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**Review paper** 

# STATE AID CONTROL: THEORETICAL ASPECTS AND EMPIRICAL EVIDENCES

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Abstract. In order to ensure equal business conditions and fair competition for all market participants, competition policy regulation in the field of company activities control alone is not sufficient. Another very important aspect and condition to ensure fair competition is the control of the state aid given to the economy, which can favour certain market participants and put them in a privileged position. Hence, the state aid control in the European Union (EU) is a very important segment of the competition policy. In addition, building the institutional framework of competition policy inevitably implies building capacity for state aid control in the potential member states. Impact channels of state aid on competition are different and depend on the specificity of the situation and the applied measures of aid. The aim of the paper is to explore the difference between granted state aid in the EU and Serbia, as well as examine the potential impact of state aid on the level of market concentration as a measure of the efficiency of competition. In order to realize the defined aim, comparative and correlation analyses are used in this study.

Key Words: state aid, competition, market, comparative analysis, concentration.

## INTRODUCTION

In addition to controlling the activities of enterprises, appropriate normative regulation of the state aid to economy is important in order to provide efficient competition on the market. The significance of the system of state aid control results from the need to provide equal business conditions and equal opportunities for success to all market participants. Thereby, the system of state aid control is an integral and very important part of competition policy. State aid control is adequately regulated in a number of guidelines

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and instructions at the level of the European Union. Also, because of the importance of the issue, there is constant innovation of legislation. In developing countries, which are still not members of the EU, requirements for developing a functional system of state aid control have emerged over the last decade. It has become for Community to include provisions on competition policy, including state aid in both, its trade and association agreements (Cremona, 2003, p. 265). The Stabilisation and Association Agreement (SAA) is the basis of defining requirements in the field of development and functioning of state aid control in Serbia. Given that the Law on State Aid began to be applied in 2010 and this is the first year of the work of Commission for state aid control in Serbia, we can talk about freshness and actuality of the issue.

The paper points out the importance of the system of state aid control and its role in the function of competition protection. The concept of state aid and system development at the EU level and the results achieved in this field in Serbia, a country in which the implementation of the system is relatively new, are described in the first part of the paper. The second part of the paper analyses the trends in state aid at the EU level and in Serbia as a country that is in the process of association. The comparative analysis allows the formulation of valid recommendations for further development of the system of state aid control. Finally, the third part of the paper explores the interdependence between the granted state aid and the degree of market concentration, as a measure of the intensity of competition. The starting hypothesis of the research is that there is a positive correlation between the increase in the granted state aid and the increase in the degree of market concentration.

#### 1. IMPLEMENTATION OF STATE AID CONTROL

State aid control is a highly pronounced segment of the EU competition policy. State aid itself is a form of implementation of the interventionist state policy, but it cannot be equated with a far broader concept of state interventionism. Motivated by a broad range of goals, states may use different measures to intervene in the economy and help businesses, sectors or regions. The state can intervene in the market in three ways. One way is financial aid to economic entities, realized by direct transfers to enterprises, investment, low-interest loans, tax exemptions and incentives, selling inputs below market prices, buying outputs above market prices. The second way is related to the establishment of the state rules and regulations of the state, i.e. its regulatory policy. The third method is directly related to the provision of goods and services by the state, such as infrastructure and other public goods. A wide range of goals may motivate the first mentioned way of government intervention, financial aid to companies. In the OECD study, the following stands out: a) stimulating economic activity in the regions and encourage firms to locate within a specific region, b) the provision of services that the market has no interest to provide, such as transportation or telecommunications services in remote areas, c) the slowing rate of decline in the industry, for example in the case of subsidies for coal and steel, d) correcting market failures, e) increase employment, including employment of certain categories of labour, f) increase the relative market share of the company which receive state aid (OECD, 2001). Only state intervention in the form of financial aid to economic actors, motivated by the above mentioned and a host of other objectives constitutes state aid.

