PROTECTION OF COMPETITION IN THE OIL AND OIL DERIVATES MARKET IN THE REPUBLIC OF SERBIA

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Milan Veselinović[1*], Snežana Radukić[1], Jelena Stanojević[2]

[1]University of Niš, Faculty of Economics, Niš, Serbia
[2]University of Niš, Faculty of Science an Mathematics, Niš, Serbia

Abstract. *It is generally known that the market represents the overall relationship between supply and demand. The relations between these two are constantly intertwining and are constantly influenced by different factors. Depending on their relationship as well as on factors specific to a particular economy, there are different market conditions, such as: monopoly, oligopoly, limited oligopoly, limited competition, perfect competition, etc. The liberalization of the domestic oil and oil derivatives market represents an open space for creating a high-quality competitive relationship. However, the course of strengthening the competitive relationship should be carried out considerably faster. Market conditions and competitiveness are in practice determined by the concentration in the observed market. Competition is in a particular relevant market expressed by a number of concentration indicators. Thus, an important aspect of the analysis of competitiveness intensity in the domestic oil market is measuring the concentration of supply, which will be analyzed in this paper. It can be said that every market is characterized by a certain level of competitiveness among market participants, and through these competitive relationships, their market power permeates. The research uses concentration indicators to show the concentration in the domestic oil and oil derivatives market, its current features and also to analyze the potential of strengthening the competitive relationship in the future.*

Key words: *protection of competition, oil and oil derivatives market, concentration indicators, concentration*

INTRODUCTION

Oil and oil derivatives market in the Republic of Serbia is characterized by a certain level of competitiveness among oil companies. Through concentration and competitive market relations, their market power spreads out. The theoretical approach to the study of market power primarily starts from the market structure form, and these forms are numerous. There are different market structures. Most of the real market situations include elements, number of participants, conditions and monopoly dominance or perfect competitiveness. Oligopoly is one of the market situations, which in terms of number of participants and conditions that rule upon it, lies between monopoly and perfect competitiveness. It is such a market situation where there are little or few sellers who sell similar or slightly different products. If a product offered by oligopolists is homogeneous, then it is a homogeneous oligopoly. If a product offered by oligopolists is inhomogeneous, then there is a heterogeneous oligopoly (Zdravkovic, D., (2006); Zdravković, Stojanovic, B., Đorđević, D., Stojanovic I. (2004)).

Thus, oligopoly has been a very common market situation. For instance, in the domestic market, the following industries are adequate examples of oligopoly - sugar industry, cement industry, tobacco industry, dairy industry and mobile phones industry. The oil market is also oligopoly. More specifically, as oil is homogeneous product, it is a homogenous oligopoly market. What is typical for this type of market is that companies that operate in this type of market in the long run generate huge profit, and often disable the entry of new competitors. Concentration in this kind of market represents an indicator of the level on which the total sales is controlled by a small number of participants and the high level of competitiveness in combination with low concentration level represents a condition to be pursued. However, the concentration in the domestic oil market is not uniform, thus potential competitors are facing with economies of scale, large investments in facilities modernization, investments, effective pricing policy of the leading companies, institutional and political barriers and other similar things (Horvath, 1970, 446). In addition to all this, one should bear in mind the experience of oligopolistic companies that can be manifested in their capability of considerably reducing the price of their products or overwhelming the market with their products, which can only discourage potential competitors. From the perspective of placing barriers, an oligopolistic market can act as a market monopoly, especially if there is a common interest and agreement among oligopolists in the long run.

What is also interesting is the division of market oligopoly in terms of the distribution of the market share. That is how we have loose oligopoly, when four leading companies in the market have up to 40% market share, and tight oligopoly, the case when the four largest companies have 40 to 50% market share. Arrangements can be strong or long-term and short-term or weak, respectively. In order for an agreement to be reached, it is desirable that companies have similar potential, demand conditions and costs (Zdravkovic, D., (2006)). One kind of a strong agreement is a cartel. An adequate example of a tight oligopoly based on a cartel principle is the Organization of the Petroleum Exporting Countries (OPEC).

In the contemporary market economy, competition law is used to sanction the secret of commercial cooperation, strong and weak agreements on a joint approach with the intention of achieving extra profits and violation of the principle of competitiveness at the

expense of business competitors and consumers themselves. These activities are hard to detect, investigate and punish, especially in corrupt countries. Hidden and secret agreements are realized in the market by using different signals, for example, a competitor is signaling what price he prefers, and other companies follow him, in accordance with the previously established agreement.

In the first part of this paper, the attention is paid to the variables on the basis of which the situation and changes in the domestic oil and oil derivatives market in the Republic of Serbia is monitored. This market is covered by oil companies. The second part of the paper deals with the application and presentation of metrics and also with the analysis of the concentration level in the domestic oil and oil derivatives market. The analysis of the concentration level has led to the interesting tendencies that occur in the observed market.

