RESEARCH ON INFLUENCING FACTORS AND PREDICTIONS OF INSURANCE DEVELOPMENT IN UZBEKISTAN

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This thesis presents the results of research on the analysis of the regional insurance markets of Uzbekistan and the modeling of the insurance market. Factors influencing the development of insurance markets were identified and a model was created based on panel data. Regional insurance markets in Uzbekistan were analyzed and a development model was created. For the forecast, a forecast of the volume of insurance premiums for 2023-2026 regions is given, using panel data consisting of the volume of accumulated insurance premiums in the regions, gross regional product, investment, average income of the population, and indicators of the population in the regions.

KEYWORDS: *regional insurance market, panel data, econometric model, insurance potential, insurance premium, GDP, population income, random effect, fixed effect model*

INTRODUCTION

Reforms and modernization of the economy are being carried out on a large scale in the Republic of Uzbekistan. One of the main directions of economic liberalization is the development of a full-fledged market infrastructure.

In a situation where deep reforms directed at the market economy are being carried out in our republic, there is a need to modernize the insurance sector as well. In fact, the insurance system in our country is considered to be of great importance in the stable development of the economy and in protecting it from possible shocks.

Factors such as the fact that insurers in the insurance market are developing new insurance products that suit the interests of these subjects in order to attract a wide range of potential customers to insurance protection, and that the competitive environment is growing among them also have a positive effect on this process.

PREVIOUS STUDIES AND HYPOTHESES DEVELOPMENT

Factors affecting the development of the insurance market have been analyzed in many literatures. Scholars have analyzed from various perspectives, including macro, meso, micro, and economic. Arena (2008)[1], Lee et al. (2006) [2] and Anghelache et al. (2019) [3] conducted a study on the relationship between insurance development and economic growth using data from different countries.

Hong et al. (2014)[4], Tang (2015)[5], Gao (2018)[6] and Wang (2019)[7] studied the relationship between insurance and economic growth in China. They found that economic growth significantly increases insurance development because economic growth affects the demand for insurance and the financial status of the population indicates the ability to purchase insurance services. Zhou (2014) [8], Yuan (2015) [9], Yang and Zhu (2019) [10] conducted research on the impact of monetary policy on the insurance market. According

to their research results, different forms of monetary policy have different effects on the development of the insurance industry.

Hu and Chen (2012[11]), Wang (2019)[12] and Paunika et al examine the impact of inflation on the development of the insurance industry, finding that inflation leads to higher inflationary expectations and lower demand for long-term insurance.

Return on asset, which represents the level of profitability of insurance companies, is a measure of efficiency, and the factors affecting it have been studied by several scientists. In their research, factors such as GDP growth rate, inflation, insurance premium growth, company size, and interest rate are considered factors that strongly influence the level of financial performance of insurance companies. [14]

In this research, the experience of the above foreign countries and the suggestions and recommendations of foreign scientists for the study of insurance income were used in the analysis of insurance income and demand for insurance.

DATA SOURCE

Based on the demand for insurance and the factors affecting it, an econometric model was created. The research included data from 21 annual observations of Uzbekistan for 2001-2021. The volume of insurance premiums was taken as a variable for the demand for insurance. Statistical data were used from the official website of the Statistics Committee and the official website of the Insurance Support Agency.

METHOD

We construct an analysis integrating a multiple linear regression, stepwise regression, and robustness analysis. The process can be expressed as three parts, as follows:

1. Construct an initial model and check the multi-collinearity: a multiple linear regression is applied to build the initial model as:

$$y_{it} = a_i + \beta_1 X_{it1} + \beta_2 X_{it2} + \beta_3 X_{it3} + ..\beta_n X_{itn} + u_{it} \qquad (1)$$

where y_{it} is the value of leading indicator to evaluate the development of insurance industry, x_{it} are the values of the factors influencing the development of insurance industry, and u_{it} is a random error term which meets the general classical hypothesis of econometrics. Then, a regression analysis of all the factors is done to calculate the correlation coefficients between pairs of the variables.

2. Find an optimal combination of variables without collinearity: a stepwise regression is used. A stepwise regression is actually a feature extraction method that can find an optimal combination of variables that can explain most dependent variable variation. In this step, Formula 1 can be improved as:

$$y_{it} = a_i + \beta_1 X_{it1} + \beta_2 X_{it2} + \beta_3 X_{it3} + ..\beta_k X_{itk} + u_{it} \qquad (2)$$

Where y_{it} is the value of leading indicator to evaluate the development of insurance industry, k=1,2,…., k<n are the values of factors selected by stepwise regression, and u_{it} is a random error term which meets the general classical hypothesis of econometrics.

3. Model testing: Which effect is most appropriate can be determined using the Hausman test. To decide whether to choose the FE or RE model, we perform the Hausman test. In this case, the null hypothesis RE and the alternative hypothesis FE indicate that the model is preferred

EMPIRICAL ANALYSIS AND RESULTS

According to the results of the FE model, all other factors being constant, a 1% increase in GDP causes a 0.0015% increase in the volume of insurance premiums in regional insurance markets. An increase in the population by 1% causes an increase in the volume of regional insurance premiums by 3.98%. A 1% increase in per capita income leads to an increase in regional insurance premiums by 0.45%. A 1% increase in the volume of investment in the main capital causes an increase in the volume of regional insurance premiums by 0.38%.

