Abstract

In the last ten years, the impacts of the external environment have more than ever affected the activity of insurance companies, the manner in which operations are carried out, and the manner in which they will be carried out. If we look at competition as a market game in which the degree of competitive struggle depends on the number of market participants and their relative market power, it is clear that the size of the available capital to cover the risk and the degree of capitalization of individual insurance companies, as well as liberalization and deregulation, have the most direct impact on the competition and thus on the insurance market. In the region, a greater interest in securing competition in all markets, including the insurance market, occurred together with privatization and deregulation that followed the overall efforts to transform the socio-economic system from a planned and orchestrated to a market economy system. Also, the trend of liberalization is present, i.e. opening of local, national markets to foreign competitors. Although in an uneven degree, there are foreign competitors in almost all countries of the region, which has been particularly pronounced in Slovenia since its accession to the European Union, and this year a similar trend can be expected in Croatia after its accession to the European Union.

Key words: competition, market, insurance, former Yugoslavia

Introduction

In the last ten years, the impacts of the external environment have more than ever affected the activity of insurance companies, the manner in which operations are carried out, and the manner in which they will be carried out. If we look at competition as a market game in which the degree of competitive struggle depends on the number of market participants and their relative market power, it is clear that the size of the available capital to cover the risk and the degree of capitalization of individual insurance companies, as well as liberalization and deregulation, have the most direct impact on the competition and thus on the insurance market. In the region, a greater interest in securing competition in all markets, including the insurance market, occurred together with privatization and deregulation that followed the overall efforts to transform the socio-economic system from a planned and orchestrated to a market economy system. Also, the trend of liberalization is present, i.e. opening of local, national markets to foreign competitors. Although in an uneven degree, there are foreign competitors in almost all countries of the region, which has been particularly pronounced in Slovenia since its accession to the European Union, and this year a similar trend can be expected in Croatia after its accession to the European Union.

The development of the insurance market is characterized by numerous indicators such as the absolute size of the insurance premium, the insurance premiums to gross domestic product and per capita, the share of life insurance...
in the structure of total market premiums and the like. For these indicators to be at satisfactory level it is necessary that certain conditions are being fulfilled which, in the insurance market, encompass the availability of adequate capacity to accept risk, diversified range of insurance coverage and continued improvement in compliance with European and international standards. The fulfillment of these requirements is greater in the insurance markets where there is a higher level of competition. In view of these relations, the paper builds upon the basic premise that competition is one of the key factors determining the development of the insurance market. Our research in the paper is directed at analyzing the issue of competition in certain markets in the region. We direct our attention to the quantitative analysis of competition in order to indicate the relevance of the findings in relation to the thesis pointing to a significant impact of the competition in the insurance market on its development.

**Competition in insurance market**

Competition is the essence of success and failure [20], suggests Michael Porter, a leading scientist in the field of business strategies and competitiveness. According to Porter, competition confirms validity of activities undertaken by specific companies which include innovation, culture, or practical implementation. Analysis of competitors and competitive position is crucial for market success of each insurance and reinsurance company. Competition level is often measured by the number of market participants and influences the amount of insurance premiums and the quality of insurance coverage and related services. The low level of competition in the market means high concentration, which is a source of high profits. Research shows that in markets with low level of competition insurers have greater opportunities to achieve high profits [1], [3], [2], [12], [19]. Profits higher than in more competitive markets are the main reason for the lack of interest of insurers for greater market competition. Therefore, the role of the state is necessary, as it should control its policies and contribute to the improvement of competition.

Open and fair competition among market participants is good for both consumers and businesses. More competition means more choices and greater value for consumers. Also, more competitive business environment provides the basis for the exploitation of opportunities for advancement and achievement of business success on a level playing field. Open and healthy competition that is in the interest of both the insureds and insurance companies should be the basis of regulations on competition in the insurance market. For the society as a whole it is important that the insurance market operates on the fair grounds and recognizes the need to prevent monopolistic activity, or any activity that would be directed towards limiting or preventing competition in the insurance market. Perfect competition in the insurance market characterizes the conditions in which there is no manifestation of market imperfections [7]. However, in the market there are not always a sufficient number of subjects of supply and demand, complete freedom of entry and exit from the market, complete uniformity of product or full information symmetry. These limits require state intervention, but only if they have been realized.