### 1.1. The legal framework at the EU level

Provisions of the Treaty on the European Union are the base of the EU state aid control. Article 87 of the Treaty (which is equivalent to Article 107 of the Lisbon Treaty in force) emphasizes that "any aid granted by a Member State or through State resources which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods, especially if it affects trade between Member States, is considered incompatible with the common market" (Consolidated versions of the Treaty on the Functioning of the European Union 2008, p. 91). Besides highlighting that state aid is forbidden under appropriate conditions, the Treaty does not contain a precise definition of state aid, thus making this question still open to interpretation. The nonexistence of a clear definition of the subject is justified by the fact that the substance, not the form, is relevant in defining state aid. The presence of a precise definition may limit the flexibility of the Treaty and open the possibility for a later creation of other forms of unlawful aid, which are not initially included in the potential definition and in the Treaty (Stojanović, Stanišić, 2011, p. 50).

The Treaty on the European Union and the Lisbon Treaty also leave a wide scope for interpretation of the notion of authority that provides state aid. According to Article 87 (107), we may conclude that this authority can be the state, local or regional authorities or bodies over which the state, directly or indirectly, has a significant impact. The state does not have to be a direct giver of state aid. The aid granted by any entity, public or private, whose decisions and operations are under state control, is considered as state aid. Public company which is controlled by the state can grant state aid. An example is the case 303-88 Italy v. Commission: Eni Lanerossi, where the Court (European Court of Justice) found that Eni, a public company, is a state company in accordance with the law, notwithstanding the terms of its establishment required to operate as an independent entity, which depends on the capital markets respect to the funds (Case C-303/88, 1991). However, the Court took this position with respect to the fact that the members of the board of directors of this company were appointed by the decree of the prime minister, and given that, it did not enjoy full autonomy, because it is required to operate in the framework set by a number of directives issued by the Italian government. Effective exercise of control cannot automatically be assumed because a public company may enjoy a greater or lesser degree of autonomy. In determining whether the aid granted by a public company can be attributed to the state it is necessary to take into account the following parameters: a) the company must take into account the guidelines and requirements of the state, b) integration of the administrative structure with the state, c) the intensity of the public authority direction, d) the nature of activities of the company.

Therefore, state aid at the EU level is every convenience that: a) allows economic advantage to the user, b) is granted selectively to certain undertakings or to the production of certain goods, c) has the potential danger of destroying competition, d) violates trade between Member States and e) involves the transfer of state funds, either directly by the state, local and regional authorities, or through the company that is managed by the state. State aid could be thought of as a tool to remedy potential market failure. However, it might also generate significant distortions of competition even when it is aimed at addressing market failure (Crocioni, 2006, p. 91). The fact that both effects could be present at the same time requires control of state aid.

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### 1.2. Establishment of the system of state aid control: the case of Serbia

Stabilisation and Association Agreement is the base of defining requirements in the field of development and functioning of state aid control in Serbia. The constitution of the system of state aid control has begun after signing of this document. Two basic elements of SAA are trade liberalization and creating a single market, as well as harmonization of legislation as an essential prerequisite for achieving the first element, that is the goal. Competition and state aid are the most important sectors of adjustments related to the functioning of the single market. In this way, Serbia accepted the building of institutions for state aid control by signing SAA. Serbia's duties and needs to develop a functioning system of state aid control are contained in Article 73 of the SAA - "Competition and other economic provisions." The first paragraph of this article defines what is not in line with the single market, the emphasis is on state aid, which distorts or threatens to distort competition by favouring certain undertakings or certain products. Paragraph 4, Article 73 of SAA defines the obligation of establishing the regulatory authority or commission within one year from the date of entry into force of SAA as an independent body whose responsibility will be, among other things, the approval of aid and requests for recovering unlawfully granted aid. Paragraph 5 appoints obligation of generation of state aid annual report, taking into account the methodology adopted in the European Union (Stabilisation and Association Agreement between the European Communities and Their Member States and the Republic of Serbia).

The requirements of the SAA are fulfilled in a timely manner. Serbia has established a Commission for state aid control as an operationally independent body in charge of monitoring government grants. Serbia has also managed to secure regularity in reporting on state aid since the Commission promptly prepares and publishes annual reports. The base of all activities in the field of implementation of the state aid control in Serbia is the Law on State Aid, which was adopted in 2009 and began to be implemented starting from 2010. The Serbian Law on State Aid Control defines state aid as any actual or potential public expenditure or reduced realization of public revenue, by which the user of state aid gets a more favourable position in the market relative to its competitors, which distorts or threatens to distort competition in the market (Law on State Aid Control, 2009).

