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MARKET CONCENTRATION AND FOREIGN DIRECT INVESTMENT IN THE FINANCIAL LEASING SECTOR OF THE REPUBLIC OF SERBIA

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Abstract: The financial leasing market in previous years is characterised by a growth that is also expected in the coming period. Besides, developing countries are striving to attract as much foreign direct investment (FDI) as possible to accelerate economic growth and achieve macroeconomic stability. The aim of this paper is to determine whether there is a relationship between FDI and the level of market concentration in the financial leasing sector of the Republic of Serbia and to determine whether this relationship is long-term or short-term. Quarterly data from the first quarter of 2006 to the first quarter of 2019 were used. Autoregressive Distributed Lag approach (ARDL) and bounds test were used for data analysis. The results showed that there is a negative relationship between FDI and the level of market concentration in the financial leasing sector of the Republic of Serbia in the long run, while there is no statistically significant relationship between FDI and the level of market concentration in the short run.

Keywords: foreign direct investment, market concentration, financial leasing, Herfindahl-Hirschman Index, Republic of Serbia

JEL classification: L11, F23

TRŽIŠNA KONCENTRACIJA I STRANE DIREKTNE INVESTICIJE U SEKTORU FINANSIJSKOG LIZINGA REPUBLIKE SRBIJE

Sažetak: Tržište finansijskog lizinga u prethodnim godinama karakteriše rast koji se očekuje i u narednom periodu. Pored toga, zemlje u razvoju se trude da privuku što više stranih direktnih investicija (SDI) kako bi ubrzale ekonomski rast i postigle

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makroekonomsku stabilnost. Cilj ovog rada je da se utvrdi da li postoji povezanost između SDI i nivoa tržišne koncentracije u sektoru finansijskog lizinga Republike Srbije, kao i da se utvrdi da li je ta povezanost dugoročna ili kratkoročna. Korišćeni su kvartalni podaci za period od prvog kvartala 2006. godine do prvog kvartala 2019. godine. Pri analizi podataka je primenjen autoregresivni model distribuiranih docnji (ARDL) i test graničnih vrednosti (bounds test). Rezultati su pokazali postojanje negativne povezanosti između SDI i nivoa tržišne koncentracije u sektoru finansijskog lizinga Republike Srbije na duži rok, dok u kratkom roku nije utvrđena statistički značajna povezanost između istraživanih varijabli.

Ključne reči: strane direktne investicije, tržišna koncentracija, finansijski lizing, Herfindahl-Hirschman Index, Republika Srbija

1. INTRODUCTION

Financial leasing is a type of leasing that essentially transfers the risks and benefits of owning an asset, from the lessor to the lessee. However, the lessee is not the formal owner of the asset and the risks related to potential losses due to unused capacity, technological obsolescence, etc. The benefits represent expected earnings during the economic life of the asset (Čavić, 2009). As a specific form of financing, leasing is of great importance for the development of the entire economy, especially for the segment of small and medium enterprises, newly established enterprises and for agricultural holdings (Drljača, 2015). Precisely because of the importance of financial leasing, the sector must be well developed and have a large number of competitors on the market, both national and foreign. Foreign companies influence the progress of the host country by changing the market structure. Blomstrom (1986) argues that FDI in small economies increases market concentration due to the size and degree of technological sophistication of foreign compared to national companies.

The global financial leasing market is expected to grow significantly by 2025, in line with the growing demand for expensive machinery, equipment and other necessary assets in the fields of healthcare, construction, information technology and telecommunications (Grand View Research, 2019). Accordingly, the subject of this empirical study is the financial leasing market of the Republic of Serbia and its characteristics with special emphasis on foreign companies in this sector. The aim of this paper is to determine whether there is a relationship between FDI inflows and the level of market concentration in the financial leasing sector of the Republic of Serbia, as well as to determine whether this relationship is long-term or short-term. The author will strive to prove that FDI inflows affect the level of market concentration in the financial leasing sector of the Republic of Serbia. Pack and Sagi (2001)

consider that FDI influences the change of the market structure of the host country by increasing or decreasing the market concentration and thus influencing the conditions of competition. Suppose foreign companies enter a highly concentrated industry, opening new branches in the form of greenfield investments. In that case, the initial impact of FDI will lead to an increase in the number of companies in the market, increased competition and reduced market concentration. The long-term effects of FDI on the level of market concentration in the host country will depend on the competitive strength and technological capabilities of national companies.

Descriptive statistics, unit root tests, bounds tests and the AutoRegressive Distributed Lag (ARDL) approach were used to analyse the collected data.

Besides the introductory and concluding remarks, the paper is structured as follows. The first section provides an overview of the existing empirical literature on the relationship between FDI and the level of market concentration. The second part presents the data and research methodology. The third part presents the results of research on the relationship between FDI and the level of market concentration in the financial leasing sector of the Republic of Serbia.

2. LITERATURE REVIEW

The relationship of FDI to the number and distribution of companies in a given sector is a problem that economists have been dealing with for decades, and should answer two questions: do multinational companies open their branches abroad in industries with different market structures than national companies and what impact multinational companies have on the market structures of these sectors (Dunning & Lundan, 2008). Despite the topicality of this issue, no agreement has yet been reached on the impact of FDI on the market structures of the host country. Existing empirical studies on the effects of FDI on host country market structure are not extensive but show that growing FDI inflows affect host country market structure by improving or worsening competitive market conditions (Dunning & Landan, 2008; Forte & Sarmiento, 2012; Driffield, 2001; Rutkowski, 2006; Ames & Roberts, 2005; Lall, 1979). Most empirical studies on the relationship between FDI and the host country's market concentration relate to the manufacturing industry (Forte & Sarmiento, 2012; Singh, 2011; Rutkowski, 2006; Adam & Khalifah, 2012; Yun & Lee, 2001).

Forte and Sarmiento (2012) examined the effects of FDI on market structures in the Portuguese manufacturing industry using data from 2006 to 2009 and applying a panel analysis. The concentration ratio of the four largest companies (CR4) was used as a dependent variable and a measure of market concentration, while the share of foreign companies in the total sales of the manufacturing

industry was used as an explanatory variable and a proxy of FDI. Besides, market size, market growth rate, economies of scale and other variables were included in the analysis. The results of the research showed that there are negative effects of FDI on the level of market concentration in the manufacturing industry of Portugal.

Orazalin and Dulambaeva (2013) examined the effects of FDI on the level of market concentration in the manufacturing industries of 26 countries in Central and Eastern Europe and the Commonwealth of Independent States (CIS) using the instrumental variables method. FDI stock for 2000 was used as an independent variable, while dummy variable was used as a proxy of market concentration (1 if the company has 1-4 competitors (high market concentration), 0 if the company has more than four competitors (low market concentration)). The results of the research showed that there is a negative impact of FDI on the market concentration of the host country, which is in line with the results of Forte and Sarmento (2012).

Driffield (2001) also studied the relationship between FDI and market concentration levels in the UK manufacturing industry between 1983 and 1992, using the method of simultaneous equations. According to the results of the research, FDI reduced the level of market concentration and improved the competitive conditions in the manufacturing industry of the United Kingdom.

Rutkowski (2006) also identified the negative impact of FDI on the level of market concentration in the manufacturing industry of 13 Central and Eastern European countries using data for 2001.

Lundin, Sjöholm, He and Qian (2007) examined the effects of FDI on the level of market concentration in the Chinese manufacturing industry from 1998 to 2004. The authors found that FDI inflows increased competition in the Chinese manufacturing industry (negative effects on the level of market concentration).

Singh (2011) also examined the effects of FDI on the level of market concentration in the manufacturing industry, but his research related to the manufacturing industry of India. The research was conducted from February 2001 to July 2006 using a panel analysis of data. Unlike Forte and Sarmento (2012) which used the concentration ratio of the four largest companies (CR4), Singh (2011) used the concentration ratio of the three largest companies in the manufacturing industry (CR3) as a dependent variable. The share of foreign companies in the total sales of the manufacturing industry was used as a proxy of FDI, while the market growth rate was also included as an explanatory variable. The results of the research showed that there is a statistically significant positive impact of FDI on the level of market concentration in the

Indian manufacturing industry. Besides, the results showed that the change in the share of foreign companies in the total sales of the manufacturing industry by one unit, increases the level of market concentration by 24.90%, while all other conditions remain unchanged.

Yun and Lee (2001) also studied the impact of FDI on the market structures of the host country by analysing the Korean manufacturing industry from 1991 to 1997. The authors concluded that there is a statistically significant positive impact of FDI on the level of market concentration measured through the concentration ratios of the three largest companies in the manufacturing industry (CR3). The obtained results are in line with the results of Adam and Khalifah (2012), Blomstrom (1986), Bourlakis (1987), Willmore (1989) who found the positive effects of FDI on the level of market concentration in the manufacturing industries of Malaysia, Mexico, Greece and Brazil.

Besides empirical studies examining the relationship between FDI and the level of market concentration in the manufacturing industry, certain studies have examined this relationship in the banking sector, especially in Indonesia. Cho (1990) examined the impact of FDI on the level of market concentration in the Indonesian banking market. The research was conducted from 1974 to 1983. The concentration ratio of the four largest banks in Indonesia (CR4) was used as a dependent variable, while the volume of FDI was used as an independent variable. The results of the research showed that the increase in the volume of FDI decreases the level of market concentration in the banking sector of Indonesia.

Mulyaningsih (2014) examined the relationship between FDI and conditions of competition also in the banking sector of Indonesia from 1980 to 2010 using the Vector Error Correction Model (VECM). The results showed that there is a long-term relationship between FDI and competition in the Indonesian banking sector. Besides, it was found that if there is a larger number of banks in the market and a favourable macroeconomic environment, then there is an increase in competition in the banking sector.

Panjaitan, Primiana, Ariawati and Masyita (2016) also examined the effects of FDI on the level of market concentration in the Indonesian banking sector. Data from 2005 to 2014 were used. The share of foreign banks in the total assets of the banking sector was used as a proxy of FDI and an independent variable, while the concentration ratio of the three largest banks (CR3) was used as a proxy of market concentration levels and dependent variable. The authors found that an increase in FDI (share of foreign banks in total assets of the banking sector) by one unit leads to a decrease in the level of market concentration

(CR3) by 0.35 units. The obtained results are following the results obtained by Cho (1990) in his research.

Sathye (2002), as well as Ames and Roberts (2005) found that there is no relationship between FDI and the level of market concentration. Sathye (2002) examined this relationship in the banking sector of India from 1997 to 1998 using the Herfindahl-Hirschman Index (HHI) as a dependent variable, and as an independent variable and a proxy of the FDI, dummy variable that takes the value 0 if the bank is in the majority domestic ownership and value one if the bank is in the majority foreign ownership. Ames & Roberts (2005) found that there is no impact of FDI on the level of market concentration in the Polish manufacturing industry using the instrumental variable method.

According to the mentioned empirical researches which examine the effects of FDI on the level of market concentration, it can be determined that the obtained results are inconsistent and differ depending on the observed country, market, period, research methodology and data used. Besides, according to a review of the relevant literature available to the author of this study, empirical study that examines the impact of FDI on the level of market concentration in the financial leasing sector could not be found, and there is no research related to the Republic of Serbia.

3. METHODOLOGY

The model used in the paper was formed according to the model of Sathye (2002), Panjaitan et al. (2016) and Forte and Sarmiento (2012) with certain adjustments adequate to the nature and structure of the data of the financial leasing sector of the Republic of Serbia. Accordingly, the initial model is represented by the following equation:

$$HHI_t = b_1FP_t + b_2MS\ growth_t + c + \varepsilon_t \quad (1)$$

where HHI_t - Herfindahl-Hirschman Index, a proxy of the level of market concentration in the financial leasing sector of the Republic of Serbia in the period t ; FP_t – the share of foreign companies in the total assets of the financial leasing sector of the Republic of Serbia in period t , a proxy of FDI; $MS\ growth_t$ – growth rate of the financial leasing market of the Republic of Serbia in period t expressed as the growth rate of assets of the observed sector; ε_t – error term in period t ; c – constant; $t = QI\ 2006, \dots, QI\ 2019$.

Accordingly, general and specific research hypotheses have been set.

General research hypothesis:

H_0 : FDI inflows affect the level of market concentration in the financial leasing sector of the Republic of Serbia.

H_1 : FDI inflows do not affect the level of market concentration in the financial leasing sector of the Republic of Serbia.

Specific research hypotheses:

H_{0a} : In the long run, FDI inflows have a positive effect on the level of market concentration in the financial leasing sector of the Republic of Serbia.

H_{1a} : In the long run, FDI inflows negatively affect or do not affect the level of market concentration in the financial leasing sector of the Republic of Serbia.

H_{0b} : In the short run, FDI inflows have a positive effect on the level of market concentration in the financial leasing sector of the Republic of Serbia.

H_{1b} : In the short run, FDI inflows negatively affect or do not affect the level of market concentration in the financial leasing sector of the Republic of Serbia.

The research used secondary data from the first quarter of 2006 to the first quarter of 2019, retrieved from the Report on the Financial Leasing Sector in Serbia of the Bank Supervision Department of the National Bank of Serbia. Descriptive statistics, unit root tests and the Autoregressive Distributed Lag (ARDL) approach were used for data analysis. According to Ghatak and Siddiki (2001), the ARDL approach gives statistically significant results even on relatively small samples. The ARDL approach is used when the variables are of a different order of integration, $I(0)$, $I(1)$ or a combination thereof, but no variable is $I(2)$. The bound test is used to determine the long-term relationship between variables and is based on Wald's transformation of F statistics. If the value of F-statistics is higher than the upper $I(1)$ and lower limit $I(0)$ at the level of statistical significance of 10%, 5% and 1%, it shows that there is a long-term relationship between variables (Nkoro and Uko, 2016).

4. RESULTS AND DISCUSSION

The Herfindahl-Hirschman Index (HHI) is the sum of the squares of individual market shares of companies in one industry, taking into account the existence of differences in the size of market share between competitors (Kostić, 2008). Begović, Bukvić, Mijatović, Paunović, Sepi and Hiber (2002) believe that markets with HHI index value less than 1000 have low concentration, the value from 1000 to 1800 medium concentration, from 1800 to 2600 high concentration, from 2600 to 10000 very high concentration, and monopolies have an HHI index value of 10000. Table 1 shows the descriptive statistics of

the variables. The average value of the HHI concentration index from the first quarter of 2006 to the first quarter of 2019 is 1243.13, showing that the financial leasing market in the Republic of Serbia is moderately concentrated on average. However, in the observed period, the HHI index on the financial leasing market of the Republic of Serbia ranges from the low concentrated (from the third quarter of 2012 to the first quarter of 2016, with the lowest value recorded in the first quarter of 2015) to highly concentrated (in the first and second quarters of 2006). The growth of the level of market concentration in the first quarter of 2006 is primarily the result of the growth of the market share of Raiffeisen Leasing d.o.o. Belgrade (National Bank of Serbia, 2006). In the first two quarters of 2006, Hypo-Alpe-Adria Leasing had the largest share in the financial leasing market (over 30.00% share in total assets). This period was also marked by the entry into the market of two new leasing companies: Intesa Leasing (in the first quarter) and EFG Leasing (in the second quarter), which had the lowest market share in the observed periods. In addition to these companies, Sogelease Serbia had the lowest market share (0.10%) in this period. Three companies (Hypo Alpe-Adria Leasing, Raiffeisen Leasing and S-Leasing in majority foreign ownership) retained market leadership in 2006. Still, their cumulative share decreased by more than ten percentage points compared to 2005, primarily due to the reduction of S-Leasing's share in the total assets of the financial leasing market (National Bank of Serbia, 2006).

Table 1

Descriptive statistics of variables

Variable	Mean	Standard deviation	Minimum	Maximum	Number of observations
<i>HHI</i>	1243.13	284.21	821.30	1877.20	53
<i>FP</i>	63.81	27.10	9.70	92.80	53
<i>MS growth</i>	1.18	5.75	-12.91	15.48	53

Note. Author's calculations.

After the second quarter of 2006, the financial leasing market became a medium-concentrated market. It remained so until the second quarter of 2012, but again became moderately concentrated from the second quarter of 2016 to the first quarter of 2019. In the first quarter of 2019, a total of 16 companies operated on the financial leasing market of the Republic of Serbia, with seven companies being foreign-owned and nine companies domestically owned. The four largest companies on the market had a 60.60% share in the total assets of the financial leasing sector in the first quarter of 2018 (PwC Serbia, 2019). In the observed period, at least 16 and at most 17 financial leasing companies

operated on the financial leasing market of the Republic of Serbia, while the number of foreign-owned companies ranged from 7 to 11.

According to the methodology of the National Bank of Serbia, foreign companies in the financial leasing sector of the Republic of Serbia are considered to be lessors if they are entirely (100%) or majority-owned by foreign legal entities. Figure 1 shows the share of foreign companies in the total assets of the financial leasing sector of the Republic of Serbia in the observed period, where there is a declining trend in the share of foreign companies. The share of foreign companies in the total assets of the financial leasing sector of the Republic of Serbia (FP) in the observed period ranges from 9.70% in the fourth quarter of 2018 to 92.80% in the first quarter of 2006, with the average share of foreign companies in total assets of the financial leasing sector leasing of 63.81%.

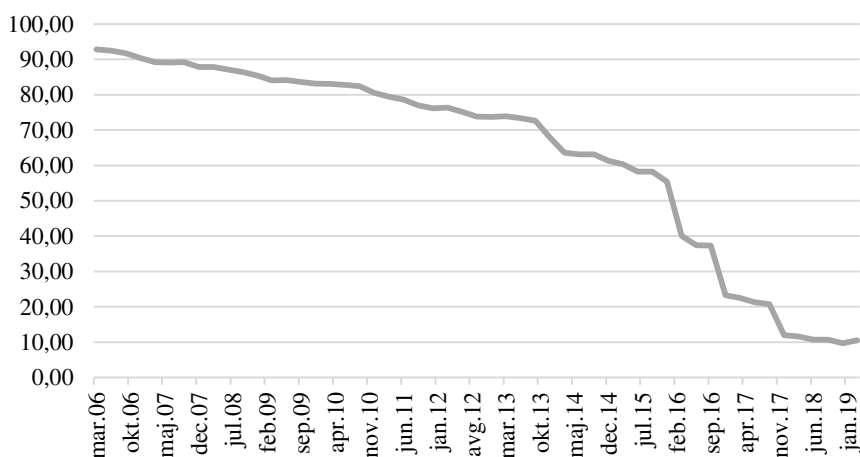


Figure 1. The share of foreign companies in the total assets of the financial leasing sector of the Republic of Serbia (FP), Q1 2006 – Q1 2019.

Note. Author's calculations.

The average growth rate of the financial leasing market of the Republic of Serbia in the observed period is 1.18%. The minimum growth rate is -12.91 and refers to the first quarter of 2015, while the maximum growth rate is 15.48 and refers to the fourth quarter of 2008.

Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests were used to examine whether the variables were of the same order of integration (Dickey & Fuller, 1981; Phillips & Perron, 1988). The results of unit root tests (Table 2) showed that the variables HHI and FP are stationary at the first differences (I(1)), while the variable MS growth is stationary at the level (I(0)).

Since the variables are of a different order of integration, for the analysis of the relationship between the variables HHI, FP and MS growth it is possible to apply the ARDL approach which allows the variables in the model to have different lags, the most optimal for each variable and includes bounds test (Pesaran et al., 2001).

Table 2

Unit root test results (ADF and PP)

Variable	ADF test		PP test	
	Intercept	Trend and intercept	Intercept	Trend and intercept
HHI	-2.53	-1.00	-2.35	-1.08
D(HHI)	-5.94*	-6.58*	-5.98*	-6.58*
FP	-1.38	-1.15	1.42	-1.14
D(FP)	-6.74*	-7.20*	-6.84*	-7.20*
MS growth	-4.11*	-4.08*	-4.05*	-4.03*

Note. Author's calculations.

