INSURANCE MARKET DEVELOPMENT TRENDS IN BOSNIA AND HERZEGOVINA AND THEIR CONTRIBUTION TO ECONOMIC GROWTH

Mirela Mitrašević
University of East Sarajevo, Faculty of Business Economics Bijeljina,
Republic of Srpska, Bosnia and Herzeghovina
mirela.mitrasevic@fpe.unssa.rs.ba

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Abstract: *This paper firstly presents the development trends of the insurance market in Bosnia and Herzegovina in the period 2004-2015 measured by the indicators of density and insurance penetration, and then it presents the research concerning the factors that have a major impact on the development of the insurance market, as well as research related to the examination of the impact of insurance on economic growth. One of the aims of the paper has been to check whether the results of the scientists who examined the interrelationship of insurance market development and economic growth in different countries and at different time periods would be confirmed for the market of Bosnia and Herzegovina.*

Keywords: *density and insurance penetration, the development of the insurance market, economic growth*

I. INTRODUCTION

The subject of this paper is an analysis of trends in the development of the insurance market in Bosnia and Herzegovina and their interconnectedness with economic growth.
The work is divided into four parts. The first part analyzes the characteristics of the insurance market in Bosnia and Herzegovina in the period from 2004. to 2015, related to the trend in the movement of the value of non-life and life insurance premiums and the amount of capital, the insurance density (per capita) and the penetration of insurance (share of premium in gross domestic product-GDP).

The second part of the paper presents research related to factors that are crucial to the development of the insurance market. The importance of educated staff in ensuring a stable insurance market, as well as the contribution of the insurance sector to raising the level of employment in Bosnia and Herzegovina, was especially emphasized. In the third part of the paper, an overview of the results of the scientists who watched the insurance market is given, in order to examine the extent to which insurance contributes to economic growth. Additionally, based on the available data from the insurance market in Bosnia and Herzegovina, it was verified that in the period from 2006 to 2015 there was a linear dependence between the selected indicators of the development of the insurance market and indicators of economic growth, which was one of the goals of this paper.

This paper uses data from the market of Bosnia and Herzegovina for the period from 2004 to 2015, while certain data cover the period from 2006 in accordance with the official statistical data published by the supervisory bodies in Bosnia and Herzegovina. Bearing in mind how specific the insurance market in Bosnia and Herzegovina is, some data have been analyzed separately for both entities. At the time of writing, no reports on the state of the insurance market for 2016 were published by supervisory bodies in Bosnia and Herzegovina, so the data for this year could not be analyzed. This paper will have convertible marks (BAM) expressed in US Dollars, in order to make the data comparable to the insurance market data of selected European countries, downloaded from the Sigma magazine (www.swissre.com), issued by one of the world's leading reinsurers, Swiss Re.

II. CHARACTERISTICS OF THE INSURANCE MARKET IN BOSNIA AND HERZEGOVINA IN THE PERIOD FROM 2004 TO 2015

According to data published on the website of the Insurance Agency of Bosnia and Herzegovina (http://www.azobih.gov.ba/) in 2006, 24 insurance companies and one reinsurance company operated in the insurance market of Bosnia and Herzegovina. After 10 years time, regardless of the emergence of new companies in the observed period, the number of insurance companies remained unchanged due to the fact that in a given period a certain number of companies with headquarters in the Federation of Bosnia and Herzegovina lost their work permit. During 2015, 12 insurance companies and one reinsurance company operated on the market of the Federation of Bosnia and Herzegovina, as well as 7 branches of companies whose headquarters are located in the Republic of Srpska, while there were 12 insurance companies in the Republic of Srpska market, along with 11 branches of companies from the Federation of Bosnia and Herzegovina. At the time of writing this paper, Rulebook on the Rules for the Establishment and Operation of Branches of Insurance Companies in Inter-Entity Operations was in force, published in the Official Gazette of Republic of Srpska no. 12/13 as of 02/15/2013. The following data in this part of the paper show the movement of the non-life and life insurance premiums, as well as the amount of capital, the insurance density (per capita) and the penetration of insurance (share of gross domestic product-GDP) in the period from 2004 to 2015.