Therefore, contractual and statutory provisions leave the decision-making entities the possibility to interpret the concept of state aid in different ways. In practice, the interpretations range from the broadest, which state that state aid is any economic benefit to the company receiving the aid, to those which state that state aid is any measure which strengthens the competitive position of the recipient reducing operational or capital costs relative to competitors and distorts competition in this way. Regardless of the definition of the coverage, state aid inevitably involves adequate benefit or advantage to certain companies, sectors or regions. Hence, there is the necessity to control state aid by establishing sophisticated control and monitoring systems.

The establishment of the system of state aid control is not without costs. Long-term positive effects cannot be counted on by neglecting the initial costs of construction and development of the system. A planned and directed introduction of the system of state aid control requires a detailed cost-benefit analysis. Numerous studies and current practice suggest that the adoption and application of state aid rules costs. These costs are mainly manifested in the form of increased prices of products and services where previously state

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aid scheme was used. These costs are transmitted to consumers (individuals and businesses) and to the rest of the economy (because most of the earlier state aid was aimed at sectors such as energy, transport, water supply, postal services). The main benefits relate to speeding up the restructuring of earlier state aid users and reducing expenditures from the state budget (budget funds could be used more effectively in other areas).

Creating a system of state aid control involves several steps. The first is to establish an inventory in terms of internal evaluation of everything that the government makes at various government levels. The next step is to create a monitoring system to monitor the changes in the coming years relating to the basic inventory. The third step is mapping in the sense of determining the level of development of regions, which should provide that the maximum amounts of certain types of state aid will be approved only to certain parts of the country. The final stage involves the introduction of national measures of state aid control in accordance with the EU principles and legislation into national structures.

Given that creating the system of state aid control should include a wide range of national, regional and local authorities, this fact will likely create significant initial challenges for the policy makers in Serbia (Stojanović, 2008, p. 97). Special challenges are placed for Serbia in the quest for a balanced approach that will work in accordance with the legacy and will be effectively coordinated with the short and long-term requirements of economic development (Stojanović, 2010, p. 129). The evaluation of results, which Serbia has achieved in the establishment and implementation of the system of state aid control, has two aspects. One is institutional, in the sense of providing the necessary legal framework and the necessary capacity for the implementation of the Law on state aid control. The other aspect is practical, in terms of analysis of effects that implementation of the law and the work of the Commission of state aid control have. While Serbia's progress in institutional terms is evident, the evaluation of the effectiveness of state aid control in the practice may be given through a comparative analysis of the granted state aid in Serbia towards the EU, in absolute terms, but also by comparison of the objectives of granting state aid.

## 2. COMPARATIVE ANALYSIS OF TRENDS IN GRANTED STATE AID - THE EU AND SERBIA

The aim of the EU regulation is a lower share of state aid in the GDP, since fewer amounts of state aid mean less possibility of distortion of competition. If we ignore the recent period of global economic crisis, the EU is successful in meeting this goal. The level of state aid as a percentage of GDP at the EU level has a tendency of continuous decline from 1992 to 2011 (without the crisis state aid). The share of state aid in GDP above 1% was recorded for the last time in 1997 (1.2% of GDP) (European Commission, 2012, p. 9). After that, the share of state aid in GDP at the EU level has dropped below one percent. Although the facts about the level of state aid under one percent of GDP is valid for the EU as a whole, among the member states individually there is significant disparity. Figure 1 shows the level of state aid as percentage of GDP in the EU member states, as well as in Serbia in 2011.



Fig. 1 Aproved state aid in the EU member states and Serbia in 2011 (as % of GDP) Source: European Commission, http://ec.europa.eu/; Serbian Commission for State Aid Control, http://mfp.gov.rs/

A certain (not large) number of the EU countries (Hungary, Slovenia, Greece, Finland, and Malta) recorded the share of state aid in GDP above one percent in 2011. A comparative review of the level of state aid in the EU countries and in Serbia leads to the conclusion that Serbia still has a significantly higher level of state aid in relation to all EU countries (Figure 1).