The interest of the state that is sought to be achieved with insurance regulation is to provide insurance at an affordable price, the protection of policyholders, the confidence that insurers will pay compensation when damage occurs and to provide the framework for insurers to be effective [9]. In market conditions prices are determined by the law of supply and demand. However, completely free market mechanisms could not be established without fair insurance premium or premium high enough to cover costs and provide a reasonable profit, but also low enough to be accessible to policyholders. Too high insurance premiums that may arise in the case of a monopoly market are very negative for the insured, since such premiums could prevent the accessibility of insurance. However, the existence of the too low insurance premium could result in insolvency or inability of insurers to pay losses when they occur. State intervention in order to ensure fair premium is required and it is achieved in two ways: 1) indirectly, through solvency regulation that prevents uncontrolled and unfair competition, and 2) directly, by granting tariff premium. Regulation of market practice is focused on preventing insurers to set inadequately low insurance premiums compared to competitors, to set
different premiums for different policyholders in order to attract them to conclude a contract and to persuade insureds to leave the existing policyholders, as well as on preventing false advertising, while a special importance is given to the prevention of monopolistic market.

Thanks to liberalization, deregulation, privatization and de-monopolisation of national markets in many countries, including the countries of the former Yugoslavia, there is a rapid development of the insurance. Liberalization expressed through the removal of barriers to entry for foreign insurance companies in national insurance market has improved the competitiveness and development of regional insurance markets, particularly in the area of life insurance. Foreign insurers have brought new products, advanced techniques of risk management, advanced techniques of assets and liabilities management [16] and they had a special incentive in the field of life insurance whose rapid growth was recorded after the liberalization of national markets.

**Competition and development: The insurance market in former Yugoslavia region**

The link between competition level and the development of insurance markets in the countries of former Yugoslavia basically follows the general rules that indicate that more developed insurance markets occur mainly as a result of high competition. Below we analyze the development of insurance markets in the region and compare them with leading insurance markets, pointing to the competition in the insurance market in the region.

Two indicators have been commonly used as a measure of insurance market development in different countries – indicators of insurance density and insurance penetration. Insurance density indicator is essentially the average annual insurance premium per capita. This ratio is an indicator of spending on insurance by the average resident of a country that in the most appropriate way demonstrates the importance of purchasing insurance in the individual national economies. Indicators expressed in national currencies are usually denominated in euro or dollar, which may result in uneven measurements, depending on exchange rate movements, as well as on chosen day. Insurance penetration indicator is the share of insurance premiums in GDP, or, in other words, it is the ratio of annual insurance premiums to gross domestic product. This ratio implies the relative importance of insurance in a given national economy and is commonly used as an approximation of the demand for insurance. However, there are limitations of this information as it ignores the specifics of individual insurance markets and national economies, such as the existence of different levels of insurance premiums in different countries and the differences in the method of calculation of gross domestic product and its structure.

**Table 1: Insurance premiums per capita in 2011 in the countries in the region of former Yugoslavia vs top ten countries in terms of premium per capita (in EUR)**

