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ВЛИЯНИЕ СТРАХОВОЙ ОТРАСЛИ НА ЭКОНОМИЧЕСКИЙ РОСТ: ЭМПИРИЧЕСКИЙ АНАЛИЗ В КЫРГЫЗСКОЙ РЕСПУБЛИКЕ

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Аннотация. Страховая отрасль в Кыргызской Республике приобретает все большее значение. Однако исследований в этой области проведено недостаточно. Целью данного исследования является определение влияния страховой отрасли на экономический рост в Кыргызской Республике. Для выявления влияния страховой отрасли на экономический рост Кыргызстана были применены квартальные данные временного ряда с использованием переменных страховых премий и страховых выплат в качестве показателей активности страхового рынка за период с 2007 по 2016 годы. Количественный эмпирический анализ основан на методе корреляции, включая тест Дики-Фуллера для единичного корня, корреляционную матрицу, основанную на коэффициенте корреляции Пирсона и тесте Бреуша-Пагана / Кука-Вайсберга на гетероскедастичность. Мы обнаружили несущественную связь между страховой отраслью и экономическим ростом. Наши выводы подтверждаются работами по смежной теме и объясняется низкой степени пенетрации страхования. По результатам анализа рекомендуется принять меры по дальнейшему развитию страховой отрасли.

Ключевые слова: страхование, экономический рост, Кыргызская Республика, эмпирический анализ, взаимосвязь между страхованием и ростом.

THE IMPACT OF THE INSURANCE INDUSTRY ON THE ECONOMIC GROWTH: EMPIRICAL STUDY IN THE KYRGYZ REPUBLIC

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Abstract. The insurance industry in the Kyrgyz Republic is growing in its importance. However, only a few research have been done in this regard. This empirical study is aimed to identify the impact of the insurance industry on the economic growth in the Kyrgyz Republic thereby contributing to the literature focusing on insurance-growth nexus. We apply a time-series quarterly data using insurance premium and insurance payment variables as indicators of insurance market activity over the period from 2007 to 2016. The quantitative empirical analysis is based on the correlation method including the Dickey-Fuller test for unit root, correlation matrix based on Pearson's correlation coefficient and Breusch-Pagan/Cook-Weisberg test for heteroskedasticity. We found non-significant relationship between the insurance industry and economic growth. Our findings are supported by the works on a related subject and mainly due to weak insurance penetration. As a result of the analysis, it is recommended to take measures for further development of the insurance industry.

Keywords: insurance, economic growth, Kyrgyz Republic, empirical analysis, the relationship between insurance and growth.

INTRODUCTION

The link between the financial market and the economy has been studied by economists and researchers in very details. Sümegi K. and Haiss P. [1] based on earlier works of King R. and Levine R. [2], Wachtel P. and Rousseau P. [3] and further works of Levine R. and Zervos S. [4], Beck T. and Webb I. [5] concluded that banking industry, as well as capital markets, positively and significantly affect the economic growth. Fink G., Haiss P. and Hristoforova S. [6], and Fink G., Haiss P. and Mantler H.C. [7], De Fiore F. and Uhlig H. [8] as well found a positive correlation between the financial sector and economic growth. Jung W.S. [9] as well accept the hypothesis that the development of the financial market is essential for economic growth. The major part of the literature dealing with the financial market and economic growth, however, rarely focus on the insurance industry.

The United Nations Conference on Trade and Development (UNCTAD) in the first session (1964) has declared that "a sound national insurance and reinsurance

market is an essential characteristic of economic growth". Taking into consideration the growing importance of the insurance industry and its cooperation with other financial sectors, the insurance shall also play an important role in economic growth. We found some of the empirical works that studied the correlation between the insurance sector and the economy. Beenstock M., Dickinson G., Khajuria S. [10], Outreville J.F. [11,12], Browne M.J. and Kim K. [13], Catalan M., Impavido G. and Musalem A.R. [14], Ward D. and Zurbrugg R. [15] and others focused on the insurance industry and the economic growth with the concentration on developing and developed markets, separating life insurance and non-life insurance.

The purpose of this research is to identify the role of the insurance industry in the economy of the country and to contribute to the local literature focusing on the insurance-growth nexus.

Blum D., Federmaier K., Fink G. and Haiss P. [16] stated that similar to other financial markets, the correlation

between the insurance industry and the economy can be classified into five hypotheses: 1. No correlation. 2. Demand-following correlation. 3. Supply-leading correlation. 4. Negative correlation. 5. Interdependence. Our hypotheses for this thesis are as follows:

H₀: There is no supply-leading correlation between the insurance industry and the economy.

H₁: There is a supply-leading correlation between the insurance industry and economy so that growth of the insurance industry leads to the growth of the economy.