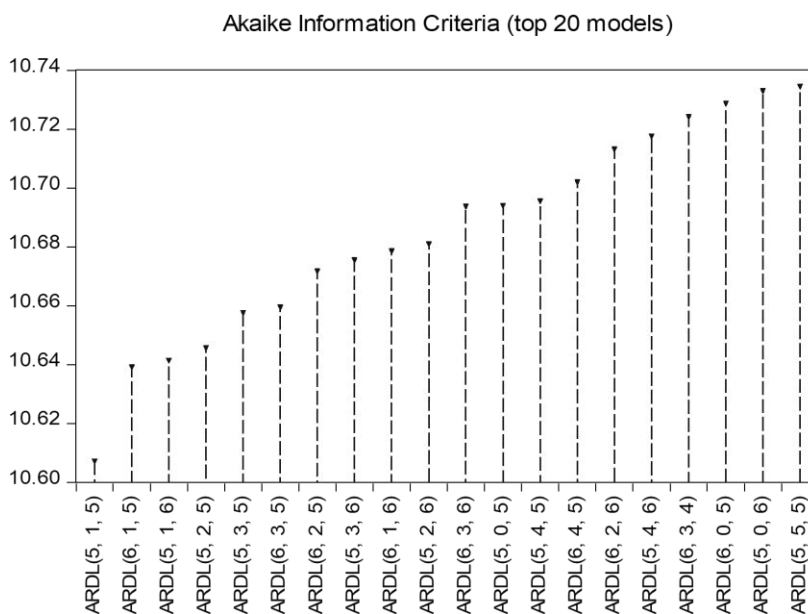


Figure 2. Selection of the optimal ARDL model according to the Akaike information criterion

Note. Author's calculations.

The Akaike Information Criteria (AIC) was used to determine the optimal lag length and the optimal model because it provides more robust and reliable information compared to other information criteria, i.e. it does not identify the simplest model as optimal (Lutkepohl, 2006). The Akaike information criteria identified ARDL (5, 1, 5) as the optimal model (Figure 2). The trend component is also included in the model because the existence of a trend in the observed variables has been determined.

Table 3

Bounds test

F-Bounds Test		Null hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.99	10%	4.19	5.06
k	2	5%	4.87	5.85
		1%	6.34	6.52

Note. Author's calculations.

The bounds test was used to examine the long-term relationship between the variables HHI, FP and MS growth, i.e., between the levels of market concentration, FDI and the growth rate of the financial leasing market in the Republic of Serbia. The bounds test is based on Wald's transformation of F statistics and tests the null hypothesis that there is no long-run relationship between the variables HHI, FP, and MS growth. Since the value of F-statistics is greater than the upper I(1) and lower limit I(0) at 10%, 5% and 1% significance level, then the null hypothesis is rejected. Therefore, there is a long-term relationship between variables HHI, FP and MS growth. According to the results shown in Table 3, we can conclude that there is a long-term relationship between the variables HHI, FP and MS growth, i.e., cointegration between the level of market concentration, FDI and the growth rate of the financial leasing market in the Republic of Serbia.

Table 4

Long-term coefficients of the relationship between HHI, FP and MS growth

Variable	Coefficient	Std. Error	t	p
FP	-13.83	5.03	-2.75	0.01
MS growth	6.65	12.74	0.52	0.60

Note. Author's calculations.

Since the existence of a long-term relationship between variables has been determined (Table 3), it is necessary to calculate and evaluate long-term coefficients (Table 4).

These estimates also include the estimations of the error correction term (ECT), which shows the speed of adjustment towards equilibrium (Table 5). According to the results in Table 5, the error correction term is negative (-0.32) and statistically significant ($p < 0.01$), which shows that the system returns to equilibrium 32.00% quarterly, i.e., the system will be in equilibrium for less than a year (3 quarters and 11 days).

Long-term coefficients and their estimates show that the share of foreign companies in the total assets of the financial leasing sector of the Republic of Serbia (FP – a proxy of FDI) has a statistically significant and negative effect on the HHI index (a proxy of level of market concentration). Consequently, FDI has a statistically significant and negative impact on the level of market concentration in the financial leasing sector of the Republic of Serbia in the long run. The results also showed that in the long run, there is no statistically significant impact of market growth rate (MS growth) on the level of market concentration. Equation (2) shows the long-term relationship between the variables and the error correction term:

$$ECT = HHI - (-13.83 * FP + 6.65 * MS \text{ growth}) \quad (2)$$

The results of the ARDL approach for the short-term relationship between variables FP and HHI differ from the results obtained for the long-term relationship of these variables (Table 5). Namely, suppose we observe the short-term effect of FDI on the level of market concentration in the financial leasing sector of the Republic of Serbia. In that case, it can be concluded that there is no statistically significant impact of variable FP on the dependent variable HHI ($p > 0.05$) at 5% significance level, while in the long-term a statistically significant relationship between the variables was found. Short-term coefficients of the relationship between HHI and MS growth showed that there is a statistically significant negative impact of the growth rate of the financial leasing market of the Republic of Serbia with a lag of 4 quarters on the level of market concentration in this sector, while the results obtained for long-term coefficients showed that there is no relationship between these variables (Table 5).

Table 5

Short-term coefficients of the relationship between HHI, FP and MS growth

Variable	Coefficient	Std. Error	t	p
D(HHI(-1))	0.19	0.12	1.64	0.11
D(HHI(-2))	0.11	0.11	0.97	0.34
D(HHI(-3))	0.23	0.11	2.03	0.05
D(HHI(-4))	0.67	0.14	4.84	0.00
D(FP)	1.57	2.20	0.71	0.48
D(MS growth)	5.18	1.41	3.69	0.00
D(MS growth(-1))	0.16	1.72	0.09	0.93
D(MS growth(-2))	2.12	1.65	1.28	0.21
D(MS growth(-3))	0.71	1.67	0.42	0.67
D(MS growth(-4))	-5.64	1.43	-3.83	0.00
ECT(-1)	-0.32	0.07	-4.72	0.00
C	1015.28	212.35	4.78	0.00
@trend	-12.00	2.51	-4.78	0.00
R-squared	0.64	Mean dependent var		-7.68
Adj. R-squared	0.52	S. D. dependent var		60.12
S. E. of regression	41.59	Akaike info criterion		10.52
Sum squared resid	60566.83	Schwarz criterion		11.03
Log-likelihood	-239.48	Hannan-Quinn crietr.		10.71
F-statistic	5.26	Durbin-Watson stat		2.02
Prob (F-statistic)	0.00			

Note. Author's calculations.

The basic assumptions of the model, the normal distribution of the residuals, the absence of serial correlation and heteroskedasticity are fulfilled. If the number of observations in the sample is greater than 30 than each empirical distribution, according to the central limit theorem, tends to be normal, so each empirical distribution, for $n > 30$ can be approximated by normal (Jovetić, 2015). Since the sample has 53 observations, it is considered that the assumption of a normal distribution of residues is fulfilled. A serial correlation test was done using the Breusch-Godfrey Serial Correlation LM test. The test is performed by regressing the residuals to the model variables and the residuals with a lag (Jovetić, 2015). The null hypothesis that there is no serial correlation is tested. Since the test results showed that the null hypothesis could not be rejected, it is concluded that the assumption of no serial correlation is fulfilled (Table 6). Durbin-Watson statistics (DW = 2.02) show that there is no autocorrelation problem in the model. Field (2009) finds that the value of Durbin-Watson statistics below one and above three are worrying when testing autocorrelation.

Table 6

Breusch-Godfrey LM serial correlation test results

F-statistic	Prob. F(5, 28)	Obs*R-squared	Prob. Chi-square (5)
0.27	0.92	2.24	0.82

Note. Author's calculations.

The assumption of the constant variance of the residuals means that for each value of the independent variable the value of the residuals shows the same dispersion around its mean value, which means that the residuals are homoskedastic (Jovetić, 2015).

Table 7

Breusch-Pagan-Godfrey heteroskedasticity test results

F-statistic	Prob. F (14, 33)	Obs*R-squared	Prob. Chi-square (14)	Scaled explained SS	Prob. Chi-square (14)
0.66	0.79	10.46	0.73	8.36	0.87

Note. Author's calculations.

Testing of this assumption was performed using the Breusch-Pagan-Godfrey heteroskedasticity test. The null hypothesis that residuals are homoskedastic is tested. The test results showed that the null hypothesis could not be rejected, which shows that the assumption was fulfilled (Table 7).

An important assumption of the evaluated ARDL model is its stability, which is tested using the CUSUM and CUSUM of Squares test (Page, 1954). The test results on the existence of recursive residuals for means and variances are shown in Figures 3. The dashed lines on the graphs show bounds of 5% statistical significance. If the recursive residues are within the limits of 5% of statistical significance, then it is concluded that the estimates of a short-term and long-term relationship, i.e. the estimated ARDL model, are valid and stable. Finally, the results of the F-test are statistically significant at the 1% significance level, which shows that the model is stable and statistically significant. According to the above results, testing the assumptions of the ARDL model concludes that the model is reliable and stable.

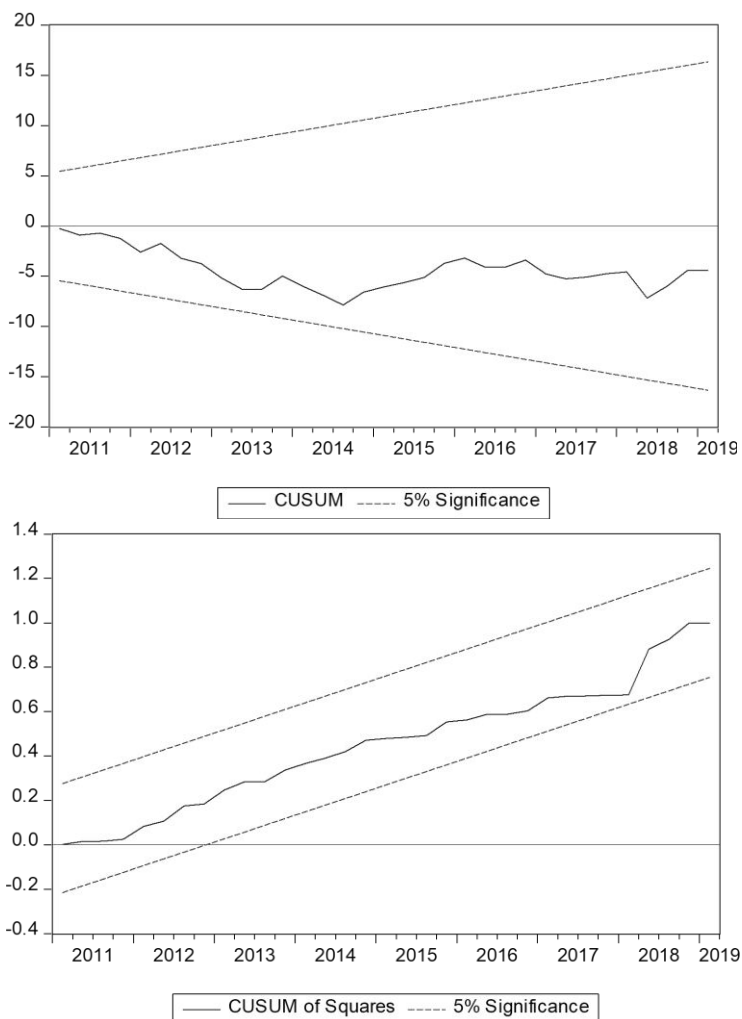


Figure 3. CUSUM and CUSUM of squares test results

Note. Author's calculations.

5. CONCLUSION

This empirical study investigates the relationship between FDI inflows and the level of market concentration in the financial leasing sector of the Republic of Serbia using the ARDL model. The results of the research showed a statistically significant negative impact of FDI inflows on the level of market concentration in the financial leasing sector of the Republic of Serbia in the long run.

The paper confirms the general null hypothesis (H_0) and concludes that FDI inflows affect the level of market concentration in the financial leasing sector of the Republic of Serbia. Also, it is stated that within the first group of specific research hypotheses, the null hypothesis was rejected, and the alternative hypothesis (H_{1a}) was accepted, so it is concluded that in the long run, FDI inflows negatively affect the level of market concentration in the financial leasing sector.

The obtained results are following the results of Forte and Sarmiento (2012), Orazalin and Dulambaeva, Driffield (2001), Rutkowski (2007), Lundin et al. (2007) who found a negative relationship between FDI and the level of market concentration in the manufacturing industry but are also consistent with the results of Cho (1990), Panjaiatna et al. (2016) who found a negative relationship between these variables in the banking sector. Besides, it was determined that the system returns to equilibrium at a speed of 32.00% quarterly, i.e., in 3 quarters and 11 days.

The results of the research also show that in the short run, there is no relationship between FDI and the level of market concentration. In accordance with the above, it is stated that within the second group of specific research hypotheses, the null hypothesis was rejected. The alternative hypothesis (H_{1b}) was accepted. Therefore, it is concluded that in the short run, FDI inflows do not affect the level of market concentration in the financial leasing sector of the Republic of Serbia.

According to the author's knowledge, this is the first empirical study that examines the relationship between FDI and the level of market concentration in the financial leasing sector of the Republic of Serbia, which makes a significant contribution to the existing literature. This study contributes to a better understanding of the relationship between FDI inflows and market concentration in the financial leasing sector and indicates that increasing the share of FDI inflows in this sector reduces the level of market concentration, in the long run, leading to increased market competition.

The results of the research of this empirical study provide appropriate information and guidelines for future directions of development of the financial leasing market of the Republic of Serbia, which shows its practical contribution. The users of this empirical data can be decision-makers, policymakers and other interested participants in the field of financial leasing.

Future research in this problem area should be extended to multi-country financial leasing markets to apply a panel analysis of data and compare the results between countries. Besides, it is necessary to include several variables in

the analysis that may affect the market structures of the host country (entry barriers in the industry, market size, etc.).

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FINANCIAL SUPPORT AS A DETERMINANT OF SMALL AND MEDIUM-SIZED ENTERPRISES ECONOMIC GROWTH

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Abstract: *European Union integration and revitalization of economy after the global economic crisis require small and medium-sized enterprises in Republic of Serbia to face more complex and dynamic environment which requires greater competitiveness in terms of improved quality, efficiency and management practices. However, the competitiveness of the regional SMEs is still at a much lower level compared to other European SMEs. Pointing out to the characteristics of small and medium enterprises, a logical conclusion can be drawn that state support for this sector is important. When forming the support modalities, the sector should not be viewed as a uniform whole. This paper analyses the importance of financial and non financial support for SMEs in terms of organizational capability and competitiveness. Roy's test, Pearson's coefficient of contingency (χ), and multiple correlation coefficients (R) are applied as univariate statistical procedures. MANOVA and discriminant analysis show a difference and clearly defined boundary between other forms of support and financial forms of support in all the analyzed units. The findings also indicate that the financial forms of SME support influence the SMEs organization capability and competitiveness, given that in most cases the benefits of state institutions are viewed through forms of financial support.*

Keywords: *financial support, non financial support, competitiveness, organizational capability, small and medium enterprises*

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JEL classification: D22, L26, H81

FINANSIJSKA PODRŠKA KAO DETERMINANTA EKONOMSKOG RASTA MALIH I SREDNJIH PREDUZEĆA

Sažetak: *U procesu evropskih integracija i oživljavanja ekonomije nakon globalne ekonomske krize, mala i srednja preduzeća u Republici Srbiji se suočavaju sa sve složenijim i dinamičnijim okruženjem koje zahteva unapređenje konkurentnosti u smislu poboljšanja kvaliteta, efikasnosti i tehnika menadžmenta. Konkurentnost MSP u regionu je još uvek na mnogo nižem nivou u odnosu na evropski prosek. Ukazujući na odlike malih i srednjih preduzeća, može se izvući logički zaključak da je državna podrška ovom sektoru bitna. Ono što se kroz rad dokazalo jeste da, pri formiranju modaliteta podrške, ne treba ceo sektor posmatrati jednoznačno. Ovaj rad analizira važnost finansijskih i nefinansijskih mera za MSP u odnosu na organizacione sposobnosti i konkurentnosti. Od univarijantnih postupaka primeniće se Rojev test, Pirsonov koeficijent kontingencije (χ) i koeficijent multiple korelacije (R). Primenom MANOVA i diskriminativne analize, dolazi se do rezultata koji ukazuju na razlike i jasno definisanu granicu između drugih oblika podrške i finansijskih oblika podrške u svim analiziranim jedinicama. Rezultati istraživanja ukazuju i na to da finansijski oblici podrške MSP utiču na organizacionu sposobnost i konkurentnost MSP, s obzirom na to da se u najvećem broju slučajeva koristi od državnih institucija posmatraju kroz oblike finansijske podrške.*

Ključne reči: *finansijska podrška, nefinansijska podrška, konkurentnost, organizacione sposobnosti, mala i srednja preduzeća*

1. INTRODUCTION

In developed economic systems, SMEs have an important place, and their contribution is not only reflected in quantitative macroeconomic indicators, but also in qualitative terms, through innovation and entrepreneurship. SMEs are the true back-bone of the European economy, being primarily responsible for wealth and economic growth, next to their key role in innovation and R&D, with nine out of ten SMEs in the EU belonging to the category of micro enterprises with less than ten employees. According to Irwin (2007) economies with high proportion of SMEs will be more resilient to external shocks and will be more likely to have more firms which grow into larger businesses.

Government support for SMEs will help countries exploit the social benefits from greater competition and entrepreneurship (World Bank, 2004). Acs and Szerb (2007) argued that public policies focusing on increasing potential of human capital, upgrading technology availability, labour market reform and deregulation of financial markets are extremely important to support the growth of the SMEs. Vapa-Tankosić, Redžepagić and Stojsavljević (2013) pointed out that the economies of Western Balkan countries, on the pathway to European integration “shall depend on enhancing their efficiency and performances in industry, service and know-how. Modernizing production and raising efficiency and competitiveness, accelerating structural changes toward knowledge based services, are the major generators of value added, exports and new jobs“ (p.229). SMEs have become the most efficient segment of the economy in almost all countries of the world. When analyzed individually, it is concluded that they make the greatest contribution to increasing employment, gross value added and turnover. The role of these companies is especially important in transition countries that face the problem of high unemployment, insufficient competitiveness, low level of economic activity and lack of investment, and in which large inefficient state-owned companies are still present (Sekulić & Perović, 2014). Thus, in the early 1990s, the share of these companies in the national income of Taiwan was 56%, Italy 53%, Denmark 46%, Korea 40% and Sweden 30% (Kapor, 1999). Today, SMEs are one of the leading forces of economic development because they stimulate private ownership and entrepreneurial skills, are flexible, and can quickly adapt to market changes, create diversified economic activity, contribute to trade and exports and are key factors in competitive economy (Jašarević, 2013).

This study analyzes roles, competencies and authorities of stakeholders and their particular interest in public sector support programs. Furthermore, it estimates the possible influence of every participant in the process in order to increase the effectiveness of the export assistance programs in developing countries, especially in a transition to a market economy. Thus, this empirical study can contribute to best practices of government support. In this empirical study, the authors have analyzed the importance of financial and non financial support and its influence on the benefits from state institutions and bodies, SMEs organizational capability and the SMEs competitiveness. The scope of this paper is to find the critical problems that Serbian SMEs face and promote industry support. Important contribution of this research is that majority of studies have been conducted in developed countries (e.g. USA, Canada and Western Europe) with very little attention given to support in developing countries (Julian, 2003). In the next sections the authors have presented the literature review, then explained the research method and the hypotheses, and

presented the results of empirical research in order to confirm or reject the proposed hypotheses. Empirical data, discussion and analysis results are also presented. The final conclusions and guidelines based on research findings are presented in the end of the empirical study.

