

## Cluster Analysis of the Profitability of Insurance in Poland with Regard to the Type of Capital

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**Abstract:** *Purpose* – To analyze the profitability ratios in the insurance division for companies with predominantly domestic and foreign capital in 2008–2012.

*Design/Methodology/approach* – used standard test methods – descriptive statistics.

*Findings* – companies with predominantly domestic capital achieve much better results than companies with predominantly foreign capital.

*Originality/value* – Analysis of the profitability ratios allows the evaluation of the effectiveness of foreign capital in the Polish insurance market.

**Keywords:** insurance market, domestic capital, foreign capital, profitability

### Introduction

The insurance market is a component of the financial system. It is a very important link in the system. A link which provides security not only in the financial markets, but also in the entire Polish economy and with insurance market instruments used by many entities. This is due in part to its mandatory and optional nature, providing both financial security of property, health, life or survival. A lot of controversy is in the fact the high share of foreign capital is in this market. Such a high share extorted by a low level of internal savings, which have not met the growing demand for growing Polish establishments offering this type of service. At the end of 2012, the share of foreign capital in the insurance market in Poland was 81.06%. This is a very high proportion, but should not raise doubts about the safety of the operations of these groups of companies, i.e. the majority of foreign capital, as it is subject to the same standards as other surveillance (Ostrowska 2013). The aim of this paper is to analyze the profitability ratios of 2008–2012, which are synonymous with the efficiency of the insurance companies. The analysis will be made taking account of the share capital. Therefore, they will be divided into two groups of insurance companies – with predominantly domestic and foreign capital.

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## 1. Foreign capital in the insurance market

The financial market in Poland is dominated by foreign capital. On the one hand, the liberalization of capital from abroad has caused the acceleration of economic growth and development and an increase in domestic savings, on the other hand – it has increased the risk of financial crises, which confirms the analysis of crises in countries such as Mexico, Hungary, Czech Republic, Malaysia, South Korea and Brazil (Błaszczuk 2001). “Liberalization also brings additional benefits, such as the effect of the restructuring. Market integration can result in increased competition between parties, which can force a general improvement in competitiveness. Part of the weaker entities may fall as a result of increased competition, while others – under the pressure of restructuring – may improve the efficiency of their operations. It can be seen in the banking and insurance sectors and many others.” (Piech 2007)

For the dynamic development of the insurance market in Poland after 1990 there was a great need to supply the market with new capital, and therefore deficient internal savings had to be a foreign capital (Żetecka 2000). Until the end of the 1980s the Polish insurance market, despite amendments to the Act<sup>1</sup> of 17 May 1989, which authorized the introduction of foreign capital Polish insurance companies, i.e., PZU and Warta. This happened only after 1990, when it entered into force the Act of 28 July 1990 on insurance business (Janiec 2002).

In Poland, insurance companies operate in the form of joint-stock companies or mutual<sup>2</sup>: „Mutual insurance business is conducted in the interests of the members, and not in the interest of the agent standing outside the insurance company (i.e. shareholders in the event of a joint stock company).” (Kowalewski 2001) Between these two forms occur some differences, the main one is that the former are focused on profit and a Mutual Insurance Company operates a non-profit organization, and as for the risk taken, in the case of a company shall be charged to the owners (shareholders) and Mutual Insurance Company – community. The costs incurred in the process of business are larger companies than in a Mutual Insurance Company (Witkowska 2009). An Analysis of loss ratios indicates that they are higher in companies than in Mutual Insurance Companies (Janowicz-Lomott 2010).

According to the Financial Supervisory Commission, at the end of 2012, the share of foreign capital in Department I was 71.05%, the nominal value of the share capital of PLN 2,926,025 and foreign investment in the share capital of PLN 2,078,961. In Section II the share was considerably higher, as was 91.07%, the nominal value of the share capital of PLN 2,594,797 and foreign investment in the share capital of PLN 2,363,142. Investors were

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<sup>1</sup> Act of 20 September 1984 The property and casualty insurance in art. 17 allows for the creation of state insurance and art. 21 allowed for even the possibility of creating such a facility, but the share of state capital in the capital had to be at least 51% (DzU nr 45, poz. 242).

