DETERMINANTS OF NONLIFE INSURANCE MARKET ATTRACTIVENESS FOR FOREIGN INVESTMENTS: EASTERN EUROPEAN EVIDENCE

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ABSTRACT

The aim of this paper is to investigate factors that influence the attractiveness of nonlife insurance market for foreign insurers in Eastern Europe. We use country-specific effects models for panel data that covers fifteen countries during the period 2004-2009, allowing each cross-sectional unit to have a different intercept term serving as an unobserved variable that is potentially correlated with the observed regressors. The research results indicate that the main forces affecting market attractiveness are insurance demand, entry barriers, market concentration and the return on investment. These findings provide significant implications for local governments and for both foreign and domestic insurers.

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I. INTRODUCTION

Insurance was one of the first industries that became international. During the last twenty years, globalization became one of the most important issues for insurance industries across the globe. Deregulation, privatization and liberalization have facilitated globalization of risks and insurance services (see Swiss Re, 2000; Cummins and Venard, 2007). These processes have spread over Eastern European insurance markets too (Njegomir and Stojic, 2011). Instead of being centrally planned, they became market-oriented. Although some barriers remain, regional insurance markets have been generally opened to foreign investments. Combined with the privatization of state monopolies and deregulation, liberalization have facilitated foreign insurers' entry and generated more competitive local insurance markets.

Local economies tend to attract foreign companies in order to generate foreign investments inflows, improve competitiveness of local insurance markets and achieve the greater availability and more affordable insurance coverage. Although the study of the importance of market characteristics that influence foreign insurers' participation is important for local economies as well as for foreign and domestic insurers, to our knowledge, similar study for Eastern European countries is non existent.[3]

While factors that affect insurance demand and supply for non-life insurance have been studied extensively (for example, Outreville, 1990; Browne, Chung and Frees, 2000; Hussels, Ward and Zurbruegg, 2005), studies on the issue of market characteristics that relate to the participation of foreign insurers are generally scarce. Even when they are available (for example, Ma and Pope, 2003; Outreville, 2008) they are not focused on insurance markets of Eastern European region. Thus, the aim of this paper is to investigate factors that influence foreign insurers' participation, or in other words factors that affect the attractiveness of Eastern European non-life insurance markets for foreign insurers. The findings of this study will be of particular importance to policymakers that seek to better understand how they can influence participation of foreign insurers on local non-life insurance markets and take advantages of globalisation. Additionally, the findings will be of interest for foreign insurers that wish to enter or increase their participation on local non-life insurance markets but also for domestic insurers that seek to understand factors that could influence market competitiveness in order to develop their operations in a way that will provide successful competition with new entrants and to start or increase their cross-border presence on regional non-life insurance market.

We apply linear model for panel data. Panel data encompass 15 formerly communist European states for the period 2004-2009.[4]

The remainder of this article is organised as follows. In this chapter we briefly present historical specificities of Eastern European insurance markets followed by review of literature on determinants of insurance market attractivenes in different lines of insurance as well as different regions of the world. We observe that most authors agree on key macro factors which we use too in our analysis. In section 3 we describe the data and variables we shall apply in

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[3] Insurers can participate in foreign markets either through cross-border or establishment trade (Skipper and Kwon, 2007). Cross-border trade exists when insured domiciled in one country purchases insurance coverage from insurer that is domiciled in another country. Establishment trade exists when insured and insurer are domiciled in the same country. We limit our discussion here on establishment insurance trade.

[4] Countries included in our analysis are Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, Slovenia and Serbia. Former East Block countries are the following: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia.

the regression model. Results of the model are presented in section 4 where we conclude that the results are in line with previous studies. Finally, in section 5 we address policy makers and insurance companies in clarifying the implications of the results of our research.

In the last two decades countries of Central and East Europe have experienced tremendous changes of political, cultural, social and economic environment. All countries have had communist regimes and centrally planned economies. During transitory period towards market economy some of countries have been politically disintegrated, some have been seized by war while some have experienced extraordinary high inflation rates. Different political and economic transitory paths have predetermined the development of insurance industries. All of the developments that have happened or are still happening in the observed countries can be grouped into two periods, one period being from 1989 to 2004 and the other being from 2004 to the present. The first period, which depicts the initial transition of insurance markets in observed countries, is analysed in detail by Pye (2000). This article aims to investigate factors that affect the attractiveness of Eastern European non-life insurance markets for foreign insurers in the period 2004-2009.