2. LITERATURE REVIEW

The issue of SMEs internationalization, described as the process of increasing the involvement in international operations, or especially, the process of exporting, attracts most attention from policymakers in the developed countries (Bell & Young, 2004). In order to make the most of their strengths and minimize their weaknesses, SMEs should use certain partnership and cooperative arrangements in the process of internationalization (Todorović, 2007). Ignjatijević, Babović and Đorđević (2012) performed an analysis of comparative advantages in the exports of the Republic of Serbia and have concluded that it is necessary to make additional efforts in order to ensure brand and design visibility, product aesthetics, types of sales, packaging and adaptation to international standards. It is important to emphasize that, although they are similar in many ways, SMEs do not represent a homogeneous category. It is necessary to distinguish between SMEs that are older and those that are young because their attitude towards internationalization is also different. Namely, older companies generally follow the traditional approach to internationalization, gradually, step by step, while young companies enter more and more foreign markets more decisively, easier and faster at the same time (Rakita & Mitić, 2012). The programs that focus on international orientation of leaders and key decision makers in SMEs are very important (Lloyd-Reason, Damyanov, Nicolescu & Wall, 2004). Strategic management of the international distribution network can improve the competitive position of SMEs in the foreign market, and thus contribute to a greater volume of foreign sales and sales share in the international market (Vapa & Vapa-Tankosić, 2019). Vapa, Ignjatijević and Gardašević (2015) have identified that the most important export problems for Serbian exporters are: ineffective national export promotion programmes, red tape in domestic public institutions, lack of government assistance in overcoming export problems and the existence of a strong international competition. The results suggest that the exporters have also considered their staff as qualified for the export arrangements, and that their organization of export department is on a satisfactory level ready to deliver effective communication with overseas customers, without language problems. Žunić-Kovačević, Vapa-Tankosić & Lazić, (2016) performed a survey on export activities of SMEs in Croatia and Serbia in order to compare the

qualitative export performance factors related to the level of entrance to the European single market. High costs of export financing, lack of effective government programs for exporters, strong international competition and the complexity of documents for export are proven to be the most significant barriers for SMEs in Croatia and Serbia. The results have confirmed that SMEs in Serbia do not possess an export strategy, and export sales are often a result of sporadic contact from foreign markets. However, both Serbian and Croatian SMEs exporters consider themselves able to cope with competition from the EU, in terms of quality, price and design. Gurrieri and Petruzzellis (2008) point out that SMEs export performance is affected by its structural and organizational characteristics. Lautanen (2000) explores the relationship between the decision maker's age and language ability, and export performance. Knowles, Mughan & Lloyd-Reason (2006) emphasize the language skills that make indirect contributions to international business success. The crucial role of the government in the development of successful export activities gives credibility to the studies focusing on the appraisal of public policy programmes for export promotion (Kotabe & Czinkota, 1992; Seringhaus, 1986; Seringhaus & Botschen, 1991).

A complex relationship between export promotion programs and export performance can be explained using internationalization process theory and resource-based theory. Internationalization process theory indicates how gradual knowledge acquisition leads to greater commitment to exporting and international operations (Johanson and Vahlne, 1990). Resource-based theory proposes that competencies in the form of knowledge and expertise are critical to superior organizational performance (Barney, 1991; Coff, 1997). While these competencies are internal and are acquired by firms, export promotion programs help firms to obtain the information, knowledge, experience, and resources they need to develop an export strategy and achieve better performance (Singer and Czinkota, 1994). This suggests that government support programs help develop company and managerial capabilities such as knowledge and skills that can positively influence a firm's export strategy and performance. Yet, significant differences are found among large firms and experienced exporters in their degree of awareness of export promotion programs as large firms and experienced exporters were significantly more aware of several export promotion programs than small and medium-sized firms (Ahmed, Mohamed, Johnson & Meng, 2002). The greater use of export assistance programs contributed to the achievement of export knowledge and product market objectives (Francis & Collins, 2004, p.490).

3. METHODOLOGY

3.1. RESEARCH SAMPLE AND DATA SOURCE

The study was carefully prepared and carried out by a method of survey. The questions in the survey were designed in accordance with the aims of the research (Leonidas, Palihawadana & Theodosiou, 2011). The individual questions were answered by the respondents with scores on a Likert scale from 1 to 5. The survey has been sent to 130 small and medium enterprises in Vojvodina in the year 2015. This number represents a small share of total SMEs in the Autonomous Province of Vojvodina (RZS, 2018), but a significant share in relation to the total number of SMEs that is successfully engaged in foreign trade in Vojvodina. All companies are privately owned (100% privately owned, mostly up to 5 owners in the ownership structure). Out of the total number of respondents, 78 fully completed valid surveys have been received (60% response rate) and 37 of them had export activities. After completion of the survey elaboration and processing of data was done by Statistical Package for Social Sciences. Observed variables are characteristic, interconnected and form a logical unit (C).

3.2. DEFINING RESEARCH HYPOTHESES

The objective of this paper is to analyse the perceived importance of financial and non financial measures for SMEs in terms of organizational capability and competitiveness. Firstly, the authors have investigated how the SMEs perceive the benefits from state institutions and authorities in relation to "other forms of support" and "financial forms of support". Secondly, the perceived organizational capability of the company has been analyzed in relation to "other forms of support" and "financial forms of support". Thirdly, the perceived competitiveness of company in the market has been analyzed in relation to "other forms of support" and "financial forms of support".

The following hypothesis can be derived from the research objectives and methodological approaches of this research:

H1₀: There is no significant statistical difference between "other forms of support" and "forms of financial support" in relation to the perceived assessment of the benefits from state institutions and authorities of respondents.

H1_a: There is a statistical difference between "other forms of support" and "forms of financial support" in relation to the perceived assessment of the benefits from state institutions and authorities of respondents.

H2₀: There is no clearly defined statistical boundary between "other forms of support" and "forms of financial support" in relation to the perceived assessment of the benefits from state institutions and authorities of respondents.

H2_a: There is a clearly defined statistical boundary between "other forms of support" and "forms of financial support" in relation to the perceived assessment of the benefits from state institutions and authorities of respondents.

H3₀: There is no significant statistical difference between "other forms of support" and "forms of financial support" in relation to the perceived SMEs organizational capability and competitiveness in the market.

H3_a: There is a significant statistical difference between "other forms of support" and "forms of financial support" in relation to the perceived SMEs organizational capability and competitiveness in the market.

3.3. RESEARCH DESIGN AND PROCEDURE

All variables in the model are latent variables. Multi-item scales have been used to operationalize all the variables. Two construct measures of the institutional support programmes will be developed. A five-point scale was used to rate the level of benefit of the services. The level of perceived benefit was used to weigh each service used by respondents. Drawing on the literature, a number of items will be used to measure managers' attitude and perception towards organizational capability variables: locating and analyzing potential markets, acquiring market information, identifying business opportunities, contacting potential partners, understanding market needs and partners, establishing a representative market presence, establishment of business relations, acceptance of new methods and ideas, development of new products and adoption of marketing approaches and techniques and responding to actions of competitors. Drawing on the literature, a number of items will be used to measure managers' attitude and perception towards competitiveness variables: costs of raw materials as a factor of competitiveness, production costs as a factor of competitiveness, distribution and sales as a factor of competitiveness, recognition of products on the market, introduction of new products, product range, brand recognition, availability of products on the market, speed of delivery, possibility of after-sales service, provision of satisfactory quality, retention of customers/ partners, acquiring new customers/ partners and building reputation in the market. The next variable, other forms of institutional support, includes: provision of various information by state authorities, government programs and support for specific business activities, education provided by the state officials (courses, seminars, lectures, etc.), and the financial forms of

institutional support: through loans (with a lower interest rate), subsidies, guarantees in the country or abroad and other forms of financial direct or indirect assistance. Methods of proving the existence of similarities or differences confirm the hypothesis of similarity or reject it (confirming the alternative hypothesis) i.e., indicating differences. The research methods applied were in line with the empirical studies on management in Serbia (Hristić, Grubić-Nešić & Dudjak, 2011; Hristić, Čabrilo, Savić & Šikoparija, 2016; Savić-Šikoparija, 2019). When testing the hypothesis, the critical value of p has been used and represents the risk of conclusion. If it is determined that the p value, $p > 0.100$, there is no reason why the initial hypothesis shall not be confirmed. For rejecting the initial hypothesis two thresholds of significance will be used. In the case when $0.10 > p > 0.05$ the alternative hypothesis shall be confirmed with an increased risk of reasoning, when $p < 0.05$ the alternative hypothesis shall be confirmed, having in mind that there are significant differences. The multivariate analysis of variance (MANOVA) and discriminant analysis have been applied. In regard to univariate procedures the authors have applied Roy's test, Pearson's coefficient of contingency and multiple correlation coefficients (R).

4. RESULTS AND DISCUSSION

For the purpose of this research thematic sections have been outlined. In accordance with the objectives of the research, methodological approach and hypotheses set in this research, the difference within three thematic units will be analyzed. The features in relation to which the sample is divided into subsamples are criterion features. After analyzing the characteristics and homogeneity of the group of respondents in relation to the assessment - benefits from state institutions and bodies, it can be concluded that a statistically reliable division of all respondents into two subgroups - respondents who rated the benefits from state institutions and bodies worse and those who rated it better. C1 and C4 focus on the perceived benefits from state institutions and authorities in relation to "other forms of support" and "financial forms of support". In C2 and C5 the perceived organizational capability of the company has been analyzed in relation to "other forms of support" and "financial forms of support". In C3 and C6 the perceived competitiveness of company in the market has been analyzed in relation to "other forms of support" and "financial forms of support".

4.1. BENEFITS FROM STATE INSTITUTIONS AND BODIES

Based on the value of $p = .000$ (analysis by MANOVA) and $p = .000$ (discriminant analysis), the hypotheses $H1_0$ and $H2_0$ have been rejected and an alternative hypotheses $H1_a$ and $H2_a$ have been confirmed (Table 1). This means that there is a difference and clearly defined boundaries between "other forms of support "and" forms of financial support".

Table 1

Results of MANOVA analysis

	C1 Other forms of support			C4 Financial forms of support		
	n	F	P	n	F	P
<i>MANOVA</i>	11	7.879	.000	11	9.682	.000
<i>DISCRIMINANT</i>	11	190.709	.000	11	1048.773	.000

Note. Authors' calculations.

From the Table 2 it can be seen that there is a significant difference in "other forms of support". There is also a significant difference in "forms of financial support". On the other hand, there was no significant difference in "other forms of support" of respondents in the claim: *Financial support through subsidies* (.195). There was no significant difference in "forms of financial support" by the respondents in the claims: *Information on financing* (.534) and *Information on literature and training* (.512).

The coefficient of discrimination indicates that the largest contribution in the discrimination in "other forms of support" of the respondents in relation to the assessment of the perceived benefits from the state institutions and bodies is in *Information on financing* (.827). In "financial forms of support" the biggest difference of the respondents is in *Information on potential export markets* (.589). It should be noted that the latent characteristic is the feature in relation to which there was no difference between "other forms of support" and "forms of financial support". Latent feature in "other forms of support" is the *Support through subsidies*, and in "forms of financial support" is the *Information on financing* and *Information on literature and training*.

Table 2

The significance of the difference between "other forms of support" and "financial forms of support" in relation to the SMEs perceived benefits from the state institutions and bodies

	OTHER FORMS OF SUPPORT					FINANCIAL FORMS OF SUPPORT				
	χ	R	F	P	k.dsk	χ	R	F	P	k.dsk
I	.375	.404	7.610	.009	.190	.375	.404	7.610	.009	.589
II	.388	.421	8.405	.006	.827	.100	.100	.394	.534	.018
III	.296	.310	4.159	.048	.272	.105	.105	.437	.512	.001
IV	.350	.374	6.344	.016	.107	.433	.480	11.707	.001	.160
V	.433	.480	11.707	.001	.289	.433	.480	11.707	.001	.349
VI	.276	.287	3.494	.069	.025	.402	.439	9.288	.004	.263
VII	.541	.643	27.538	.000	.414	.375	.404	7.626	.009	.003
VIII	.462	.521	14.548	.000	.638	.462	.521	14.548	.000	.387
IX	.348	.371	6.232	.017	.005	.616	.783	61.600	.000	.092
X	.202	.206	1.733	.195	.237	.465	.526	14.879	.000	.477
XI	.380	.410	7.898	.008	.739	.460	.518	14.268	.001	.155

Note. Authors' calculations.

Legend: I - Information on potential export markets; II - Information on financing; III - Information on literature and training; IV - Assistance with participation in trade fairs; V - Participation in the organized international business visits; VI - Assistance of other state agencies; VII - Participation in seminars; VIII - Advice on plans and activities; IX - Support through loans; X - Support through subsidies; XI - Support in the form of guarantees; k.dsk - Coefficient of discrimination.

4.2. SMEs ORGANIZATIONAL CAPABILITY

Based on the value of $p = .035/ .005$ (analysis MANOVA) and $p = .000/ .000$ (discriminant analysis), the hypothesis H_{3_0} has been rejected and the alternative hypothesis H_{3_a} has been confirmed, which means that there is a difference between "other forms of support" and "financial forms of support" in the subsamples in regard to SMEs perceived organizational capability (Table 3).

Table 3

Results of MANOVA analysis

	C 2			C5		
	Other forms of support			Financial forms of support		
	N	F	P	N	F	P
MANOVA	11	2.302	.035	21	3.240	.005
DISCRIMINATIVE	11	57.743	.000	21	38.690	.000

Note. Authors' calculations.

Since $p < .1$ the alternative hypothesis H_{3a} has been confirmed. From the Table 4, it can be seen that there is a significant difference in "other forms of support" of the respondents found in: *Locating and analyzing potential markets (.003)*, *Acquiring market information (.002)*, *Identifying business opportunities (.049)*, *Understanding market needs and partners (.019)*, *Establishing a representative market presence (.059)*, *Adoption of marketing approaches and techniques (.032)*. There is also a significant difference in "financial forms of support" found in: *Identifying business opportunities (.080)*, *Contacting potential partners (.044)*, *Understanding market needs and partners (.049)*, *Establishment of business relationships (.009)*, *Acceptance of new methods and ideas (.037)* and *Responding to actions of competitors (.088)*.

There was no significant difference in "other forms of support" of the respondents in: *Contacting potential partners (.248)*, *Establishing business relationships (.248)*, *Acceptance of new methods and ideas (.420)*, *Development of new products (.235)*, *Responding to actions of competitors (.913)*. There was no significant difference between "financial forms of support" of the respondents in: *Locating and analyzing potential markets (.589)*, *Acquiring market information (.614)*, *Establishing a representative market presence (.341)*, *Development of new products (.381)*, *Adoption of marketing approaches and techniques (.282)*. The coefficient of discrimination indicates that the largest contribution to the discrimination between "other forms of support" in relation to the assessment of the SMEs perceived organizational capability and that the biggest difference of subsamples has been shown in: *Identifying business opportunities (.239)* and "financial forms of support" and the biggest difference of the respondents is in: *Understanding the market needs and partners (.232)*. It should be noted that the latent characteristic is the feature in relation to which no difference has been determined between "other forms of support" and "financial forms of support".

Table 4

The significance of differences between "other forms of support" and "financial forms of support" in relation to the SMEs perceived organizational capability

	OTHER FORMS OF SUPPORT					FINANCIAL FORMS OF SUPPORT				
	χ	R	F	p	k.dsk	χ	R	F	P	k.dsk
I	.413	.454	10.113	.003	.050	.087	.087	.296	.589	.003
II	.425	.470	11.050	.002	.114	.081	.081	.258	.614	.114
III	.296	.309	4.131	.049	.239	.266	.276	3.225	.080	.132
IV	.181	.184	1.374	.248	.039	.301	.316	4.313	.044	.013
V	.342	.364	5.956	.019	.001	.296	.309	4.130	.049	.232
VI	.285	.297	3.778	.059	.200	.151	.152	.928	.341	.000
VII	.181	.185	1.375	.248	.080	.375	.404	7.628	.009	.025
VIII	.128	.129	.663	.420	.015	.311	.327	4.674	.037	.132
IX	.186	.190	1.457	.235	.122	.139	.141	.785	.381	.085
X	.317	.335	4.920	.032	.045	.170	.172	1.189	.282	.124
XI	.018	.018	.012	.913	.034	.260	.269	3.054	.088	.053

Note. Authors' calculations.

Legend: I - Locating and analyzing potential markets; II - Acquiring market information; III - Identifying business opportunities; IV - Contacting potential partners; V - Understanding market needs and partners; VI - Establishing a representative market presence; VII - Establishing business relations; VIII - Acceptance of new methods and ideas; IX - Development of new products; X - Adoption of marketing approaches and techniques; XI - Responding to actions of competitors; k.dsk - Coefficient of discrimination.

Latent feature in "other forms of support" is: *Contacting potential partners (.248), Establishing business relationships (.248), Acceptance of new methods and ideas (.420), Development of new products (.235), Responding to actions of competitors (.913), and in "forms of financial support" is: Locating and analyzing potential markets (.589) Obtaining information from the market (.614), Establishing a representative presence in the market (.341), Development of new products (.381) Adoption of marketing approaches and techniques (.282).* Analyzing the results of our research on the importance of other forms of support and financial support in relation with the perceived organizational capability we see that, of particular importance, are *Information and analysis of opportunities, resources, potentials and ideas* which is consistent with the previous findings.

4.3. SMEs COMPETITIVENESS ON THE MARKET

Based on the value of $p = .081/.015$ (analysis MANOVA) and $p = .000/.000$ (discriminant analysis), the hypothesis $H3_0$ has been rejected and the alternative hypothesis $H3_a$ has been confirmed, which means that there is a difference and clearly defined boundary between "other forms of support" and "financial forms of support" in subsamples in relation to the assessment of the perceived SMEs competitiveness on the market (Table 5).

Table 5

Results of MANOVA analysis

	C 2			C5		
	Other forms of support			Financial forms of support		
	N	F	P	N	F	P
MANOVA	14	1.873	.081	24	2.671	.015
DISCRIMINATIVE	14	795.581	.000	24	936.463	.000

Note. Authors' calculations.

Since $p < .1$ the alternative hypothesis $H3_a$ has been confirmed. From the Table 6 it can be seen that there is a significant difference in "other forms of support" in: *Production costs as a factor of competitiveness (.023)*, *Introduction of new products (.019)*, *Brand recognition (.016)* *Provision of satisfactory quality (.048)*, *Retention of customers/partners (.007)*, *Acquiring new customers/partners (.083)*. There is also a significant difference in "financial forms of support" in: *Distribution and sales as a factor of competitiveness (.060)*, *Introduction of new products (.043)*, *Brand recognition (.029)*, *Possibility of after-sales service (.024)* *Provision of satisfactory quality (.068)*, *Retention of customers/partners (.008)*, *Acquiring new customers/partners (.083)* and *Building a reputation in the market (.050)*.

No significant difference has been determined in "other forms of support" in: *Costs of raw materials as a factor of competitiveness (.274)*, *Distribution and sales as a factor of competitiveness (.325)* *Recognition of products on the market (.278)*, *Product range (.802)*, *Availability of products on the market (.412)*, *Speed of delivery (.143)*, *Possibility of after-sales service (.128)*, *Building reputation on the market (.126)*. No significant difference in "forms of financial support" has been determined in: *Costs of raw materials as a factor of competitiveness (.199)*, *Production costs as a factor of competitiveness (.431)*, *Recognition of products on the market (.321)*, *Product range (.802)*, *Availability of products on the market (.119)*, *Speed of delivery (.156)*.