<sup>2</sup> “Insurance companies, which in the Polish system operate as a public company or mutual insurance companies, financial institutions are characterized by a certain specificity of the financial management of the economy, it differs from other economic operators. Conducting the business of insurance in the form of a limited company is associated with the desire to maximize profits while taking care of some financial security.” Read more: *Ubezpieczenia...* (2002), p. 219.

the shareholders of the following countries: Austria, Germany, the Netherlands, Canada, France, the United Kingdom, Japan, Luxembourg, Belgium and Cyprus.

## 2. Analysis of the profitability ratios of insurance companies with regard to the type of capital

An analysis of the profitability ratios in the case of insurance include an analysis of the following types of indicators: return on technical activity, return on investment, the return on sales, return on equity and return on assets.

Table 1 presents data on the profitability of technical indicators. This ratio is calculated by the following formula: Technical result/earned premiums, net of reinsurance  $\times$  100%. This result should be higher than 0%<sup>3</sup>.

Considering the indicators in total, it was found that during the period they remained at a similar level. Only in 2010 did they decrease significantly and amounted to 4.64%. The result of the submitted total and the results of the two groups of establishments, i.e. establishments with predominantly domestic and foreign capital.

**Table 1**

Profitability ratios of technical activity security establishments operating in Poland in 2008–2012 (including the type of capital, in%)

Year	Type of capital		Total
	predominant national	predominant foreign	
2008	11,15	4,05	7,65
2009	13,46	3,36	8,52
2010	8,29	1,07	4,64
2011	10,68	4,08	7,26
2012	11,09	3,87	7,27

Source: *Biuletyn Roczny, Rynek ubezpieczeń 2008*, KNF, Warszawa 2009, tabl. 118, 119; *Biuletyn Roczny, Rynek ubezpieczeń 2009*, KNF, Warszawa 2010, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2010*, KNF, Warszawa 2011, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2011*, KNF, Warszawa 2012, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2012*, KNF, Warszawa 2013, tabl. IV.2., IV.3.

Clearly, the levels of indicators of the two groups differ significantly from each other, for the benefit of those in which domestic capital predominates, where there has been successively: 11.15%, 13.46%, 8.29%, 10.68 and 11.09%. Foreign capital has a lower profitability, as these indicators in turn were 4.05%, 3.36%, 1.07%, 4.08% and 3.87%. From the point of view of policy holders or potential customers there is a very important indicator of the efficiency of companies in terms of compensation. If this indicator shows discrepancies

<sup>3</sup> Interpret the results for Division I and Division II in another way – relating to, for example, result from -17.96% indicates a very good score, and in Section II will have just as good a rating. Read more: *Metodologia analizy...* (2014), p. 105.

between the two types of companies this may result from the fact that establishments with foreign capital offered cheaper insurance, both in Department I and II<sup>4</sup>.

Table 2 presents data on the profitability indicators of investment activity. This ratio is calculated by the following formula: revenue income/average balance sheet value of investments  $\times$  100%. This indicator allows you to assess the efficiency of portfolio management tracking. Investment activity is a kind of support for insurance. Profits from investments are particularly important in the case of incurring significant technical losses. In the event of poor performance a detailed analysis of the structure of assets, income and expenses of the investment activity can be seen. Ratio, which is less than 8% means a bad performance, and almost 12%, is already a good evaluation (averaging over the I and II Department).

Analyzing these indicators in total with all insurance, it was found that it was the worst result recorded in 2008, because it was negative and amounted to  $-2.46\%$ , but after it had reached a satisfactory level and amounted to  $9.23\%$ . Another year there is a drop to  $9.03\%$ , then to  $2.08\%$  and then an increase to  $8.25\%$ .

Again, insurance companies with predominantly domestic capital achieved much better results. This ratio in each case under consideration was positive and amounted to:  $4.70\%$ ,  $8.06\%$ ,  $10.14\%$ ,  $5.71\%$ , and  $8.05\%$ . Foreign capital was not quite as good in this area, because in two years (2008 and 2011) they reached negative values:  $-10.61$  and  $-1.29\%$ .