<table>
<thead>
<tr>
<th>Global ranking</th>
<th>Country</th>
<th>Total premiums</th>
<th>Life insurance</th>
<th>Non-life insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Switzerland</td>
<td>6111.9</td>
<td>3344.4</td>
<td>2767.5</td>
</tr>
<tr>
<td>2</td>
<td>Netherlands</td>
<td>5036.9</td>
<td>1410.7</td>
<td>3626.2</td>
</tr>
<tr>
<td>3</td>
<td>Denmark</td>
<td>4359.7</td>
<td>3054.6</td>
<td>1305.0</td>
</tr>
<tr>
<td>4</td>
<td>Japan</td>
<td>3923.5</td>
<td>3114.8</td>
<td>808.7</td>
</tr>
<tr>
<td>5</td>
<td>Finland</td>
<td>3681.4</td>
<td>2938.1</td>
<td>743.3</td>
</tr>
<tr>
<td>6</td>
<td>Luxembourg</td>
<td>3365.1</td>
<td>1868.2</td>
<td>1636.1</td>
</tr>
<tr>
<td>7</td>
<td>Sweden</td>
<td>3441.5</td>
<td>2611.8</td>
<td>829.7</td>
</tr>
<tr>
<td>8</td>
<td>United Kingdom</td>
<td>3416.3</td>
<td>2567.9</td>
<td>848.4</td>
</tr>
<tr>
<td>9</td>
<td>Norway</td>
<td>3273.7</td>
<td>2005.0</td>
<td>1268.6</td>
</tr>
<tr>
<td>10</td>
<td>Ireland</td>
<td>3243.1</td>
<td>2408.4</td>
<td>834.8</td>
</tr>
<tr>
<td>29</td>
<td>Slovenia</td>
<td>1071.6</td>
<td>312.8</td>
<td>758.9</td>
</tr>
<tr>
<td>47</td>
<td>Croatia</td>
<td>298.2</td>
<td>79.3</td>
<td>219.0</td>
</tr>
<tr>
<td>67</td>
<td>Serbia</td>
<td>82.9</td>
<td>13.4</td>
<td>69.6</td>
</tr>
<tr>
<td></td>
<td>Bosnia and Herzegovina</td>
<td>65.7</td>
<td>10.8</td>
<td>54.9</td>
</tr>
<tr>
<td></td>
<td>Macedonia</td>
<td>54.9</td>
<td>3.9</td>
<td>51.0</td>
</tr>
<tr>
<td></td>
<td>Montenegro</td>
<td>104.3</td>
<td>14.7</td>
<td>89.7</td>
</tr>
</tbody>
</table>

Source: [5], [7], [8], [9]
Indicator of insurance density for the ten countries with the highest premium per capita is given in Table 1. This table gives an overview of insurance premiums per capita, separately for the total premiums and for life and non-life insurance, for each country in the region of former Yugoslavia. Data are denominated to the value of EUR and dollar at 31.12.2011.

As can be seen from Table 1, the region is largely behind the highly developed countries in terms of the size of the total insurance premium per capita. Particularly noticeable is lag in life insurance. In four countries of the former Yugoslavia life insurance premium was less than 15 euros per capita and this explains why this type of insurance was less influenced by the financial crisis [18]. Also, it is noticeable that in the top ten countries ranked by the amount of the insurance premium, eight are members of the European Union.

Figure 1 shows share of insurance premiums in gross domestic product. Share of total, life and non-life insurance premiums in GDP was most pronounced in Taiwan, South Africa and the Netherlands. The key impact of the high penetration of insurance in all of the ten leading countries, except the Netherlands, provides life insurance. In the region, with the exception of Slovenia, it was recorded relatively little, almost negligible share of insurance premiums in gross domestic product.

We believe that the key reason for underdevelopment of insurance in some countries is due to the fact of its general and private insurance underdevelopment. In the former socialist countries, including countries of the former Yugoslavia, private insurance was not developed until the early nineties of the twentieth century. The causes are numerous. We believe that the key reason for the underdevelopment of private insurance market is the relict of the past low demand for insurance coverage. At a time when the social insurance was the widest coverage of pension and health insurance, the demand for private insurance was almost nonexistent. In the circumstances when assets were essentially in state ownership or without property owner, as in the case of countries of the former Yugoslavia, while personal types of insurance were provided by state, private insurance was not necessary. Insurance coverage for motor vehicles was dominant, for example, in the former Yugoslavia, exactly because of the fact that it was mandatory. However, even this segment of the insurance did not have a private character, given that most of the insurance companies were a state or public property. Also, in some countries there was no trust in the institution of insurance; in some countries there was a problem with the stability of the currency, while in others there was no adequate staff. We believe that inadequate competition was the crucial reason for the underdevelopment of insurance.