However, the specificity of the period of global economic crisis must be mentioned here. In the crisis circumstances, governments must take some measures that are faced with a difficult challenge: ease the crisis and ensure further economic growth (Cvetanović at al., 2010, p. 77). The global economic crisis emphasized the significance and possibilities of fiscal policy and government spending (Rakić at al., 2012, p. 404) . The beginning of the global economic crisis brought significant changes in the area of state aid. It allowed Member States to support, initially, financial institutions and then the real economy, while at the same time striving to prevent excessive distortion to competition and disruption to the flow of resources between Member States (Nicolaides, Rusu, 2010, p. 781). Not only the EU countries, but all countries were trying to put state aid in function to prevent the negative effects of the crisis. The level of aid that the country had set aside was due to two factors: a) magnitude of the need of the country to revive economic activity and b) dimension of financial capacity of certain countries, and therefore possibilities of helping their own economy. Despite the different approaches of individual countries, the level of the crisis state aid in the EU was significant, especially in 2009 (Figure 2). Given that the measures of state aid for alleviating the consequences of the economic crisis were limited by time, the level of state aid decreased continuously and significantly in the following years.



Fig. 2 Financial Crisis Aid in EU: Used amount (2008-2011) Source: European Commission, http://ec.europa.eu/

Figure 3 shows the level of state aid as percentage of GDP in Serbia (without separation crisis and non-crisis aid) in the period 2004 - 2011.



**Fig. 3** Trend in total allocated state aid in Serbia as % of GDP (2004 – 2011) Source: Serbian Commission for State Aid Control, http://mfp.gov.rs/

The level of state aid was less than 2% only in 2005 and 2006. The effects of the crisis are visible in 2008 and especially in 2009, when the level of state aid was the highest. After that, the level of state aid recorded a slight decrease.

In addition to variations in the level of state aid between Serbia and the EU, declination by type or purpose of state aid is also evident. Horizontal state aid can distort competition the least (given its basic division into horizontal, sectoral and regional). Hence, the intention of both the European and national legislations is increasing its share in the total structure of aid. In Serbia, however, the share of horizontal state aid in the overall structure of aid is even less by 43.5 percent, compared to the EU (2011), while the share of sectoral and regional is higher by 17.9 and 25.6 percent respectively (Figure 4).



Fig. 4 Variation of granted state aid in Serbia in relation to the EU 27 average according to the main categories of state aid, as% of total aid - 2011 (EU 27 average = 0) Source: Calculation based on data of European Commission, http://ec.europa.eu/ and Serbian Commission for State Aid Control, http://mfp.gov.rs/

In addition, significant variations in the basic objectives of granted horizontal state aid were recorded in Serbia in relation to the EU (Figure 5). The biggest declination was noted in the field of state aid for environmental protection and state aid for research, development and innovation. Regardless of the convergence of Serbia to the EU, it is evident that there is a significant disparity in economic development priorities, and therefore the objectives toward which the state aid is allocated still vary significantly.



Fig. 5 Variation of granted horizontal state<br/>aid in Serbia in relation to the EU 27<br/>average according to the main objectives,<br/>objectives, as % of total aid - 2011<br/>(EU 27 average = 0)Fig. 6 Variation of granted sectoral state<br/>aid in Serbia in relation to the EU 27<br/>average according to the main objectives,<br/>as % of total aid - 2011<br/>(EU 27 average = 0)Source: Calculation based on data of European Commission, http://ec.europa.eu/ and Serbian

Commission for State Aid Control, http://mfp.gov.rs/

Before starting the empirical analysis we provide also a comparative review of certain types of sectoral state aid in Serbia and the EU (Figure 6). The most significant variation

was noted in the field of state aid to the transport sector. State aid for the mining sector (which will be the subject of further analysis) was slightly lower in Serbia than in the EU by 1.3% (measured as a percentage of total aid).

# 3. EXAMINING THE CORRELATION BETWEEN STATE AID AND THE DEGREE OF MARKET CONCENTRATION – RESEARCH RESULTS AND DISCUSSIONS

Concentration, as an indicator of the degree in which the total production or sales on the market are in the hands of a small number of market participants, is a measure of the intensity of competition. The performances of economic entities are improving in the sector where there is low concentration. There is a more efficient allocation of resources and fair rule of business conditions. Companies are becoming competitive outside the national market and there is a satisfactory level of economic well-being. The paper explores the potential link between state aid granted to selected sectors and the degree of market concentration in selected years. Measuring the concentration of supply is essential for determining prevention, restriction or distortion of competition. In addition, various indicators of the level of concentration allow assessment of the current state of the market and changes that occur.