The period 2004-2009 was influenced by many political, social and economic developments that have influenced the development of observed insurance markets. The most important was the integration of majority of countries in the EU. Poland, Slovakia, Czech Republic, Hungary, Slovenia, Latvia, Lithuania and Estonia became EU member states in 2004 while Romania and Bulgaria became member states in 2007. Additionally, all countries of former Yugoslavia are in some stage of negotiations for EU membership. All countries that became members of the EU have changed their insurance regulations, increased transparency of insurance industry and liberalised insurance markets in accordance with the established EU regulations. Countries still outside the EU zone also changed their regulations in accordance with the EU regulations as a result of their aspirations to become EU member states. The other crucial development during the observed period was economic crisis that has negatively influenced insurance industry in all countries.

The word 'potential' is often used to describe the observed markets, often referred to as 'emerging Europe'. The growth of non-life insurance premium was significant during the period 2004-2008, but turned negative in 2009 because of economic recession. During the observed period, relative annual growth of non-life insurance premium in the region was 11.47 percent, 13.58 percent, 22.33 percent, 18.80 percent and -4.16 percent respectively. However, despite the recent growth these markets are still undeveloped in terms of total premium volume, low share of life insurance in total premium, the predominant share of obligatory auto liability insurance (in average above 60 percent in non-life insurance premium), high market concentration (the obvious legacy of the communist era), insurance penetration and density. Figure1 illustrates constant growth of non-life insurance premium in Central and Eastern European countries and its share in world premium. The share of regional in global insurance premium was between 2 percent and 4 percent during the observed period, while its share in world population was around 4.7 percent. The average premium per capita of USD 55.8 when compared with USD 1572.8 in North America and USD 1811.1 demonstrate significant underdevelopment, but also potential for future growth.

NON-LIFE INSURANCE PREMIUM IN CENTRAL AND EASTERN EUROPE – SHARE OF WORLD MARKET (2004-2009)

FIGURE 1
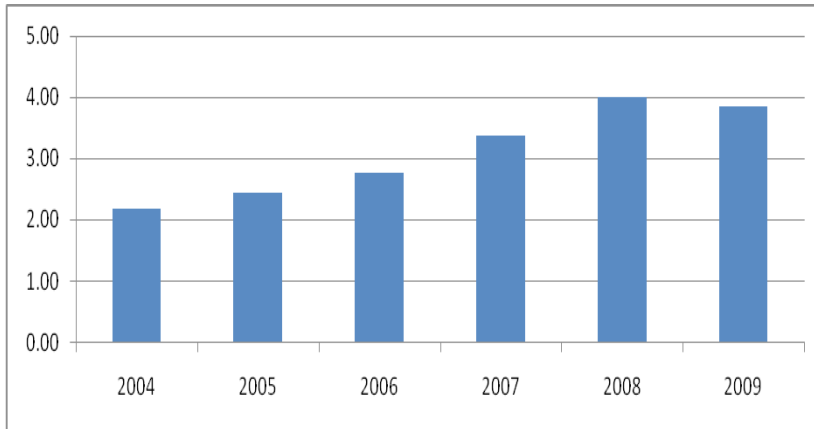
SOURCE: Swiss Re (2005, 2006, 2007, 2008, 2009 and 2010)

As a result of first and especially the second phase of transition, foreign insurers' participation has increased in local markets. The most significant increase of foreign insurers' participation during the period 2004-2009 has been marked in Bulgaria (from 52 percent to 82 percent), Croatia (from 19 percent to 31 percent), Montenegro (from 23 percent to 83 percent), Serbia (from 69 percent to 93 percent) and FYR of Macedonia (from 50 percent to 91 percent).[5] Other countries retained relatively flat, but above 50 percent foreign insurers participation. The only exception has been insurance market in Slovenia where foreign insurers' participation was around three and five percent. Theoretically, the potential arrival of foreign competitors holds acute implications for current market competitors, and the viability of foreign entry is heavily influenced by government policies on market liberalization (Skipper, 1998). However, only limited investigation of the impact of liberalization on the market concentration–profitability relationship has been undertaken (for example, Mann, 1966; Qualls, 1972; Jenny and Weber, 1976; Caves, Porter, and Spence, 1980). Thus, in the conceptualisation of the idea for the research we have chosen the period 2004-2009 for these still developing markets in order to investigate factors that influence the attractiveness of insurance market for foreign insurers.