Chart I. Movement of insurance premium and capital level in Bosnia and Herzegovina in the period from 2004 to 2015.
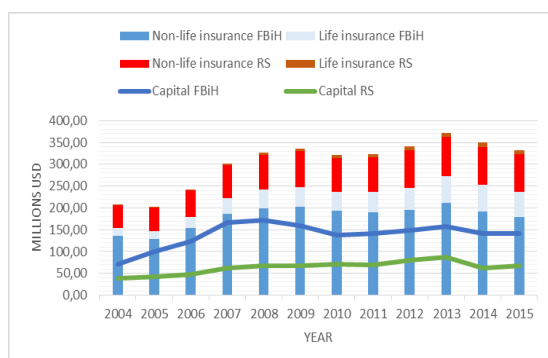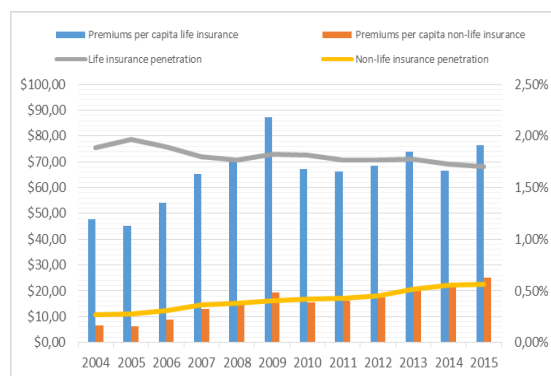

Source: Calculation of the author on the basis of the data of the Insurance Agency in Bosnia and Herzegovina

Income from insurance premiums in Bosnia and Herzegovina in 2015 amounted to 332.84 million USD (The exchange rate list of the Central Bank of Bosnia and Herzegovina was used to convert data from BAM to USD, http://www.cbbh.ba/CurrencyExchang/), which is 126.10 million USD more than the premium realized in 2004. The life insurance premium amounted to USD 69.01 million or 20.73% of the total insurance premium in BiH realized in 2015. In the observed twelve-year period (2004-2015), the life insurance premium increased by 240%, while the non-life insurance premium increased by 41.50%. Insurance premium realized in the Federation of BiH as of 31.12.2015 amounted to USD 237.13 million, representing 71.24% of the premium in Bosnia and Herzegovina, while the remaining 95.71 million USD or 28.76% was realized in the Republic of Srpska. Compared to 2004, the insurance premium in the Federation of Bosnia and Herzegovina increased by 53.41%, and in the Republic of Srpska it recorded an increase of 83.44%. Life insurance premium in the Federation of Bosnia and Herzegovina accounted for 24.79% of the total premium earned in this entity in 2015. Unlike the Federation of Bosnia and Herzegovina, the life insurance premium in the Republic of Srpska accounted for 10.68% of the total premium earned in this entity in 2015. In the period from 2004 to 2015, the premium of life insurance in the Republic of Srpska increased from USD 1.22 million to USD 10.22 million.

In the observed period, the capital of insurance companies operating in the territory of Bosnia and Herzegovina increased from $ 170 million to $ 210 million. Share of companies whose headquarters are located in the Federation of BiH in the total capital of insurance companies in BiH amounted to 67.5% on 31.12.2015. In the next part of the paper, penetration and density indicators in the Federation of Bosnia and Herzegovina and Republika Srpska in the period from 2004 to 2015 are shown.

Chart II. Share of premium in GDP and premium per capita in the federation of BiH in the period from 2004 to 2015.
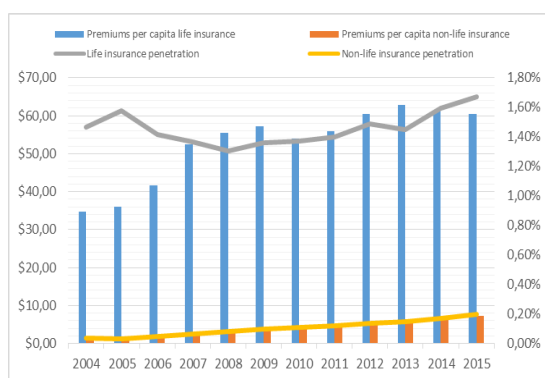

Source: Calculation of the author on the basis of the data of the Insurance Agency in Bosnia and Herzegovina

The premium of non-life insurance per capita in the Federation of Bosnia and Herzegovina in 2015 amounted to 76.41 USD. The largest amount of non-life insurance premium per capita in USD was recorded in 2009 when it was 87.31 USD. The life insurance premium in the Federation of Bosnia and Herzegovina rose from $ 6.7 per capita in 2004 to $ 25.19 per capita in 2015.

The share of non-life insurance premiums in GDP ranged from 1.71% to 1.97% , and in recent years showed the tendency of a slight decline, while in contrast, the share of life insurance premiums in GDP showed a tendency for growth.

Chart III. Hare of the premium in GDP and premium per capita in Republic of Srpska from 2004 to 2015

Source: Calculation of the author on the basis of the data of the Insurance Agency in Bosnia and Herzegovina

The non-life insurance premium per capita in the Republic of Srpska in 2015 amounted to USD 60.37, while the life insurance premium was USD 7.22 per capita.

The share of non-life insurance premiums in GDP in the observed period ranged from 1.30% to 1.67%, while the share of life insurance premiums in GDP ranged from 0.03% to 0.20%.

