The results of this study can significantly aid insurance industry managers in making more effective decisions, thereby enhancing productivity and financial sustainability of insurance companies.

2. LITERATURE REVIEW

The insurance industry, as a key institution within any country's financial system, plays a vital role in managing risks and providing financial security for individuals and businesses (Kumar et al., 2021; Franke and Meland, 2019). The performance of the insurance industry is influenced by various factors, which can be broadly categorized into external and internal organizational factors. This study focuses on internal organizational factors that can be managed and controlled by insurance companies. Internal organizational factors include financial and managerial variables that impact the profitability, productivity, and financial sustainability of insurance companies. These variables include underwriting risk (which measures the company's ability to manage risks and accept insurance policies with varying degrees of risk), premium growth (indicating the expansion of the insurance market and an increase in policyholders), financial leverage (representing the ratio of debt to assets and the company's ability to manage its liabilities), capital adequacy ratio (indicating the amount of capital available to meet financial obligations), and liquidity (the company's ability to meet short-term liabilities). Several studies have examined factors influencing the performance of insurance companies, with most focusing on analyzing the effects of financial and economic variables. However, fewer studies have simultaneously analyzed these factors using advanced statistical and econometric models such as Structural Vector Autoregression (SVAR).

For instance, Li and Chen (2016) explored the impact of financial leverage and capital adequacy ratio on the risk-taking behavior of insurance companies. Their findings revealed that companies with higher financial leverage tend to engage in higher risk-taking, which can undermine financial sustainability. Similarly, Zhang et al. (2019) showed through economic models that premium growth and risk management have a direct and positive effect on the profitability of insurance companies, while excessive financial leverage can lead to liquidity problems and reduced performance. Chen et al. (2019) investigated the impact of financial leverage on both systematic and unsystematic risks of insurance companies, concluding that increased leverage, especially in unstable market conditions, heightens risk and decreases company performance. In another study, Mak et al. (2020) focused on premium growth's effect on profitability, finding that premium increases, particularly in developing markets, are directly linked to higher profitability and sustainable industry growth. Furthermore, Fang et al. (2021) demonstrated that an insurance company's ability to manage underwriting risk has a direct effect on profitability, showing that companies with superior risk assessment skills experience reduced losses and increased profitability. Zhang et al. (2022) also confirmed that the capital adequacy ratio directly influences an insurance company's ability to attract capital and manage risk, with companies maintaining higher capital adequacy ratios being more likely to sustain financial stability. Benjamin et al. (2023) examined the impact of liquidity on the performance of insurance companies, showing that companies with higher liquidity levels are better equipped to manage short-term liabilities and engage in new investments. They also found that higher liquidity boosts investor confidence and contributes to company growth. Upadhyaya et al. (2023) analyzed the financial performance determinants of non-life insurance companies in Nepal over a 14-year period (2008-2021). Their panel data analysis indicated a significant and positive impact of gross premiums, retention ratio, expense ratio, and combined ratio on financial performance, explaining 92.75% of the variance. This underscores the importance of enhancing elements like gross premiums and retention ratio to improve performance. In a study focused on Iran, Babaei et al. (2023) examined the profitability determinants of 18 insurance companies listed on the Tehran Stock Exchange from 2014 to 2021. Their findings highlighted the importance of aligning costs and revenues for insurers, though variables like company size, company age, and product diversification were not significantly related to profitability. Worku et al. (2024) identified key profitability determinants for Ethiopian insurance companies between 2011 and 2020. The classical linear regression model showed that variables such as company age, tangible assets, company size, managerial efficiency, leverage ratio, premium growth, and GDP positively influenced return on assets. Conversely, factors like loss ratio and inflation had a negative effect.

Despite these studies, limited research has specifically employed the SVAR model to analyze the impact of internal organizational factors on the performance of the insurance industry. The SVAR approach is highly suitable for analyzing complex relationships among internal organizational variables due to its ability to identify structural shocks and disentangle their effects on various variables. By leveraging this approach, researchers can provide deeper insights into how internal factors interact and affect insurance companies' performance in both the short and long term.