II. LITERATURE REVIEW

All previous studies that examine companies' participation in foreign markets can be divided into two categories: those that focus on firm-specific issues of companies entering foreign markets and those that focus on market-specific characteristics that facilitate or hinder foreign companies' presence. The first group of research studies focuses on international diversification (Capar and Kotabe, 2003) and firm-specific competences (Dunning, 1977; Bartlett and Ghoshal, 1989; Rugman and Verbeke, 2004) as motivators for the establishment

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[5] We exclude cross-border trade, that is, premiums underwritten directly by insurance companies established in other EU member states.

of foreign market presence. Other studies emphasize the market specific characteristics as key motivators for foreign companies' presence. Some studies (Agarwal and Ramaswami, 1992; Rugman and Verbeke, 2004) indicate that both firm-specific and market-specific factors jointly influence companies' participation in a specific national market.

Clarke et al. (2003) give one of the most comprehensive reviews on existing studies related to the banking industry. A substantial body of literature has been reviewed, for both location-specific factors and approaches that had examined bank-specific factors that influence banks' entry into foreign markets. Also Soussa (2004) points out that research studies found that profit opportunity, information costs, deregulation and, specific for the U.S., relaxation of restrictions on interstate banking, have influenced banks' entry into foreign markets.

In the insurance literature, qualitative studies that have examined factors affecting insurers' international operations appeared first. Schroath and Korth (1989) examined the U.S. property and liability companies, and learnt that knowledge of foreign markets represents a major managerial barrier to foreign market entry. Based on in-depth interviews with insurance executives, Zimmerman (1999) found that barriers, especially non-tariff, are one of the factors that influence managerial decision to entering foreign markets but become critical factor if they create prohibitive costs or difficulties.

The insurance related literature has only recently focused on empirical, quantitative studies when examining factors that affect companies' presence in foreign markets. Moshirian (1999) focused on cross-border trade and foreign direct investment in insurance services using a model for British and German foreign direct investments in insurance. His findings suggest that in addition to insurance premiums, national income of the host country, bilateral trade, labor and capital costs and economic growth, the expansion of international insurance services complement those in banking. Elango (2003) examined the internationalization of the U.S. reinsurance industry and found support for previous studies done for the insurance industry. U.S. reinsurers export their services to countries with large markets, high income per capita and insurance prices, where firms operate internationally, whilst cultural distance was found to be insignificant. Donghui and Moshirian (2004) found that national income, source countries' insurance market size and host countries' financial development facilitates, while the relatively higher wages and higher costs of capital in the host countries restrain foreign direct investments in insurance services in the U.S.. Berry-Stölzle, Hoyt and Wende (2010) examined successful business strategies for insurance companies entering foreign markets for the period 2004-2007 and found that although these strategies vary across countries they generally involve a high growth rate, increased size and emphasis on life insurance. They also found that better risk-adjusted performance is associated with lower financial leverage and mutual organizational form. Ma and Pope (2003) empirically examined the importance of foreign market characteristics that have decisive role for the participation of international insurers in the non-life business of industrialized countries for the period 1995-1998. Their research indicates that market structure is important factor in determining whether international insurers would participate in a given foreign market but when markets are not competitive, removing of trade barriers significantly improves the attractiveness of host countries. Additionally, their results suggest that the development of economy in general is positively correlated with the involvement of foreign insurers. Outreville (2008) examined the factors that influence the participation of the world's largest insurance companies in some transitional and developing countries based on data for the year 2003 only. The study results indicate that location-specific factors, namely the size of a market, human capital, and good

governance explain internationalization of insurance groups. The study also suggests that cultural distance, regulatory barriers and market competitiveness significantly influence the host country choice by transnational insurance companies.