On the basis of previous indicators, it can be concluded that despite the growth of life insurance premium in the previous period, the non-life insurance premium still has the dominant share. Also, the penetration and safety margins had different patterns of development in the Federation of Bosnia and Herzegovina and the Republic of Srpska in the observed period.

The above indicators should be taken with the reserve, bearing in mind that for their calculation, the estimates of the number of inhabitants published in the publications of the Insurance Agency of Bosnia and Herzegovina were used and which in the observed period vary for the Federation of Bosnia and Herzegovina in the amount of about 500 thousand inhabitants.

According to the 2013 census, there are 3.531.159 (Agency for Statistics of BiH, http://www.bhas.ba/ (accessed 20.5.2017.) inhabitants in Bosnia and Herzegovina, while the number of inhabitants in the data taken from the Insurance Agency of Bosnia and Herzegovina has been estimated to be around 300,000 greater.

In the following chart shows the indicators of the development of the insurance market of Bosnia and Herzegovina in parallel with the data of four developed European countries: Great Britain, France, Italy and Germany and three former Yugoslav republics: Slovenia, Croatia and Serbia.

Chart IV. Share of the premium in GDP and premium per capita in chosen European countries (USD) in 2015
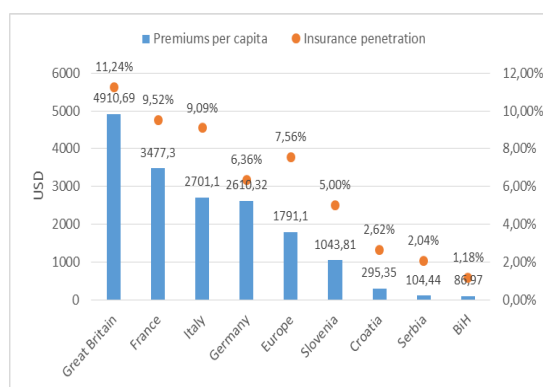
Source: Calculation of the author on the basis of the data of the Insurance Agency in Bosnia and Herzegovina

In comparison to the selected countries, the insurance market in Bosnia and Herzegovina is most closely related to the Serbian insurance market in the terms of the density and insurance penetration of the insurance industry, while in relation to other countries, there is a significant deviation in terms of density and insurance penetration. For this reason, the next part of the paper is dedicated to research related to the prerequisites that need to be fulfilled in order to ensure the development of the insurance market.

III. PRECONDITIONS TO INSURANCE MARKET DEVELOPMENT

In the publication "The Role of Insurance in Developing Markets", issued in 2015 by one of the world's leading reinsurers, Swiss Re, several important factors that influence the development of the insurance market have been identified, including general and specific factors. General factors include economic growth, wealth distribution, as well as non-economic factors that influence the development of insurance: religion, culture, education and the legal system. Factors that are specific to the insurance market include

product offerings, distribution channels, insurance market regulation, risk awareness, degree of trust in insurance. In addition, specific factors have been identified for life and non-life insurance. It was established that the development of the non-life insurance market is influenced by regulations defining compulsory insurance, exposure to natural disasters and the role of the public sector in health care and the provision of compensation to workers. For life insurance, they include factors that affect economic stability (for example, inflation and exchange rate), as well as demographic factors and the tax system (The Role of Insurance in Developing Markets, Swiss Re, http://oesai.org/wp-content/uploads/2015/01/The-Role-of-Insurance-in Developing-Markets.pdf, приступљено 25.3.2017.).

In addition, a reliable professional staff, including actuaries, risk managers, insurance agents, staff employed in the damages sector, premium bookkeepers, managers and supervisors is crucial for a strong insurance market. On the other hand, the increase in the number of employed staff of different vocational qualifications is one of the contributions of the development of the insurance market to improving the living standards of the population.

Chart V. Number of employees in the insurance sector in BiH in the period from 2006 to 2015
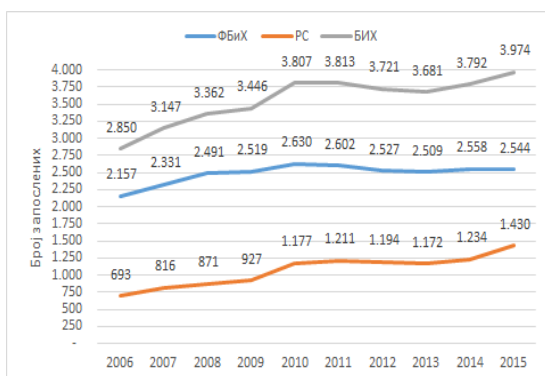
Source: Insurance Agency in Bosnia and Herzegovina

With 2,850 employees in insurance companies in BiH in 2006, this number has increased to 3,974 in 2015. In 2006, there were 20 doctors and masters of science employed in insurance companies, and in 2015 this number increased to 102. The number of employees with higher education increased from 996 to 1279.

