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DOES BANCASSURANCE AFFECT PERFORMANCE OF NON-LIFE INSURANCE SECTOR – CASE OF EU COUNTRIES

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Abstract:

The aim of this paper is to test the influence of bancassurance as a distribution channel on performance of non-life insurance sector in selected European countries. The analysis refers to 2009 – 2015 period and it is conducted using static panel analysis. Performance measures employed comprise of sales profitability as well as of profitability ratio of technical activity whereas independent variables used in the model include share of bancassurance, market share, gross written premium growth rate, claims growth rate, insurance density, share of premium in GDP, share of reinsurance and number of insurance companies. The results of the analysis in both models reveal that market share prove to be statistically significant determinant of insurance sector performance negatively affecting performance. Furthermore, insurance density has statistically significant and positive influence on performance measured with profitability ratio of technical activity.

Keywords:

bancassurance, non-life insurance industry performance, EU countries, static panel analysis

JEL Classification: G22, L10, O16

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Introduction

Insurance companies are faced with exceptionally strong competition, especially with other financial institutions, and therefore must constantly look for ways of development and growth not only to survive on the market but also to make profit. As stated by Greene and Segal (2004), without growth, an insurer may not accumulate the business capacity necessary to guarantee the collective pooling of insurance risks adding that, in the domestic market, growth is accomplished mainly through development of distribution systems and technology improvements.

One of the ways of achieving growth and making a profit for insurers lies in bancassurance. The cooperation between banks and insurance companies, starting in the 1980s with simple distribution arrangements, has steadily progressed to ownership links in the early 1990s, gaining a vital role in many European insurance markets (Fiordelisi and Ricci, 2011). For thorough view on the forms of cooperation between banks and insurers see e.g. Nurullah and Staikouras (2015) and Spotorno, Moro and Anderloni (2016). Reasons and benefits of bancassurance for insurers are often cited in the literature including lower distribution costs than through agent networks, clients receiving better pricing and high-quality services, entering new markets rapidly and building marketing channels cost-effectively (see e. g. Benoist, 2002; Fields, Fraser and Kolari, 2007; Chang, Penf and Fan, 2011).

Still, as cited by Chang, Peng and Fan (2011), there is no consensus whether bancassurance is beneficial or whether insurers can achieve cost advantages if selling insurance products through bancassurance channels. Therefore, the authors wanted to empirically test the benefits of bancassurance as a distribution channel on performance of insurance markets using a sample of nine European countries including Croatia, Slovenia, Spain, Belgium, Poland, Portugal, Italy, Finland and France that in 2015 had a total share of 41% in European non-life insurance sector. Moreover, insurance markets of these countries represent developed and less developed insurance sectors in the EU. Specifically, an average insurance density in EU insurance market amounted to 498 € in 2015, with Croatia, Slovenia, Poland, Portugal and Italy belonging to the group with less developed insurance market achieving insurance non-life premium per inhabitant lower than EU average, whereas Spain, Belgium, Finland and France registered significantly higher insurance density than 498 €. This is shown in Table 1.

Table 1 Non-life insurance density in selected EU countries and EU average

Country	Non-life insurance density in 2015
Croatia	171 €
Slovenia	454 €
Poland	177 €
Portugal	302 €
Italy	488 €
Spain	513 €
Belgium	834 €

Finland	725 €
France	948 €
EU average	**498 €**

Insurance Europe, European insurance industry database, Non-life Insurance for 2009 – 2016 period. https://www.insuranceeurope.eu/insurancedata

Although our general topic of investigation is analogous to that of Pavic Kramaric, Pastar Krncevic and Miletic (2018), this research outspreads the latter since it covers broader range of countries. Furthermore, in order to capture performance of insurance markets of observed countries, besides sales profitability, profitability ratio of technical activity is also used. Moreover, control variables used in the model extend variables used in the above mentioned paper and comprise of market share, gross written premium growth rate, claims growth rate, insurance density, share of premium in GDP, share of reinsurance and number of insurance companies, all based on non-life insurance sector.

The rest of the paper is structured as follows. After the Introduction, literature review presenting relevant papers in the field follows. The third section deals with data sample of the analysis and describes variables employed in the model. Methodology and empirical findings are given in fourth section while the paper concludes with concluding remarks.

Literature Review

As stated by Fiordelisi and Ricci (2011) citing Chen et al. (2009) most studies dealing with the issue of bancassurance have been descriptive in nature whereas the number of empirical studies focusing on bancassurance is very scarce.