1. The Turnover in the Domestic Oil and Derivates Market

In a market economy in the world, there are many companies that make profit and generate income as a dominant company in oligopoly conditions. IBM, Procter Gamble, General Electric, Kodak, Hewlett Packard and other companies achieve a market share of over fifty percent by selling their products. A quite common example is that the percentage of sales of products of certain companies in a particular market ranges between 60 and 70 percent. In Serbia, this kind of market structure is characteristic for oil and oil derivatives market, and the dominant company is Petroleum Industry of Serbia (hereinafter NIS), regarding retail sale.

Prior to application of measurement indicators, that is the indicators and analysis of the level of concentration, it is necessary to choose a variable based on which the situation and changes in the domestic market of oil companies will be monitored. Data and information regarding turnover, production and costs of oil companies operating in the domestic oil and oil derivatives market is difficult to obtain. There are several reasons for this. First, Data Protection Law provides the right and obligations of oil companies to hold as a secret a good deal of data and pass them only to the legally competent institutions. Second, the non-transparency of the majority of legal and economic institutions also further complicate the collection and processing of necessary and available data. Thus, availability of the relevant data of interest for the study of business efficiency, concentration, competitive relations and market power is reduced to a low level. Objectively speaking, at that very moment, the most suitable variable is the total turnover of oil the company has achieved in the domestic retail market (excluding Kosovo and Metohia). For the purpose of identifying key trends in the oil market, an overview of the total turnover of fifteen oil companies operating on the territory of the Republic of Serbia for the period from 2010 to 2014.

Table 1 The total turnover of domestic oil companies during the period from 2010 to 2014

Registered name	2010	2011	2012	2013	2014
ДОО ЕУРО ПЕТРОЛ СУБОТИЦА	3,908,874	5,464,054	6,027,370	5,635,528	554,234
ДОО ЗА ТРГОВИНУ И УСЛУГЕ ГАСПЕТРОЛ ПАНЧЕВО	1,254,885	1,424,032	1,467,994	1,239,017	128,335
ПЕТРОЛ ДОО БЕОГРАД	945,557	1,438,410	2,107,860	4,760,596	4,554,469
ЕУРО ПЕТРОЛ ТРАНС ДОО СУБОТИЦА	226,891	243,212	233,656	244,419	234,971
НАФТАХЕМ ДОО НОВИ САД	7,684,361	11,066,679	17,677,041	14,511,628	14,525,764
ЕВОЛУЦИЈА 2004 ДОО БЕОГРАД	4,984,100	5,401,846	5,342,950	6,194,219	6,212,478
РАДУН АВИА ДОО НОВИ САД	1,507,597	2,053,630	2,663,442	2,888,821	2,457,867
СТАНДАРД ГАС ДОО НОВИ САД	2,842,420	4,102,700	5,586,532	6,241,883	6,457,817
НАФТА АД БЕОГРАД	9,422,196	12,616,517	5,568,006	5,061,697	5,002,354
ЈП ТРАНСНАФТА ПАНЧЕВО	484,326	464,379	581,967	818,758	658,914
КНЕЗ ПЕТРОЛ ДОО ЗЕМУН	18,820,128	31,281,957	40,369,705	37,597,349	38,958,899
ЛУКОИЛ СРБИЈА АД БЕОГРАД	37,551,658	44,057,626	45,154,451	30,242,523	33,656,847
ИНТЕРМОЛ ДОО БЕОГРАД МОЛ ДОО	11,430,785	13,202,373	18,059,526	20,248,316	19,850,411
ОМВ СРБИЈА ДОО БЕОГРАД	31,169,935	34,897,696	38,108,709	30,937,667	28,969,747
НИС АД НОВИ САД	161,148,850	186,882,958	226,156,906	252,214,729	239,214,757
Total turnover in domestic market	293,382,563	354,598,069	415,106,115	418,837,150	401,437,864

Source: *Business Registers Agency*

From Table 1 that depicts the annual retail turnover of the domestic oil companies, it is clear that *NIS* has the highest turnover on annual basis. The average share in total turnover per year ranges between 54% and 60%, which is a really big market share. The total turnover during the observed period had been increasing at a rate of 18%, except for the last year when a slight drop of 2.5% was recorded.