Figure 1: The comparison of premium share in GDP in the region of the former Yugoslavia and in leading 10 countries in 2011 in %

Source: [5], [7], [8], [9]
market, as state monopolies were the only insurers. Starting from the fact that their property was in the state’s hands and that the possibility of entry of foreign insurers did not exist, nor was there a possibility of establishing private insurance companies, competition was very low, which resulted in underdeveloped insurance supply and relatively high premiums. With the gradual economic development, privatization, deregulation, liberalization, the gradual increase in prosperity and competitiveness of the insurance market in these countries has happened.

**Competition measured by market share of insurance companies in the region of former Yugoslavia**

The degree of competition in the insurance markets can be measured in different ways but usually: 1) by the absolute number of companies on the market, 2) by the relative participation of several leading companies (often 3 to 5), and 3) by using Herfindahl-Hirschman index (Herfindahl-Hirschman Index).

Concentration rate is most often determined by a number of companies in a particular sector. Concentration rate of the leading market participants is usually defined as the percentage of the total supply in a sector. Analogously, the rate of concentration of eight to ten market participants is usually defined as a percentage of the total supply in a particular sector. In the case of pure monopoly, concentration ratios of leading two to five, or eight to ten companies, will reach 100% of market share. In the case of perfect competition this rate approaches zero. Therefore, in the case of pure theoretical monopoly, the rate of concentration of the leading company would be 100%, as the company would provide a complete offer of products or services in a particular sector.

The degree of market concentration is first analyzed in terms of the movement of the market share of the leading and dominant insurance company. It is common that if a company has a market share of 40% or 50% it can be considered absolutely dominant in a particular market. Market concentration presented by trends of the market share of the leading insurance company for the countries of the former Yugoslavia in the period from 2006 to 2011 is shown in Figure 2.

According to trends in the market share of the dominant insurance company, the insurance market in Bosnia and Herzegovina is the least concentrated and the insurance market in Montenegro is the least competitive. During the period the dominant insurance company in Bosnia and Herzegovina was “Sarajevo osiguranje”. The share of the company during the period decreased slightly, from 13.72% in the 2006 to 12.78% in the 2011. Although “Lovcen”, the dominant insurer in the insurance market in Montenegro, had a significant share over the period, the change was

![Figure 2: Trends in market share of the dominant insurance company in countries of the region of the former Yugoslavia in the period 2006-2011](image-url)
much more drastic than in Bosnia and Herzegovina. From a position of fully dominant market share of 73.70% in the 2006 the share of “Lovcen” in the insurance market in Montenegro decreased by almost 30%, i.e. it was 45.38% in 2011. In Croatia, the dominant insurance company “Croatia osiguranje” partially lost its leading market share. The share of the insurer in the insurance market in the course of the period declined from 36.08% to 30.54%. The situation was similar in Macedonia. Leading insurance company “Vardar osiguranje” reduced its market share from 25.45% in 2006 to 19.26% in 2011. In Slovenia, the dominant insurance company “Triglav zavarovanje” also reduced its market share (from 41% to 33.21%), but relatively less than was the case in Montenegro, Croatia, Macedonia and Serbia. Finally, in Serbia, the market share of the dominant insurance company also declined during the period. Market share of insurance company “Dunav osiguranje” was reduced from 34.23% in 2006 to 26.93% in 2011.

The degree of market share and degree of market competition can be measured by the participation of several leading companies (usually 3 to 5 companies in the market). Figure 3 presents the share of four leading insurance companies in insurance markets in the countries of former Yugoslavia.