In the Register of Insurance Agents in the Insurance Agency of Republika Srpska, as of 30.0.2015, there were:

• 157 legal entities are natural persons, out of which 27 have registered entrepreneurship for representation in the insurance,

• 11 representation societies from Republika Srpska (including the Post of Srpska) and 4 departments of representation agencies from the FBiH,

• 117 brokers in insurance - natural persons,

• 6 brokerage companies from the Republic of Srpska (2 banks and 4 brokerage companies) and 1 branch of the brokerage company from FBiH.

Actuaries play an important role in ensuring the development and financial stability of the insurance sector (more in: М. Митрашевић, Допринос актуарске професије развоју тржишта осигурања, Зборник радова са треће интернационалне конференције Економског факултета Брчко одржане од 10. до 12. novembra 2016. godine, ISBN 978-99938-95-24-4, стр. 351-359.). Regulations in Bosnia and Herzegovina oblige insurance companies to appoint an authorized actuary. In Republika Srpska, the Rulebook on the conditions for acquiring and withdrawing the title of an authorized actuary ("Official Gazette of the Republic of Srpska", No. 57/06) is applied, while the Federation of Bosnia and Herzegovina applies the Rulebook on the conditions for carrying out actuarial affairs ("Official Gazette of the Federation of BiH" No. 81/06).

In the scientific and professional literature related to insurance business, special attention is paid to regulating the insurance market. The primary basis of the insurance market is the adequate regulations governing this area. Legal and sub-legal regulations must regulate issues related to the regulation of the insurance market and its functioning, including defining the role of supervisory bodies.

Supervision of the operations of insurance companies should provide an efficient, fair, safe and stable insurance market in order to protect the insured against excessive exposure to insolvency risk.

The main objective of the regulations related to solvency is:

• Reducing the probability that the insurer will not be able to meet the obligations towards the insured;

• Providing early warning for interventions by supervisory authorities and corrective actions, bearing in mind that the supervisory authority will not always have access to complete information and that a corrective action takes some time.

• Increasing confidence in the financial stability of the insurance sector (.М. Митрашевић., Актуарска и финансијска анализа адекватности капитала компанија за

неживотна (докторска дисертација), Економски факултет Београд, 2010., pg 44.).

There are three insurance market surveillance agencies in the territory of Bosnia and Herzegovina:

• Insurance Agency in Bosnia and Herzegovina, established in 2004 by the Law on the Insurance Agency of Bosnia and Herzegovina ("Official Gazette of BiH" No. 12/04). The Agency is an independent legal entity with public authority within its scope and competencies and is responsible for its work to the Council of Ministers of Bosnia and Herzegovina.

• The Insurance Supervision Agency of the Federation of BiH, which has been operating under the present name since 2005, when the laws regulating the insurance sector in BiH have been adopted. Until then, the FBiH regulated and supervised market surveillance operations for the insurance company in the Federation of BiH, which was established by the Government of the FBiH Regulation on the Establishment of the Office for Supervision of Business of the Insurance Company ("Official Gazette of the Federation of BiH", number 18/97).

• Insurance Agency of Republika Srpska, which was established in accordance with the Law on Insurance Companies (Official Gazette of Republika Srpska No. 17/05) during 2006.

Supervision over the business of insurance companies can be divided into two primary categories: solvency or financial control and market control. Market regulations are trying to ensure fair and reasonable insurance prices. The regulations are directed to numerous aspects of the business of insurers including: product design, pricing, investment, reinsurance, determination of reserved claims and adjustment of assets and liabilities (Mitrašević, 2010., pg. 44).

From the aspect of the market structure, the life insurance market of Bosnia and Herzegovina in 2015 is a moderately concentrated market (Herfindahl-Hirschman Index (HHI) is 1723), while the non-life insurance market is said to be not concentrated (Herfindahl-Hirschman Index (HHI) is 649) .[2]

What characterizes the insurance market of Bosnia and Herzegovina is the unfair price competition,

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[2] The value of the XXI index is obtained when the market shares of each firm that is a market participant are individually squared and then added up. This index can take different values in the range from 0 to 10,000. Approaching the zero index implies that the market has a large number of participants of about the same size. When the number of firms in the market decreases or there is a disparity in their size, the XXI Index increases.

which has a significant impact on the financial performance of insurers. It should be noted that the market can play a key role in disciplining bad participants, but only if there is adequate information and appropriate incentives.

The next part of the paper will give an overview of the results of scientists who were watching the insurance market in different countries and at different time periods, with the goal of answering the question of whether insurance contributes to economic growth, and to question whether this contribution can be empirically measured.