Table 6

The significance of the differences between "other forms of support" and "financial forms of support" in relation to the SMEs perceived competitiveness on the market

	OTHER FORMS OF SUPPORT					FINANCIAL FORMS OF SUPPORT				
	χ	R	F	p	k.dsk	χ	R	F	P	k.dsk
I	.172	.175	1.230	.274	.000	.201	.205	1.709	.199	.000
II	.335	.355	5.626	.023	.102	.125	.126	.633	.431	.034
III	.156	.157	.992	.325	.074	.284	.296	3.736	.060	.035
IV	.171	.174	1.211	.278	.001	.157	.159	1.010	.321	.097
V	.342	.364	5.959	.019	.395	.303	.318	4.386	.043	.064
VI	.040	.040	.063	.802	.004	.040	.040	.063	.802	.002
VII	.349	.372	6.268	.016	.003	.322	.341	5.118	.029	.200
VIII	.130	.132	.687	.412	.000	.240	.247	2.536	.119	.000
IX	.227	.233	2.234	.143	.286	.220	.226	2.093	.156	.082
X	.235	.241	2.410	.128	.290	.331	.351	5.478	.024	.153
XI	.296	.310	4.159	.048	.376	.277	.288	3.526	.068	.136
XII	.381	.413	8.001	.007	.301	.376	.405	7.672	.008	.218
XIII	.264	.274	3.160	.083	.000	.264	.274	3.160	.083	.049
XIV	.236	.243	2.437	.126	.167	.294	.308	4.086	.050	.099

Note. Authors' calculations.

Legend: I - Costs of raw materials as a factor of competitiveness; II - Production costs as a factor of competitiveness; III - Distribution and sales as a factor of competitiveness; IV - Recognition of products on the market; V - Introduction of new products; VI - Product range; VII - Brand recognition; VIII - Availability of products on the market; IX - Speed of delivery; X - Possibility of after-sales service; XI - Provision of satisfactory quality; XII - Retention of customers/ partners; XIII - Acquiring new customers/ partners; XIV - Building reputation in the market; k.dsk - Coefficient of discrimination.

The coefficient of discrimination indicates that the largest contribution to the discrimination in "other forms of support" of the subsamples in relation to the assessment of the SMEs perceived competitiveness on the market is in: *Introduction of new products (.395)*; and in "financial forms of support" and in subsamples, the biggest difference is found in: *Retention of customers/partners (.218)*. It should be noted that the latent characteristic is the feature in relation to which there was no difference between "other forms of support" and "financial forms of support". Latent feature in "other forms of support" is: *Costs of raw materials as a factor of competitiveness (.274)*, *Distribution and sales as a*

factor of competitiveness (.325), Recognition of products on the market (.278), Range of products (.802), Availability of products on the market (.412), Speed of delivery (.143), Possibility of after-sales service (.128), Building reputation on the market (.126), and in "forms of financial support" is: Costs of raw materials as a factor of competitiveness (.199), Production costs as a factor of competitiveness (.431), Recognition of products on the market (.321), Range of products (.802), Availability of products on the market (.119), Speed of delivery (.156).

Table 7

Contribution of the whole sample according to characteristics of the subsample

	Contribution %	Score of respondents	“Financial forms of support”and „other forms of support”
C4	25.527	Benefit from state institutions and bodies	“financial forms of support”
C1	21.474	Benefit from state institutions and bodies	“other forms of support”
C6	15.027	Competitiveness on the market	“financial forms of support”
C5	13.775	Organizational capability	“financial forms of support”
C3	12.587	Competitiveness on the market	“other forms of support “
C2	11.611	Organization capability	“other forms of support “

Note. Authors’ calculations.

Based on contributions (%) of the whole sample according to the characteristics of the subsamples it can be seen from the Table 7 that the largest contribution (25.53%) of the (C4) unit score of the subsamples *favours the benefits from state institutions and bodies on the basis of “forms of financial support”,* followed by (C1) *benefit from state institutions and bodies on the basis of other forms of support* (21.47%) and (C6) *competitiveness on the basis of financial support* (15.02%).

5. CONCLUSION

In this empirical study, the authors have analyzed how SMEs perceive the importance of institutional financial and non financial support and its influence on the organizational capability and the competitiveness of SMEs. A sample of 78 SMEs was surveyed. All the respondents were divided into two subgroups - respondents who rated the benefits from state institutions and bodies worse and

those who rated them better. In accordance with the previously established research objectives, methodological approach and hypotheses, the difference within three logical units was analyzed. By applying MANOVA and discriminant analysis, we found that alternative hypotheses H1a, H2a, H3a have been confirmed. The results of the contribution of the whole sample show that most respondents favour financial form of support from state institutions.

The findings indicate that the financial support is perceived to impact the SMEs organization capability and competitiveness. It can be concluded that institutional financial and non-financial support is particularly important for SMEs as such, and that it must be comprehensive, systematic and coordinated. This research generally confirms the literature (Ahmed, Mohamed, Johnson & Meng, 2002; Crick & Czinkota, 1995; Francis & Collins-Dodd, 2004; Day & Wensley, 1988; Murray, Gao, & Kotabe, 2010) but comes to some original conclusions. This empirical study has identified the impact of various measures that should be expected from insituitional support. Its importance is primarily directed at SMEs enhancement of resources and capabilities. Considering the importance of future SMEs internationalization and creation of new, innovative SMEs for small and open economies like Serbia, this finding can lead to a creation of adequate institutional support measures and instruments, aimed at the development of more competitive SMEs, which should be a priority for public policy creators. Therefore, the institutional support for SMEs is particularly important and the adequate institutional infrastructure model is still needed to enhance the transition into market economy. These findings also suggest that SMEs are aware of the importance of institutional financial support. This paper emphasize the importance of the studies focusing on the appraisal of the importnace of the policy programmes for SMEs development stressing the crucial role of the government support policy.

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THE EFFECT OF MACRO FACTORS ON BANK CREDIT ACTIVITY IN THE REPUBLIC OF SERBIA

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Abstract: *This paper investigates whether and how key macro-fundamentals in Serbia affect the volumes of issued loans of Erste bank to public and business sector in Serbia. We made an effort to determine which particular macro factor has the highest influence on issued credits of Erste bank, and to measure the exact average magnitude of these influences. The main idea is to find out how GDP, inflation, central bank referent interest rate, exchange rate changes and Euribor affect short-term and long-term credit activity of Erste bank in Serbia. The computations are done by applying several multivariate regression models in which dependant variables are the volume of issued credits towards civil sector and enterprises. Based on the results, we can report that Euribor is the most important factor of all scrutinized macro-aggregates, since it affects most of the analysed bank loans. Besides Euribor, we find that other macro fundamentals influence the issued loans only sporadically. In other words, the level of GDP and inflation affect only long-term loans for businesses, while referent interest rate influences only short-term loans for public. We find that exchange rate changes have no effect on any loan of Erste bank, whatsoever, which clearly indicates that the bank protects itself very successfully against this type of macro risk.*

Key words: *Erste bank, macroeconomic factors, short-term and long-term loans, multivariate linear regression models, public sector and enterprises*

JEL classification: C22, G21, F62

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EFEKAT MAKROFAKTORA NA KREDITNU AKTIVNOST BANKE U REPUBLICI SRBIJI

Sažetak: *Ovaj rad istražuje da li i kako ključni makrofundamenti u Srbiji utiču na količinu izdatih kredita Erste banke građanima i preduzećima u Srbiji. Težnja autora se odnosi na utvrđivanje određenog makrofaktora koji ima najveći uticaj na izdate kredite Erste banke, kao i na merenje tačne prosečne veličine ovih uticaja. Cilj rada je da se otkrije kako BDP, inflacija, referentna kamatna stopa Narodne banke Srbije, promene kursa i Euribor utiču na kratkoročnu i dugoročnu kreditnu aktivnost Erste banke u Srbiji. Izračunavanje se vrši primenom nekoliko multivarijantnih regresijskih modela u kojima su zavisne varijable obimi kredita odobrenih stanovništvu i privredi. Na bazi rezultata možemo zaključiti da je Euribor najvažniji faktor svih pregledanih makroagregata, jer utiče na većinu analiziranih bankarskih kredita. Pored Euribora, otkrivamo da drugi makrofundamenti utiču na izdate kredite samo sporadično. Drugim rečima, nivo BDP-a i inflacija utiču samo na dugoročne kredite za preduzeća, dok referentna kamatna stopa utiče samo na kratkoročne kredite za stanovništvo. Otkrivamo da promene kursa nemaju uticaja ni na jedan kredit Erste banke, što jasno ukazuje da se banka veoma uspešno štiti od ove vrste makrorizika.*

Ključne reči: *Erste banka, makroekonomski faktori, kratkoročni i dugoročni krediti, multivarijantni linearni regresioni modeli, civilni sektor i preduzeća*

1. INTRODUCTION

Various financial intermediaries, such as investment companies, mutual funds, insurance companies and particularly banks, play a crucial role in development of economy and their prosperity is important for an overall macroeconomic stability (see e.g. Lojanica and Tubić-Čurčić, 2019). Hasanov, Bayramli and Al-Musehel (2018) asserted that global trends show that the share of the banking sector in the financial system has increased in recent decades. Ongore (2013) contended that commercial banks play a vital role in the economic resource allocation and contribute to country's economic growth by making funds available for investors to borrow. However, their performance can be impacted by different internal and external factors which can be classified into bank specific (internal) and macroeconomic variables, as Ongore (2013) pointed out. The internal factors are individual, bank-specific characteristics which are basically related to the internal decisions made by management and board. The external factors are more important and have more profound impact on banks, because they can influence whole sectors or an entire country, and as such they are beyond the control of any bank and can inflict serious problems on bank

businesses (see e.g. Kamani, 2019; Lee, Lin, Lin and Zhao, 2020; Ognjanović and Pešterac, 2019).

Based on the aforementioned, this paper tries to find out how five key macroeconomic factors – GDP, inflation, central bank referent interest rate, exchange rate changes and Euribor, affect short-term and long-term credit activity of Erste bank in the Republic of Serbia, which are issued to civil population and enterprises. To the best of authors' knowledge, this is the first time that a paper does this type of investigation, using data from a commercial bank in Serbia, and we strongly believe that it will contribute to the existing literature. The aim of this study is to econometrically determine which particular macro factors have the highest influence on credit activity of Erste bank, and to measure the exact average magnitude of these influences. In addition, the goal is to provide a reasonable and economically-based explanation for every highly statistically significant factor impacting the volume of the bank loanable funds. With this kind of knowledge, managing structures of Erste bank could define their credit strategies towards the bank's clients and also could devise various plans to mitigate looming risks that might strike the bank businesses. The methodology used for this research involves several multivariate regression models, in which independent variables are short-term and long-term loans granted to public sector and enterprises. On the other hand, in every multivariate model, independent variables are macroeconomic variables that are listed above. We have chosen research methodology referring to the following recent papers, which used multivariate linear regression models in their papers – Chen, Pourahmadi and Maadooliat (2014), Mori and Suzuki (2018), Xia, Zhang, Wang and Yeh (2019), Petrella and Raponi (2019).

Beside introduction, the rest of the paper is structured as follows. The second section presents brief literature review. The third section explains used methodology and dataset. Section four contains estimated results and provides explanations. The last section gives concluding remarks.

2. BRIEF LITERATURE REVIEW

Many theoretical researchers have investigated how different macroeconomic fundamentals affect banks' businesses. For instance, Baum, Caglayan and Ozka (2009) examined the effects of uncertainty on the allocation of banks' scarce resources in the U.S. and claimed that the stability of the macroeconomic environment will favour more efficient allocation of loanable funds. They demonstrated that macroeconomic uncertainty (measured by the volatility of GDP growth or inflation) has a negative effect on the cross-sectional dispersion of total loans-to-assets ratio. Glen and Mondragón-Vélez (2011) studied the effects of business cycles on the performance of commercial bank loan

portfolios. They covered major developing economies in the period 1996–2008 and gauged loan performance *via* loan loss provisions. They found that economic growth is the main driver of loan portfolio performance, whereas interest rates have second-order effect. In addition, their results indicated that the relationship between loan loss provisions and economic growth is highly non-linear only under extreme economic stress. Gu, Xin and Xu (2019) investigated whether the stock price crash risk is priced in private debt contracting in China. They disclosed that the expected stock price crash risk is positively associated with the bank loan interest spread, which indicates that banks regard stock price crashes in China as an important risk factor when issuing loans.

Caglayan and Xu (2019) used a large panel of commercial bank data gathered from 15 countries and looked at the distortionary effects of inflation volatility on the allocation of bank loans. They asserted that inflation volatility would force bank managers to behave more conservatively in issuing new loans. In contrast, when inflation volatility is low, bank managers have space to lend in more idiosyncratic fashion. They concluded that a strong negative relation exists between inflation volatility and the dispersion of loans-to-assets ratio. The study of Abuka, Alinda, Minoiu, Peydró and Presbitero, (2019) researched Uganda's volume of loan application, taking into account unanticipated variation in monetary policy. They showed that monetary contraction reduces credit supply of banks, which is mirrored in increasing rate of loan application rejections, which is especially true for banks with more leverage and sovereign debt exposure. Orzechowski (2017) researched the long-run nexus between bank profits, loan growth, and monetary policy at different types of profitable banks in the U.S. He reported that monetary policy has a slightly larger negative relationship with real estate loans in banks with above average profits than with their less profitable peers. He also contended that commercial loan growth in low-profit banks may be more sensitive to their loan loss provisions than to monetary policy. His overall conclusion is that loan portfolio ratio shows a significant negative relationship with monetary policy and a positive relationship with provisions.

3. RESEARCH METHODOLOGY AND DATASET

This paper uses annual data, covering the period from 2005-2018. In order to estimate the extent to which the selected macroeconomic factors (gross domestic product, inflation, exchange rate, referent interest rate and Euribor) affect the volume of loans of Erste bank, issued to civil population and enterprises in short and long-term in Serbia, we use several multivariate linear

regression models. In these models, dependent variables are the volume of issued loans to population and economy, whereas the independent variables are the selected macroeconomic aggregates. For comparability of results and consistency in modelling, we set all independent variables as rates i.e. for those variables that were not empirically given in rates. Table 1 presents descriptive statistics for the independent variables. On the other hand, dependent variables are omitted from Table 1, since they are observed in absolute values (in billions of Republic of Serbia dinars - RSD), not rates, which means that they do not follow normal distribution. In order to provide an insight into the relative value of the issued loans, we show their yearly dynamics in Figure 1.

Table 1

Descriptive statistics for the independent variables

	Mean	S.D.	Skewness	Kurtosis	JB
<i>GDP</i>	2.820	3.417	0.338	2.831	0.283
<i>Inflation</i>	6.910	4.685	0.377	2.127	0.777
<i>Referent interest rate</i>	7.648	2.786	-0.478	2.008	1.107
<i>Exchange rate changes</i>	3.080	5.746	-0.106	2.033	0.572
<i>Euribor</i>	0.899	1.483	1.017	2.485	2.566

Note. Authors' calculation.

Legend: S.D. is an abbreviation for standard deviations; JB stands for Jarque-Berra coefficient of normality.

According to Table 1, average annual GDP growth in the observed period is 2.8%, average annual inflation is relatively high, amounting to 6.9%, whereas average annual referent interest rate is also high with the value of 7.6%. Annual average depreciation of RSD is 3%, and Euribor has relatively low average annual value of 0.899%. The variable with the highest volatility is GDP, which is followed by inflation. All macro-variables have low skewness and kurtosis, which suggest that these variables have normal distribution. This is confirmed by JB coefficient of normality.

Equations 1-4 present linear model specifications for four independent variables:

$$LTLE_t = C + \alpha_1 GDP_t + \alpha_2 INF_t + \alpha_3 RIR_t + \alpha_4 ERC_t + \alpha_5 EUR_t + \varepsilon_t \quad (1)$$

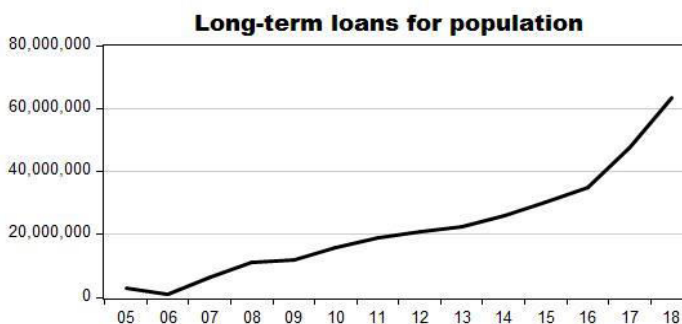
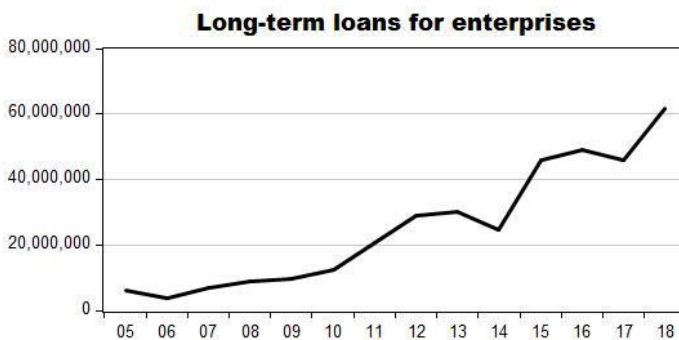
$$LTLP_t = C + \alpha_1 GDP_t + \alpha_2 INF_t + \alpha_3 RIR_t + \alpha_4 ERC_t + \alpha_5 EUR_t + \varepsilon_t \quad (2)$$

$$STLE_t = C + \alpha_1 GDP_t + \alpha_2 INF_t + \alpha_3 RIR_t + \alpha_4 ERC_t + \alpha_5 EUR_t + \varepsilon_t \quad (3)$$

$$STLP_t = C + \alpha_1 GDP_t + \alpha_2 INF_t + \alpha_3 RIR_t + \alpha_4 ERC_t + \alpha_5 EUR_t + \varepsilon_t \quad (4)$$

where acronyms *LTLE*, *LTLP*, *STLE* and *STLP* denote long-term loans for enterprises, long-term loans for population, short-term loans for enterprises and short-term loans for population, respectively. As for independent variables, *GDP* is gross domestic product, *INF* is rate of inflation, *RIR* stands for referent interest rate, *ERC* labels exchange rate changes and *EUR* is European interbank rate – Euribor. *C* is constant, and ε_t is white noise error term that follows Gaussian (normal) distribution, $\varepsilon_t \sim N(0, \sigma^2)$, with zero mean and variance.

The research was conducted on annual data that ranges from 2005-2018. We are unable to use higher frequency data for computations, because issued data for loans are available only in gross amount for one year. The data for bank loans was collected from the financial reports of Erste bank. Empirical data for macro-factors were collected from the official website of National bank of Serbia.



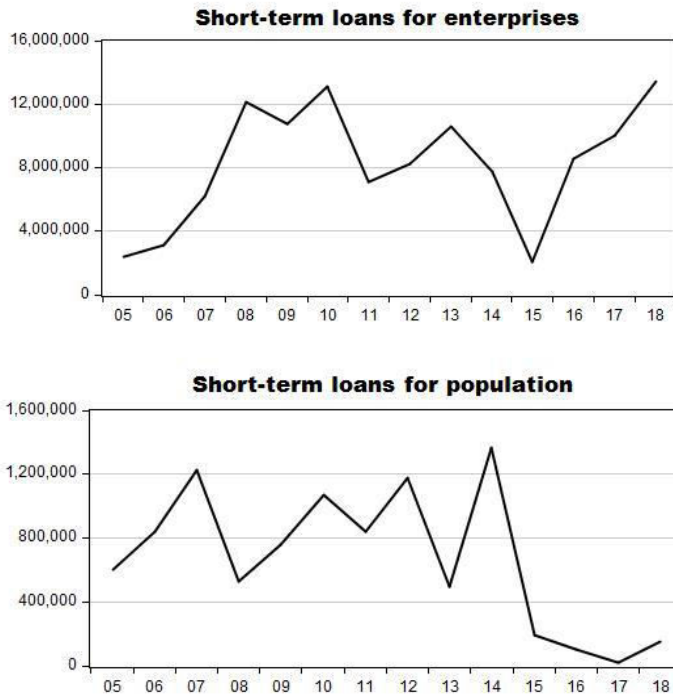


Figure 1. Dynamics of issued loans in thousands of RSD

Note. Authors' calculation.