Hwang and Gao (2005) investigated scale economies and cost efficiency in the Irish life insurance industry on the sample of insurance companies that continually operated in the period from 1991 to 2000. They have tested the relationship between firm size, market share and bancassurance on one side and cost efficiency on the other. Using the translog cost frontier function and distribution-free method the authors have found that large insurers as well as insurers having a large market share have higher scale efficiency scores. More importantly, the results of the analysis showed that bancassurers achieve much higher cost efficiency than non-bancassurers.

Barros, Barroso and Borges (2006) have analysed the rate of technical efficiency in the Portuguese insurance sector in the 1995 – 2003 period. The authors have conducted the analysis using a stochastic cost frontier method on the sample of life and composite insurance companies. The dependent variable of the cost function used is the log of operational costs including personnel costs, goods and services purchased and the depreciation of physical assets. The authors have also employed two dummy variables, i.e. ownership status and bancassurance whether insurance companies are belonging to banking group or not. The results of the analysis reveal that the Portuguese insurance companies are, on average, rather inefficient mainly due to the costs of production factors and output production. They have also found that bancassurance increases efficiency, although it is not statistically significant.

Chang, Peng and Fan (2011) have conducted a comparative analysis of the efficiency of bancassurance and traditional insurer sales channels. Using a data envelopment analysis approach on the sample of Taiwanese life insurance companies that operated in 2006 the authors have found traditional sales channel to be more efficient.

Fiordelisi and Ricci (2011) tried to evaluate bancassurance performance advantages from both the banking and the insurance perspectives in the Italian banking and insurance sectors over the period 2005 – 2006 by estimating cost and profit efficiency using stochastic frontier analysis and a sample of more than 250 annual observations. Specifically, they tried to find out whether the banks involved in insurance business are more cost and profit efficient than traditional and investment banks as well as whether bancassurance companies are more cost and profit efficient than independent life insurance companies. Furthermore, the authors tried to find out which bancassurance model performed best. The results of the analysis reveal that for the insurance industry there are cost economies of bancassurance as a distribution channel and that ownership or equity links are not necessarily the best model for bancassurance strategy.

Nurullah and Staikouras (2015) tried to investigate feasibility of integration of banking and insurance services employing a measure of profitability (return on assets), a measure of risk exposure (the standard deviation of risks) and a measure of creditworthiness or possible failure (Z score).The authors used a sample of European banks together with their insurance life and non-life subsidiaries finding that the return on life assurance underwriting increases significantly contrary to the non-life insurance sector.

Data Sample and Description of Variables

Variables used in the research paper were chosen based on relevant theory and literature taking into account the availability of data. Since the data on share of bancassurance are not publicly available for majority of insurance companies operating in the European insurance markets, the analysis is conducted on the aggregate level.

Majority of the variables for the analysis were calculated using the data from European (re)insurance federation, i.e. Insurance Europe. However, the data regarding share of reinsurance for Croatian non-life insurance market were obtained from regular publications of Croatian Financial Services Supervisory Agency called Statistics as well as net financial result and non-life technical account. Regarding Slovenian insurance market, data on number of non-life insurance companies operating in the market were taken from Annual Reports of Slovenian Insurance Supervision Agency. Moreover, data on number of non-life insurance in the Polish insurance market as well as already calculated sales profitability ratios and profitability ratios of technical accounts were obtained from regular publications called Insurance Market Yearbook including Aggregated efficiency ratios and Information on insurance companies published by Polish Financial Supervision Authority.

Due to the specific features of insurance sector activities generally accepted accounting measures of performance might not adequately reflect unique characteristics of insurance market performance. Therefore, sales profitability ratio was employed as dependent variable and, in order to obtain robustness of results, profitability ratio of technical activity. The authors find that these variables better capture the specifics of the insurance industry although in some studies common accounting performance measures such as ROA and ROE have also been used (e.g. Pavic Kramaric, Miletic and Pavic, 2017; Lee, 2014; Doumpos, Gaganis and Pasiouras, 2012). However, these measures are more inherent to non-financial institutions (e.g. Akben-Selcuk, 2016).

Sales profitability ratio **(SAP)** variable is calculated as net financial result over non-life gross written premium in a specific year multiplied by 100. This approach has also been used by Ortyński (2016), Akotey et al. (2013) and Kozak (2011).