**Table 2**

Profitability indicators of the investment activity of insurance companies operating in Poland in 2008–2012 (including the type of capital, in%)

Year	Type of capital		Total
	predominant national	predominant foreign	
2008	4,70	-10,61	-2,46
2009	8,06	10,52	9,23
2010	10,14	7,95	9,03
2011	5,71	-1,29	2,08
2012	8,05	8,42	8,25

Source: *Biuletyn Roczny, Rynek ubezpieczeń 2008*, KNF, Warszawa 2009, tabl. 118, 119; *Biuletyn Roczny, Rynek ubezpieczeń 2009*, KNF, Warszawa 2010, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2010*, KNF, Warszawa 2011, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2011*, KNF, Warszawa 2012, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2012*, KNF, Warszawa 2013, tabl. IV.2., IV.3.

Table 3 presents data on indicators of profitability of sales. This ratio is calculated by the following formula: net profit/gross written premium  $\times$  100%<sup>5</sup>. The result was satisfactory overall, because each year was positive and higher than 9%. Similarly, companies with

<sup>4</sup> According to research conducted in 2010. Read more: Ostrowska (2011), p. 168.

<sup>5</sup> Here, as in the case of other indicators there are differently interpreted results obtained by the companies within the Division I and II, for example, a good evaluation occurs when the indicator reaches a score of  $-45.65\%$  to  $1.83\%$  (Section I) in Section II, in turn, from  $-4.16\%$  to  $2.66\%$ .

predominantly domestic capital achieved better results. The highest level of the indicator was recorded in 2010 (22.85%), the lowest, but still very good was in 2008 (15.81%).

Companies with predominantly foreign capital in this case reached a weaker result, but still sufficient to obtain a good evaluation in this regard. The lowest level of the indicator was recorded in 2010 (3.24%) and the highest in 2011 (5.08%). Significant differences between the rates obtained by the domestic and foreign establishments may also result from lower premiums charged by foreign establishments for the same types of insurance.

**Table 3**

Sales profitability indicators of undertakings operating in Poland in 2008–2012 (including the type of capital, in%)

Year	Type of capital		Total
	predominant national	predominant foreign	
2008	15,81	4,07	9,75
2009	21,96	4,60	12,91
2010	22,85	3,24	12,45
2011	17,75	5,08	10,72
2012	17,85	4,90	10,59

Source: *Biuletyn Roczny, Rynek ubezpieczeń 2008*, KNF, Warszawa 2009, tabl. 118, 119; *Biuletyn Roczny, Rynek ubezpieczeń 2009*, KNF, Warszawa 2010, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2010*, KNF, Warszawa 2011, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2011*, KNF, Warszawa 2012, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2012*, KNF, Warszawa 2013, tabl. IV.2., IV.3.

Table 4 presents data on rates of return on equity. This ratio is calculated by the following formula:  $\text{net profit/equity} \times 100\%$ . It means the rate of profit from insurance activities. This ratio is called „Beacon” for investors – shareholders or potential investors who expect returns on their investments. If this rate in the long run presents unfavorable levels, the insurance company has to reckon with the reduced interest of investors and limiting supply in cash. The indicator is negative and the rate of loss of extras – profit.

Generally, a result of more than 5% can be considered satisfactory. However, when this ratio is maintained at a much higher level for a longer period of time (mainly „young” companies) this may mean the use by the insurance company is too risky an investment strategy or undercutting reserves (see *Metodologia analizy...* 2014). An analysis of the level of this indicator in total allows the conclusion that insurance companies operating in Poland in the period achieved high results. In subsequent years, it was: 16.89%, 20.45%, 22.53%, 19.83% and 19.59%.

Traditionally, companies with predominantly domestic capital achieved better results. While in 2008 it was similar. The domestic companies recorded sequentially such levels: 17.73%, 23.84%, 29.86%, 22.67% and 23.77% in foreign: 14.39%, 12.61%, 8.89%, 14.66% and 13.04%. A very large discrepancy was noted in 2010, because of 20.97 pp

Analysis of this index leads to the conclusion that establishments with predominantly foreign capital apply a less risky investment policy.