4. RESEARCH RESULTS

This section presents the results of the estimated multivariate models, and the results are summarized in Table 2. Since dependent variables are inserted in the models in billions of RSD, the estimated parameters are also expressed in billions of RSD. In other words, we measure how the change of independent macro-factors affects volumes of issued loans in billions of RSD of Erste bank. In the following subsections, we interpret estimated parameters and give viable and economically-based explanations.

Table 2

Estimated parameters

Independent variables	Parameter Estimates	Dependent variables			
		LTLE	LTLP	STLE	STLP
Panel A. Estimated parameters					
GDP	α_1	2.3**	1.4	-0.1	-0.04
Inflation	α_2	-1.5*	-1.1	-0.1	-0.04
Referent interest rate	α_3	0.9	-1.7	0.002	-0.1***
Exchange rate changes	α_4	0.5	-0.3	0.2	0.005
Euribor	α_5	-9.6***	-7.5***	-0.5	0.2**
Panel B. Diagnostic tests					
Determination coefficient – R ²		0.93	0.84	0.26	0.82
Durbin-Watson test		1.82	2.07	1.98	2.62
Breusch-Godfrey test (p-value)		0.258	0.229	0.355	0.190

Note. Authors' calculation.

***, **, * represent statistical significance at 1%, 5% and 10% level, respectively.

4.1. LONG-TERM LOANS FOR ENTERPRISES

Generally, long-term loans are used by business entities when they want to finance fixed or current assets, to refinance existing loans or investments from their own funds. In particular, these loans are primarily used for the procurement of equipment and capacity expansion, the purchase of current working capital, the purchase of another legal entity, etc. Long-term loans are approved with a repayment period of more than 60 months.

According to Table 2, the following variables are found to be statistically significant in model for LTLE – GDP, inflation and Euribor. It can be seen that Euribor is a highly statistically significant parameter with probability of over 99%, inflation is statistically significant up to 90% probability, while the impact of GDP on long-term corporate loans is statistically significant at a probability of over 95%. In other words, estimated model for LTLE suggests that 1% of GDP growth affects the increase of long-term credit placements to enterprises in Serbia by RSD 2.33 billion. This estimate is in line with economic logic,

because GDP growth implies an increase in industrial production, which is followed by an increase in investments, and this entails the need for financial resources, which are subsequently acquired from banks. Our results for GDP are well supported by the findings in the study of Mondragón-Vélez (2011).

Full value of inflation coefficient is -1,487,271, which means that 1% increase in inflation annually reduces long-term loans to enterprises by almost 1.5 billion of RSD. This is in line with expectations, since rising inflation negatively affects the activity of economic entities, spurs uncertainty in business forecasts, affects cost growth, and as a consequence, reduces overall revenues. Our findings for inflation coincide very well with the study of Caglayan and Xu (2019). In addition, we find that parameter for Euribor is -9,608,748, which is the largest of all statistically significant parameters in model for LTLE. This highly statistically significant coefficient means that Euribor exerts the greatest influence on long-term corporate loans in comparison with all the other independent variables in the system. In other words, a 1% rise in Euribor impacts the decline of long-term loans to the economy by more than 9.5 billion of RSD. The estimation of the parameters in front of Euribor is in line with expectations, because we observe long-term loans to companies are approved in euros. In other words, in order to issue these loans to the economy, Erste bank has to obtain these funds in the European interbank market and any increase in interest rates in that market reduces the volumes of issued loans towards Serbian companies, because the cost of long-term funds rises.

Referent interest rate and the exchange rate are not statistically significant for several reasons. First, the reference interest rate affects the price of loans granted by NBS to commercial banks, but in RSD, and since the dependent variable is long-term loans to enterprises expressed in euros, then it is logical that the change in the reference interest rate will have no effect on foreign currency loans. The exchange rate is also considered statistically insignificant, and the economic rationale behind this could be that long-term foreign currency loans to companies have a safeguard clause for the exchange rate changes. This means that the change in RSD/EUR does not pose a direct risk to the bank i.e., it does not play a significant role in the level of approved loans to the economy. This is because loans that are given in euros have to be returned in euros. The bank as a lender may have potential problems with the exchange rate increase in terms of clients' inability to repay the loan with the foreign currency clause to the bank, because non-export-oriented companies earn their income in RSD. Then the depreciation of exchange rate increases the cost of loan repayment that has a currency clause. However, speaking in average values, we did not find that exchange rate changes affect the volume of issued loans to Serbian enterprises.

As for model adequacy, we refer to Živkov, Njegić and Ljumović (2013) and check for the presence of serial correlation by using two tests – Durbin-Watson (DW) and Breusch-Godfrey (BG). The value of Durbin-Watson tests is around 2, which indicates the absence of autocorrelation. In order to further support DW statistics, we calculated additional Breusch-Godfrey test, in which p-value also confirms that the model has no problem with autocorrelation. Coefficient of determination is very high and amounts to 93%, which indicates that independent variables explain the dependent variable (LTLE) in 93% in the multivariate regression model. This is very high percentage, which means that the choice of the independent variables is good.

4.2. LONG-TERM LOANS FOR POPULATION

When it comes to long-term loans for households and civil population, the dominant share are mortgages. These loans are granted in foreign currency or in RSD, but when they are issued in RSD, they are hedged by a foreign currency clause, as in the case of LTLE, which protects the bank against possible exchange rate risks.

According to Table 2, the only parameter that is statistically significant is Euribor. Its statistical significance is very high and amounts to almost 98%. Also, this parameter has a value of 7.46 billion, which means that a rise of 1% in Euribor in the European interbank foreign exchange market causes a decrease in long-term retail placements by almost 7.5 billion on average. This value is in line with economic logic because any increase in interest rate in the European interbank market is directly reflected in the increase in domestic loans to households and population (see Den Haan, Sumner & Yamashiro, 2007; Busch and Prieto, 2014). Unlike the model from the previous subsection, in which the estimated Euribor parameter was -9.6 billion, this parameter is -7.5 billion, which suggests that the increase in Euribor by 1% has a more negative influence on LTLE than on LTLP. This discrepancy is expected, because the volume of loans to the economy in absolute numbers is higher than to the population.

Contrary to Euribor, all other variables are not statistically significant. In other words, this means that the percentage change in GDP does not affect the volume of long-term loans to households. According to the model, the percentage change in GDP is not large enough to stimulate an increase in the volume of long-term loans to households. Unlike long-term loans to households, the parameter in front of GDP in previous section is estimated as statistically significant. As we have stated, GDP growth influences the increase in volumes of issued credits to the economy because GDP growth itself implies growth of

economic activity, export and industrial production. On the other hand, there is no direct link between GDP and retail lending towards civil population, as the model has shown.

The same is true for inflation, the reference interest rate and the exchange changes. According to Table 2, this means that inflation in Serbia was not high enough to cause the reduction of LTLP. This result is consistent with the LTLE finding, which has indicated that inflation does not have effect on long-term loans to enterprises. The referent interest rate is also assessed as insignificant, which is in line with expectations, since the reference interest rate defines the dinar borrowing price. In other words, due to the fact that LTLP are issued either in foreign currency or in RSD with a safeguard clause, the reference interest rate, most likely, will not be statistically significant. In addition, exchange rate changes are also statistically insignificant, which suggests that the change in the RSD/EUR has no effect on the amount of long-term loans towards households. The explanation is the same as in the case of LTLE i.e., long-term loans to households are protected by a foreign currency clause against possible changes in the exchange rate, hence the model does not find any effect of exchange rate on LTLP.

As in the previous model, DW and BG tests confirm that model does not have a problem with autocorrelation, while relatively high value of R^2 coefficient (0.82%) suggests that independent variables explain LTLP in relatively high degree.

4.3. SHORT-TERM LOANS FOR ENTREPRISES

Short-term corporate loans are approved for financing current liquidity (current problem of payments to suppliers, payment of earnings, etc.), working capital, exports, refinancing of liabilities and loans to other banks and for other purposes. These loans are approved in RSD with foreign currency clause or in foreign currency. These loans have a repayment period of up to 12 months. According to Table 2, none of the estimated parameters in STLE model are statistically significant. A rational explanation behind these results would be that short-term corporate loans are mostly granted for the purpose of overcoming short-term illiquidity of economic entities. Given that all observed independent variables affect the banking businesses in the long run, then it cannot be expected that these parameters are statistically significant in the model where the dependent variable is short-term corporate loans.

In other words, GDP growth or its decline certainly affect corporate loans, but this effect is evident in the long run (e.g., 9, 12 or 16 months). Similarly, high inflation certainly does not benefit business entities in terms of their long-term

plans, but in the short-term, inflation does not exert its influence. The reference interest rate should have, according to economic logic, statistical significance, because if a commercial bank borrows short-term funds from a central bank, then these short-term funds should be borrowed to commercial entities. However, failing to find the statistical significance of the reference interest rate in the model does not mean that it does not have an impact on short-term loans, but rather points to the imperfection of the model. That is, if another model or other methodology is applied, it would be very possible the reference interest rate would be statistically significant.

As for the exchange rate, the insignificance of this factor in the model means that the fluctuations of the exchange rate over the observed period are not strong enough to influence economic entities when deciding to use short-term loans. This assertion is in line with economic logic because these loans are used primarily to settle some short-term liabilities e.g., for suppliers or employees, to refinance previously borrowed items, etc. Euribor is statistically insignificant, because commercial banks generally do not borrow short-term funds in the European interbank market, but rather from the National Bank of Serbia. Therefore, it is expected that Euribor has no statistical significance.

In model for STLE, the coefficient of determination is the lowest compared to all other models and its value is 26%. However, we have to say that such a low value of R^2 is expected, because according to the estimated model, none of the variables is statistically significant, that is, the selected macro factors do not have an effect on the dependent variable (STLE), which indicates that some other factors may have greater influence on STLE. Error terms of the model do not report the presence of autocorrelation, according to DW and BG tests.

4.4. SHORT-TERM LOANS FOR POPULATION

The last type of loans in our analysis are short-term loans granted to population (STLP). In this category we can distinguish between several types of banking products such as: arranged overdrafts, credit cards, cash loans, consumer loans (loans approved for the purchase of consumer goods, payment of tourist, health and other services). According to the results, two parameters are statistically significant – the reference interest rate and the Euribor. The statistical significance of the reference interest rate is very high and amounts to 99%, while the significance of Euribor is also very high and amounts to 96%.

The reference interest rate parameter has a value of -126 million, which means that the increase of 1% in the reference interest rate by the National Bank of Serbia results in a decrease in short-term loans towards population by 126

million on average. This value is in accordance with economic logic, because any increase in the reference interest rate by the NBS directly impacts the rise in domestic loans to households, and this increase consequently affects the lower issuance of these loans by the bank. Unlike in the LTLP model, where the estimated Euribor parameter is -500 million, this parameter in STLP model is around -176 million, which means that an increase of 1% in Euribor affects long-term loans to population much more than short-term loans to population. This estimate is in line with expectations, because the sheer volume of long-term loans to households is larger than in the case of STLP.

Unlike Euribor and the reference interest rates, which are statistically significant in STLP model, all other variables are not statistically significant. In other words, a change in GDP does not affect the volume of short-term loans to households. According to the model, the change in GDP is not large enough to stimulate an increase in the volume of short-term loans to households. In addition, inflation and the exchange rate are also statistically insignificant. According to the model, this means that inflation in Serbia is not high enough to reduce STLP. It has been found that exchange rate is not statistically significant in STLP model, which is similar to all other previously estimated models. In particular, it means that the change in the RSD/EUR does not have any effect on the volume of short-term placements to households, because short-term loans to households are primarily issued in RSD. Therefore, we can contend that this macro factor does not have any influence on the demand for this type of credits.

According to diagnostic tests, the model is well specified, because R^2 coefficient indicates relatively high explanation power of 82%, while DW and BG tests show that the model is not polluted by the serial correlation.

5. CONCLUSION

This paper examines how key macro-economic factors – GDP, inflation, referent interest rate, exchange rate changes and Euribor affect the volume of issued loans of Erste bank to civil population and enterprises in Serbia. We use several multivariate regression models to answer this question, and results are heterogeneous. Despite common opinion that macro factors influence bank business in one way or another, we find that not all fundamentals impact the bank credit activity. In particular, we report that Euribor is the most important factor, since it affects most of the bank products – LTLE, LTLP and STLP, where LTLE are hit the hardest. These results are well grounded, because Euribor is essential cost that the bank needs to bear in the process of financial fund procurement, and the level of this interest rate directly spills over to the interest rate of the bank credit to civil sector and enterprises. Due to the fact that long term loans to enterprises have the highest amount, the rise of Euribor affect

these loans the strongest. Besides Euribor, we find that other macro fundamentals influence the volumes of the bank loans only sporadically. More specifically, the level of GDP and inflation affect only LTLE, while referent interest rate has an influence only on STLP. Interestingly, exchange rate changes have no effect on any loan of Erste bank, whatsoever, which clearly indicates that the bank protects itself very successfully against this type of macro risk.

According to the results, it seems that Euribor is the factor on which the bank needs to pay the highest attention. At the same time, bank can adjust its performance depending on this factor. In other words, due to the fact that Euribor has the strongest and the widest effect on the bank loans, it would be beneficial for Erste bank to keep track of global economic (and political) developments and forecast the future level of Euribor. In that regard, the bank could borrow higher amount of financial funds in times when Euribor is relatively low or records downward trends, and thus reduce costs of financial funds in times when the rise of Euribor is expected. Alternatively, the bank could make some type of interest rate hedging deal in global financial markets, protecting itself by borrowing the funds in times when global interest rates start to rise.

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THE RESEARCH ON FEMALE MOTIVATION FOR ENTREPRENEURSHIP IN THE REPUBLIC OF SERBIA

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Abstract: *Modern social development trends, as well as globalization and internationalization, require significant changes in entrepreneurship, with a tendency of increasing involvement of women in business. The main focus of the paper is to determine the significance of different motives that influence women in the Republic of Serbia for entrepreneurship, depending on their age, education, marital status, length of entrepreneurial experience and number of employees. Empirical research was conducted on a sample of 162 female entrepreneurs in the territory of the Republic of Serbia. The data were analyzed using factor analysis, Mann-Whitney U and Kruskal-Wallis test. The research results indicate that the motivation for entrepreneurship can be grouped into two areas. Non-parametric tests have found that there are differences in the significance of different motivations for women entrepreneurs of different age, education level, marital status, length of service and number of employees. The results of the research confirm that women entrepreneurs differ in terms of motives for entrepreneurship.*

Key words: *motivation, female entrepreneurs, factor analysis, non-parametric statistics, The Republic of Serbia*

JEL classification: *J24, C14, C38.*

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ISTRAŽIVANJE MOTIVA ŽENA ZA BAVLJENJE PREDUZETNIŠTVOM U REPUBLICI SRBIJI

Sažetak: *Savremeni trendovi razvoja društva, kao i njegova globalizacija i internacionalizacija, zahtevaju značajne promene u preduzetništvu, sa tendencijom sve većeg angažovanja žena u poslovanju. Cilj rada jeste utvrđivanje značaja različitih motiva koji su opredelili žene u Republici Srbiji za bavljenje preduzetništvom, u zavisnosti od njihove životne dobi, obrazovanja, bračnog statusa, dužine preduzetničkog staža i broja zaposlenih. Empirijsko istraživanje je sprovedeno na uzorku od 162 preduzetnice sa teritorije Republike Srbije. Dobijeni podaci su analizirani primenom faktorske analize, Mann–Whitney U i Kruskal-Wallis testa. Rezultati istraživanja ukazuju na to da se motivi za bavljenje preduzetništvom mogu razvrstati u dve grupe. Neparometrijskim testovima je utvrđeno da postoje razlike u značaju različitih motiva za preduzetnice različitih godina starosti, obrazovanja, bračnog stanja, dužine preduzetničkog staža i broja zaposlenih. Dobijeni rezultati istraživanja potvrđuju da se preduzetnice razlikuju po pitanju preferencija pojedinih motiva za bavljenje preduzetništvom.*

Ključne reči: *motivi, preduzetnice, faktorska analiza, neparometrijska statistika, Republika Srbija*

1. INTRODUCTION

Entrepreneurship as an idea is as old as human society and is not exclusively an economic phenomenon. It relates to all aspects of human behavior and action, where creativity, innovation, new ideas, and problem-solving are needed, in order to meet human needs. Entrepreneurship is a dynamic and progressive social phenomenon (Apergis & Pekka-Economou, 2010) and is a key element for the growth and development of each country, so it is recognized in the European Union as the main drive of a modern and dynamic knowledge-based economy. Small businesses are now the main source of job creation and one of the engines of national economic growth (Mukhtar, 2002). Small women-owned enterprises are also a significant contributor to the competitiveness of national economies (Kamberidou, 2013; Huarng, Mas-Tur & Hui Kuang Yu, 2012). Increasing the scope and importance of female entrepreneurial activity is one of the most prominent characteristics of modern entrepreneurship. The entrepreneurial activity of men is still dominant, both in terms of scope and business characteristics. Although gaining in its intensity, the female entrepreneurial potential is still largely underused source of economic growth and development (Kamberidou, 2013; Xavier, Ahmad, Nor & Yusof, 2012;

Vossenbergh, 2013). At the end of the 20th century, female entrepreneurship became an interesting field of research for theoreticians (Weeks & Seiler, 2001; Greene, Brush, Hart & Saporito, 2001), since entrepreneurship had been considered to be a major male activity up to that time. With the increasing importance and affirmation of female entrepreneurial activity, interest in this phenomenon begins to grow (Peris-Ortiz, Rueda, Armengo & Benito Osorio, 2012; Robichaud, Zinger & LeBrasseur, 2007; Santos, 2009). Affirming its importance for improving the economic status of women, as well as for the overall socio-economic progress of society, the female entrepreneurial activity becomes the actual theoretical and empirical phenomenon.

In order to achieve the strategic goals of improving competitiveness and innovation of small business sector in the Republic of Serbia, the female entrepreneurial activity is recognized as part of the overall entrepreneurial activity that should be encouraged. Unfortunately, female entrepreneurship in the Republic of Serbia is an insufficiently researched area. This paper will focus on the analysis of female entrepreneurs' perception of the motives for engaging in entrepreneurship in agribusiness in the Republic of Serbia. In addition, special emphasis will be placed on understanding the motivational factors that are primary not only for women entrepreneurs, but also for the creators of the overall economic environment in this area.

In order to achieve the set goals, a survey was conducted during 2018, and the questionnaire was distributed by e-mail. The sample comprised 162 female entrepreneurs, all of them owners of small and medium-sized enterprises in the Republic of Serbia and engaged in the production and processing of agri-food products.

2. LITERATURE REVIEW

The earliest studies of female entrepreneurial activity were oriented to description of the psychological characteristics of women entrepreneurs and their motivation to perform entrepreneurial activities (Stevenson, 1986; Brush, 1992). The need for independence and autonomy is one of the main factors of entrepreneurial motivation (Badulescu, 2010; Nhemachena & Murimbika, 2018). Independence and self-achievement are the most important reasons why women start an entrepreneurial venture (Hughes, 2006).