The paper seeks to assess the situation in the mining sector in Serbia trough the relevant economic analysis and empirically substantiate the conclusion about the level of competition in this sector, as well as, the possible impact of allocated state aid to changing that level by year. There are several reasons for choosing the sectoral state aid (as one of the three main categories of state aid) and the mining sector as a subject of analysis. First, the sectoral state aid is intended for predetermined (known) economic entities in certain industries or sectors. This category is more selective in relation to the horizontal state aid and, because of that, there is greater possibility for distorting or threatening to distort competition in the market. State aid given to the sectors listed in Table 1 is treated as sectoral state aid according to the Serbian Law on state aid. In addition to the transport sector, the participation of the mining sector with a significant percentage in the overall structure of allocated sectoral aid in Serbia is clear (Table 1). The relevant geographic market of analysis is the Serbian market (when the concentration parameters are calculated).

	Sectoral state aid in the Republic of Serbia 2007 - 2010 (million RSD)					
Sector	2007	2008	2009	2010	2011	
Mining	1,440	1,850	1,715	2,126	2,219	
Transport	7,239	11,108	9,646	12,400	16,041	
Steel*	0	0	0	0	0	
Tourism	379	301	76	0	0	
Other sectors	293	518	280	0	0	
Total	9,350	13,777	11,717	14,526	18,260	

Table 1 Allocated sectoral state aid in the Republic of Serbia in the period 2007–2011

\*With the privatization of large state company, "Steel" in 2007 there is no more state aid to the steel sector in Serbia. Source: Reports On State Aid Granted in Serbia in 2010, p. 5, http://www.mfin.gov.rs Before choosing measuring indicators and analysis of the degree of concentration on the market of mining companies in Serbia, it is necessary to make a choice of a variable based on which the situation and changes in the mining sector will be monitored. The availability of relevant data makes revenue the most suitable variable. We analysed revenue  $(S_i)$  of the sixteen Serbian mining sector enterprises as a share in the total revenue of all sector in the period 2007 – 2011. The data are available via The Serbian Business Registers Agency. The analised enterprises are: ad Bobija Ljubovija, doo Aroma 1990 Krusevac, doo Contractor Beograd, ad Igma Uljma, ad Kaolin Valjevo, doo Kijevo Beograd, ad Kopovi Ub, doo Kovilovaca Despotovac, doo Mannes Korman, doo Nemetali Topola, ad Mineralkonemetali Vranjska banja, doo Siti Cacak, ad Sloga Cacak, ad Ukras Novi Pazar, ad Vencac Arandjelovac, ad Zlatibor – mermer Uzice. Out of the total number of enterprises in Serbia, which are registered as a mining company, we selected those in which the exploitation of minerals, ferrous, nonferrous and other metals are exclusive activities.

Various types of indicators of the degree of concentration allow consideration of the current state of the market and changes that occur. This further leads to their usefulness in the assessment and analysis of future market trends, which may be a signal for the possible intervention of antitrust policy in order to provide conditions for healthy competition. Concentration ratio, Herfindahl - Hirschman index and entropy coefficient will be used in the paper.

*Concentration ratio* ( $CR_n$ ) is a simple statistical measure that shows the cumulative market share of n leading firms in the industry or on the market.  $CR_n$  can be defined as:

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

where *n* is the number of companies whose share is calculated, *Si* is the share of the selected company that can be defined on the basis of production, turnover, earnings, etc. A highly concentrated market is the market where the value of  $CR_4$  is above 25% in the European Union. In the U.S., the limit is 50%. However, an indicator of  $CR_4$  has a large number of defects for which the analysis should be supplemented with other measures of concentration.

*Herfindahl - Hirschman Index (HHI)* provides information that is much more complete. *Herfindahl - Hirschman Index* is defined as the sum of squared market shares of *n* firms in an industry:

$$HHI = \sum_{i=1}^{n} S_i^2 \tag{2}$$

where Si is the share of the selected company.

*Entropy coefficient* is obtained as the sum of the market share of individual firms and natural logarithms of their inverse (reciprocal) values. The coefficient can be determined through the following form:

$$E = \sum_{i=1}^{n} S_i \ln \frac{1}{s_i}$$
(3)

where  $S_i$  is the share of the selected company that is expressed in relative numbers. The zero value of the coefficient demonstrates a monopoly. If in an industry there are n com-

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panis of the same size, the coefficient of entropy will be equal to the natural logarithm of  $n (E = \ln n)$ .