3. RESEARCH METHODOLOGY

The fundamental difference between classical econometric methodology and time series methodology is that in classical econometrics, economic theories are generally tested, and the impact of independent variables on a dependent variable—usually the focus of scientific discussion—is measured. However, in time series methodologies, the influence between different variables is generally bidirectional. These methodologies allow us to treat all variables as endogenous when we are unsure whether a variable is truly exogenous.

New econometric methods, such as VAR and its evolved form SVAR, were developed in response to criticisms of older models. After estimating the VAR equation using the OLS method, the residuals or error components are identified. Early VAR models assumed that structural shocks did not have simultaneous effects on each other. However, as models evolved, the SVAR model was introduced, which accounts for the simultaneous effects of shocks.

In the vector autoregressive (VAR) approach, a system of simultaneous equations is initially designed where all variables are functions of their current and past values of each other. This model is known as the structural VAR (SVAR) model. By solving the SVAR model for the variables of interest, the solved form of the VAR model is obtained, which is known as the standard VAR.

In this model, each variable is a function of the past values of all variables in the model. Since the standard VAR model is a function of the past values of the variables, it can be estimated using the OLS method. However, for the SVAR model, such conditions do not hold. One of the main issues in these models is the identifiability of the SVAR model. In fact, the SVAR model cannot be solved using VAR methods because, with the inclusion of simultaneous structural shocks, the number of unknowns exceeds the number of equations. Therefore, in the identification process, we seek a set of constraints derived from reliable theories to match the number of equations and unknowns.

The structural form for m variables and order p can be represented as follows:

$$\theta Y_t = \tau_0 + \sum_{j=1}^{p} \tau_j Y_{t-j} + \varepsilon_t$$

Each component of this equation is as follows:

$$Y_t = \begin{bmatrix} Y_{1t} \\ Y_{2t} \\ \vdots \\ Y_{mt} \end{bmatrix} . \theta = \begin{bmatrix} 1 & -\theta_{12} & \cdots & -\theta_{1m} \\ -\theta_{21} & 1 & \cdots & -\theta_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ -\theta_{m1} & -\theta_{m2} & \cdots & 1 \end{bmatrix} . \tau_0 = \begin{bmatrix} \gamma_{10} \\ \gamma_{20} \\ \vdots \\ \gamma_{m0} \end{bmatrix} \quad (1)$$

$$\tau_j = \begin{bmatrix} \gamma_{11.j} & \gamma_{12.j} & \cdots & \gamma_{1m.j} \\ \gamma_{21.j} & \gamma_{22.j} & \cdots & \gamma_{2m.j} \\ \vdots & \vdots & \ddots & \vdots \\ \gamma_{m1.j} & \gamma_{m2.j} & \cdots & \gamma_{mm.j} \end{bmatrix} . j = 1.2. \dots . m$$

Thus, the i-th equation can be written as follows:

$$Y_{it} = \sum_{\substack{K=1 \\ K\neq i}}^{m} \theta_{ik} Y_{Kt} = \gamma_{i0} + \sum_{j=1}^{p} \gamma_{i1.j} Y_{1t-j} + \sum_{j=1}^{p} \gamma_{i2.j} Y_{2t-j} + \cdots +$$

$$\sum_{j=1}^{p} \gamma_{im.j} Y_{mt-j} + u_{it} . i = 1. \ldots . m$$

u_{it} has a zero mean and variance σ_{ui}^2. In addition, u_{it} has no autocorrelation, and the error term of one equation is uncorrelated with the error term of another equation. The variance matrix of u_t is denoted by Σ, which is expressed as:

$$\sum = var(u_t) = E(u_t \acute{u}_t) = \begin{bmatrix} \sigma_{u1}^2 & 0 & \cdots & 0 \\ 0 & \sigma_{u2}^2 & \cdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & \sigma_{um}^2 \end{bmatrix} \quad (2)$$