The need for self-achievement was pointed out by several authors (Jalbert, 2000; Lewis, 2013) and personal development was explored by (Kantis, Postigo, Federico & Tamborini, 2002; Chen, Li & Matlay, 2006). When it comes to financial factors, a number of studies demonstrated the acquisition of

wealth or high income to be the main motivator (Lewis, 2013; Sloka, Kantane, Avotins & Jermolajeva, 2014; etc.). Most studies point out that women were motivated by the desire for independence, combining personal interest with material existence, by the perspective of freedom to decide what they would like to do, to do what they can do best, and do it in the way they choose (Mršević & Janković, 2018).

At the end of the twentieth century, the research was increasingly focused on determining differences in the management process in enterprises owned by women and those owned by men, and was characterized by more sophisticated methodology and sampling (Carter & Bennett, 2006). Over time, the subject of research in entrepreneurial activity of women has changed, and today it can be noticed that an increasing number of studies are concerned with the issue of managing the enterprises owned by women, primarily the issue of access to funding sources. Research methodology of female entrepreneurial activity changed over time: from small samples and predominantly descriptive-qualitative approach to larger samples and quantification of phenomena (Carter & Bennett, 2006). There is an intense academic interest in female entrepreneurial activity in Anglo-Saxon countries, while in most other countries this interest is at a much lower level (Díaz-García & Jiménez-Moreno, 2010; Ahl, 2003).

Empirical consideration of key characteristics and constraints of female entrepreneurial activity should contribute to more precise identification of factors and characteristics of this phenomenon, and to direct measures of support and incentives (Xavier, Ahmad, Nor & Yusof, 2012). Women represent half of the population and the workforce, and are active participants in the global economy, so it is necessary to understand their economic contribution (Greene et al., 2001), as well as to remove barriers to the full use of their potential (Huang, Mas-Tur & Hui Kuang Yu, 2012; Kamberidou, 2013).

3. RESEARCH METHODOLOGY

3.1. RESEARCH DATA COLLECTION

The survey was conducted from January to April 2018, by means of a questionnaire which was distributed by e-mail. The contact details of female entrepreneurs were taken from the database of Association of Business Women in Serbia, which at the time numbered 523 female entrepreneurs (<http://poslovnzene.org.rs/za-clanice/direktorijum-clanica>). The request for completing the questionnaire was sent to addresses of 277 female entrepreneurs who are owners of small and medium enterprises in the Republic of Serbia and

are engaged in the production and processing of agricultural and food products. There were 162 valid questionnaires in total (31% of the total number of associated female entrepreneurs, or 58% of the total number of surveyed female entrepreneurs).

The questionnaire contained 41 questions, grouped into four segments: general data on entrepreneurs (10 questions), data on specific entrepreneurship (17), business environment (8) and affirmation of female entrepreneurship (6).

Table 1

Number and participation of observation units

	Frequency	%
Age groups		
Up to 25 years	0	0
between 26 and 45 years	90	55.56
between 46 and 65 years	72	44.44
Over 65 years	0	0.00
Education level		
Primary school	0	0.00
Secondary school	15	9.26
Higher school	24	14.81
Faculty	123	75.93
Marital status		
Married	123	75.93
Single	18	11.11
Divorced	21	12.96
Widow	0	0.00
Length of service		
1-5 years	54	33.33
5-10 years	51	31.48
Over 10 years	57	35.19
Number of employees		
up to 10	126	77.78
11-50	30	18.52
51-100	6	3.70

Note. Author's calculation.

The Five-point Likert scale was used for measuring the significance of different aspects of entrepreneurial motivation (1 - completely insignificant; 2 – insignificant; 3 - important, 4 – significant, 5 – very significant).

In the sample (Table 1) there were no female entrepreneurs under the age of 25 or older than 65. In the sample 75.93% of women were university graduates, and the same percentage of married women entrepreneurs. Regarding the entrepreneurial length of service, the same representation is present in all three observed groups, and 77.78% of survey participants are owners of small business with up to 10 employees.

3.2. DETERMINATION OF RESEARCH VARIABLES AND DEFINITION OF RESEARCH HYPOTHESES

The motive for engaging in entrepreneurship was assessed as a dependent variable based on eight different aspects of possible motives (Figure 1).

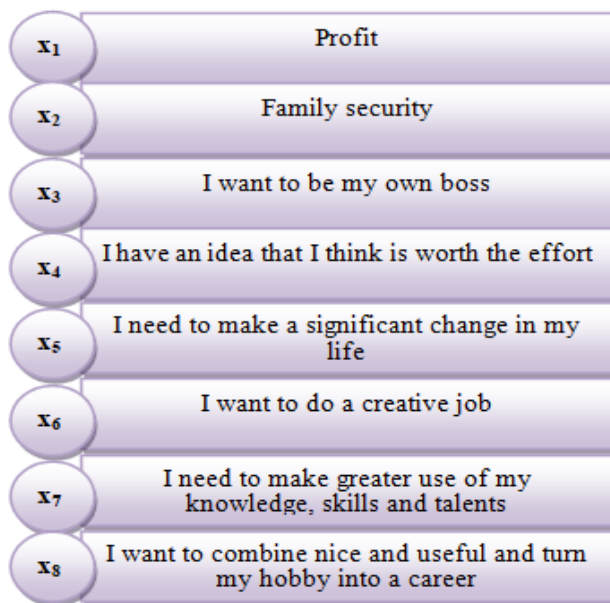


Figure 1. Motive for entrepreneurship.

Note. Prepared by the authors.

The main idea of this research is to determine whether the examined independent variables (age, education level, marital status, entrepreneurial experience and number of employees in the company) significantly influence

and contribute to the diversity of motives for female involvement in entrepreneurship, or these variables are not significant for engaging women and developing their own business. Therefore, several modalities of independent variables were observed: the age structure of female entrepreneurs (four groups: up to 25, 26-45, 46-65 and over 65), education level (four groups: primary school, secondary school, higher school and university), marital status (four groups: married, single, divorced and widow), length of service (three groups: 1-5 years, 5-10 years and over 10 years) and number of employees in the enterprise: up to 10; 11-50 and 51-100).

Starting from the objectives and tasks of this study, two research hypotheses were formulated:

H1₀: The surveyed female entrepreneurs in the Republic of Serbia differ in their motives for engaging in entrepreneurial activity.

H1_a: The surveyed female entrepreneurs in the Republic of Serbia do not differ in their motives for engaging in entrepreneurial activity.

H2₀: Surveyed female entrepreneurs in the Republic of Serbia favor quantitative aspects of motives for entrepreneurship in relation to qualitative ones.

H2_a: Surveyed female entrepreneurs in the Republic of Serbia do not favor quantitative aspects of motives for entrepreneurship in relation to qualitative ones.

Appropriate data processing methods were used for testing hypotheses and drawing conclusions.

3.3. DATA PROCESSING METHODS

In order to better understand the motives that prompt women to become entrepreneurs, in this paper, a grouping of various motivation aspects for entrepreneurship was done using factor analysis with Varimax rotation. To verify the suitability of the dataset for factor analysis, the strength of the relationship between variables has been determined, and the variables with the value of the correlation coefficient $|r| \geq 0,3$ are included in the analysis (Tabachnick & Fidell, 2007). The adequacy and validity of factor analysis are tested through Bartlett's test of sphericity (Bartlett, 1954) and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1974). Bartlett's test of sphericity should be significant ($p < 0,05$) to justify the application of factor analysis. KMO takes values between 0 and 1, where 0,6 is recommended as the minimum amount acceptable for good factor analysis. For

determining the number of factors to extract, the Kaiser's criterion is applied (the rule is simply to retain factors whose eigenvalues are greater than 1), and Cronbach's alpha coefficient ($\alpha \geq 0,60$) for determining the relationship of the variable with a certain factor, in order to perform the factor interpretation Cronbach, 1951). The Mann-Whitney U test is used to analyse differences between two independent groups, and the Kruskal-Wallis test for more than two groups. The above analyses were carried out using the SPSS statistical package (Statistical Package for Social Science, Ver.21).

4. PRESENTATION AND DISCUSSION OF RESEARCH RESULTS

Factor analysis was carried out in order to better understand the motives of females to engage in the entrepreneurial process. Before conducting the analysis, it was verified that the assumptions for its implementation were satisfied.

Table 2

Correlation matrix

Motives	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈
X ₁	1.000	0.824	0.415	-0.271	-0.216	-0.431	-0.276	0.253
X ₂		1.000	-0.526	0.405	0.371	0.349	0.295	0.399
X ₃			1.000	0.413	0.471	0.260	0.200	0.347
X ₄				1.000	0.487	0.634	0.712	0.657
X ₅					1.000	0.754	0.469	0.652
X ₆						1.000	0.693	0.570
X ₇							1.000	0.653
X ₈								1.000

Note. Author's calculation.

Therefore, the correlation matrix of the original variables is first defined (Table 2). Based on the data presented, it can be concluded that the assumption regarding the boundary value of the correlation coefficients is fulfilled (all variables have at least one value $|r| \geq 0,3$). The results of KMO and Bartlett's Test justified the use of factor analysis (Table 3).

Table 3

Kaiser-Meyer-Olkin and Bartlett test

Kaiser-Meyer-Olkin measure of sampling adequacy		0.674
	Approx. Chi-Square	391.736
Bartlett's test of sphericity	df	28
	Sig.	0.000

Note. Author's calculation.

Results of the analysis of the main components indicate that two factors should be retained as relevant for further analysis, based on determined characteristic roots (Table 4). The selected factors explain 54.162% and 19.388% of the total variance. A minimum value of about 60% of variance explained is satisfactory in social sciences research (Hair, Anderson and Tahtam, 1987), while this solution explains cumulatively 73.55% of the variance.

Table 4

Total Variance Explained

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.333	54.163	54.162	4.333	54.162	54.163	3.133	39.162	39.162
2	1.551	19.388	73.550	1.551	19.388	73.550	2.751	34.388	73.550
3	0.659	8.238	81.788						
4	0.522	6.525	88.313						
5	0.497	6.215	94.527						
6	0.283	3.538	98.065						
7	0.115	1.437	99.502						
8	0.040	0.498	100.00						

Note. Author's calculation.

Factor matrix whose elements are factor weightings is obtained by Varimax rotation, and weights with a value greater than 0,6 were considered to be significant, so, the factor interpretation was performed based on their correlation with a certain factor (Table 5).

Table 5

Factor Loading Matrix after Varimax Rotation

Motives	Factor		Communalities
	1	2	
X ₁	-0.165	0.912	0.858
X ₂	0.231	0.878	0.824
X ₃	0.051	0.728	0.533
X ₄	0.727	0.054	0.532
X ₅	0.708	0.086	0.509
X ₆	0.802	-0.117	0.657
X ₇	0.785	-0.038	0.618
X ₈	0.696	0.180	0.517

Note. Author's calculation.

The first factor contains a number of significant factor loadings (table 5) and the following variables have a statistically significant correlation with this factor: X₄ (I have an idea that I think is worth the effort), X₅ (I need to make a significant change in my life), X₆ (I want to do a creative job), X₇ (I need to make greater use of my knowledge, skills and talents) and X₈ (I want to combine nice and useful and turn my hobby into a career).

The second factor contains 19.388% variations of all characteristics, which cumulatively with the first factor makes 73.55%. The following features have a high and significant connection with this factor: X₁ (profit), X₂ (family security), X₃ (I want to be my own boss).

Taking into account the nature of the variables that are grouped around selected factors, it can be concluded that the motivations of female entrepreneurs for entrepreneurship can be seen through two dimensions, namely: the need for self-assertion (first factor) and the need for material security (second factor).

Confirmation of factor analysis can also be seen through the calculated mean values in Table 6. Motives related to the first factor are all on average rated by more than 4 (meaning they are significant or very significant), while motives related to the second factor have lower average values, particularly

characteristic for profit (X_1) where most entrepreneurs consider that this motive is important, but not significant and very significant ($Mo = 3$).

Table 6

Calculated mean values

Motives	\bar{X}	Me	Mo
X_1	3.59	4	3
X_2	3.80	4	5
X_3	4.00	4	5
X_4	4.43	5	5
X_5	4.04	4	5
X_6	4.31	5	5
X_7	4.44	5	5
X_8	4.06	4	5

Note. Author's calculation.

The Mann-Whitney U test was used to examine possible differences in motives for engaging in entrepreneurship among female entrepreneurs of different age groups. The results show (Table 7) that there is no statistically significant difference between these two age groups except for the third motive (I want to be my own boss) where younger female entrepreneurs (26-45 years) give greater importance to this motive than the older group (46-65 years).

The Kruskal-Wallis test (Table 7) was used to analyze the differences between groups of female entrepreneurs of different education level, marital status, length of service and number of employees.

Among the groups of female entrepreneurs of different education level, statistically significant differences occur in the third, fourth, fifth and eighth motive. Female entrepreneurs with tertiary education give greater importance and have a greater motivation to become their own boss and to realize an idea that is worth the effort than the other two groups. Female entrepreneurs with secondary education are motivated to change something significant in their lives, as well as to turn a hobby into a career, so these motives are statistically more important than in other groups.

Table 7

Results of the Mann-Whitney U and the Kruskal-Wallis test

		Motives for entrepreneurship							
		X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈
Age	26-45 years n=90	Z= -1.88 ^{nz} p=0.06	Z= -1.60 ^{nz} p=0.11	Z= -3.96 ^{**} p=0.00 Me ₍₂₆₋₄₅₎ =5 Me ₍₄₆₋₆₅₎ =4	Z= -1.326 ^{nz} p=0.18	Z= -0.74 ^{nz} p=0.46	Z= -1.49 ^{nz} p=0.14	Z= -1.24 ^{nz} p=0.22	Z= -1.27 ^{nz} p=0.20
	46-65 years n=72								
Education level	Secondary school n=15	X ² = 1.02 ^{nz} df=2 p=0.60	X ² = 2.65 ^{nz} df=2 p=0.27	X ² = 18.79 ^{**} df=2 p=0.000 Me _(secondary) = 4 Me _(higher) =3 Me _(faculty) =5	X ² = 13.79 ^{**} df=2 p=0.001 Me _(secondary) =5 Me _(higher) =4 Me _(faculty) =5	X ² = 11.14 ^{**} df=2 p=0.004 Me _(secondary) =5 Me _(higher) =4 Me _(faculty) =3	X ² = 5.15 ^{nz} df=2 p=0.08	X ² = 4.89 df=2 p=0.09	X ² = 6.20 [*] df=2 p=0.049 Me _(secondary) =5 Me _(higher) =3.5 Me _(faculty) =4
	Higher school n=24								
	Faculty n=123								
Marital status	Married n=123	X ² = 1.02 ^{nz} df=2 p=0.60	X ² = 0.58 ^{nz} df=2 p=0.75	X ² = 16.57 ^{**} df=2 p=0.000 Me _(married) =4 Me _(single) =5 Me _(divorced) =4	X ² = 4.13 ^{nz} df=2 p=0.13	X ² = 21.05 ^{**} df=2 p=0.000 Me _(married) =4 Me _(single) =3.5 Me _(divorced) =5	X ² = 9.33 ^{**} df=2 p=0.009 Me _(married) =5 Me _(single) =4.5 Me _(divorced) =5	X ² = 4.18 ^{nz} df=2 p=0.12	X ² = 3.09 ^{nz} df=2 p=0.21
	Single n=18								
	Divorced n=21								
Length of service	1-5 years n=54	X ² = 19.20 ^{**} df=2 p=0.000 Me ₍₁₋₅₎ =4 Me ₍₅₋₁₀₎ =3 Me _(over 10) =3	X ² = 24.20 ^{**} df=2 p=0.000 Me ₍₁₋₅₎ =4.5 Me ₍₅₋₁₀₎ =3 Me _(over 10) =4	X ² = 19.31 ^{**} df=2 p=0.000 Me ₍₁₋₅₎ =5 Me ₍₅₋₁₀₎ =4 Me _(over 10) =4	X ² = 12.23 ^{**} df=2 p=0.002 Me ₍₁₋₅₎ =5 Me ₍₅₋₁₀₎ =5 Me _(over 10) =5	X ² = 5.31 ^{nz} df=2 p=0.07	X ² = 11.60 ^{**} df=2 p=0.003 Me ₍₁₋₅₎ =5 Me ₍₅₋₁₀₎ =4 Me _(over 10) =5	X ² = 2.54 ^{nz} df=2 p=0.28	X ² = 6.70 [*] df=2 p=0.035 Me ₍₁₋₅₎ =4.5 Me ₍₅₋₁₀₎ =3 Me _(over 10) =4
	5-10 years n=51								
	Over 10 years n=57								
Number of employees	Up to 10 n=126	X ² = 14.12 ^{**} df=2 p=0.001 Me _(do 10) =4 Me ₍₁₁₋₅₀₎ =3 Me ₍₅₁₋₁₀₀₎ =5	X ² = 7.68 [*] df=2 p=0.21 Me _(do 10) =4 Me ₍₁₁₋₅₀₎ =4 Me ₍₅₁₋₁₀₀₎ =5	X ² = 0.45 ^{nz} df=2 p=0.79	X ² = 10.83 ^{**} df=2 p=0.004 Me _(do 10) =5 Me ₍₁₁₋₅₀₎ =4 Me ₍₅₁₋₁₀₀₎ =4.5	X ² = 0.31 ^{nz} df=2 p=0.86	X ² = 9.21 ^{**} df=2 p=0.01 Me _(do 10) =4 Me ₍₁₁₋₅₀₎ =4.5 Me ₍₅₁₋₁₀₀₎ =3.5	X ² = 17.12 ^{**} df=2 p=0.000 Me _(do 10) =5 Me ₍₁₁₋₅₀₎ =4 Me ₍₅₁₋₁₀₀₎ =4.5	X ² = 3.92 ^{nz} df=2 p=0.14
	11-50 n=30								
	51-100 n=6								

Note. Author's calculation.

Marital status, as an independent variable, significantly separates female entrepreneurs as regards the third, fourth and sixth motive. It is more important for single female entrepreneurs to become their own boss than those who are married and divorced, it is also very important for divorced women to change something in their life, and it is less important for single female entrepreneurs to do the creative job than it is important for the other two groups.

The length of the entrepreneurial service is also very important and significantly separates the entrepreneurs on motives for engaging in entrepreneurship. There is no significant difference only in the fifth and seventh motive. The following motives are more important to entrepreneurs with an entrepreneurial experience of 1-5 years than other groups: profit (X_1), family security (X_2), I want to be my own boss (X_3) and I want to combine nice and useful and turn my hobby into a career (X_8). I want to do a creative job (X_6) is a motive that is less significant for female entrepreneurs with entrepreneurial experience of 5-10 years than other groups.

Profit and family security are motives of greater significance to female entrepreneurs whose company employs 51-100 workers, while the idea that is worth the effort and need to make greater use of knowledge, skills and talents are the motives of the greatest importance for female entrepreneurs with up to 10 employees in the company.

4. CONCLUSION

The motivation of female entrepreneurs to start their own business is a complex phenomenon, given the complex structure of start-up motives for entrepreneurial activity. Previous studies observed inconsistent results on the motivation of female entrepreneurs. According to some authors, the primary motives for female entrepreneurial activities are related to the need for success, independence, self-achievement, and autonomy (Carter, Brush, Greene, Gatewood & Hart, 2003; Xavier et al., 2012). According to others, female entrepreneurs have largely been "pushed" into entrepreneurship (Bardasi, Sabarwal & Terrell, 2011; Klapper & Parker, 2010). There are also differences in the motivation of female entrepreneurs in developed and developing economies (Vossenbergh, 2013). In developed countries, female entrepreneurs are encouraged to take advantage of opportunities, while in developing countries and transition economies they are more likely to be pushed into entrepreneurship by the non-existence of another option (Manolova, Carter, Manev & Gyoshev, 2007).