IV. THE CONNECTION BETWEEN THE DEVELOPMENT OF THE INSURANCE MARKET AND ECONOMIC GROWTH

There is a generally accepted view of the positive impact of a strong financial services sector on economic growth. Increased accessibility and diversity of financial services and instruments provides businesses with more opportunities to save, invest and lend, thereby affecting economic growth.

The insurance sector plays a key role in financial and economic development. By combining risks and reducing the impact of large losses on firms and households, insurance affects the reduction of the amount of capital that would be needed to cover these losses individually, encouraging investment, innovation and competitiveness (E. Feyen, R. Lester, R. Rocha, What Drives the Development of the Insurance Sector? An Empirical Analysis Based on a Panel of Developed and Developing Countries, The World Bank, February 2011, pg. 2.).

Insurance encourages economic development based on the following functions (J. Кочовић, П.Шулејић, Т.Антић Ракоњац, Осигурање, Економски факултет у Београду, 2010. pg 43.):

• insurance helps financial stability and reduces uncertainty;

• socio-social function of insurance;

• insurance promotes trade and exchange;

• financial accumulator function of insurance;

• insurance contributes to the efficient allocation of capital.

A survey published by the United States Agency for International Development (USAID) in February 2006 suggests that growth in insurance consumption (expressed as a penetration of insurance or total premiums as a percentage of GDP) generally follows what is called an "S-Curve": slower growth is recorded at lower levels

of development, accelerating as the insurance market and the economy develop, and then slows down again as the market matures (Chemonics International Inc. and the International Insurance Foundation, Assessment on how strengthening the insurance industry in developing countries contributes to economic growth, United States Agency for International Development, February 15, 2006.).

Arena Marco (2006) estimated the impact of life and non-life insurance on economic growth using the generalized method of moment using the data of 56 countries in the period from 1976 to 2004. The results of the conducted test have proven that the indicator of penetration of life and non-life insurance has a positive and significant impact on economic growth, but that life insurance has a positive impact in high-income countries, and non-life insurance in the case of developing countries (A. Marco, Does Insurance Market Activity Promote Economic Growth? A Cross-Country Study for Industrialized and Developing Countries. Policy Research Working Paper; No. 4098. World Bank, Washington, DC., 2006.).

Outrevill François dealt with the identification of the link between economic development and insurance development, with the result of the research being the three papers published in 1990, 1992, and 1996 (F. Outreville, The economic significance of insurance markets in developing countries, Journal of Risk and Insurance 57 (3), 1990, 487-498). A study published in 1992 shows a positive relationship between economic expansion and the growth of the insurance sector. It was shown that the development of the insurance market (measured by the ratio of insurance premiums in GDP) significantly depends on the financial development of the country.

Soo Hak Hong, using the Granger causality test, found that life insurance contributes to the productivity growth and economic growth in the US over a 30-year period, and as a reason for this, he lists, among other things, the significant investments that life insurance companies had in this period (Soo, Hak Hong (1996), Life Insurance and Economic Growth: Theoretical and Empirical Investigation University of Nebraska: Dissertation).

Rudolf Enz studied the relationships between insurance demand and GDP, and as such, points out factors that limit the increase in penetration of insurance, which, among other things, include taxation, regulations, and coverage of risk by the government (R. Enz, The S-Curve Relation between Per Capita Income and Insurance Penetration. Geneva Papers on Risk and Insurance, Vol. 25, № 3, 2000. pp.396–406).

The results of the survey conducted by Erik Feyen, Rodney Lester and Roberto Rocha, published in 2011, show that the development of life insurance, measured by the increase in penetration of insurance, is influenced by the gross social product per capita, the number of population and population density, demographic structure, distribution of income, size of public pension system, state ownership of insurance companies, availability of private loans and religions. The non-life insurance sector is affected by other variables as well. The results also show that the development of the insurance sector can be under the influence of a number of political variables (E. Feyen, R. Lester, R. Rocha, What Drives the Development of the Insurance Sector? An Empirical Analysis Based on a Panel of Developed and Developing Countries, The World Bank, February 2011.).

By applying a panel regression model with fixed effects, Bianchi and associates investigated the impact of real GDP growth on the growth of insurance premiums in Central, Eastern and Southeastern Europe and came to the conclusion that growth potential in observed insurance markets is closely linked to economic growth in the region (T.Bianchi, R.Korherr, G.Ebner and E.Ubl (2011): The Austrian Insurance Industry in CESEE: Risks and Opportunities from a Financial Stability Point of View, Financial Stability Report, issue 22, p. 88-106.).