Table 2 Percentage share of the first seven domestic oil companies in total
in the period from 2010 to 2014

Registered name/Year	2010	2011	2012	2013	2014
НИС АД НОВИ САД	54.93	52.70	54.48	60.22	59.59
ЛУКОИЛ СРБИЈА АД БЕОГРАД	12.80	12.42	10.88	7.22	8.38
ОМВ СРБИЈА ДОО БЕОГРАД	10.62	9.84	9.18	7.39	7.22
КНЕЗ ПЕТРОЛ ДОО ЗЕМУН	6.41	8.82	9.73	8.98	9.70
ИНТЕРМОЛ ДОО БЕОГРАД МОЛ	3.90	3.72	4.35	4.83	4.94
НАФТА АД БЕОГРАД	3.21	3.56	1.34	1.21	1.25
ЈП ТРАНСНАФТА ПАНЧЕВО	0.17	0.13	0.14	0.20	0.16

Source: *Business Registers Agency*
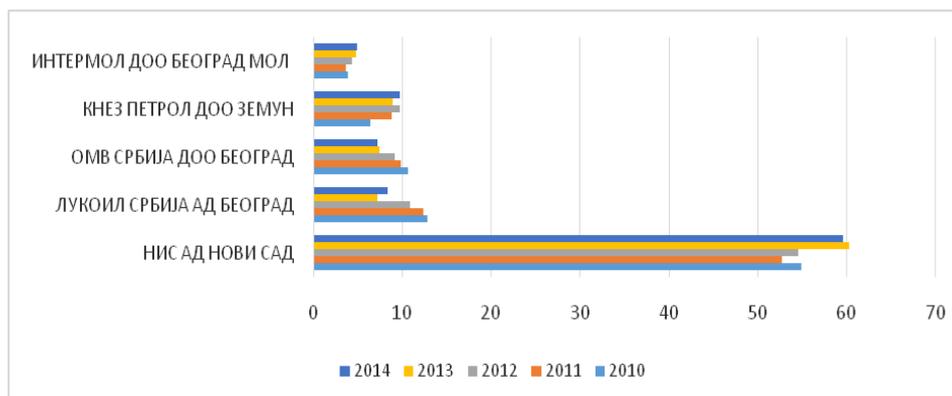
Graph 1 Percentage share of the first seven domestic oil companies
in total in the period from 2010 to 2014

Besides the presented data about the revenue growth, and revenue from sales, far more valuable information relates to the tendency of concentration of market power and it can be obtained by analyzing the data in Table 2. Although, it is evident that the domestic oil and oil derivatives market is oligopoly, the available and presented data indicate that the current market is moving away from theoretical and classical oligopoly. In the reported period, only one oil industry had a share of 54% to 60% of total retail trade, while the first five realized 87% of the turnover in the total turnover in the last five years. Table 2 and Graph 1 clearly show the turnover realized by large companies. They do this at the expense of smaller oil companies. Although there is a tendency of association among private oil companies, growing market power of certain oil companies is more pronounced.

2. CONCETRATION INDICATORS IN THE MARKET AND MEASURES

In economic theory and practice, there is a relatively widespread misconception that large market share automatically means great market power and violation of competitive relationships. This so-called traditional understanding links market power to market share, considering that profitable price increase is more likely to happen in companies with larger market share than in those who have less market share. The reason for this is the large market share of certain companies in the total turnover. Concentration indicators

show the share of every company's total turnover observed on the relevant market. On the basis of the market share of companies the relations among them are formed within a certain relevant market and the degree of concentration on the market is determined. This clearly shows the nature of the relationship of the observed companies. This is why concentration indicators are important. They describe the structure of a market and are often called structural indicators. As such, they are used during the implementation of the antitrust policy measures. The holders of the antitrust policy often rely on the calculated value of this indicator in order to make important decisions regarding the performance of certain companies in the relevant market. They enable the analysis of the current market conditions, taking into consideration the changes that occur in it. As such, we use them to predict and analyze future trends in the market.

Assessing the relevant market involves its defining both from the geographical aspect, and the aspect of the product that is sold in that market. Thus, from the point of view of the participants industry in the particular market, we can distinguish between the relevant product market and the relevant geographic market. The relevant product market can be seen in a narrow and in a broader sense. The relevant product market in the narrow sense means a set of products or services for which the observed participant is specialized, for example - production of Euro-diesel in the domestic oil market. The relevant product market in the broader sense means a set of products or services for which the observed participant is less specialized, such as - Energy Market in the Republic of Serbia, that is oil and oil derivatives market, liquefied petroleum gas, oil, and lubricants. Furthermore, the relevant geographic market can be understood in a narrow and in a broader sense. If the narrower geographical area, say the territory of the city or region and wider is observed, then we are talking about the relevant geographic market in a narrow sense. If we observe the territory of a state, province or alliance of individual states, then the relevant geographic market in a broader sense is in question. The results of the market power of the company will be considered more precise if they are calculated for the relevant geographic market in a narrow sense, and vice versa. Setting boundaries in terms of product and space means defining the framework within which a competition analysis will be performed based on the selected variables, and the relative market power will be estimated. By determining the relevant market, it becomes clear which companies are those that compete with each other in respect of certain products offered in a particular geographic market become known. In the economic theory and practice, there are different methods by the help of which, the relevant market can be defined, and in this paper, the relevant market is clearly framed and defined as the retail market of oil and oil derivatives in Serbia.