The standard form, or the solved form, for m variables and p time lags can be obtained by multiplying both sides of equation (1) by θ^{-1}, as follows:

$$\theta Y_t = \tau_0 + \sum_{j=1}^{p} \tau_j Y_{t-j} + u_t \quad (3)$$

$$Y_t = A_0 + \sum_{j=1}^{p} A_j Y_{t-j} + \varepsilon_t \quad (4)$$

Where:

$$A_0 = \theta^{-1}\tau_0 = \begin{bmatrix} a_{10} \\ a_{20} \\ \vdots \\ a_{m0} \end{bmatrix} . \ A_j = \theta^{-1}\tau_j = \begin{bmatrix} a_{11.j} & a_{12.j} & \cdots & a_{1m.j} \\ a_{21.j} & a_{22.j} & \cdots & a_{2m.j} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1.j} & a_{m2.j} & \cdots & a_{mm.j} \end{bmatrix} . \quad (5)$$

$\varepsilon_t = \theta^{-1} u_t \, . \ j = 1.2. \ldots . m$

The i-th equation is as follows:

$$Y_{it} = a_{i0} + \sum_{j=1}^{p} a_{i1.j} Y_{1t-j} + \sum_{j=1}^{p} a_{i2.j} Y_{2t-j} + \sum_{j=1}^{p} a_{im.j} Y_{mt-j} + \varepsilon_{it} . \quad (6)$$

$$i = 1. \ldots . m$$

In the system of equations above, each error term is a linear combination of the structural VAR error terms (u_t). Therefore, while the u_{it}uit terms are uncorrelated, the εit\varepsilon_{it}εit terms are correlated. The variance-covariance matrix of ε_{it} is as follows:

$$var(\varepsilon_t) = E(\varepsilon_t \acute{\varepsilon}_t) = \Omega = \begin{bmatrix} E({\varepsilon_{1t}}^2) & E(\varepsilon_{1t}\varepsilon_{2t}) & \cdots & E(\varepsilon_{1t}\varepsilon_{mt}) \\ EE(\varepsilon_{2t}\varepsilon_{1t}) & ({\varepsilon_{2t}}^2) & \cdots & E(\varepsilon_{2t}\varepsilon_{mt}) \\ \vdots & \vdots & \ddots & \vdots \\ E(\varepsilon_{mt}\varepsilon_{1t}) & E(\varepsilon_{mt}\varepsilon_{2t}) & \cdots & ({\varepsilon_{mt}}^2) \end{bmatrix} \quad (7)$$

$$= \begin{bmatrix} \sigma_1^2 & \sigma_{12} & \cdots & \sigma_{1m} \\ \sigma_{21} & \sigma_2^2 & \cdots & \sigma_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ \sigma_{m1} & \sigma_{m2} & \cdots & \sigma_m^2 \end{bmatrix}$$

If we denote the variance matrix of u_t as Σ, then according to $\varepsilon_t = \theta^{-1} u_t$, we will have:

$$\Omega = var(\varepsilon_t) = E(\varepsilon_t \acute{\varepsilon}_t) = \left[(\theta^{-1}u_t)(\theta^{-\acute{1}}u_t)\right] = \theta^{-1}E(u_t\acute{u}_t)\theta^{\acute{-1}} = (\theta^{-1})\Sigma\left(\theta^{\acute{-1}}\right) \quad (8)$$

Or:

$$\Sigma = \theta\,\Omega\,\theta^{-1} \quad (9)$$

4. RESULTS

In this study, six variables have been used for the period from 2011 to 2023 on a quarterly basis. Given that the variables need to be stationary for estimating the model using the SVAR method, the variables have been utilized in logarithmic form. The variables are introduced in Table 1:

Table 1 - Selected Variables

Variable	symbol	description	source
profitability	ROA	return on assets: profit after tax deduction divided by total assets	Msomi, (2023),Bushashe, (2023) Bazhair & Alshareef (2022),Upadhyaya et al. (2023), Al-Omari et al. (2024)
Underwriting risk	UNR	The ratio of claims paid to net insurance premiums received	Msomi, (2023), Olarewaju & Msomi (2022)
premium growth	PGR	Growth in premium income	Upadhyaya et al. (2023), Olarewaju & Msomi (2022)
leverage	LEV	The ratio of total debt (sum of current and non-current liabilities) to equity	Msomi, (2023),Trung, (2021), Bazhair & Alshareef (2022), Ghafel & Bougatef (2024)
Capital adequacy ratio	CAR	The ratio of equity to total assets	Yitayaw, (2021),Bushashe, (2023)
Liquidity	LIQ	The ratio of total assets to total current liabilities	Worku et al. (2024), Zinyoro & Aziakpono (2023), Kumar et al. (2022),

The Cholesky decomposition has been used to impose the restrictions. The constraint matrix is presented as follows:

$$\begin{bmatrix} \varepsilon^{\text{LIQ}} \\ \varepsilon^{\text{UNR}} \\ \varepsilon^{\text{CAR}} \\ \varepsilon^{\text{PGR}} \\ \varepsilon^{\text{LEV}} \\ \varepsilon^{ROA} \end{bmatrix} = \begin{bmatrix} b_{11} & 0 & 0 & 0 & 0 & 0 \\ b_{21} & b_{22} & 0 & 0 & 0 & 0 \\ b_{31} & b_{32} & b_{33} & 0 & 0 & 0 \\ b_{41} & b_{42} & b_{43} & b_{44} & 0 & 0 \\ b_{51} & b_{52} & b_{53} & b_{54} & b_{55} & 0 \\ b_{61} & b_{62} & b_{63} & b_{64} & b_{65} & b_{66} \end{bmatrix} = \begin{bmatrix} u^{\text{LIQ}} \\ u^{\text{UNR}} \\ u^{\text{CAR}} \\ u^{\text{PGR}} \\ u^{\text{LEV}} \\ u^{ROA} \end{bmatrix}$$

The Augmented Dickey-Fuller (ADF) unit root test has been used in this study to test the stationarity of the variables, and the results are reported in Table 2:

Table 2. Results of the Augmented Dickey-Fuller (ADF) Test
Source: Research Findings

Variable	ADF Test Statistic	Critical Value (1%)	Critical Value (5%)	Critical Value (10%)	Stationarity	Order of integration
ROA	-5.43	-3.57	-2.92	-2.60	Stationarity	I(0)

UNR	-16.52	-3.57	-2.92	-2.60	Stationarity	I(0)
PGR	-6.65	-3.57	-2.92	-2.60	Stationarity	I(0)
LEV	-2.62	-3.58	-2.92	-2.60	Stationarity	I(0)
CAR	-2.15	-3.58	-2.92	-2.60	Stationarity	I(0)
LIQ	-2.02	-3.57	-2.92	-2.60	Stationarity	I(0)

As shown in Table 2, all variables are stationary at the level. Various criteria are used to determine the optimal lag, and none of these criteria have absolute precedence over the others. Therefore, we consider the lag as optimal based on the majority of criteria. Thus, two lags are selected as the optimal lag, which are introduced as optimal according to the HQ, FPE, and LR criteria. The statistics for these criteria are presented in Table 3.

Table 3. Results of Lag Selection
Source: Research Findings

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1048.122	NA	2.60e+13	47.91463	48.15793	48.00486
1	-923.9275	208.8724	4.29e+11	43.90579	*45.60888	44.53738
2	-883.4905	*56.97934	*4.79e+11	43.70411	46.86700	*44.87706
3	-843.5332	45.40601	4.63e+11	43.52424	48.14691	45.23855
4	-798.8238	38.61271	5.43e+11	*43.12835	49.21082	45.38402

LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final Prediction Error
AIC: Akaike Information Criterion
SC: Schwarz Information Criterion
HQ: Hannan-Quinn Information Criterion
To analyze the complex dynamics of the variables, we use impulse response functions.