Anju Verma and Renu Bala (A. Verma, R. Bala, The Relationship between Life Insurance and Economic Growth: Evidence from India , Research India Publications ISSN 2248-9878 Volume 3, Number 4 (2013), pp. 413-422) used the Ordinary Least Square regression model (which took premiums and life insurance investments as independent variables, and gross social product in the period 1990-2011as a dependent variable) to conclude that life insurance has a significant effect on economic growth in India.

In a study published in 2013 by Olalekan Yinus and Taiwo Akinlo, the long-term and short-term relationship between the development of insurance and economic growth in Nigeria from 1986 to 2010 was analyzed using the error correction model (ECM).

The results of this study show a statistically significant contribution of insurance to economic growth in Nigeria (O. Yinusa, T. Akinlo, O. Awolowo, University Insurance development and economic growth in Nigeria, 1986-2010, Ile-Ife, Nigeria. Accepted 13 June, 2013.).

Bryan Justin, Proctor Austin and Stoklosa Kathryn analyzed the ratio between gross national income

per capita and premiums per capita in life insurance in the countries that are members of the OECD (Organization for Economic Co-operation and Development). Data were analyzed for the period from 2010 to 2012, and included 22 of the 46 OECD member countries.

The survey includes a total of six variables: gross national income per capita, life expectancy, participation rate of the population from 0-17 years, long-term interest rates, life insurance as a share of the entire insurance market, fertility rate.

Their results show that there is a statistically significant positive correlation between the level of gross national income per capita and the premium per capita in the selected OECD countries (B. Justin, P. Austin, S. Kathryn, An Analysis of the Effect of Income on Life Insurance, Econometric

Analysis Undergraduate Research Papers, Georgia Institute of Technology. School of Economics, 2015.). The empirical analysis carried out by Casper Christophersen and Petr Jakubik indicates a strong link between the invoiced insurance premium and the economic growth and unemployment. The model they created suggests that life insurance is sensitive to changes in the macroeconomic environment compared to non-life insurance (C. Christophersen and P. Jakubik, Insurance and the Macroeconomic Environment, https://eiopa .europa.eu/Publications/ Reports/ Insurance_ and_ the_Macroeconomic_ Environment_01.pdf).

Mirela Cristea, Nicca Marcua and Silviu Cârstinaa were aiming to examine the correlation between the growth of the insurance and economic growth market in Romania, taking into account the penetration and the insurance density, as insurance indicators. It has been established that there is a strong correlation between gross domestic product per capita and selected indicators that characterize the development of the insurance market (M. Cristeaa, N. Marcua, S. Cârstinaa, The relationship between insurance and economic growth in Romania compared to the main results in Europe – a theoretical and empirical analysis, International Conference 'Economic Scientific Research - Theoretical, Empirical and Practical Approaches', ESPERA 2013.).

In this paper, we will examine the dependence of gross domestic product per capita (which will be further denoted by BDPST) expressed in convertible marks(BAM / KM) and the share of total premium (PU) and premiums of life (PZ) and non-life insurance (PN) in gross domestic product as explaining variables since 2006, when the Insurance Agency of Bosnia and Herzegovina

started publishing official bulletins on insurance market statistics in BiH (Table I).

The corresponding regression models are shown in Tables II, III and IV.

TABLE I. In-going parameters

YEAR	*PN*	*PZ*	*PU*	*BDPST* (KM)
2006	0,01678	0,00209	0,01887	4969,05
2007	0,01607	0,00252	0,01859	5631,28
2008	0,01566	0,00267	0,01833	6433,11
2009	0,01622	0,00289	0,01911	6243,56
2010	0,01606	0,00301	0,01907	6440,28
2011	0,01602	0,00314	0,01916	6633,85
2012	0,01617	0,00333	0,01950	6744,79
2013	0,01625	0,00379	0,02004	6862,47
2014	0,01662	0,00425	0,02087	7036,05
2015	0,01678	0,00439	0,02117	7355,11

Source: Calculation of the author on the basis of the data of the Insurance Agency in Bosnia and Herzegovina

TABLE II. Regression analysis results

Dependent Variable: BDPST
Method: Least Squares
Date: 06/03/17   Time: 11:10
Sample: 2006 2015
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3932.120	3531.989	-1.113288	0.2979
PU	532414.0	181199.1	2.938281	0.0188

R-squared	0.519043	Mean dependent var	6434.956
Adjusted R-squared	0.458923	S.D. dependent var	695.8421
S.E. of regression	511.8470	Akaike info criterion	15.49079
Sum squared resid	2095899.	Schwarz criterion	15.55130
Log likelihood	-75.45393	Hannan-Quinn criter.	15.42440
F-statistic	8.633498	Durbin-Watson stat	1.007178
Prob(F-statistic)	0.018759		

Source: Evaluation results in the EViews software package

Based on a coefficient of determination of 0.519, we can conclude that 51.9% of the gross domestic product per capita is explained by the share of the total insurance premium in the social product.