Although, Berry-Stölzle, Hoyt and Wende (2010) included insurance markets of Croatia and Bosnia and Herzegovina in their examination of successful business strategies for insurers entering emerging markets, neither of the previous studies does not focus examination of location-specific factors for foreign insurers participation on Eastern European economies. Although our research contains results that extend and complement those in existing literature, the main contribution of the research presented in this paper is original. We depart from Ma and Pope (2003) as we use data for transition countries of Eastern Europe; in which sense we are close to Outreville (2008), but depart from his study as our examination exploit time series data instead of single year observation.

III. DATA AND METHODOLOGY

We focus our analysis here on factors that determine the attractiveness of a non-life insurance market for foreign insurers' participation. For a detailed insight to definitions of variables used in the analysis we direct the interested reader to Njegomir and Stojic, (2010).

We use foreign companies' premiums (FP) in gross written non-life premium per capita, calculated for each national market, as a proxy for market attractiveness. Factors that we use as control variables, which may explain the attractiveness of a market for foreign insurers, include the following: market competitiveness (HHI), barriers to entry (LIB), human capital (HCI), insurance demand (ID), foreign direct investments (FDI), market profitability (PR) and return on investment (ROI). Following Ma and Pope (2003) we include a variable interacting market competitiveness and barriers to entry (HHILIB) to control for their interactive relationship and its impact on market attractiveness.[6]

Data cover 15 countries, 6 of which were formerly constituent republics of Socialist Federal Republic of Yugoslavia, and 9 countries of the former East Block, over the time period 2004-2009. We observe an integral linear model encompassing all of the observed variables. Number of observations for each country varies between 5 and 6, depending on data availability, total of 88 observations. Descriptive statistics of cross-sectional and time-series data for each variable depicting market attractiveness are shown in Table 1.

TABLE 1 - Observed Variables' Descriptive Statistics

	FDI	FP	GDP	HCI	HHI	LIB	PR	ROI
Mean	578	80,050	8.101	0,714	0,795	61,576	0,140	0,022
Median	397	64,187	7.952	0,731	1	61,450	0,132	0,018
Maximum	5.277	315,186	18730	0,876	1	77,952	0,420	0,105
Minimum	1	1,651	2.476	0,422	0	44,700	-0,143	-0,070
Std. Dev.	760	64,312	4.309	0,120	0,344	7,879	0,126	0,036
Skewness	4,295	1,520	0,529	-0,740	-1,391	-0,020	0,238	0,110
Kurtosis	24,755	5,521	2,376	2,658	3,500	2,460	2,552	3,018

SOURCE: Authors' calculations

Note: Values of FDI, FP, GDP are given per capita.

[6] HHILIB is obtained by multiplying HHI and LIB.

Data used in empirical analysis are obtained from various sources. Gross written premium, loss, expense, and foreign companies' market share data for each market are obtained from individual countries' regulatory bodies and national insurance associations. Inflation rate, population and GDP data are obtained from European Bank for Research and Development (EBRD) economic statistics and forecasts published for each year in *Transition Report*. Population data for countries of ex-Yugoslavia are obtained from individual countries' statistical offices, except for Bosnia and Herzegovina, the only country that hadn't census since 1991, which is outdated, thus we use EBRD's estimates of total population excluding refugees abroad. Adult literacy rate data are obtained from United Nations Development Programme (UNDP) Human Development Reports for various years while gross enrollment ratio data are obtained from United Nations Educational, Scientific and Cultural Organization's (UNESCO) Institute for Statistics. Long term interest rate data are obtained from United Nations Economic Commission for Europe (UNECE) Statistical Division Database. Index of economic freedom data, that depicts barriers to entry, is obtained from The Heritage Foundation. Finally, exchange rate of national currencies against the euro for ex-Yugoslavia countries are obtained from individual countries' central banks. Foreign direct investment (FDI) data are obtained from UNCTAD's *Country Fact Sheets*. All monetary values have been denominated to end of 2009 euro value and adjusted for inflation by authors.

Given the cross-sectional and time-series data, to specify the model we observe logarithm of foreign premium as a dependent variable, while the independent variables are market concentration and liberalisation. The model is further augmented by the following explanatory variables: GDP per capita, FDI per capita (both in log form), human capital index, profitability and return on investment.