Another variable employed to measure performance is profitability ratio of technical activity (**PR_of_TA**) that, according to Kozak (2011) assesses the effectiveness of the core insurance activities. It is calculated as non-life technical account over non-life gross written premium multiplied by 100. This performance measure has also been employed by e.g. Akotey (2013) and Ortyński (2016).

Since we wanted to find out whether bancassurance affects performance of non-life insurance sector in selected EU countries, variable share of bancassurance **(SOB)** has been included in the model. It is calculated as non-life gross premium written by banks over total non-life gross written premium multiplied by 100. Since share of bancassurance is gaining importance almost all of the countries covered by the analysis, we expect bancassurance to positively influence performance. This is also found by Tunay (2014) whose results of the econometric analysis using dynamic panel data techniques show bancassurance practices increase profitability of both insurance companies and banks in Turkey. Furthermore, Barros, Barroso and Borges (2006), while testing efficiency in the Portuguese insurance industry using stochastic frontier model, have found that bancassurance increases efficiency. Although not being statistically significant, the authors explain the influence of this variable with the benefits arising from use of bank branches as selling points resulting in lower costs and direct access to the bank clients. Hwang and Gao (2005) have also tested efficiency of Irish life insurers finding that bancassurance companies are more cost efficient than traditional insurers explaining it with the fact that bancassurance companies can benefit from targeting a wide range of bank clients' database, providing integrated personal financial planning and sharing marketing expenses and management cost through multi-distribution.

In order to capture different aspects of insurance markets control variables were employed in the model comprising of size, market share, gross written premium growth rate, claims growth rate, insurance density, share of premium in GDP, share of reinsurance and number of insurance companies, all based on non-life insurance sector.

Market share **(MS)** variable is calculated as non-life gross premium written in a particular market divided by the total non-life gross premium written in EU countries

multiplied by 100 specifying position of a particular insurance market within total EU insurance sector. Market share is frequently positively related with the profitability due to, as stated by Pervan, Curak and Marijanovic (2012), economies of scale & scope and resulted cost advantage. Therefore, the authors expect a positive influence of this variable on the insurance market performance.

Gross written premium growth rate **(PREMIUM_GROWTH)** is calculated as percentage change in non-life premiums i.e. as $\frac{GWP_t - GWP_{t-1}}{GWP_{t-1}} * 100$. Kim et al. (1995) examined insurer insolvencies finding that rapid premium growth will increase likelihood of insolvency in general insurers. On the other hand, Ahmed, Ahmed and Usman (2011) found premium growth variable to be insignificant using the case of life insurance sector in Pakistan. Similarly, Chen and Wong (2004), while investigating determinants of financial health of Asian insurance companies, found gross written premium growth rate to be insignificant but note that being overly focused on growth can lead to self-destruction as other main goals might be disregarded. Furthermore, Spotorno, Moro and Anderloni (2016), citing Swiss Re (2011), stated that companies aiming to grow rapidly might sacrifice profits in the short term in order to establish themselves in the market. Negative influence of gross written premium growth on insurers' profitability is found by Hrechanuik, Lutz and Talavera (2007) on the sample of Spanish and Ukrainian insurers as well as by Charumathi (2012) explaining it by increased underwriting risk and related provisioning for solvency margin. Therefore, the influence of this variable is not clear.

Claims growth rate **(CLAIMS_GROWTH)** variable is calculated as $\frac{gross\ claims_t - gross\ claims_{t-1}}{gross\ claims_{t-1}} * 100$. Authors dealing with the topic of determinants of profitability in the insurance sector usually employ claims ratio variable expecting its negative influence on performance. Since claims growth might decrease profits as well, we expect negative influence of this variable on profitability. E.g. Ortyński (2016) has found negative influence of claims ratio on six financial performance measures like Akotey et al. (2013), Pervan et al. (2012), Malik (2011) whereas Ahmed, Ahmed and Usman (2011), while investigating life insurance companies in Pakistan, have determined positive relationship between performance and loss ratio.

Furthermore, two macroeconomic variables were introduced in the model including insurance density **(DENSITY),** i. e. gross written premium per capita and share of premium in GDP **(GWP_in_GDP).** Since these variables are main insurance industry development indicators, the authors expect them both to have positive effect of insurance sector performance. Pervan, Poposki and Curak (2014) note that these variables refer to the insurance industry and give valuable insight into main aspects of this industry. Furthermore, as stated by Park, Borde and Choi (2002) both insurance density and share of premium in GDP can reflect the degree of insurance pervasiveness of a country.