When testing the significance of the regression link, ie when testing the zero hypothesis that the slope coefficient is equal to 0, r-value is 0.0188.

Therefore, with the risk of error of 0.05, we can conclude that there is a linear dependence between gross domestic product per capita and the share of total insurance premium in the social product.

TABLE III. Regression analysis results

Dependent Variable: BDPST
Method: Least Squares
Date: 06/03/17   Time: 11:11
Sample: 2006 2015
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6310.348	11096.80	0.568664	0.5852
PN	7661.924	682172.8	0.011232	0.9913
R-squared	0.000016	Mean dependent var		6434.956
Adjusted R-squared	-0.124982	S.D. dependent var		695.8421
S.E. of regression	738.0462	Akaike info criterion		16.22275
Sum squared resid	4357698.	Schwarz criterion		16.28326
Log likelihood	-79.11373	Hannan-Quinn criter.		16.15636
F-statistic	0.000126	Durbin-Watson stat		0.313010
Prob(F-statistic)	0.991314			

Source: Evaluation results in the EViews software package

In the case of gross domestic product per capita and share of non-life insurance premium in a commodity product, the coefficient of determination is close to 0, which tells us that a small percentage of variations of the dependent variable is explained by the explanatory variable. The P-value for the significance of the regression link is 0.9913, therefore, with the risk of error of 0.05, we can not conclude that there is a linear dependence between the gross domestic product per capita and the share of the non-life insurance premium in the social product (insurance penetration), which is the opposite the evidence provided by Arena Marco (2006).

TABLE IV. Regression analysis results

Dependent Variable: BDPST
Method: Least Squares
Date: 06/03/17   Time: 11:16
Sample: 2006 2015
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3711.712	453.0049	8.193534	0.0000
PZ	848738.3	137880.3	6.155616	0.0003
R-squared	0.825676	Mean dependent var		6434.956
Adjusted R-squared	0.803886	S.D. dependent var		695.8421
S.E. of regression	308.1523	Akaike info criterion		14.47592
Sum squared resid	759662.5	Schwarz criterion		14.53644
Log likelihood	-70.37961	Hannan-Quinn criter.		14.40953
F-statistic	37.89160	Durbin-Watson stat		1.149542
Prob(F-statistic)	0.000272			

Source: Evaluation results in the EViews software package

When we look at the link between gross domestic product per capita and the share of the life insurance premium in the social product, the coefficient of determination is 0.825676, and we can conclude that 82.57% of the gross domestic product variation per capita is explained by the share of the life insurance premium in the social product. The P-value of the significance of the

regression link is 0,0003, so we conclude, with an error of 0.05, that there is a linear dependence between these variables.

An analysis that was made before selecting the final market development indicators on the database starting from 2004 to 2015 did not disclose that there is an interdependence between gross domestic product per capita and the insurance density, nor between the growth of gross domestic product and the increase in insurance premiums, therefore only the penetration of insurance was used as an indicator of the development of the insurance market. Bearing in mind that unreliable estimates of the number of inhabitants were used for the calculation, these results should be taken with reserve and the regressive functions obtained will not be considered.

CONSLUSION

This paper presents data on the movement of premiums and capital, indicators of penetration and the density of life and non-life insurance for both entities of Bosnia and Herzegovina in the period from 2004 to 2015. These indicators were compared to the data from the markets of Great Britain, France, Italy and Germany and three former Yugoslav republics of Slovenia, Croatia and Serbia for the year 2015, and it was noted that, regardless of some positive developments in the observed period, the insurance market of Bosnia and Herzegovina is at the very beginning of the column and lagging behind in its development in relation to the selected countries. In the further part of the paper, experts' research related to the interconnectedness of the development of the insurance and economic growth market were summed up.

The last part of the paper examined the existence of dependence between development of insurance and indicators of economic growth on the basis of available data from the market of Bosnia and Herzegovina. The results show the existence of a linear dependence between gross domestic product per capita and the share of life insurance premiums in gross domestic product, while in terms of gross domestic product per capita and non-life insurance premiums in gross domestic product we could not conclude that there is linear dependence.

Since in the observed period there were no in-depth consistent data available, the impact of investments of insurance companies on economic growth was not included in the analysis. Bearing in mind the significance of insurance companies as institutional investors, further research is needed that will include the mentioned impact, as well as the impact of other economic and demographic

factors, taking into account the characteristics of the insurance market in Bosnia and Herzegovina.

REFERENCES

[1] Агенција за статистику БиХ, http://www.bhas.ba/(приступљено 20.5.2017.)