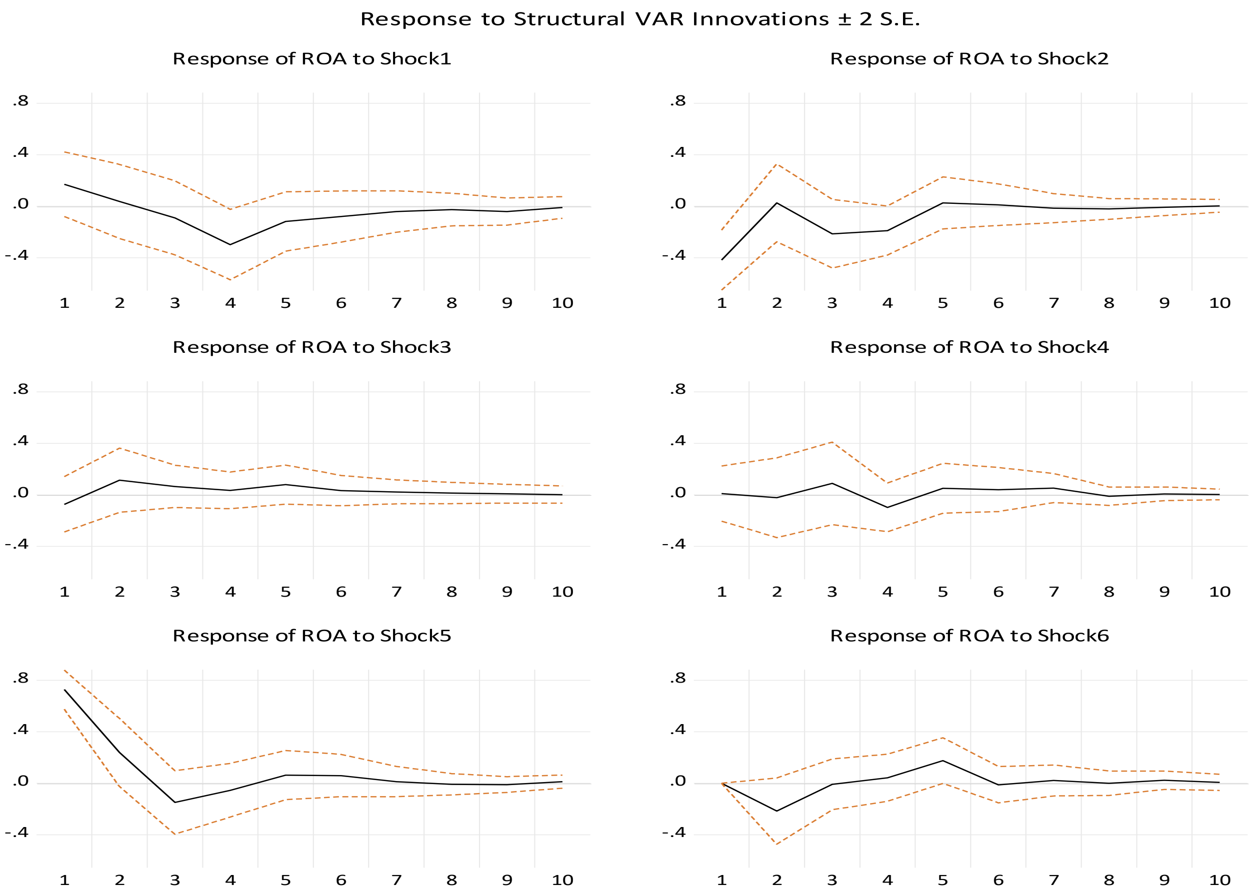

Figure 1. Impulse Response Function of Profitability Index (ROA)