As can be seen from Figure 3, all insurance markets in the region are highly concentrated, with the exception of the insurance market in Bosnia and Herzegovina, where the share of four leading insurance companies is less than 50% of the total market share. As with the representation of participation of leading insurance company, the specific situation of an insurance market is in Montenegro where the share of the top four insurers in the total premium was very high. This situation is primarily the result of small number of companies at the beginning of the observed period. Although the changes of market concentration in the region were relatively small, over the period the decrease of market concentration was noticeable in all markets, with the exception of the insurance market in Bosnia and Herzegovina. The share of the top four insurers in Bosnia and Herzegovina between 2006 and 2011 increased from 36.08% to 37.81%. In Montenegro, the share of four leading insurance companies from 99.84% in 2006 decreased to 82.64% in 2011. In Croatia, the share of four leading insurers decreased from 65.50% in 2006 to 59.69% in 2011. In Macedonia, the participation of the four leading insurance companies decreased from 64.80% in 2006 to 53.69% in 2011. In Slovenia, the market share of the leading four insurance companies declined

Figure 3: The competition level in the insurance markets of the countries of former Yugoslavia measured by the share of the four leading insurance companies in the period 2006–2011

Source: authors’ calculations based on [4], [7], [8], [9], [10], [14], [15], [21]
from 82.20% in 2006 to 70.38% in 2011. Finally, a similar situation happened in Serbia where the share of the four leading insurance companies decreased from 81.16% in 2006 to 72.10% in 2011.

The degree of market concentration is further analyzed in terms of movement of the market share of the top ten insurance companies. The results of the movement of the market concentration of the top ten insurance companies for the period from 2006 to 2011 are demonstrated in Figure 4.

As with the two previous indicators Figure 4 shows similar trends in the case of the insurance market in Croatia, Macedonia, Slovenia and Serbia, but not in the case of the insurance market in Bosnia and Herzegovina and Montenegro. The reason lies in the fact that in Bosnia and Herzegovina came to a reduction in the number of companies, while in Montenegro during the part of the observed period the total number of insurance companies was below ten, the reason why the top ten insurers essentially made total commercial capacity. Top ten insurance companies in the insurance market in Bosnia and Herzegovina during the period increased its market share from 65.87% in 2006 to 70.75% in 2011. As the two previous groups of indicators, the indicators of participation of the top ten insurance companies in the region point to the lowest level of competition in the insurance market in Montenegro, where the share of the top ten insurance companies during the entire period was in effect at the level of about 100%. The share of the top ten insurance companies in the insurance market of Croatia was reduced from 90.34% to 84.43% between 2006 and 2011. In Macedonia, the share of the top ten insurers was reduced from 98.06% in 2007 to 97.15% in 2011, which represents a significant change in comparison to 2010, when the market concentration of the top ten insurance companies in this market totaled 92.80%. In Slovenia, the top ten insurance companies reduced the market share of 97.30% in 2006 to 94.05% in 2011. Finally, the market share of the top ten insurance companies in Serbia was decreased from 96.49% in 2006 to 90.82% in 2011.

**Competition in insurance markets in the region of former Yugoslavia measured by Herfindahl-Hirschman Index**

Herfindahl-Hirschman Index measures market concentration degree by the market share of each insurance company, so this index considers all companies and not only the leading insurers. Attitudes regarding the use of specific indicators are not uniform. Some believe that the Herfindahl-Hirschman Index (HHI) is more comprehensive [6] than other measures while other believe the opposite [11]. Without getting into a detailed consideration of the advantages and disadvantages of this index, we believe that definitive

![Figure 4: Market concentration as a measure of the competition of the insurance market in the countries of the former Yugoslavia during the period 2006-2011 measured by the share of the top ten insurance companies](image-url)
conclusions can be obtained by using all four indicators. The HHI is calculated by adding the squares of market share percentages of all market participants, or as follows:

$HHI = (\text{market share of the company 1 in } \%)^2 + (\text{market share of the company 2 in } \%)^2 + \ldots + (\text{n company’s market share in } \%)^2$

In the case of the insurance market, the Herfindahl-Hirschman index is calculated by summing the squares of the relative market share of each insurance company according to the following formula:

$$HHI = \sum_{i=1}^{n} \left( \frac{p_i}{P} \right)^2,$$

where $p_i$ is the size of each company’s premiums and $P$ total market premium.