There are numerous concentration indicators that economists use to describe the degree of market restrictions in the most relevant way. The representation of the level of market restrictions depends on market participants and the distribution of market share, sales, incomes, region and other similar variables among them in one market. Otherwise, there are a number of indicators that provide a relative image of market concentration within one agricultural branch. The most important are:

- Concentration Ratio;
- The Herfindahl - Hirschman Index of concentration;
- The Hannah - Kay index of Domination;
- Index of Domination;

- The Hall -Tideman Index (HTI) and the Rosenbluth Index;
- The Comprehensive Industrial Concentration Index;
- Gini coefficient;
- Lorenz curve;
- Uncertainty coefficient and others.

Taking into consideration the specificities of the of oil and oil derivatives market in the Republic of Serbia, the advantages and disadvantages of the statistical apparatus, as well as the data we have access to in order to assess concentration, it is necessary to affirm a few concentration indicators in order to determine the level of concentration in the market. This is supported by the fact that the analysis of the results of only one indicator does not indicate clearly the nature of the concentration of the retail market offers. For example, a significant disadvantage with concentration ratio represents an insight into the market shares of smaller companies that bypasses the calculation of this indicator, and certainly affects the industrial concentration. Such restrictions are and can be bypassed only by applying the calculation of several concentration indicators. The combination of several concentration indicators creates a clearer image of concentration in a particular market because every concentration indicator is special, but it also complements other indicators with its characteristics. Thus, in this paper, the analysis of the market concentration will be based on the use of several indicators of concentration. As seen before, the *Concentration Ratio*, the *Herfindahl-Hirschman index of concentration*, *Uncertainty coefficient* and *Comprehensive Concentration Index* have proved to be the most commonly used indicators. Therefore, we will use in this paper the four abovementioned indicators.

2.1. Concentration Ratio

Index of shares of *n* companies or ***concentration ratio*** (concentration coefficient) represents an indicator that is calculated as the sum of the market shares of *n* largest companies in the market and as such it is very easy to understand (Waldman, E., D., Jensen, J., E. (2001)). It can be represented using the following formula in Figure 1 (Savic, 2000, 4):

Fig. 1 Concentration ratio

$$CR_n = \sum_{i=1}^{n} S_i \tag{1}$$

whereby S_i represents market share of the *i* company, which is obtained through form:

Fig. 2 Market share of the *i* company

$$Si = \frac{q_i}{Q} 100 \tag{2}$$

whereby q_i represents the sales, that is the income of the *i* company, and *Q is* the overall sales at the level of branches, retail trade revenue (see Figure 2).

The number of companies that will be included by using these indicators usually ranges between 4 and 10 (n=4-10), and this decision is up to specialized organs that are professionally engaged in monitoring the level of concentration, provided that this

coefficient is used as an official indicator of the limited market. It is believed that taking a large number of companies in the analysis can reduce the analytical significance of this indicator by increasing the value of the index. What ensures the objectivity of this indicator is choosing a small number of companies which have the most impressive offers, thus affecting the conditions of competition mostly. Most experts would agree with this, and because of that, companies whose size (income, sales, turnover) influences the concentration of branches are usually taken for the purpose of analysis. It is usual to take four companies CR_4. CR_4 as a concentration ratio has a value for which there are limits on the basis of which there is a classification of market structures. Thus, this paper will cover the four oil companies that we believe influence the concentration in the market mostly. The value of this index ranges from 0 to 100. If its value is 0, then it indicates that it is a market with unlimited number of companies, where the participation of each of them is very small, almost zero. Conversely, if its value is 100, it indicates a market monopoly, that is, a highly concentrated industry. In the United States and the European Union limit value of this ratio is more or less different, but the value that is greater than 25 generally involves a high degree of concentration of supply, given that in the US, highly concentrated market has a value above 50.