Share of reinsurance **(SHARE_RE)** is calculated as non-life gross premium ceded to reinsurance divided by total non-life gross premium written in a particular market multiplied by 100. As stated by Spotorno, Moro and Anderloni (2016), reinsurance activity might either indicate greater risk management skills that help insurers achieve

higher profits or a weaker capability at internally managing risks especially presented by undercapitalized companies. Although, reinsurance enables insurers to accept risks in their entirety (Thoyts, 2010) it also involves a cost for insurers. Kim et al. (1995) introduced this variable in order to find possible factors related to insolvencies of insurers finding, in some models, that the more the insurer is exposed to its reinsurance, the more it is exposed to the negative financial influence of a reinsurer failure. Therefore, the authors expect reinsurance to negatively affect performance

Number of insurance companies **(ln_NO)** refers to the number of competitors in the market implying the higher number of insurers operating in the marketplace lower the competition, and thus, lower market profitability (Pope and Ma, 2008). Therefore, authors expect negative influence of this variable on performance since, according to SCP hypothesis, market concentration inhibits competition and results in higher than expected levels of profit.

Methodology and Empirical Analysis

For the purpose of econometric data analysis, the authors have employed static balanced panel data analysis. Model (1) forms the basis of our estimation.

$$Y_{it} = c + \sum_{k=1}^{K} \beta_k X_{it}^k + \varepsilon_{it} \qquad (1)$$
$$\varepsilon_{it} = z_i + u_{it}$$

where:
- Y_{it} is the profitability of insurance company i at time t, with i = 1,..., N; t = 1,…, T presented with two different measures of profitability, i.e. sales profitability and ratio of technical activity. By iterating these profitability measures, we account for two different models depending on the dependent variable used.
- X_{it} are k independent variables as discussed above.

ε_{it} is the disturbance with z_i being the unobserved insurance-specific effect and u_{it} being the idiosyncratic error. The presented model is a one-way error component regression model where $z_i \sim IIN(0, \sigma_z^2)$ and independent of $u_{it} \sim IIN(0, \sigma_u^2)$.

Descriptive statistics for all variables are provided in Table 2.

Table 2 Descriptive statistics of variables used in the empirical analysis

Variables	Observations	Mean	Std. Dev.	Min	Max
SAP	62	6.5597	36.2266	-260.7405	31.1886
PR_of_TA	63	5.0407	4.4677	-5.5543	14.3239
SOB	62	6.8373	4.5638	0.4000	16.8600
MS	63	4.2281	5.1027	0.1752	16.2260
GWP_GR	63	0.7317	4.2948	-9.7792	13.4647
CLAIMS_GR	63	-4.3993	24.0986	-100.0000	32.9342
DENSITY	63	581.3341	286.5111	134.5376	1,100.0150
GWP_in_GDP	63	2.4443	0.7097	1.4100	4.0000
Share_RE	61	14.0790	6.4189	5.0241	31.3241
ln_NO	58	3.6972	0.8238	2.6391	5.3982

Source: authors' calculation

Using several independent variables can lead to distorted and unrealistic assessment of contributions of individual independent variables when trying to explain the dependent variable. This problem is created by high collinearity of two, or more than two independent variables. Before panel data analysis was done, multicollinearity between the independent variables was investigated.

Table 3 shows the results of the research and examines the problem of multicollinearity between the independent variables.

Table 3 Correlation matrix

	SOB	MS	GWP_GR	CLAIMS_GR	DENSITY	GWP_in_GDP	Share_RE	ln_NO
SOB	1.0000							
MS	0.3109	1.0000						
GWP_GR	0.0347	-0.0426	1.0000					
CLAIMS_GR	-0.0579	0.1192	0.0657	1.0000				
DENSITY	0.1478	0.4873	0.2055	0.0477	1.0000			
GWP_in_GDP	-0.1260	0.1944	-0.0511	-0.1516	0.6344	1.0000		
Share_RE	0.5453	-0.0246	-0.2458	-0.2338	-0.3140	-0.0079	1.0000	
ln_NO	0.3485	0.6163	-0.0488	0.1625	0.3188	-0.0211	-0.2415	1.0000

Source: authors' calculation

An absolute value of the Pearson coefficient higher than 0.7 indicates a strong correlation between independent variables. As it can be seen from the Table 3, the values of coefficients suggest there is no problem of multicollinearity and therefore, no variables were omitted from further analysis.