Factor analysis showed that the female entrepreneurs survey participants in Serbia favour the qualitative aspects of the motives for entrepreneurship such as: the need to make greater use of their knowledge and skills, to realize an idea that is worth the effort, the desire to engage in a creative job, as opposed to more quantitative aspects such as profit and family security. Survey results also confirm that not all female entrepreneurs have the same preferences regarding motives for engaging in entrepreneurship. Therefore, the second null hypothesis ($H2_o$) is rejected and an alternative hypothesis ($H2_a$) is accepted.

The research has clearly shown that female entrepreneurs differ according to the preferences of individual motives for entrepreneurship, which confirmed the first null hypothesis ($H1_o$) and rejected the alternative hypothesis ($H1_a$). Quantitative motives (profit and family security) are of great importance for female entrepreneurs with entrepreneurial experience of 1-5 years and with a number of employees from 51 to 100, while in other categories there are no statistically significant differences. The greater significance of motivation to become their own bosses is identified for faculty-educated and single female entrepreneurs with entrepreneurial experience of 1-5 years than for other categories. The change in life as a motive for entrepreneurship is more important for female entrepreneurs with secondary education and divorced female entrepreneurs.

An idea that it is worth the effort is a motive that mostly female entrepreneurs describe as very significant. Entrepreneurs with higher education and those who have from 11 to 50 employees find this motive less significant. Engaging in a creative job is also rated as a very important motive, but it is seen as slightly less important by single female entrepreneurs, those with an entrepreneurial experience of 5-10 years and 51-100 employees. The need to make greater use of the knowledge, skills and talents of female entrepreneurs stands out as a very important motive that made them engage in entrepreneurship, and only female entrepreneurs with 11-50 employees believe it is less important. Female entrepreneurs with secondary school and those who have up to 5 years of entrepreneurial service gave slightly higher importance to the desire to turn the hobby into a career as a motive for engaging in entrepreneurship.

The growing expansion of entrepreneurship initiated discussions concerning the motives that encourage its development. The initial motives for entrepreneurship are considered to be very important in this process. Understanding the motivational factors is very useful for both female entrepreneurs and for the creators of the overall economic environment in this area.

Keeping in mind that women's economic activity is an under-utilized source of national competitiveness, support for their economic engagement is not only a question of economic emancipation and empowerment of women, but also an important question of the overall socio-economic progress of a society. Programs for encouraging and supporting female entrepreneurial activity should be related to both financial and non-financial aspects. Financing of innovative activities, loan guarantees, micro-crediting, co-financing the costs of training and consulting services are just some of the measures of financial support for the promotion of female entrepreneurship. Non-financial support includes the organization of educational programs, trainings, mentoring support for female entrepreneurs, as well as setting up information portals that provide problem-oriented and object-specific information to female entrepreneurs.

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RESEARCH ON BUYERS' ATTITUDES TOWARDS THE USE OF SOLAR PANELS IN HOUSEHOLDS IN THE REPUBLIC OF SERBIA

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Abstract: *In modern living conditions, the concept of sustainable development is one of the current research topics. In this context, the focus on greater use of renewable energy sources is supported both in the member states of the European Union and in the Republic of Serbia. The research problem of this paper refers to the attitudes of customers towards the use of renewable energy sources. The subject of the research is about the attitudes of customers towards the use of solar panels and panels in households. The first part of the paper sets out the theoretical basis of the research through a review of previous empirical studies that dealt with the same research problem, while the other sections are dedicated to explaining the research methodology, presenting and discussing the results of research on consumer attitudes towards the use of solar panels in households. The significance of this empirical study lies in the fact that it explores customer attitudes with regard to their sociodemographic characteristics.*

Keywords: *sustainable development, renewable energy sources, solar panels, households, buyers' attitudes, sociodemographic characteristics of buyers*

JEL classification: *M31, Q21*

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ISTRAŽIVANJE STAVOVA KUPACA PREMA KORIŠĆENJU SOLARNIH PANELOVA U DOMAĆINSTVIMA U REPUBLICI SRBIJI

Sažetak: U savremenim uslovima života koncept održivog razvoja je jedna od aktuelnih istraživačkih tema. U tom kontekstu, fokusiranost ka većoj upotrebi obnovljivih izvora energije je podržana kako u državama članicama Evropske unije, tako i u Republici Srbiji. Problem istraživanja ovog rada se odnosi na stavove kupaca prema upotrebi obnovljivih izvora energije. Predmet istraživanja govori o stavovima kupaca prema upotrebi solarnih ploča i panela u domaćinstvima. U prvom delu rada su postavljene teorijske osnove istraživanja putem pregleda prethodnih empirijskih studija koje su se bavile istim problemom istraživanja, dok su ostali delovi rada posvećeni objašnjenju istraživačke metodologije, prezentovanju i tumačenju rezultata istraživanja stavova kupaca prema upotrebi solarnih panela u domaćinstvima. Značaj ove empirijske studije se ogleda u činjenici da se ona bavi istraživanjem stavova kupaca s obzirom na njihove sociodemografske karakteristike.

Ključne reči: održivi razvoj, obnovljivi izvori energije, solarni paneli, domaćinstva, stavovi kupaca, sociodemografske karakteristike kupaca

1. INTRODUCTION

Customer attitudes are a topic that occupies a significant place in the theory and practice of marketing. Researching customer attitudes can provide useful information related to the needs and desires of the target customer segment, as well as their future intentions, which can be the basis for formulating adequate marketing strategies. In uncertain business conditions, permeated with business and market risk, determining the attitudes and preferences of customers is a very important factor for marketing management, from marketing strategies to decisions to optimize marketing programs (Janković-Milić & Lepojević, 2010).

According to Živković (2014), attitudes determine the way in which a certain person perceives, feels and reacts in relation to a certain product, service, object, person or idea. They are formed under the influence of events from the past, present and planned future, as well as on the basis of their own and/or other people's experience, and they are characterized by durability and resistance to change. There is a difference between attitudes and behavior, since attitudes have the ability to direct the customer towards a particular behavior or distract it away from it. Consequently, a change in customer attitudes causes changes in customer lifestyle (Živković, 2014).

Attitudes with a motivational character encourage customers to a certain type of behavior, and can announce a certain model of customer behavior of a particular market segment in the process of purchasing products or services (Jevtić, Alavuk & Petrevska, 2015).

The tendency of consumers to accept the lifestyle that reflects their awareness of the importance of the environment and its preservation has become more pronounced in recent decades (Stanković, Đukić & Stanković, 2020).

The negative effects of globalization have indicated an increasingly complex relationship between man and the environment, where the application of the concept of sustainable development appears to be a solution (Berber, 2009). The concept of sustainable development implies economic development that meets the needs of present generations, without compromising the ability to meet the needs of future generations. Berber (2009) states that renewable sources are practically inexhaustible and that there are some types of natural resources that have the ability to reproduce faster through natural processes in relation to the level consumed in the production process. In accordance with the application of the concept of sustainable development, it is necessary to change the attitudes of customers aimed at greater use of renewable energy sources.

Pokrajac (2009) states that sustainable development as a new philosophy of development implies the existence of synergy between the use of resources, investment flows, direction of technological development and institutional changes with the aim of increasing current and future potentials of human needs and desires.

Stefanovic and Azemovic (2012) conclude that the concept of sustainable development does not represent a strictly formulated definition, but a constant process of changing the relationship between social, economic and natural systems.

In the context of sustainable development and in addition to the need to research the profile of consumers of organic food in domestic conditions, the authors Grubor, Djokic and Milićević (2018) state that there are few studies with consistent findings about the profile of such customers' unique conclusions about the profile of such consumers have not yet been reached.

According to the research conducted by Camara, Xu and Binyet (2018), the consumer is responsible for making the right decisions that encourage sustainable development, and households are one of the most important factors influencing sustainable development management.

The focus on renewable energy sources both in the member states of the European Union and in the Republic of Serbia, puts the concept of sustainable development in the center of attention. The subject of this study relates to the attitudes of customers towards the use of solar panels and panels in households, taking into account their socio-demographic characteristics. The structure of the paper includes the theoretical foundations of research through a review of scientific papers dealing with the research of customer attitudes in relation to energy efficient behavior and their sociodemographic characteristics. The second part of the paper includes an explanation of the research methodology, presentation of the results obtained by empirical research and discussion of the research findings on the attitudes of customers towards the use of solar panels and panels in households in the Republic of Serbia. In accordance with the importance of the concept of sustainable development and the importance of using renewable energy sources, the expectations of the authors in terms of research results are that respondents will have a positive attitude towards the use of solar panels and panels.

2. REVIEW OF PREVIOUS LITERATURE

2.1. INFLUENCE OF CUSTOMER ATTITUDES ON ENERGY EFFICIENT BEHAVIOR

Consumer attitudes are formed throughout life, with constant changes that occur under their own influence or other people's experience, family, friends or the media and determine their behavior. In the context of sustainable development, changes in consumer attitudes towards energy-saving behavior are important (Nikolić-Ristić & Đokić, 2020).

Customer attitudes are an important variable that influences their energy-saving behavior. Sun, Liu and Zhao (2019) state that customers with a positive attitude towards the environment will be more willing to opt for "green consumption" in their daily lives and will have a higher level of green consumption, which is explained by the Theory of Self-Efficacy (Bandura, 1997). This theory focuses the researcher's attention on defining unforeseen obstacles that can affect behavior, i.e., the intention to buy and the Theory of Planned Behavior (Eisen, 1991) according to which consumer attitudes influence their intentions and if, unforeseen circumstances do not occur, they result in a purchase.

Attitudes refer to the extent to which a person has a favorable or unfavorable assessment of a particular behavior and depends on an assessment of financial costs, effort or time. Research conducted by Abrahams and Steg (2009) explains the variation in direct energy consumption (the more positive the attitudes about

energy conservation, the lower the direct energy consumption), and the variants in direct and indirect energy savings.

Sardianou's (2007) study highlights the impact of attitudes towards the environment as a significant variable that affects energy-saving actions, and states that well-informed customers and customers with environmental awareness can be identified as "energy savers".

Attitude is identified as an important determinant of behavior, because it represents a positive or negative assessment of an individual in terms of his behavior, so people who have a positive attitude towards reducing energy use and stronger responsibility for environmental protection show more direct and indirect energy-saving behavior (Yang, Zhang & Zhao, 2016).

The research conducted by Li, Li, Jin & Wang (2019) starts from an extended traditional theory of planned behavior and in addition to analyzing the influence of major factors (attitudes, subjective norms and perceived behavioral control), focuses on the impact of care and knowledge of the environment on the intention to purchase energy-efficient devices of urban residents of the underdeveloped province of Shanxi in the energy-rich region of central China. In addition, 305 valid questionnaires were collected by residents of Shanxi Province using a survey method conducted from June 2018 to October 2018. Based on this, it was concluded that care for the environment, knowledge, attitudes and perceived behavior control have a significant impact on the readiness of residents to purchase energy efficient appliances. When looking at the degree of impact, attitudes have the greatest impact on the intention to purchase energy-efficient appliances (Li et al., 2019).

The results of research done by Ebrahimigharehbaghi, Qian, Meijer and Visscher (2019) show the importance of variables (barriers and initiators) that affect energy efficient consumer behavior and state that the age variable has proven to be significant, so homeowners over 35 are about 2.5 times more likely to make a positive decision on energy efficient home renovation compared to homeowners (17-35 years).

Faiers, and Neame (2006) analyzed and identified household attitudes about the characteristics of solar systems and the existence of barriers to their acceptance, based on household data in central England. The authors divided the respondents who participated in the research into two groups: "early users" - 100 respondents who use solar systems and "early majority" - 1000 respondents who use other energy efficiency measures, but are not innovative enough to use solar systems. The results of empirical research show that solar systems met the expectations of "early users" which resulted in the adoption of solar system

technology, except in terms of return investment time, where their expectations were not met. Also, the results showed that the attitudes of customers who belong to the "early majority" are positive in terms of some characteristics of solar systems, but still not positive enough to adopt and apply innovative technology of solar systems.

The results of a survey in which more than 1,000 women in Serbia took part within the WISE SEE project (Women in Sustainable Energy in South-East Europe), (2018), show that women in Serbia have a positive attitude in the context of state measures to promote sustainable energy development. The overall results show that renewable energy evokes as their first association solar panels (83%), followed by wind energy (76%), and finally biomass (pellet, briquette, etc.) (48%).

2.2. CUSTOMER ATTITUDES TOWARDS ENERGY EFFICIENCY IN THE CONTEXT OF THEIR SOCIO-DEMOGRAPHIC CHARACTERISTICS

In analyzing gender as a socio-demographic variable, authors Yang, Zhang & Zhao (2016) state that women have a greater propensity for indirect energy-saving behavior than men. However, this difference between men and women is not significant for direct behavior when using energy. The results of the study confirm that households in which women make decisions about energy-saving behaviors show more direct energy-saving behaviors than those where men make decisions. Faiers and Neame (2006) in their research conclude that women are less likely to have the attitude that the use of solar systems negatively affects the exterior of the houses on which solar panels and panels are installed.

Also, Faiers and Neame (2006) showed that respondents older than 50 years are more likely to think that the payback period from investing in solar systems is longer, compared to younger respondents. Martinsson, Lundqvist & Sundström (2011) confirm that with aging, there is a greater tendency to save energy, which is more pronounced in households living in separate houses, as opposed to households in flats, emphasizing that in the analysis of age variables, savings in hot water consumption is the most significant variable.

Saradianou (2007) in his research conducted in Greece confirms that the marital status of the respondents has no influence on energy saving decisions. Martinsson, Lundqvist & Sundström (2011) believe that marital status and urbanization, sometimes show a significant impact on energy savings, but not consistently, or show a lower level of statistical significance.

Martinsson, Lundqvist & Sundström (2011) conclude that the relationship between environmental attitudes and energy savings is quite complex and emphasize the importance of the interaction between attitudes and socio-economic factors. The authors state that attitudes towards the environment play a much larger role for high-income households than for low-income households.

Describing the consumers profile, Grubor and Djokic(2016) state that when buying yogurt, for women, older respondents, as well as for mostly employed and married, it is important that yogurt is produced from organic milk, because they believe that nutrition is important for health.

3. RESEARCH METHODOLOGY

3.1. STRUCTURE OF THE RESEARCH SAMPLE

The field research was conducted during 2019 on the territory of the Republic of Serbia, in the Pčinja district. Testing of the respondents was carried out using the method of personal examination. The sample included 167 respondents from the territory of the Republic of Serbia. The precondition for someone to be a respondent was that there were (or would be in the coming period) technical bases in the household to make a reorientation to the use of solar panels and panels, i.e., that it is a decision maker in this regard.

Demographic characteristics of the respondents are shown in Table 1.

Observing the structure of the sample of respondents based on marital status, we can conclude that a significant majority of respondents are married, as well as that the majority of respondents are employed. Also, in relation to the gender structure. The number of male participants was larger than female participants.

The average age of the respondents is 44.2 years (standard deviation 13.3), the average number of household members is 3.8 (standard deviation 1.5), and the average self-assessed household income is 3.5 (standard deviation 1.1).

Table 1

Demographic characteristics of respondents

	Number of respondents	Percentage share (%)
Gender		
Male	94	56,3%
Female	73	43,7%
Marital status		
Married	128	76,6%
Single	39	23,4%
Work status		
Employed	120	71,9%
Unemployed	16	9,6%
Pensioners	23	13,8%
Students	8	4,8%

Note. Author's calculations.

3.2. STRUCTURE OF THE SURVEY QUESTIONNAIRE

The questionnaire was designed in two parts. The first part of the questionnaire referred to the socio-demographic characteristics of the respondents. In doing so, gender, age, marital status (married, single), number of household members, employment status (employed, unemployed, pensioners, students), self-assessed household income (from 1 to 5 - 1 the lowest, 5 the highest) were examined.

The second part of the questionnaire referred to the research of attitudes towards the use of solar panels and panels in the household. Attitudes were measured using a total of six statements. Each started with "Using solar panels and panels", and continued with one of the following descriptions: pleasant, likable, positive, desirable, wise, good. At the same time, the respondents expressed their attitudes using a five-point Likert scale (from "I do not agree at all" to "I completely agree"). Attitude questions were adapted from the research conducted by Eisen, Joyce, Sheikh & Gilbert Cote (2011). The aforementioned authors used a questionnaire containing 6 statements to assess each of the four main determinants of Planned Behavior Theory (attitudes, subjective norms, perceived behavioral controls, and intentions) and applied it to a sample of 79

graduate students. The energy conservation that students rated refers to energy-saving behavior in the context of turning off lights and computers when not in use, limiting hot shower time, using a bicycle, or walking instead of taking a car. However, the results of their research challenged the assumption that good information is a prerequisite for achieving the desired results and showed that environmental knowledge had no impact on energy conservation.

3.3. DATA PROCESSING METHODS

Respondents' attitudes towards the use of solar panels and panels in the household were expressed by the average grade of the answers to the 6 described questions. The independent samples t-test was used to compare respondents of different gender and marital status. One-factor analysis of variance was applied to compare different segments based on work status. Pearson's correlation was used to determine the relationship between the age of the respondents, the number of household members and the self-assessed income of the household with the attitudes of the respondents towards the use of solar panels and panels in the household.

4. DISCUSSION OF RESEARCH RESULTS

The average assessment of respondents' attitudes towards the use of solar panels and panels in the household is shown in Table 2.

Table 2

Attitudes of respondents towards the use of solar panels and panels

	N	Mean	Standard Deviation
Attitudes of respondents towards the use of solar panels and panels	167	4,33	0,82

Note. Author's calculations.

Out of the total number of respondents, only 12% give an average grade of attitudes lower than 3.5, which indicates that the attitudes towards the use of solar panels and panels are extremely positive.

In general, with the exception of income, attitudes towards the use of solar panels and panels cannot be statistically significantly explained by the sociodemographic characteristics of the respondents.

Test results $t: t(165) = 0.337; p = 0.737 > 0.05$ show that there is no statistically significant difference between men ($M = 4.31$) and women ($M = 4.34$) in their attitudes towards the use of solar panels and panels. T-test results: $t(165) = 0.581; p = 0.563 > 0.05$ show that there is no statistically significant difference between respondents who are married ($M = 4.35$) and respondents who are not married ($M = 4.26$) in attitudes towards the use of solar panels and panels.

Results of one-factor analysis of variance: $F(3) = 0.743; p = 0.528 > 0.05$ show that there is no statistically significant difference between the four groups employed ($M = 4.38$), unemployed ($M = 4.32$), pensioners ($M = 4.20$) and students ($M = 4.00$) regarding their attitudes towards the use of solar panels and panels.

The results of the Pearson correlation with respect to attitudes toward the use of solar panels and panels are shown in Table 3.

Table 3

Results of correlation of variables of age, household size and income

Age	<i>Pearson Correlation</i>	0,034
	<i>Sig. (2-tailed)</i>	0,663
	<i>N</i>	167
Number of family members	<i>Pearson Correlation</i>	-0,025
	<i>Sig. (2-tailed)</i>	0,752
	<i>N</i>	167
Household income	<i>Pearson Correlation</i>	0,173
	<i>Sig. (2-tailed)</i>	0,026
	<i>N</i>	166

Note. Author's calculations.

The above results of Pearson's correlation in relation to attitudes towards the use of solar panels and panels show that there is no correlation between the age of respondents and household size with attitudes towards the use of solar panels and panels in households, while when it comes to income there is a weak, positive and statistically significant correlation with attitudes ($p < 0.05$).