Six dummy variables for each year shall be introduced in the model for dealing with time effects directly (variable y_{04} takes value 1 for each country in 2004. and 0 otherwise). We start with testing whether variation of foreign premium is significant between countries. H_0: $\mu_i = 0$, that is $\sigma_\mu^2 = 0$ against the alternative H_1 that individual effects do exist.

Both F-test and Welch test suggest we accept the alternative hypothesis that claims the existence of individual effects. We use the same test for testing time effects, that is heterogeneity of the observed variable in time:

TABLE 2: Anova F statistics (individual effects)

Method	df	Value	Probability
Anova F-test	(14, 75)	12	0.0000
Welch F-test*	(14, 28,12)	136	0.0000

SOURCE: Author

F-test is insignificant at 5 percent level, suggesting we should accept the H_0 that time effects do not exist.

We further analyse whether the observed individual effects in the model should be specified as fixed or stochastic. We first estimate the model with stochastic effects, in order to apply Hausman test for correlated random effects:

TABLE 3: Correlated Random Effects - Hausman Test

Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi. d.f.	Prob.
Cross-section random	17,20	7	0,0162

SOURCE: Author

There is strong evidence in support of H_1 hypothesis that individual random effect model is not appropriate, therefore we adopt model with country specific fixed effects. All time dummy variables except y_{05} are found to be insignificant; therefore, we shall estimate the model with specific fixed effects and a single dummy y_{05}.

The general equation to be estimated is:

$$y_{it} = \alpha_i + x_{it}\beta + u_{it},$$

where y_{it} is a scalar dependent variable, in other words, foreign premium per cap. In log form, x_{it} is a $K{\times}1$ vector of independent variables, u_{it} is a scalar disturbance term, i indexes country in a cross section, and t indexes time measured in years. Our model incorporates White's consistent covariance matrix (White, 1980), for dealing with heteroskedasticity.

IV. EMPIRICAL RESULTS

The model used in this study has been introduced at the end of previous chapter. In this section, we present original results and interpretations concerning the model observed. The results of the empirical analysis are presented in Table 4 and Table 5.

TABLE 4: Parameter estimates from *Model*

Dependent Variable: LOG(FP)

Method: Panel Least Squares

Sample: 2004 2009

Cross-sections included: 15

Total panel (unbalanced) observations: 88

White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C*	-13,956	2,655	-5,257	0,000
LOG(FDI)	0,034	0,030	1,153	0,253
LOG(ID)*	1,781	0,137	13,026	0,000
HCI	-0,984	2,340	-0,421	0,675
HHI*	-6,900	3,334	-2,069	0,043
LIB**	0,044	0,023	1,921	0,059
HHILIB*	0,112	0,055	2,038	0,046
PR	-0,729	0,746	-0,978	0,332
ROI***	1,520	0,887	1,714	0,091
Y_{05}*	0,121	0,045	2,695	0,009

TABLE 4: Parameter estimates from *Model - continued*

R-squared	0,888	Mean dependent var	4,016
Adjusted R-squared	0,848	S.D. dependent var	1,003
S.E. of regression	0,391	Akaike info criterion	1,185
Sum squared resid	9,766	Schwarz criterion	1,861
Log likelihood	-28,135	F-statistic	222,160
Durbin-Watson stat	1,169	Prob(F-statistic)	0,000

Note:*, ** and *** denote significance at 1 percent, 5 percent and 10 percent level respectively.

SOURCE: Author

TABLE 5: Cross-section fixed effects

Country	Effect
Bosnia	1,143
Bulgaria	1,018
Czech R.	-0,393
Croatia	0,732
Hungary	-0,045
FYRM	1,038
Poland	0,431
Romania	0,703
Slovakia	-1,160
Slovenia	-1,895
Serbia	1,144
Montenegro	1,074
Latvia	-0,544
Lithuania	-1,518
Estonia	-1,865

SOURCE: Author

The results suggest that five explanatory variables influence observed market attractiveness.

Insurance demand (*ID*) is positive and significant at 1 percent. This means that with 1 percent increase in GDP per capita, premium written by foreign insurers would increase roughly by 1.78 percent. This result is consistent with previous studies that suggest that with the increase of insurance demand the market becomes more attractive for foreign insurers' participation (for example, Moshirian, 1999, 2004; Ma and Pope, 2003; Outreville, 2008).