Table 3 Concentration ratio - CR4 -
Calculations based on data
from Table 1 and Table 2

Year	CR4	ΔCR
2010	84.7	
2011	83.7	-0.98
2012	84.2	0.47
2013	83.8	-0.46
2014	84.8	1.09
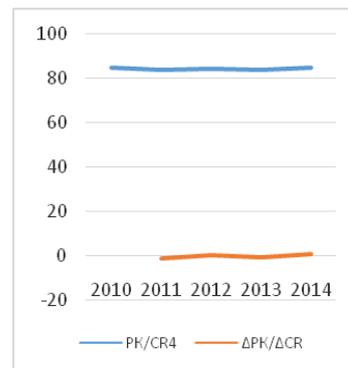
Graph 2 Concentration ratio - CR4

The calculation of the ratio has included only four companies. The practice shows that if the calculation took a larger number of oil companies, concentration ratio would have been inaccurate and it would have lost analytical significance. Measured by the ratio in concentration, and by the standard both of the European Union and the United States, the domestic oil and oil derivatives market is characterized by extremely high concentration. In theory, it is also known that if the value of the concentration ratios is greater than 25, then we are talking about an oligopolistic market. However, if its value is between 25 and 50 then it is a *loose oligopoly*, and if its value is greater than 50, a *tight oligopoly* is in question. As the value of the concentration ratios for the four companies is above 50, oil and oil derivatives market has the title of a *tight oligopoly*. Table 3 and Graph 2 showed

the value movement of CR_4 in the domestic oil and oil derivatives market in the period from 2010 to 2014, whereas as the base for calculations, which were percentage market shares were taken from Table 2 .

All the indicators of concentration, both in this analysis and in general, have certain advantages and disadvantages. For this indicator, the main drawback is that it only shows the total market share of the 4 leading companies in the industry, but not the dispersion of participation among them, which is certainly a major drawback in the detailed consideration of the concentration in a particular market. So, if there are 4 companies in the industry, its value will be 100, the same as if there is only one company. Obviously, when there are only 4 companies within a branch, CR_4 will be set to 100, regardless of the layout of the market share of these four companies. So we can have $CR_4=100$ for the market in which there are 4 equal sized companies (by revenue), and $CR_4=100$ for the market when there is only one dominant company with a much larger market share than the other three. This is the reason why we will use several indicators in our analysis.

2.2. The Herfindahl - Hirschman Index of Concentration

The application of **Herfindahl-Hirschman Index of concentration** (hereinafter HHI) provides a clearer analysis of the observed market compared to the previous indicator. This index complements the concentration ratio because it takes into account the difference in size of market share among companies. Also, we consider all the companies operating within the industry into this calculation. Herfindahl-Hirschman Index represents the sum of market shares of the companies weighted by their own market share:

Fig. 3 Herfindahl-Hirschman Index of concentration

$$HHI = \sum_{i=1}^{n} W_i S_i = \sum_{i=1}^{n} (S_i)^2 \qquad (3)$$

whereby w_i represents weighting factor and s_i represents market share of the i company

Every company is assigned a specific weight corresponding to its market share ($w_i = s_i$). Herfindahl-Hirschman Index is a convex function of market share, and is therefore very sensitive to inequality in the market share distribution (see Figure 3). Herfindahl-Hirschman Index respects market share in the industry, except that it focuses on companies that have higher market share, thus the bigger the number of such companies, the higher the growth of this index. Its value ranges from 0 to 100 or from 0 to 10,000. A more detailed concentration levels are given in Table 4:

Table 4 The levels of market concentration - the value of the Herfindahl-Hirschman Index of concentration

Values of HHI	Degree of supply
HHI < 1,000 (0.1)	Low concentration of supply
1,000 (0.10) < HHI < 1,800 (0.18)	Medium concentration of supply
1,800 (0.18) < HHI < 2,600 (0.26)	High concentration of supply
2,600 (0.26) < HHI < 10,000 (1.00)	Very high concentration of supply
HHI > 10,000 (1.00)	Monopoly

Source: *Market concentration, Global trends and economics, Annual report: Econometric 2009*

Table 5 and Graph 3 illustrate the movement of HHI value in the domestic oil and oil derivatives market for the period from 2010 to 2014, whereby the percentage market share from the Table 2 were taken as the basis for calculation, that is, the percentage market share of seven oil companies that stood out by their turnover.

Table 5 Herfindahl-Hirschman Index
Calculations based on data
from Table 1 and Table 2

Year	ННI/ХХИ	ΔHHI/ΔXXИ
2010	3360.4	
2011	3133.1	-227.28
2012	3286.1	153.02
2013	3838.5	552.31
2014	3793.4	-45.01
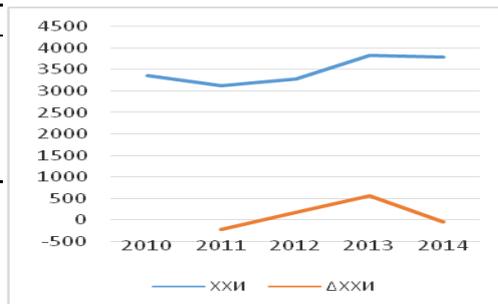
Graph 3 Herfindahl-Hirschman Index

Herfindahl-Hirschman Index of concentration of market supply of oil and oil derivatives in the Republic of Serbia (without data for Kosovo) in the period from 2010 to 2014 ranged from 3360 to 3794. An offer concentrated like this indicates that from the theoretical aspect, oil and oil derivatives market is characterized by a high level of the limited market. Based on its value, the domestic oil and oil derivatives market is classified as the market in which there is a very high supply concentration by the participants to the supply side. There is a gradual growth of this indicator, indicating the growth of concentration in the domestic oil market. The calculation base is taken from Table 2 - market share percentage and concentration coefficients are calculated from it.