Given the aforementioned points, the insurance industry is an important financial institution that, in addition to protecting people from adverse events that may happen to them, also contributes to economic growth by generating more income. Therefore, researchers place the greatest importance on profitability. The above chart shows the response of the profitability variable to a one-standard-deviation shock in other variables. Considering that the shocks have been normalized, each standard deviation shock corresponds to a one percent change in the related variable (all variable changes have been normalized between zero and one). The shocks referred to as shock6, shock5, shock4, shock3, shock2, and shock1 correspond to the capital adequacy ratio, financial leverage, liquidity ratio, premium growth, profitability, and underwriting risk, respectively. A one percent change in the first variable, referred to as shock 1, exerts a diminishing effect on profitability until the end of the fourth period, with profitability decreasing by about 0.3 percent. However, after the fourth period, the introduced shock adjusts and its impact becomes almost neutral. A one percent change in the second variable, known as shock 2, has a fluctuating effect on profitability, with increasing and decreasing effects, ultimately showing this effect approaching zero. A one percent change in the third variable, termed shock 3, results in an increasing effect in the short term (i.e., during the first and second periods), followed by adjustment and neutrality afterward. A one percent change in the fourth variable has fluctuating effects, and before becoming neutral, it leaves increasing and decreasing effects. The effect of the fifth variable is diminishing until the third period, after which it becomes slightly increasing and ultimately nearly neutral. A one percent change in the sixth variable has fluctuating effects, with decreasing and increasing impacts, but this effect also approaches zero.

Using structural decomposition tools, we can understand which factors and to what extent influence the changes in a variable, and how this influence will evolve over time. In this paper, considering our variable of interest, profitability, we will obtain valuable insights through the variance decomposition table, the information of which is presented in Table 4.

Table 4. Variance Decomposition of Profitability
Source: Research Findings

Period	S.E.	Shock1	Shock2	Shock 3	Shock 4	Shock5	Shock 6
1	0.860671	3.966272	23.55285	0.724917	0.013810	71.74215	0.00000
2	0.927587	3.575767	23.35783	2.141998	0.068839	68.47125	5.384317
3	0.974050	4.101002	23.29065	2.390723	0.899175	64.42832	4.890130
4	1.043437	11.73163	23.58270	2.193422	1.649102	56.41366	4.429489
5	1.071253	12.34743	22.43489	2.630738	1.792769	53.87694	6.917229
6	1.077276	12.75577	22.19665	2.694981	1.915667	53.58562	6.851315
7	1.079971	12.83204	22.10480	2.725736	2.145657	53.33392	6.857847
8	1.080638	12.83204	22.11393	2.738896	2.152870	53.27400	6.849409
9	1.081819	12.98719	22.07114	2.738647	2.153521	53.16637	6.883128
10	1.081964	12.99076	22.06608	2.738392	2.153828	53.16595	6.884991

Table 4 shows the variance decomposition of profitability. The first column indicates the time period. The second column represents the forecasting errors for different periods. The source of the errors is the changes in current values and future shocks, and since the error in each year is calculated based on the errors of previous years, it increases over time. The shocks are introduced in the impulse response functions. In the first period, shock five (profitability) has the dominant explanatory power and accounts for about 71% of the changes. The explanatory power of the variable itself decreases over time and reaches approximately 53% in the long term. Therefore, in the long term, the variable explains 53% of its own changes. Other variables have varying degrees of explanatory power. Shock two, related to financial leverage, explains 23% of the changes in the short term and around 22% in the long term. Shock one, which pertains to the capital adequacy ratio, is next in importance, explaining nearly 3% of the changes in the short term, but around 12% of the changes in profitability in the medium and long term. Other shocks, as shown in the table, explain different amounts of changes.