The results of the random effect model (Random effect model) also confirm the results of the fixed effect model (Fixed effect model), that is, in this model, the main economic indicators - Gross regional product, population, per capita income, investment volume indicators have a positive effect on the volume of regional insurance premiums. . At the same time, in the fixed effect model (Fixed effect model), the factors are significant at the 1% and 10% levels of significance.

According to the results of the Student test in the model, it can be seen that the influence of the gross regional product, the population, the income of the population in the regions, the volume of investments in the regions on the volume of insurance premiums in the regions is statistically significant.

The volume of regional insurance premiums was forecast based on the forecast indicators of influencing factors. According to the model based on the constructed panel data, forecast indicators for 2023-2026 were obtained for each region. In the regional markets, the premium growth can be seen

mainly after 2013-2014. In recent years, the amount of insurance premiums has been growing at a high rate.

Table 1. Forecast indicators of the volume of regional insurance premiums for 2022-2026 years.

Region	2022	2023	2024	2025	2026
Republic of Karakalpakstan	173879,0	222565,2	284883,4	364650,8	466753,0
Andijan	116136.0	130375.7	144615.4	158855.1	173094.8
Bukhara	114931,8	128992,6	143053,4	157114,2	171175
Jizzakh	50124,88	52501,77	54878,65	57255,54	59632,42
Kashkadarya	117574,2	134790,2	169572	183128,1	201437,6
Navoi	76077,22	87029,12	97981,02	108932,9	119884,8
Namangan	91106,84	100408,7	109710,5	119012,4	128314,2
Samarkand	110599,4	122278,3	133957,1	145636	157314,8
Surkhandarya	70719,16	77542,33	84365,49	91188,66	98011,82
Syr Darya	57002,24	64333,48	71664,72	78995,96	86327,2
Tashkent	148989,9	178019,6	212705,6	254150,0	303669,5
Ferghana	130172,4	144724,5	159276,6	173828,7	188380,8
Khorezm	80347,2	88598,4	96849,59	105100,79	113351,99
Tashkent city	2647414	3484994	4322574	5160154	5997734

According to the forecast indicators of regional insurance markets, the forecast indicators of the volume of insurance premiums in the insurance market of Uzbekistan were given in graphic form.

Figure 1. Forecast of insurance premiums of the insurance market of Uzbekistan for 2023-2026
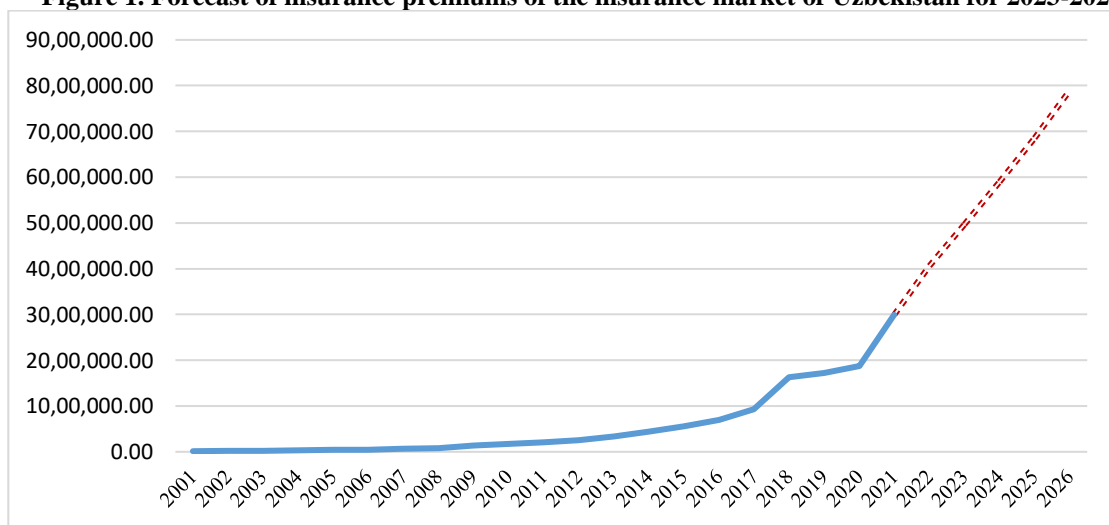
The given forecasts were obtained based on the results of the assessment of the impact of economic indicators on the volume of insurance premiums, the main indicator showing the level of development of the insurance market.

CONCLUSION

The purpose of studying the influence of the main macroeconomic factors is to determine how insurance premiums change depending on the changes in the factors included in the model.

Several factors influencing the development of regional insurance markets are analyzed in the research. It is important to consider that the level of development of the regions is different and to take into account not only economic but also social factors and the level of urbanization as influencing factors for the insurance markets in the regions.

In the development of the insurance market of Uzbekistan, it is important to study the existing opportunities of insurance companies in the

country and its regions and thereby fully use the insurance potential of the regions.

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