2.3. Uncertainty coefficient

Uncertainty coefficient belongs to the information theory, whose purpose is to evaluate the level of certainty of every decision, and can therefore be used to measure the certainty or uncertainty in different market structures. Uncertainty coefficient focuses on the degree of instability that exists in some branches of agriculture. It is obtained through this form (see Figure 4):

Fig. 4 Uncertainty coefficient

$$E = \sum_{i=1}^{n} S_i \log_e \left[\frac{1}{S_i} \right] \tag{4}$$

whereby the S_i stands for market share of i company expressed in relative numbers.

If the value of the uncertainty coefficient is zero, then the market situation is monopoly. A company that is monopolistic actually owns the entire market offer and there are no substitutes for its product. If the value of the uncertainty coefficient is equal to the natural logarithm of an n number, where n is the number of companies (companies

of the same size) in the observed market, then its value indicates that it is a market with a perfect competition. The uncertainty coefficient can be decomposed as the uncertainty coefficient within different groups, but also between different groups (Lipczynski, J., Wilson J. and Goddard J. (2009)). Thus, in a situation when there is a group of companies of different sizes, different ownership structures, various industries etc., its practical application comes to the fore. Uncertainty coefficient does not have an upper threshold value and it varies depending on the number of companies in the observed industry.

Table 6 Uncertainty coefficient
Calculations based on data from Table 1 and Table 2

Year	KE	ΔKE
2010	1.257	
2011	1.298	0.034
2012	1.225	-0.067
2013	1.119	-0.105
2014	1.149	0.030
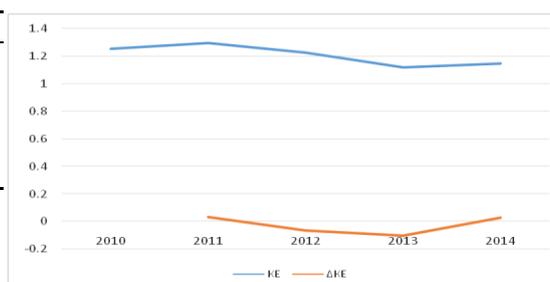
Graph 4 Uncertainty coefficient

Uncertainty coefficient of the domestic oil and oil derivatives market in 2010 amounted to 1.257, while in 2014 its value was much less, amounting only 1.149. From Table 6 and Figure 4, we can clearly see a slight drop, whereby a significant decline was recorded in 2013. Gradually moving away from the coefficient upper limit (1.950) only indicates a further alienation of this market from perfect competition. If we take the value 0 to stand for the market monopoly, and the value 1.950 to stand for the perfect competition, then the value of 1.149 clearly indicates a *tight oligopoly*, as the values of the abovementioned indicators have also confirmed.

2.4. Comprehensive Concentration Index

This index is also known as Horvath Index (Horvath, 1970). Comprehensive concentration index was created as a result of criticism of discrete and cumulative indicators of concentration. Some theorists have criticized this index for giving too much importance to large companies in the industry, while the latter was criticized for underestimating the importance of large companies and attributing the same importance to them as to small companies (Gini coefficient). This index is calculated using this simple form:
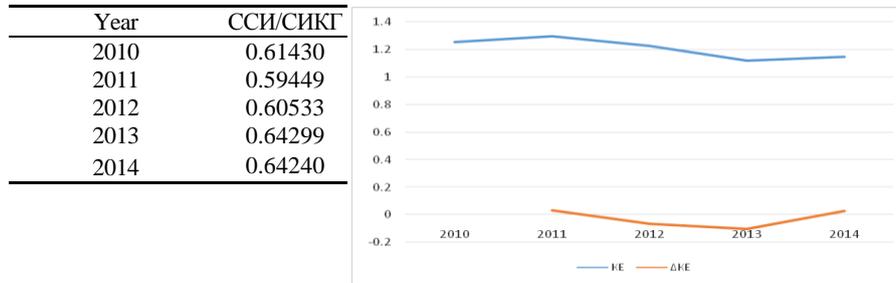
Fig. 5 Comprehensive concentration index

$$CCI = S_l + \sum_{j=2}^{n} S_j^2 (2 - S_j) \tag{5}$$

whereby $i=l$ and $j = 2,3, .. n$ and n - a number of companies in this branch, and S_i and S_j represent market shares of the i and j companies (see Figure 5). Also, S_i represents the

market share of the biggest company, and S_j represents the market share of other companies. This index has primarily been focused on measuring imbalances in the distribution of market share, and is very similar to Lorenz curve and Gini coefficient and that is the reason why these two indicators are not used in this paper.