5. CONCLUSION AND RECOMMENDATIONS

Considering the obtained results and that the profitability variable is logarithmic (growth), it can be said that any small change in it indicates significant and profound effects. The shock from the capital adequacy ratio has a diminishing effect until the end of the fourth period, resulting in profitability decreasing by about 0.3 percent, but from the fourth period onward, the shock moderates and becomes almost neutral. A one percent change in financial leverage, referred to as shock 2, has a fluctuating effect on profitability, exhibiting increasing-decreasing patterns, but this effect is shown to be close to zero. A one percent change in liquidity ratio, referred to as shock 3, leads to increasing effects in the short term, specifically in the first and second periods, but then adjusts and neutralizes afterward. A one percent change in premium growth has fluctuating effects, leaving increasing-decreasing patterns until it becomes neutral. The effect of profitability itself is diminishing until the third period, after which it becomes slightly increasing and ultimately nearly neutral. A one percent change in underwriting risk has fluctuating effects, showing decreasing-increasing-decreasing patterns, with this effect appearing close to zero. Furthermore, the results show the variance decomposition of profitability, which indicates that in the short term, shock five (profitability) has the dominant explanatory power, accounting for about 71% of the changes. The explanatory power of the variable itself decreases over time, reaching approximately 53% in the long term. Therefore, in the long term, the variable explains 53% of its own changes. Other variables have varying degrees of explanatory power. Shock two, related to financial leverage, explains 23% of the changes in the short term and about 22% in the long term. Shock one, which pertains to the capital adequacy ratio, is next in importance, explaining nearly 3% of the changes in the short term, but around 12% of the changes in profitability in the medium and long term. The research results indicate that changes in underwriting risk have a fluctuating impact on the profitability of insurance companies. Therefore, it is recommended that insurance companies utilize advanced risk analysis tools and establish more precise standards in the underwriting process to reduce unnecessary risks. Additionally, implementing intelligent risk assessment systems can create a suitable balance between premium growth and profitability.

To avoid unpredictable fluctuations in financial performance, it is advisable for policymakers to refrain from excessive use of debts and establish a proper balance between internal and external resources. It is suggested that financing programs based on increasing capital through shareholders and reducing high-risk debts should be prioritized. Moreover, managers and policymakers of insurance companies should support policies that strengthen the capital adequacy ratio. These policies can include increasing investments in low-risk assets, reducing debts, and increasing cash reserves. Enhancing the capital adequacy ratio will contribute to financial stability in the face of economic shocks. In order to improve liquidity management, it is recommended that companies enhance their status by adopting policies to increase short-term cash flows. Additionally, more precise planning for payment timing and optimizing short-term investments can help improve the liquidity of companies. Instead of solely focusing on increasing the number of insurance policies, insurance companies should pay attention to enhancing service quality and increasing customer satisfaction, as this approach will lead to retaining current customers and attracting new ones, thereby ensuring sustainable premium growth. Developing new and diverse products based on the needs of policyholders is another suggestion. Given that profitability continues to explain a significant portion of its changes in the long term (about 53%), insurance companies should formulate long-term strategies to maintain and enhance profitability. Improving operational efficiency, reducing unnecessary costs, and utilizing modern technologies for process optimization can also be effective in this regard. The volatility in profitability resulting from changes in internal variables emphasizes the importance of cohesive and balanced financial policies. Therefore, developing flexible financial policies that adapt to different economic conditions is essential for ensuring the sustainability of companies. Establishing a comprehensive financial framework that includes precise risk assessment indicators, financial leverage, and liquidity will contribute to improved financial performance. Since the relationships between various variables are complex, strengthening internal oversight and increasing transparency in the operations of insurance companies seem essential. Creating a comprehensive system for continuously monitoring changes in key variables and assessing their potential impacts on profitability can help improve risk management. Utilizing modern technologies like artificial intelligence and big data analytics can enhance underwriting processes, risk management, and financial optimization. Insurance companies can leverage these technologies to improve accuracy in risk assessment and enhance business strategies. Considering the shocks affecting various variables and their impacts on profitability, insurance companies should adjust their strategies to be flexible against sudden economic and financial changes. It is recommended that insurance company managers develop support programs to cope with potential crises to enhance the companies' ability to maintain stability during critical conditions. As the results indicate, profitability plays a significant role in explaining its changes in the long term. This suggests that companies' internal policies aimed at improving profitability will have a considerable impact in the long run. Therefore, policymakers should focus on creating long-term incentives for improving performance and efficiency in companies. By implementing these recommendations, insurance companies can enhance their financial performance and achieve sustainable profitability while simultaneously reducing existing risks, leading to greater stability and long-term growth in financial markets.

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