Market concentration (*HHI*) is found to be significant at 1 percent level and has a negative sign as expected. Entry barriers (*LIB*) are significant at 5 percent level and have positive effect on market attractiveness. Additionally, interaction term *HHILIB* is found to be positive and significant at 1 percent level. Therefore, in market that is more concentrated dominant insurers may restrain foreign competitors' entry. However, the negative impact of high market concentration is mitigated by strong positive impact of the interaction term of market concentration with the degree of easiness for foreign competitors to enter the market. These results are consistent with previous studies S-C-P hypothesis (for example, Ma and Pope,

2003; Njegomir and Stojic, 2011).

Return on investment (*ROI*) has statistically significant influence on market attractiveness at 10 percent. The impact of ROI is found to be positive, as expected.

Model was tested on all dummy variables. However, none of the dummy variables representing each year was significant except the Y_{05} representing the year 2005 and therefore we only leave the later in the final model. It is found that this variable has a positive impact. The significance of the year 2005 may be explained with the fact that eight of the observed countries (Slovenia, Hungary, Slovakia, Czech Republic, Poland, Lithuania, Latvia and Estonia) joined the European Union on May 2004 and the fact that in some of the remaining countries insurance laws have been changed (for example, Serbia and Croatia).

Underwriting profitability (*PR*), foreign direct investments (*FDI*) and human capital (*HCI*) are found to be insignificant.

V. CONCLUSION

This research study examines factors affecting attractiveness of Eastern European non-life insurance market for foreign insurers for the period 2004-2009. The region encompasses non-life insurance industries in 15 countries: Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia, Slovenia, Hungary, Czech Republic, Slovakia, Romania, Bulgaria, Poland, Lithuania, Latvia and Estonia. The research results indicate that the main forces affecting market attractiveness are insurance demand, entry barriers, market concentration and the return on investment. As expected, only market concentration has negative impact.

These results are important for local governments that wish to increase domestic non-life insurance market competitiveness and capacity, achieve foreign investments inflows and more affordable and available insurance for all. Foreign insurers bring not only additional insurance coverage capacity but also expertise in underwriting, claims handling, loss adjusting, marketing and investments, which could facilitate not only coverage of large risks but also increase in the amount of insurance premium per capita and the volume of invested assets in capital markets. Generally, local governments may use competitive and liberalising policies that could promote or restrain foreign insurers' entry. These findings could improve the policymakers' knowledge on how government policies should be targeted in order to increase or decrease foreign companies' participation. Additionally, research results could provide foreign insurance companies an invaluable insight in the characteristics of non-life insurance markets across Eastern Europe and facilitate their decisions whether to participate or not. The results are useful for both foreign and national insurers to anticipate consequences of possible changes in government policies that will aim to decrease or further increase foreign insurers' presence.

Possible limitation of the research results could be the absence of information costs, omitted due to the lack of relevant data, usually measured by geographic and cultural distance between host and home country. Further research should focus on the overcoming of the above-mentioned limitation.

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ODREDNICE TRŽIŠNE ATRAKTIVNOSTI NEŽIVOTNIH OSIGURANJA ZA STRANA ULAGANJA: ISTOČNOEUROPSKA SITUACIJA

SAŽETAK

Cilj ovog rada je istražiti faktore koji utječu na atraktivnost tržišta neživotnih osiguranja za strane osiguravatelje u Istočnoj Europi. Koristili smo modele efekata specifičnih za pojedine zemlje za dobivanje panelnih podataka koji pokrivaju petnaest zemalja u periodu od 2004-2009, omogućavajući svakoj međusektorskoj jedinici različit presječni član u svrhu neuočene slučajne varijable koja je potencijalno korelirana s uočenim regresorima. Rezultati istraživanja ukazuju na to da glavni utjecaj na atraktivnost tržišta imaju potražnja za osiguranjem, ulazne barijere, koncentracija tržišta i zarada od investicije. Rezultati bi mogli biti vrlo značajni za lokalne uprave te strane i domaće osiguravatelje.

Ključne riječi: *globalizacija, neživotna osiguranja, atraktivnost tržišta, istočna Europa.*