Table 6 Comprehensive concentration index
based on data from Table 1 and Table 2

Year	ССИ/СИКГ
2010	0.61430
2011	0.59449
2012	0.60533
2013	0.64299
2014	0.64240

Graph 5 Comprehensive concentration index

Table 7 and **Graph 5** represent the movement of index values relating to the relevant oil and oil derivatives market for the period from 2010 to 2014. Apart from the fall recorded in 2011, the index recorded a gradual growth. As the value of this index ranges between 0 and 1, where 0 represents perfect competitiveness and 1 stands for monopoly, the obtained values in the table for the observed period suggest that the existence of a *tight oligopoly* in the relevant market will not be changed suddenly. The potential changes in the market would be appearing gradually and over a longer period of time.

For the oil and oil derivatives market as a whole, all of the applied concentration indicators point to the existence of concentration to some extent. Some of these indicators point to a strong concentration, while others at a moderate concentration. Based on everything abovementioned, we can conclude that there is a tendency towards increasing concentration in the relevant oil and oil derivatives market, but there are no credible evidence that there is an agreement and monopolistic treaty among participants.

CONCLUSION

The tendency to increase the concentration is the result of the increased commitment of oil companies for better business connections and better performance. Situation in the domestic oil and oil derivatives market can be described as oligopoly and due to the certain market relations, it can be characterized as *tight oligopoly*. Therefore, the results of this study suggest that there is an existence of concentration in the relevant market, thus there is a serious possibility for the formation of agreements and arrangements between competitors. *Commission for Protection of Competition* is fully responsible for discovering these arrangements. Namely, if in the near future, the flow of strengthening the concentration in the oil market continues or even becomes stronger, combined with the economic growth and living standards improvement, the abuse of a dominant position is likely to occur.

The problem is further complicated taking into consideration all companies operating in the domestic oil and oil derivatives market. In the observed relevant market, there is an

oligopoly with the dominant firm where one company has a large market power when compared to their competitors in the market. As such, the practice has so far shown that there is a strong possibility that the company will abuse its market position towards suppliers, customers and competitors. This kind of situation in the domestic oil and oil derivatives market is subjected to the anti-monopoly policy of both domestic and foreign legislation. *Commission for Protection of Competition* should pay special attention to the policy of the retail price formation. Appropriate implementation of the regulation for forming prices in the oil and oil derivatives market is only possible under the watchful eye of the *Commission,* because the chances of an agreed performance in the relevant market are really big, which is supported by indicators. In this context, we draw attention to the potential for the agreed performance and the agreed price.

The oil company, which is without a doubt a leader in the domestic oil and oil derivatives market by all accounts is *Petroleum Industry of Serbia*. However, NIS has been a state oil company until recently, so it continues to behave as a company that pursues a responsible policy towards the state budget and society and has not yet misused its dominant position. If the agreement is reached, *tight oligopolies* will achieve maximum of the common benefit that is greater than the individual ones. By connecting several companies, a group of common interest arises and it exceeds all the individual interests. Dominant companies, such as NIS, have lower production costs. They possess advanced technology, quality management, have been present in the market for a long time and have strong support from the government. Also, they have a superior product or service - a product that customers are familiar with for a long period of time and for some specific reasons they are devoted to this product. By connecting multiple companies, a group of common interest arises and it surpasses individual interests.

In order for a company to become a dominant one, it is necessary to have a market share of 40 percent or more. Therefore, the boundary between the monopoly and oligopoly is very faint. The boundary is particularly poorly visible due to the fact that both with monopolists and the dominant firm, the demand curves and their elasticity are pretty similar, but also because of the imperceptibility of the competition of smaller companies.

Pursuant to Article 47 of the Law on Protection of Competition ("RS Official Gazette", No. 51/09) and the Decision of the Council of the Commission adopted in April 2010, *Commission for Protection of Competition* from April 2010 to September 2011 analyzed the overall situation of competition in the market. What was analyzed was import, processing, wholesale and retail trade in the domestic oil and oil derivatives market for the period 2008 to 2010. This analysis had a special significance because the impact of price movements of goods in the market in all economic areas in the Republic of Serbia was really big. Alliance for the *Commission for Protection of Competition* very quickly decided that in the future, an analysis of oil and oil derivatives market in the segment of retail trade and wholesale trade should be conducted for each preceding year. The results of continuous sectoral analysis gave statements, as follows: the Report on the analysis of the market situation, processing, wholesale and retail for the period from 2008 to 2010; the Report on the sectoral analysis of the market, wholesale and retail trade in oil derivatives in 2011; the Report on the sectoral analysis of the market, wholesale and retail trade of oil derivatives in 2012 and the Report on the sectoral analysis of the market, wholesale and retail trade of oil derivatives in 2013. This work, with its own results, clearly supports and complements certain results above mentioned.