METHODOLOGY

Phutkaradze J. [17], Curak M., Loncar S. and Poposki K. [18], Arena M. [19] and Kjosevski J. [20] aimed to estimate the relationship between the insurance industry and the economic growth by employing the Ordinary Least Squares method and Solow-Swan model used by. Webb I.P., Grace M.F., Skipper H.D. [21]. The following model will be employed for our empirical analysis:

$$(GDP\ growth)_t = \alpha_t + \beta_1(insurance\ penetration)_t + \beta_2(insurance\ indemnification)_t + \beta_3(investment)_t + \beta_4(government\ expenditures)_t + \beta_5(net\ export)_t + \beta_7(inflation) + u(error\ term)_t$$

The dependent variable in our model is the GDP growth rate as an indicator of the economic growth, measured in terms of the growth rate of GDP per capita.

The activity of the insurance industry in the Kyrgyz Republic will be measured in terms of insurance penetration. Insurance penetration is expressed as a percentage of total gross written insurance premiums to GDP. Gross written insurance premiums reflect the participation of the insurance coverage in the economy. It is worth to remind that since there is no life insurance in the Kyrgyz insurance market, the insurance penetration includes only the general insurance industry. According to our hypotheses, we expect the sign of insurance penetration to be positive.

Another important indicator to include in our model is the amount of insurance indemnification. The total amount of insurance payments made by the insurer to the insured reflects additional capital inflow into the economy because insured is reimbursed for incurred losses and hence may continue its operations. In other words, at the moment of reimbursement, the amount of insurance payment represents the value of loss and the amount for future investments to substitute that lost value [1]. The same as for insurance penetration indicator, we will use the total amount of insurance indemnification as a percentage of GDP. We expect the coefficient of insurance indemnification to be positive.

Other insurance indicators to include in our model are the total amount of insurance coverage in the economy, representing the liabilities of the insurance companies from one side and the value of secured assets of the insured from another side; and the total amount of insurance assets, because the insurance industry contributes to the economy acting as an institutional investor. These data, however, is not available or covers the period starting from the 2016 year.

The set of control variables includes inflation, investment, government expenditures, and net export. Inflation is used to account for monetary discipline and is expressed by the GDP deflator [18; 20]. The sign of the inflation variable is expected to be negative. Investment variable consists of the total amount of investments used in the economy for each year. Because investment activities favorably contribute to the economy, we expect a positive coefficient for this variable. The next control variable is government expenditure as a measure of government burden. Increased government consumption decreases government investment opportunities and therefore we expect a negative sign of this variable. The last control variable is the total amount of trade balance or net export. We expect that exports favorably contribute to economic growth, however, in the case of the Kyrgyz Republic the volume of imports is greater than the volume of exports.

In our empirical research of the impact of the insurance industry on the economic growth, we will use a quarterly

dataset for the period covering from 2007 to 2016 years, unfortunately, we are not able to expand our sample coverage period as there is no available data for earlier and later periods. The insurance figures used in our empirical analysis were obtained from the National Statistical Committee of the Kyrgyz Republic and State Service of Regulation and Supervision of the Financial Market at the Government of the Kyrgyz Republic. Other data, including gross written premium, personal consumption, investment, education, government expenditures, and net export were obtained from the National Bank of the Kyrgyz Republic and National Statistical Committee of the Kyrgyz Republic.

RESULTS

First, we test our variables on stationarity using Dickey-Fuller test for unit root: investment, government expenditures, and net export are non-stationary variables, therefore we have used net changes across the quarters for these data. Further, we have obtained the following correlation matrix (Table 1):

Table 1 - Correlation matrix

	Insurance premium	Insurance payment	ΔInvestment	ΔGovernment expenditure	ΔNet export	ΔInflation	Economic growth
Insurance premium	1						
Insurance payment	0,678	1					
ΔInvestment	0,2619	0,4307	1				
ΔGovernment expenditure	-0,3303	-0,2368	-0,0911	1			
ΔNet export	-0,0987	-0,2315	-0,1795	0,1293	1		
ΔInflation	-0,3941	-0,3343	-0,4119	0,0509	0,2576	1	
Economic growth	-0,05	-0,0844	-0,0493	-0,2588	0,054	-0,0812	1

Source: Authors' calculations

Table 2 - Descriptive statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Insurance premium	40	129,74	136,3926	27	599
Insurance payment	40	12,2475	13,76176	2	75,2
ΔInvestment	40	0,202215	0,0792947	0,078549	0,427934
ΔGovernment expenditure	40	0,261679	0,0559019	0,14251	0,367156
ΔNet export	40	-0,35791	0,0619804	-0,45035	-0,22101
ΔInflation	40	110,695	6,858141	102,9	123,5223
Economic growth	40	4,447453	5,681807	-9,04682	16,6501

Source: Authors' calculations

Table 3 - Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H₀: Constant variance