**Table 4**

Profitability ratios of equity undertakings operating in Poland in 2008–2012 (including the type of capital, in%)

Year	Type of capital		Total
	predominant national	predominant foreign	
2008	17,73	14,39	16,89
2009	23,84	12,61	20,45
2010	29,86	8,89	22,53
2011	22,67	14,66	19,83
2012	23,77	13,04	19,59

Source: *Biuletyn Roczny, Rynek ubezpieczeń 2008*, KNF, Warszawa 2009, tabl. 118, 119; *Biuletyn Roczny, Rynek ubezpieczeń 2009*, KNF, Warszawa 2010, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2010*, KNF, Warszawa 2011, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2011*, KNF, Warszawa 2012, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2012*, KNF, Warszawa 2013, tabl. IV.2., IV.3.

Table 5 presents data on indicators of return on assets. This ratio is calculated by the following formula:  $\text{net profit/assets} \times 100\%$ . One can talk about unfavorable indicator values when it reaches the level of  $-70.69\%$  to  $-39.33\%$  (Division I) and from  $-32.27\%$  to  $-12.53\%$ .

A very good assessment occurs when the indicator reaches a level above  $0.31\%$  (Division I) and above  $1.6\%$  (Section II). Even a cursory analysis of this indicator for all companies leads to the conclusion that they obtained satisfactory results. This ratio fluctuated between  $4.21\%$

**Table 5**

The return on assets ratios of insurance companies operating in Poland in 2008–2012 (including the type of capital, in%)

Year	Type of capital		Total
	predominant national	predominant foreign	
2008	6,59	1,96	4,37
2009	7,65	1,82	4,79
2010	8,55	1,25	4,75
2011	6,69	2,06	4,21
2012	7,04	2,03	4,29

Source: *Biuletyn Roczny, Rynek ubezpieczeń 2008*, KNF, Warszawa 2009, tabl. 118, 119; *Biuletyn Roczny, Rynek ubezpieczeń 2009*, KNF, Warszawa 2010, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2010*, KNF, Warszawa 2011, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2011*, KNF, Warszawa 2012, tabl. IV.2., IV.3.; *Biuletyn Roczny, Rynek ubezpieczeń 2012*, KNF, Warszawa 2013, tabl. IV.2., IV.3.

Generally, both the insurance companies with domestic capital and foreign trade reached a very good indicator level. Of course, domestic companies obtained better results – of a few

percentage points and in subsequent years it was 6.59%, 7.65%, 8.55%, 6.69% and 7.04%. The predominant foreign capital received, respectively, 1.96%, 1.82%, 1.25%, 2.06% and 2.03%. Although it is lower than that achieved by the national establishments, it could be said to be satisfactory.

## Conclusions

The insurance market in Poland is dominated by foreign capital. In 2012, the share capital amounted to 81.06%. An analysis of the profitability ratios allowed for an evaluation of the effectiveness of insurance companies. The division of companies into two groups, i.e. the prevailing domestic and foreign capital in the course of the analysis showed that domestic companies achieved significantly better results than foreign companies. However, it is worth noting that the results of the latter did not differ from assessing the positives and considering that the share of foreign capital amounted to over 80% in this market can be considered as efficient.

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### **ANALIZA WSKAŹNIKÓW RENTOWNOŚCI ZAKŁADÓW UBEZPIECZEŃ W POLSCE Z UWZGLĘDNIENIEM RODZAJU KAPITAŁU**

**Streszczenie:** *Cel* – analiza wskaźników rentowności w zakładach ubezpieczeń z podziałem na zakłady z przeważającym udziałem kapitału krajowego i zagranicznego w latach 2008–2012.

*Metodologia badania* – wykorzystano standardowe metody badawcze – statystyki opisowej.

*Wynik* – zakłady z przeważającym kapitałem krajowym uzyskiwały znacznie lepsze wyniki aniżeli zakłady z przeważającym kapitałem zagranicznym.

*Oryginalność/wartość* – analiza wskaźników rentowności pozwala na ocenę efektywności kapitału zagranicznego na polskim rynku ubezpieczeń.

**Słowa kluczowe:** rynek ubezpieczeń, kapitał krajowy, kapitał zagraniczny, rentowność

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