Herfindahl-Hirschman index commonly accounts for all market participants but can be calculated for the top three, top five, eight or ten. The HHI is calculated by the individual squaring and summing of market shares of each insurance company expressed as a percentage, where the index value can be between 0 and 10000. When index approaches zero, it indicates that the market has a large number of participants of similar size, which implies the existence of more competitive market than in the opposite case. In addition, non-concentrated market is considered to be a market for which the HHI is calculated in the range between 0 and 1000, the market for which the HHI is calculated in the range between 1000 and 1800 is considered to be moderately concentrated and concentrated market is considered to be one for which the HHI is greater than 1800 (up to 10000). HHI decreases with the growing number of competitors. This index gives proportionately greater value to companies with larger market share and given that it represents the sum of squares of the individual market shares, as individual market shares are lower the smaller total index will be, and will indicate the more competitive market.

Finally, the degree of market concentration and competition can be expressed through the Herfindahl-Hirschman index. Figure 5 presents the movement of the index for all insurance markets of the former Yugoslavia in the period from 2006 to 2011.

Movements of the HHI in all countries, except Bosnia and Herzegovina, indicate a trend of continuous decline or decrease of concentration. There are evident differences between the individual markets, among the most obvious are between insurance market in Bosnia and Herzegovina and Montenegro. The insurance market in Bosnia and Herzegovina, on the basis of data on HHI, is one of the most competitive insurance markets in the region. Although it could be identified a slight increase in the value of HHI, these values are still significantly below 1000 and undoubtedly indicate high level of competition in this market. The insurance market in Montenegro is the least competitive market in the region of former Yugoslavia. In this market, at the beginning of the period HHI amounted to more than a defined threshold of 1800 (and 2000 if we take into account the framework

Figure 5: Herfindahl-Hirschman Index as a measure of the competition of the insurance market in the countries of the former Yugoslavia in the period from 2006 to 2011

Source: authors’ calculations based on [4], [7], [8], [9], [10], [14], [15], [21]
determined by the EU). Also, during the observed period the insurance market in Montenegro experienced the most significant transformation in terms of the competition of the insurance market, although it still remains the market with the highest degree of concentration. The insurance market in Croatia during the observed period improved the competition measured by the HHI value, which decreased from 1721.39 to 1357.38. The insurance market in Macedonia also underwent positive change in the HHI value in the period in which the value of the index from 1556.07 in 2007 decreased to 1044.53 in 2011. As for the insurance market in Serbia, a highly concentrated market in 2006, when the HHI was 2236.47, turned into a moderately concentrated market in 2009 and by 2011 its HHI further improved reaching the value of 1551.26. Finally, the insurance market in Slovenia during the period suffered minor changes in the HHI value and despite improvements at the level of the amount of 2290.76 in 2006 to the level of 1952.96 in 2010, market remained highly concentrated in the 2011 when the value of the index for the first time fell below 1800, i.e. at the level of 1675.86 (according to the parameters used in the EU this market in 2010 crossed for the first time in a moderately concentrated market position).

Conclusion

In the countries of the region, as shown in the paper, a direct connection between increased competition in the market and market development cannot be fully established. The mentioned is evident given that the region's most developed insurance market is Slovenian insurance market, which is characterized by a relatively high market concentration and high level of development. We are of the opinion, however, that the main reason for the high development of this market is relatively higher per capita income than in other countries in the region. On the other hand, the second most developed insurance market, insurance market in Croatia, is characterized by relatively low market concentration. However, it is evident that in the markets where the competition is greater, or in which market concentration gradually reduces, including the market of Bosnia and Herzegovina, Montenegro and Macedonia, the insurance market is more developed.

References