Variables: fitted values of GDP growth2

Chi2(1)=1.75

Prob>chi2=0.1864

Variable VIF	1/VIF	
Insurance premium	2,09	0,477378
Insurance payment	1,92	0,521874
ΔInvestment	1,12	0,89605
ΔGovernment expenditure	1,25	0,800473
ΔNet export	1,06	-0,939718
ΔInflation	1,04	0,962147
Mean VIF	1,41 (≤ 10)	

Source: Authors' calculations

According to our findings (table 4), the impact of the insurance industry on the economic growth in the Kyrgyz Republic is not significant. According to the correlation matrix (table 1) there is a negative correlation between the insurance premium and economic growth, and a negative correlation between insurance payment and economic growth. There is a positive relationship between the insurance

premium and economic growth and a negative relationship between insurance payment and economic growth (table 4).

Table 4 – Findings

GDP growth	Coefficient	Standard error	t	P>t	95% confidence interval	
Insurance premium	0,000599	0,006847	0,09	0,931	-0,01335	0,014545
Insurance payment	-0,06461	0,064545	-1	0,324	-0,19609	0,066861
ΔInvestment	3,32517	6,804853	0,49	0,628	-10,5359	17,1862
ΔGovernment expenditure	-9,13567	9,04315	-1,01	0,32	-27,556	9,284622
ΔNet export	65,69628	22,40338	2,93	0,006	20,06208	111,3305
ΔInflation	0,383229	0,1918	2	0,054	-0,00745	0,773912
_cons	5,038866	0,948103	5,31	0	3,107644	6,970088

Source: Authors' calculations

The results of the negative relationship between the insurance premium and economic growth are supported by theoretical literature on the relationship between insurance and economic growth. Accordingly, the empirical works of Curak M., Loncar S., Poposki K. [18], Arena M. [19], Webb I.P., Grace M.F., Skipper H.D. [21], and Kjosevski J. [20] provide evidence for the positive impact of the general insurance industry on the economic growth. The significance or insignificance of the impact is explained by the level of development and participation of insurance markets in the financial markets as mentioned by Wachtel P. and Rousseau P. [22] the strength of the relationship between the insurance industry and economic growth varies from country to country depending on the overall welfare of each.

We have expected such results for insurance premiums because of weak insurance penetration. According to the National Statistical Committee of the Kyrgyz Republic, the share of the insurance industry in the financial sector measured in terms of gross income is 4%, bank's share is 80% and credit organization's share is 16%. If we compare the total assets of the financial organizations we obtain the following results: 2% share of insurance, 9% share of credit organizations and 89% share of banks. We can see that the participation of insurance in the financial sector is very limited. Insurance payments reflect the total amount of losses incurred in the economy that have been compensated by the insurance companies. In this regard and according to Sümegi K. and Haiss P. [1] there is a possibility that the volume of insurance payments have not been reinvested in the economy and therefore, there is a negative impact on the economic growth. Another reason for negative correlation of insurance payments with economic growth can include the process of claim settlement by insurance companies as it takes time (from 2 weeks to several months) to assess the amount of loss, prepare initial documents and provide indemnification. Finally, we fail to reject H_0 . There is no supply-leading correlation between the insurance industry and economy and reject H_1 . There is a supply-leading correlation between the insurance industry and economy so that growth of the insurance industry leads to the growth of the economy.

CONCLUSIONS

Insurance industry allows market participants to reduce the extent of risk and minimize possible losses. Insurance protection contributes to the reliable and stable economic environment, and at the same time reduces the burden on the expenditure side of physical and legal entities. Insurance payments allow market participants to achieve the previous level of capacity and financial position.

Insurance companies act as institutional investors, cooperate with other financial and non-financial organizations and allow businesses to participate in more risky activities with higher profitability.

Current development trends of the insurance market in the Kyrgyz Republic include development of compulsory types of insurance which have been accepted earlier, introduction of new types of compulsory and voluntary insurance, improvement of the regulatory framework for

the insurance market, increase of insurance culture among population and businesses, development of investment activities by insurance companies.

The results of the empirical analysis conducted show that the impact of the insurance industry on the economic growth in the Kyrgyz Republic is not significant. We found a negative or adverse and insignificant relationship between the insurance premium and economic growth, and a negative and insignificant relationship between insurance payment and economic growth.

The potential issues of insurance industry development in the Kyrgyz Republic include low level of trust from society to insurers and to the insurance mechanism as a whole, decline in the quality of performance of liabilities by insurer to the insured, taxation of the insured prevents the interest in insurance services; poor insurance infrastructure, gaps in regulatory framework and legislative base, absence of professional institutes, lack of reliable long-term financial instruments.

For further development of the insurance market in the Kyrgyz Republic, it is recommended to focus on compulsory and voluntary insurance, the insurance market infrastructure and popularization of insurance.

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