Table 2 shows the value of indicators of concentration on the market of mining companies in Serbia in the period 2007 - 2011.

Table 2 Indicators of concentration on the market of mining companies\* in Serbia

Indicator			Year		
Indicator	2007	2008	2009	2010	2011
$CR_4$	0.55	0.59	0.69	0.62	0.67
HHI	0.10	0.11	0.16	0.12	0.14
Ε	2.442939	2.355593	2.165350	2.215968	2.170694

Based on the calculated values of  $CR_4$  (for 4 leading companies), it can be concluded that the concentration on the market increased each year (the intensity of competition decreased). According to generally accepted criteria by which the value of HHI from 0.1 to 0.18 indicates moderate concentration, the mining sector in Serbia is moderately concentrated. The concentration increased in the observed years. The value of E is closer to the possible upper limit of ratio (E = ln n = 2.833213) in the analyzed example and concentration is moderate. The concentration increased in the observed years.

The purpose of calculating the above-mentioned indicators is the conclusion about the relationship between state aid granted to the mining sector in Serbia and the degree of concentration on the market of mining companies in Serbia. Table 3 shows values of Pearson's correlation coefficient between granted state aid and indicators of concentration for the observed period (2007 - 2011).

		State Aid
State Aid	Pearson Correlation	1
	Sig. (2-tailed)	
$CR_4$	Pearson Correlation	0.517
	Sig. (2-tailed)	0.372
HHI	Pearson Correlation	0.316
	Sig. (2-tailed)	0.605
F	Pearson Correlation	-0.700

0.188

Ε

 Table 3 Pearson's correlation coefficient between state aid and indicators of concentration (CR4, HHI, E)

The values of Pearson's correlation coefficient in the observed example indicate the existence of moderate positive correlation between increasing state aid and increasing the degree of concentration on the market of mining companies in Serbia. The negative value of correlation coefficient between state aid and entropy coefficient (E) is understandable and indicates a positive relationship between state aid and degree of concentration. Namely, a lower value of E means a higher degree of concentration. In this way, the initial hypothesis of research is confirmed.

Sig. (2-tailed)

#### CONCLUSION

State aid control is a very important part of the EU competition policy. In addition to the constant innovation of regulation and improvement of the EU system of state aid control, the requirements for the establishment of this system are transmitted to the potential membership countries. In this sense, Serbia has recorded significant progress in institutional building system of state aid control in the last years. However, there remains the problem of its practical effectiveness. The level of state aid as a percentage of GDP is much higher in Serbia than in the EU member states, and there are significant differences in the objectives of state aid. The most problematic is the significantly lower level of horizontal state aid, which is considered the least distortionary and with the lowest potential of distortion of competition.

Impact channels of state aid on competition may be different. In the paper, the connection between the assigned level of state aid and competition in the market was researched on the example of the Serbian mining sector. The limitation of the research is the impossibility of the allocation of granted state aid to individual companies. The level of market concentration is used as a measure of the intensity of competition. Various types of indicators of the degree of concentration allow consideration of the current state of the market and changes that occur, but also gives various results and conclusions. The measurement of concentration was made through three indicators: concentration ratio, Herfindahl - Hirschman Index and entropy coefficient. The obtained values of the indicators point out that the degree of concentration increased, i.e. the intensity of competition reduced in this segment of the Serbian mining sector in the period 2007 - 2011. The level of state aid granted to the mining sector increased in this period. The calculated values of Pearson's correlation coefficient between state aid and CR4, HHI and E of 0.517, 0.316 and 0.700 respectively indicate the existence of moderate positive correlation between the increase in state aid and the increase in the degree of concentration on the market of mining companies in Serbia. The initial hypothesis of the research is confirmed in this way.