[2] Агенције за осигурање у Босни и Херцеговини, www.azobih.gov.ba (приступљено 20.5.2017.)

[3] Агенција за осигурање Републике Српске, http://www.azobih.gov.ba/

[4] Marco, Does Insurance Market Activity Promote Economic Growth? A Cross-Country Study for Industrialized and Developing Countries. Policy Research Working Paper; No. 4098. World Bank, Washington, DC., 2006.

[5] Verma and R. Bala, *The Relationship between Life Insurance and Economic Growth: Evidence from India*, Research India Publications ISSN 2248-9878 Volume 3, Number 4 (2013), pp. 413-422.

[6] Justin, P. Austin, S. Kathryn, *An Analysis of the Effect of Income on Life Insurance*, Econometric Analysis Undergraduate Research Papers, Georgia Institute of Technology. School of Economics, 2015.

[7] C.Christophersen and P. Jakubik, *Insurance and the Macroeconomic Environment*, https://eiopa.europa.eu/ Publications/Reports/Insurance_and_the_Mac roeconomic_Environment_01.pdf

[8] Chemonics International Inc. and the International Insurance Foundation, Assessment on how strengthening the insurance industry in developing countries contributes to economic growth, United States Agency for International Development, February 15, 2006 .

[9] E. Feyen, R. Lester, R. Rocha, *What Drives the Development of the Insurance Sector? An Empirical Analysis Based on a Panel of Developed and Developing Countries*, The World Bank, February 2011.

[10] E. Feyen, R. Lester, R. Rocha, *What Drives the Development of the Insurance Sector? An Empirical Analysis Based on a Panel of Developed and Developing Countries*, The World Bank, February 2011.

[11] J. F. Outreville, *Life Insurance Markets in Developing Countries*, The Journal of Risk and Insurance Vol. 63, No. 2 (Jun., 1996), pp. 263-278.

[12] J. Кочовић, П.Шулејић, Т.Антић Ракоњац, *Осигурање,* Економски факултет у Београду, 2010.

[13] J.F. Outreville The relationship between insurance, financial development and market structure in developing countries: an international cross-section study UNCTAD Review 3 (1), 1992, 53-69.

[14] J.F. Outreville, *The economic significance of insurance markets in developing countries*, Journal of Risk and Insurance 57 (3), 1990, 487-498.

[15] M. Cristeaa, N. Marcua , S. Cârstinaa, *The relationship between insurance and economic growth in Romania compared to the main results in Europe – a theoretical and empirical analysis*, International Conference 'Economic Scientific Research - Theoretical, Empirical and Practical Approaches', ESPERA 2013.

[16] M. Митрашевић., *Актуарска и финансијска анализа адекватности капитала компанија за неживотна (докторска дисертација),* Економски факултет Београд, 2010.

[17] M. Митрашевић, *Допринос актуарске професије развоју тржишта осигурања,* Зборник радова са треће интернационалне конференције Економског факултета Брчко одржане од 10. до 12. novembra 2016. godine, ISBN 978-99938-95-24-4, стр. 351-359.

[18] O. Yinusa, T. Akinlo, O. Awolowo, University Insurance development and economic growth in Nigeria, 1986-2010, Ile-Ife, Nigeria. Accepted 13 June, 2013.

[19] Правилник о правилима оснивања и пословања филијала друштава за осигурање у међуентитетском пословању („Службени гласник Републике Српске“, број 12/13 од 15.02.2013. године).

[20] Правилник о условима за стицање и повлачење звања овлашћеног актуара („Службени гласник Републике Српске“, број 57/06).

[21] Правилник о увјетима за обављање актуарских послова ("Службене новине Федерације БиХ", број 81/06).

[22] R. Enz, *The S-Curve Relation between Per Capita Income and Insurance Penetration.* Geneva Papers on Risk and Insurance, Vol. 25, № 3, 2000. pp.396–406.

[23] Soo, Hak Hong (1996), *Life Insurance and Economic Growth: Theoretical and Empirical Investigation University of Nebraska*: Dissertation.

[24] Swiss Re, (2004), Sigma Series: Exploiting the Growth Potential of Emerging Insurance Markets – China and India in the Spotlight, www.swissre.com (приступљено 25.3.2017.)

[25] T.Bianchi, R.Korherr, G.Ebner and E.Ubl (2011): The Austrian Insurance Industry in CESEE: Risks and Opportunities from a Financial Stability Point of View, Financial Stability Report, issue 22, pp. 88-106.

[26] The Role of Insurance in Developing Markets, Swiss Re, http://oesai.org/wp-content/uploads/2015/01/The-Role-of-Insurance-in-Developing-Markets.pdf, (приступљено 25.3.2017.)

[27] www.swissre.com (приступљено 20.5.2017.)