If the error terms do not have constant variance, they are heteroskedastic. Furthermore, if the heteroscedasticity is present, the standard errors are biased. This can lead to bias in test statistics and confidence intervals. To test the presence of heteroscedasticity Breusch-Pagan test for heteroscedasticity was employed in research. Results of this test are shown in Table 4.

Table 4 Tests for heteroscedasticity

Tests	Ratio of technical activity model		Sales profitability model	
	chi2	p-value	chi2	p-value
Breusch-Pagan	0.18	0.6677	87.52	0.0000

Source: authors' calculations

Result of Breusch-Pagan test for heteroscedasticity showed that heteroscedasticity was present in Sales profitability (SAP) model while heteroscedasticity was not present in Profitability ratio of technical activity (PR_of_TA) model. Heteroscedasticity causes standard errors to be biased so after finding proper static panel model robust standard errors in Sales profitability (SAP) model were used in research.

After examining the multicollinearity problem and heteroscedasticity, static panel with fixed effects and static panel with random effects was used in research. In Profitability ratio of technical activity (PR_of_TA) model and Sales profitability (SAP) model Hausman test showed that most appropriate model was static panel model with fixed efects. Table 4 shows the results of both analyses, depending on the dependent variable used in model.

Table 5 Parameter Estimates of Static Panel Model with Fixed Effects

Depended variable	PR_of_TA	SAP
SOB	-0.34037 (0.3030686)	3.288502 (4.135466)
MS	-7.447326*** (1.420628)	-28.56177** (9.294476)
GWP_GR	-0.0958931 (0.1089159)	-1.309785 (1.363176)
CLAIMS_GR	-0.0077269 (0.019215)	-0.1750841 (0.2228599)
DENSITY	0.0613073** (0.0226726)	0.0878525 (0.3732019)
GWP_in_GDP	-2.484913 (6.098909)	37.38365 (81.62842)
Share_RE	0.3678248 (0.2559011)	-0.2378888 (0.772172)
ln_NO	-5.067895 (4.995096)	134.1611 (72.75961)
constant	19.99319 (16.54603)	-548.6594 (285.7839)
Model p value	0.0007	0.0000
R2 within	0.4869	0.2322
R2 between	0.0063	0.0155
R2 overall	0.0056	0.0026
Hausman test	chi = 34.38 p value = 0.0000	chi = 14.02 p value 0.0812

,,*** Statistically significant at the; 10%, 5%, 1% level, respectively. Standard errors are between parentheses.*
Source: authors' calculation

As it can be seen from the Table 5, the benefits of introducing bancassurance as a distribution channel in insurance markets are not statistically proven. Bancassurance is not statistically significant variable in neither of the models, though it has negative sign in profitability ratio of technical activity model and the opposite in sales profitability model.

However, variable having statistically significant influence on performance of insurance markets in both models is market share taking a uniform direction, i.e. negatively influencing performance. This finding is contrary to authors' expectations but, according to Hwang and Gao (2005) citing Cummins and Zi (1998) mega-insurers with significant market share are characterised by decreasing returns to scale and thus likely to be cost inefficient.

Furthermore, positive and statistically significant influence of density is evident in profitability ratio of technical activity model. Since it is reflecting the level of development of insurance market in a particular country such finding is in accordance with authors' expectations.

Conclusion

Bancassurance has been gaining importance as distribution channel of insurance products over the years. Although benefits of bancassurance are often cited in the literature, according to previous empirical analyses, there is no uniform conclusion whether bancassurance enhances performance of insurance markets.

Therefore, the purpose of this paper was to perform the research of the effects of bancassurance on the profitability of insurance markets in selected EU countries including Croatia, Slovenia, Spain, Belgium, Poland, Portugal, Italy, Finland and France in the period 2009-2015. The influence of bancassurance on performance was tested using two different performance measures, i.e. sales profitability and profitability ratio of technical activity, in order to make the results more robust. Control variables used in the models are market share, gross written premium growth rate, claims growth rate, insurance density, share of premium in GDP, share of reinsurance and number of insurance companies, all based on non-life insurance sector.

Using the static panel data model the results revealed significant negative influence of market share on performance as well as significant positive influence of insurance density (non-life premium per capita) on performance measured with ratio of technical activity. Still, no evidence of significant influence of bancassurance on insurance sector profitability is found.

Therefore, more research has to be done in order to investigate this issue more systematically. For example, additional control variables might be covered by the analysis and most importantly, if data availability allows, company-wise analysis might be valuable.

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