REFERENCES

1. Agencija za privredne registre www.apr.rs (12.5.2015)
2. Donald, B., Paul F., Michael, S., Geringer, J. (2008), International Business, The Challenge of Global Competition, Chicago
3. Gerald, A., Ewin, D. (2008), International Marketing and Export Management, University of New York and San Francisco State University
4. Keegan, W., Green, M. (2008), Global Marketing, Global Competition, Pace University and Westchester, New York, Department of Accounting, Economics, Management and Marketing, Simson College, Indianola, OWA
5. Kostić, M. (2011), Tržišna moć korporacija i koncetracija u grani, Ekonomski fakultet, Univerzitet u Kragujevcu, Srbija
6. Lipczynski, J., Wilson J. and Goddard J. (2009), Oxford University Press. p. 209
7. Nacionalni naftni komitet, www.wpcserbia.rs (16.5.2015)
8. Organization of petroleum exporting countries, www.opec.org (19.4.2015)
9. Radukić, S., Petrović-Ranđelović, M. (2014), Strane direktne investicije kao imperativ unapređenja konkurentnosti srpske privrede u postkriznom periodu, Teme 2/2014, br. 2, april-jun 2014, Univerzitet u Nišu, str. 507-526
10. Radukić, S., Radović, M., Marković, I. (2013), Unapređenje konkurencije i inovativnosti kao faktori privrednog oporavka, Poslovna ekonomija, Theme number: Privredni oporavak Srbije – ostvareni ekonomski učinci i razvojne mogućnosti, Univerzitet Edukons, Fakultet poslovne ekonomije, Sremska Kamenica, 2013, godina VII, broj 2, vol. XIII, str. 41-54
11. Republički zavod za statistiku, www.rsz.rs (15.5.2015)
12. Shingo S., (1986), A Revolution in Manufacturing: The SMED System, Productivity Press, Cambridge, MA
13. Stojanović, B., Milovanović, G., Radukić, S. (2011), Chapter 18. Globalization and transnational companies during the times of economic crisis, Contemporary issues in the integration processes of Western Balkan countries in the European Union, International Center for Promotion of Enterprises, Ljubljana, Slovenia, 2011, p. 288-304
14. Waldman, E., D. and Jensen, J., E. (2011) Prentice Hall. p. 95
15. Zdravković, D., Stojanović, B., Radukić, S. (2013), Teorija i politika cena, Ekonomski fakultet, Niš
16. Савић, Љ. (2000), Тржишне структуре у Југословенској индустији, Индустија бр. 1/4/-2000, Економски институт; Београд, стр. 4
17. Zeigenfuss, D., (2000), Measuring performance, Internal Auditor, Vol. 57, Issue 1: 18-27..

ZAŠTITA KONKURENCIJE NA TRŽIŠTU NAFTE I NAFTNIH DERIVATA REPUBLIKE SRBIJE

Opšte je poznato da tržište predstavlja sveukupni odnos ponude i tražnje. Odnosi ponude i tražnje se stalno prepliću i pod stalnim su uticajem različitih faktora.. U zavisnosti od njihovog odnosa i fakora karakterističnih za određenu ekonomiju javljaju se različita tržišna stanja: monopol, oligopol, ograničeni oligopol, ograničena konkurencija, savršena konkurencija itd. Liberalizacijom domaćeg tržišta nafte i naftnih derivata otvoren je prostor za izgradnju kvalitetnih konkurentskih odnosa. Međutim, tok jačanja konkurentnih odnosa bi trebao da se odvija znatno brže. Tržišna stanja i konkurentnost u praksi su determinisana koncetracijom na posmatranom tržištu. Konkurentnost između privrednih subjekata se na određenom relevantnom tržištu izražava brojnim pokazateljima koncetracije. Prema tome, važan aspekt analize intenziteta konkurencije na domaćem tržištu nafte jeste merenje koncetracije ponude, a što će se u ovom radu i učiniti. Može se slobodno reći da svako tržište karakteriše određeni nivo konkurentnosti između učesnika na tržištu, a kroz konkurentske odnose prožima se i njihova tržišna moć.U radu se pokazateljima koncetracije prikazuje kakva je koncetracija na domaćem tržištu nafte i naftnih derivata, kakve su njegove trenutne odlike i analizira potencijal jačanja konkurentnih odnosa u budućnosti.

Ključne reči: *zaštita konkurencije, tržište nafte i naftnih derivata, pokazatelji koncentracije, koncetracija.*