#### REFERENCES

- Case C-303/88. (1991) Italian Republic v Commission of the European Communities. State aid to undertakings in the textile and clothing sector, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri= CELEX:61988J0303:EN:HTML (02.04.2013)
- Consolidated versions of the Treaty on the Functioning of the European Union, Official Journal of the European Union, 2008/C 115/01, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008: 115:0047:0199:en:PDF (08.04.2013)
- Cremona, M. (2003) State Aid Control: Substance and Procedure in the Europe Agreements and the Stabilisation and Association Agreements, European Law Journal, Volume 9 (3): 265 – 287.
- Crocioni, P. (2006) Can State Aid Policy Become more Economic Friendly?, World Competition 29 (1): 89-108.
- Cvetanović, S., Šabotić, Z., Redžić, H. (2010) Economic Policy in Conditions of Globalazing Economic Crisis, Facta Universitatis: Series: Economics and Organization, Volume 7 (1): 73 – 81.
- European Commission. (2012) Facts and figures on State aid in the Member States, Commission Working Document, http://ec.europa.eu/competition/state\_aid/studies\_reports/2012\_autumn\_working\_paper\_en.pdf
- (16.04.2013)
  7. Nicoladies, P., Rusu, I. (2010) The financial crisis and state aid, The Antitrust Bulletin, Volume 55 (4):
  - Nicoladies, P., Rusu, I. (2010) The financial crisis and state aid, The Antitrust Bulletin, Volume 55 (4) 759 – 782.

- 8. OECD. (2001) Competition Policy in Subsidies and State Aid, http://www.oecd.org/daf/competition/ abuseofdominanceandmonopolisation/2731940.pdf (02.04.2013)
- Rakić, B., Pešić, M., Radjenović, T. (2012) The Effects of Fiscal Policy in the Contemporary Economic 9 Crisis Conditions, Facta Universitatis: Series: Economics and Organization, Volume 9 (4): 393 - 405.
- 10. Serbian Business Registers Agency, http://www.apr.gov.rs (03.05.2013)
- 11. Serbian Commission for State Aid Control, http://mfp.gov.rs/ (25.04.2013)
- 12. Stabilisation and Association Agreement between the European Communities and Their Member States and the Republic of Serbia (online), http://ec.europa.eu/enlargement/pdf/serbia/key\_document/ saa en.pdf (10.04.2013)
- 13. Stojanović B., Stanišić T. (2011) Sistem kontrole državne pomoći u Srbiji: ekonomski izazovi i ograničenja" Kontrola državne pomoći u Srbiji i EU, Tematski zbornik, Pravni fakultet Beograd, 46 - 62.
- 14. Stojanović, B. (2008) Državna pomoć i zaštita konkurencije, Tržišne strukture i zaštita konkurencije, Institut ekonomskih nauka i Beogradska bankarska akademija, 85 - 97.
- 15. Stojanović, B. (2010) Državna pomoć: Stanje regulative i perspektive implementacije" Ekonomika preduzeća, Savez ekonomista Srbije, Beograd, br. 3-4: 121 – 130. 16. Zakon o kontroli državne pomoći, Službeni glasnik RS, br. 51/09.

# KONTROLA DRŽAVNE POMOĆI: TEORLISKI ASPEKTI I EMPIRIJSKI PODACI

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Da bi se obezbedili jednaki uslovi poslovanja i lojalna konkurencija za sve tržišne učesnike nije dovoljna samo regulacija u oblasti politike konkurencije koja se odnosi na kontrolu aktivnosti preduzeća. Drugi veoma važan aspekt i uslov obezbeđivanja fer konkurencije je kontrola državne pomoći privredi, koja može favorizovati određene učesnike na tržištu stavljajući ih u privilegovanu poziciju. Otuda je kontrola državne pomoći u Evropskoj uniji (EU) veoma važan segment politike konkurencije. Takođe, izgradnja institucionalnog okvira politike konkurencije neizbežno podrazumeva i izgradnju kapaciteta za kontrolu državne pomoći i u potencijalnim zemljama članicama. Kanali uticaja državne pomoći na konkurenciju su različiti i zavise od specifičnosti situacije i primenjenih mera pomoći. Cilj rada je istraživanje razlike u dodeljenoj državnoj pomoći u EU i Srbiji, kao i ispitivanje potencijalnog uticaja državne pomoći na nivo tržišne koncentracije kao mere efikasnosti konkurencije. U svrhu realizacije definisanog cilja, u istraživanju su korišćeni metodi komparativne i korelacione analize.

Ključne reči: državna pomoć, konkurencija, tržište, komparativna analiza, koncentracija.