The results obtained in the study partly coincide with the results obtained by Yang and his associates (2016), as well as with the research of Faiers and Neame (2006), in the sense that they show that women have a slightly more positive attitude towards the use of solar panels and panels compared to men, but this difference is extremely low.

With reference to marital status, the results of the survey are consistent with the results of Saradianou (2007) where 51% of respondents were married and the survey confirms that the marital status of respondents does not affect energy saving decisions, while the results differ from Martinsson, Lundqvist & Sundström (2011) results who state that the marital status of the respondents can occasionally have a significant impact on energy savings, but at a lower level of statistical significance.

When it comes to the respondents' age variable, Faiers and Neame (2006) obtained different research results compared to the results presented here, as well as Martinsson, Lundqvist & Sundström (2011) who confirm that within the analysis of the age variable, savings in hot water consumption is the most important determinant, noting that the coefficient for saving hot water is twice as high as the coefficient for heating.

However, for the income determinant, Martinsson, Lundqvist & Sundström (2011) state that environmental attitudes play a significantly greater role for high-income households than low-income households, while this study concludes that there is a weak, positive and statistically significant correlation with attitudes when it comes to income.

4. CONCLUSION

Research on consumer attitudes towards the use of solar panels and panels in the Republic of Serbia is needed with respect to sustainable development concept, and ultimately to increase the use of renewable energy sources. The marketing implications of this paper relate to pointing out the factors that in modern living conditions have or do not have an effect on the attitudes of customers, as well as to consider these attitudes in general.

The results obtained in this research indicate that the attitudes towards the use of solar panels and panels are extremely positive. This finding suggests a possible connection between customer attitudes and customer awareness of the positive environmental effects of increased use of renewable energy sources. However, whether positive attitudes will be transformed into purchases also depends on the living standard and the possibility of financing energy efficient investments.

In the context of sociodemographic characteristics of customers, the general conclusion of the research is that, with the exception of income, attitudes towards the use of solar panels and panels cannot be statistically significantly explained by the sociodemographic characteristics of respondents.

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FOREIGN TRADE IN AGRICULTURAL PRODUCTS BETWEEN THE REPUBLIC OF SERBIA AND THE REPUBLIC OF KAZAKHSTAN - A DECADE SINCE THE SIGNING OF THE FREE TRADE AGREEMENT

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Abstract: *Modern international economic relations, among other things, are characterized by establishing bilateral and multilateral cooperation between countries in order to liberalize trade relations. The implementation of reached free trade agreements affects economic trends in the signatory countries, the intensification of their foreign trade as well as the increase in the attractiveness of countries as investment destinations. From 2000 onwards, Serbia has signed several free trade agreements with European countries and the United States. Ten years ago, a free trade agreement was signed with the Republic of Kazakhstan in order to encourage the development of mutual trade and economic relations, accelerate economic development, improve living and working conditions, increase employment and establish fair competition between economic entities from Serbia and Kazakhstan. The subject of the mentioned trade relations are also agri-food products, whose production in Serbia is supported by an excellent raw material base, and has always been a part of national tradition and culture. The research subject of this paper is foreign trade of agricultural products between Serbia and Kazakhstan with regard to free trade agreements. The research aim is to determine the differences in the movement of exports and imports between the mentioned countries in the period before and after the signing of the free trade agreement.*

Keywords: *Free Trade Agreement, Republic of Serbia, Republic of Kazakhstan, foreign trade, agricultural products*

JEL classification: *F18, F53, Q17*

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SPOLJNOTRGOVINSKA RAZMENA POLJOPRIVREDNIH PROIZVODA IZMEĐU REPUBLIKE SRBIJE I REPUBLIKE KAZAHSTAN – DECENIJA OD POTPISIVANJA SPORAZUMA O SLOBODNOJ TRGOVINI

Sažetak: *Savremene međunarodne ekonomske odnose, između ostalog, karakteriše i uspostavljanje bilateralne i multilateralne saradnje među državama u cilju liberalizacije trgovinskih odnosa. Primena sklopljenih sporazuma o slobodnoj trgovini utiče na privredna kretanja u zemljama potpisnicama, zatim na intenziviranje njihove spoljnotrgovinske razmene i na povećanje atraktivnosti zemalja kao investicionih destinacija. Od 2000. godine pa nadalje, Srbija je potpisala nekoliko sporazuma o slobodnoj trgovini sa evropskim zemljama i SAD. Pre deset godina potpisan je i sporazum o slobodnoj trgovini sa Republikom Kazahstan kako bi se podstakao razvoj međusobnih trgovinsko-ekonomskih odnosa, ubrzao ekonomski razvoj, poboljšali uslovi života i rada stanovništva, povećala zaposlenost i uspostavila lojalna konkurencija između privrednih subjekata iz Srbije i Kazahstana. Predmet pomenutih trgovinskih odnosa su i poljoprivredno-prehrambeni proizvodi, čija je proizvodnja u Srbiji podržana odličnom sirovinskom osnovom, a oduvek je predstavljala i deo nacionalne tradicije i kulture. Predmet istraživanja ovog rada jeste spoljnotrgovinska razmena poljoprivrednih proizvoda između Srbije i Kazahstana u kontekstu sporazuma o slobodnoj trgovini. Cilj istraživanja se odnosi na utvrđivanje razlika u kretanju izvoza i uvoza među pomenutim zemljama u periodu pre i nakon potpisivanja sporazuma o slobodnoj trgovini.*

Ključne reči: *Sporazum o slobodnoj trgovini, Republika Srbija, Republika Kazahstan, spoljnotrgovinska razmena, poljoprivredni proizvodi*

1. INTRODUCTION

In the conditions of increased globalization, regional and subregional cooperation between countries, which is based on the fulfillment of common interests and the satisfaction of individual needs, has become increasingly important. Modern international economic relations are clearly recognizable by the phenomenon of regional integration. This is also supported by Knežević and Pavlović (2014) who point out that one of the most significant tendencies in the development of the modern world is the growth of economic integration

processes and the establishment of a large number of trade blocs of universal and regional character. Growing interdependence at the global level and the achieved level of development of the economy and technology have imposed an even greater need to improve and deepen the existing, classic forms of international economic integration. Lapenko (2018) emphasizes that despite different levels of integration and the degree of economic influence, regional integration organisations already play the role of independent actors in the world economy. In this context, Vasily and Ivolga (2013) point out that in addition to the fact that trade integration in certain circumstances can cause certain harmful effects, it can certainly bring about certain benefits.

Visible investments in the Serbian economy began only after 2000, and since then significant variations in foreign investment trends could be noticed. These variations have occurred primarily due to the impact of the global economic and financial crisis, as well as the announcement of Serbia's accession to the EU and gaining candidate status, signed free trade agreements, features of the business environment, implementation of institutional reforms and attraction of investments through privatization processes. Bjelić and Dragutinović Mitrović (2012) support the above-mentioned stance and point out that since 2000, the Republic of Serbia (hereinafter Serbia) has reappeared as one of the participants in international trade. The year of 2000 was also marked by the intensification of foreign trade relations between Serbia and Russia by signing a free trade agreement, which provided Serbia with a privileged position in relation to other European countries. Liberalization of regional trade relations in Southeast Europe began next year with signing the Memorandum of Understanding on Trade Liberalization and Facilitation under the auspices of the Stability Pact for South-Eastern Europe. In the mentioned process, Serbia was one of the signatories of more than 30 agreements on international liberalization of trade in industrial and agricultural products. The improvement of Serbia's foreign trade position at the international level and its attractiveness as an investment destination was encouraged by signing the Stabilization and Association Agreement and the Interim Agreement on Trade with the European Union (hereinafter EU) in 2008, the Free Trade Agreement with the member states of European Free Trade Association (hereinafter EFTA), then with Belarus and Turkey in 2009, next year with Kazanstan, and joining the Generalized System of Preferences with the United States in 2018. On the other hand, Bartlett (2009) emphasizes that the Balkan states, including Serbia, are involved in a very complex and contradictory process of simultaneous regional integration and disintegration. The key instrument of regional integration is the network of bilateral trade agreements concluded by the mentioned countries under the auspices of the Stability Pact for South-Eastern Europe and the CEFTA agreement.

Božić and Nikolić (2013) claim that the strengthening of integration processes in the global economy is a trend that largely determines the characteristics of overall international trade, especially trade in agricultural and food products. Research on trends in trade in agricultural and food products in some regions of the world indicates the existence of significant differences in the level of intra-industry trade. Bojnec (2001) points out that the mentioned differences are most noticeable in Europe. Agricultural products have traditionally had a significant presence in the export structure of the Serbian economy. In the conditions of the economic crisis, the agricultural sector of Serbia has shown the highest degree of resistance in production and exports during the past decades, and has contributed to achieving the country's foreign trade balance and reducing the negative balance. Research on foreign trade of agricultural products, especially in the conditions of new economic integrations and regional connections among countries, is becoming a very current topic in the scientific and professional literature.

In 2010, Serbia signed a free trade agreement with Kazakhstan, thus establishing a free trade regime in mutual trade in goods and services, in accordance with national legislation, the provisions of this agreement and WTO rules. The research subject of this paper is the foreign trade of agricultural products between Serbia and Kazakhstan before and after the signing of the free trade agreement. The paper will pay special attention to the economic circumstances in Serbia, the potential of agricultural production and trade, the challenges posed by the provisions of the signed free trade agreement with Kazakhstan and the analysis of quantitative trends in imports and exports between Serbia and Kazakhstan in 2004-2019, that is, before and after the signing of the free trade agreement.

2. ECONOMIC ENVIRONMENT IN THE REPUBLIC OF SERBIA

The global financial crisis has pointed to many structural weaknesses in Serbia's economic growth model and at the same time encouraged the solution of fiscal problems and the acceleration of the unfinished transition from a centrally planned to a market economy structure. The rapid economic growth recorded in the country between 2001 and 2008 was largely supported by an increase in domestic consumption and led to significant internal and external imbalances, so that it proved completely unsustainable. Serbia has gone through a truly dramatic period of change, adapting to extremely rapid changes in the political

and economic environment. In the future, structural reforms are expected to continue and special attention will be paid to public administration reforms, solving problems related to public finances and transforming the social sector, accompanied by ongoing negotiations and additional efforts in the process of joining the European Union. According to the World Bank data, 6.98 million people lived in Serbia in 2018, and GDP amounted to US \$ 50.64 billion. In the same year, the dominance of imports over exports of products and services was recorded, i.e. the share of exports in GDP was 50%, while imports reached a share of 59%. As Stanojević and Jovancai (2015) state, the key features of the current trade relations of Serbia with foreign countries are a high and growing foreign trade deficit and a very small number of export partners. For a long time now, Serbia has been achieving almost all of its exports on the markets of only a few, mostly neighboring, countries, and the need for geographical diversification of exports and finding new export markets has become widely perceived.

Some of the goals that should be pursued soon are related to ensuring economic and financial stability, stopping the accumulation of public debt, creating a favorable environment that would support economic recovery as well as increasing economic growth rate while encouraging employment and raising living standards. These goals will be achieved primarily through the implementation of fiscal consolidation measures, accelerating structural reforms and encouraging the inflow of foreign direct investment (FDI). It can be said that Serbia is competing with other countries in the SEE and CEE region in attracting as much foreign investment as possible, primarily by establishing liberal FDI laws, reducing corporate income taxes and removing trade barriers and investment bans. Cheng and Kwan (2000) point out that many countries view attracting FDI as a very important element in their economic development strategies because they are considered to be a combination of capital, technology, marketing and management.

Owing to its many advantages such as favorable geographical strategic position, availability of natural resources, liberal labor laws, favorable employment and dismissal policies, friendly FDI laws, low start-up costs, benefits resulting from signed multilateral and bilateral free trade agreements as well as candidate status for EU membership, Serbia over time has become a very attractive investment destination (Stankov, Markov & Milošević, 2017).

3. CONTRIBUTION OF THE FREE TRADE AGREEMENT TO THE ATTRACTIVENESS OF THE REPUBLIC OF SERBIA AS AN INVESTMENT DESTINATION

During 2012, Serbia was marked as a very attractive investment destination, one of the leaders in the CEE region in terms of attracting production-oriented FDI as well as those that create new jobs. In addition to the available qualified and cheap labor, competitive business costs, financial incentives and impetus, a very important benefit for foreign investors comes from the duty-free treatment provided by numerous trade agreements to which Serbia is one of the signatories. In this context, Stankov (2017) emphasizes that the Stabilization and Association Agreement was signed in April 2008, by which Serbia undertook the obligation to establish a free trade zone and harmonize its own legislation with the *acquis communautaire*. At the same time, the Interim Agreement on Trade was signed, which envisages the gradual establishment of free trade in industrial and agricultural products in the next six years, with special emphasis being paid on the reduction or abolition of customs duties on certain types of products. Observing Serbia's foreign trade position, Jelisavac Trošić, Stojanović Višić and Petrović (2018) claim that it can become a "production hub" for duty-free exports to markets involving more than a billion people, including the EU, Russia, the USA, Kazakhstan, Turkey, Southeast Europe, EFTA members and Belarus.

Serbia is one of the very few countries in Europe that signed a Free Trade Agreement with Russia in 2000 that has provided for exemption from customs duties in certain circumstances and under prescribed conditions. In order to improve and deepen trade cooperation, Serbia signed free trade agreements with Belarus and Turkey in 2009 and with Kazakhstan in 2010, thus obtaining exemption from customs duties or the use of customs preferences under strictly prescribed conditions (Stankov, Roganović & Marjanski Lazić, 2016). Using the gravity model, Baier and Bergstrand (2007) analyzed changes in foreign trade and concluded that free trade agreements concluded between certain countries significantly have affected the growth of trade in the signatory countries.

Serbia's foreign trade with the United States is largely regulated by the Generalized System of Preferences, which was approved in July 2005. Through this program, the United States grants trade preferences to other countries, its

trading partners, in order to stimulate their economic development and provides preferential duty-free treatment for most final products and semi-finished products, as well as certain agricultural products and raw materials originating from those countries. It should be emphasized that no country with which free trade agreements have been signed so far has given Serbia such benefits as the EU has given it. The EU, as the most important trade partner of Serbia, participates with about 60% in the total trade exchange of Serbia, while, for example, the participation of Russia is about 9%, and China's participation is approximately 4.4% (Grandov, Stankov & Roganović, 2014). In addition to being the main trade partner, the EU is also Serbia's main investment partner.

In addition to the above, foreign investors are particularly interested in all other trade benefits and facilitations provided to them in Serbia, which are realized on the basis of signed Free Trade Agreements between Central European countries (CEFTA) and Free Trade Agreements with with the member states of European Free Trade Association (EFTA). Under the auspices of the Stability Pact for South-Eastern Europe, the process of liberalizing the region's market began in 2001 with the signing of a Memorandum of Understanding on Trade Liberalization and Facilitation. On that occasion, a number of agreements on mutual liberalization of trade in agricultural and industrial products were signed between the countries of Central and Southeast Europe (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Romania, Serbia and Montenegro). CEFTA provides market expansion for all products but also trade under the same conditions for all producers, expands and modernizes the domain of free trade, opens a larger market for trade and investment and develop institutions responsible for management in this area. The agreement envisages the liberalization of public procurement and the attraction of investments in the signatory countries, and also increases the chance of entering European markets under preferential, privileged treatment. After Bulgaria, Romania and Croatia joined the EU, the benefits provided by this agreement ceased to apply to them; however, they continued to apply to remaining signatory countries. In December 2009, the Government of Serbia signed a free trade agreement with EFTA member states (Iceland, Liechtenstein, Norway and Switzerland) and thus took another step towards improving Serbia's position in the international trade system. In this way, producers and exporters from Serbia were not only enabled to export duty-free products to a market of nearly 13 million inhabitants, but were presented with the opportunity to attract new foreign investment, given that EFTA member states have so far invested significant funds in the Serbian economy that reach an amount of close to two billion euros.

It must be mentioned that, in addition to the above, Serbia has also developed foreign trade relations with the countries of Eurasia. Đukanović and Gajić (2012) state that in the geopolitical sense, the term Eurasia is most often used as a synonym for the post-Soviet space, i.e. the territory to which the independent states have belonged after the collapse of the Soviet Union. The agreement on the free trade zone between the Eurasian Economic Union (EAEU) and the Republic of Serbia envisages a high degree of liberalization of mutual trade, which, among other things, is reflected in the non-collection of customs duties on almost 99% of customs tariff products. Among the EAEU member states, Russia is certainly the most important economic and trade partner of Serbia. The results of the research conducted by Miljković (2018) indicate that, after Russia, Kazakhstan is in second place, while symbolic economic cooperation is being achieved with other countries of this integration. The mentioned author also concludes that the preferential trade agreements signed between the Republic of Serbia and the EAEU member states have not given their full economic effect so far. Serbia hardly uses the benefits provided by the free trade agreement with Kazakhstan signed ten years ago. The future of this agreement, among other things, depends on Serbia's progress towards EU membership. Rapaić and Dabić (2013) point out that the differences in the level of customs burden in the Republic of Serbia and the EU are very visible, and that with EU membership, Serbian goods will lose preferential treatment in Russia, Kazakhstan, Belarus and the USA.

4. CHALLENGES OF THE FREE TRADE AGREEMENT BETWEEN THE REPUBLIC OF SERBIA AND THE REPUBLIC OF KAZAKHSTAN

Kazakhstan is a country in the Caspian Basin that has a much wider national market compared to Serbia, given that according to the World Bank in 2018, Kazakhstan had a population of 18.28 million (almost 3 times higher than Serbia), while GDP amounted to US \$ 179.34 billion (as much as 3.5 times more than in Serbia). In the same year, the dominance of exports over imports of products and services was recorded, given that exports amounted to 38% of GDP and imports to 26% of GDP. At the beginning of the 1990s, Kazakhstan became an independent state and began the process of economic transformation and transition from a centrally planned to a market economy. This country is considered the most attractive destination for foreign investors in Central Asia.

In that context, Kunekova (2015) points out that as much as 70% of the inflow of foreign investments in Central Asia was realized in Kazakhstan.

The development of the national economy is mainly based on the use of extensive natural resources. Kazakhstan is one of the leading countries in oil production and exports in the region. The share of oil in the total exports of Kazakhstan used to be around 15%, while after the implemented reforms supported by foreign investments, that share increased to almost 60%. In the given context, Stanojević and Jovancai (2015) point out that due to the position of this country on the transit oil and gas pipeline, oil exports mainly take place towards the Russian Federation. The service sector contributes more than 60% to GDP, followed by the industrial sector and then agriculture. In line with the above, Eren (2012) notes that the share of agriculture in the GDP of this country is declining with a simultaneous increase of the share of the industrial and service sectors in GDP.

Kazakhstan is dominated by the production of machinery, especially agricultural machinery, then electric motors and construction materials, and as much as half of total exports are directed to EU countries. Exploring the competitive advantages of Kazakhstan's foreign trade, Bozduman and Erkan (2019) called this country a "rising star" of Central Asia. The mentioned authors concluded that Kazakhstan has competitive advantage in the export of oil and oil derivatives, natural gas, non-ferrous metals, inorganic chemical products, iron and steel, raw and processed leather and fur, etc. Imanberdiev, Kasimov and Turiginbaeva (2001) investigated the impact of technological advantages, especially innovation, on the economic development of Kazakhstan, and concluded that the global picture of innovation processes in the country was mainly defined by the metallurgy sector (almost 85%), followed by construction, chemical industry and mining, and that agriculture in this context emerged as a complete "outsider".

Kazakhstan is one of the world's largest landlocked countries, which certainly affects its export potential and in a sense limits its access to global markets. In this context, Nordas, Pinali and Grosso (2006) point out that many bilateral relations are characterized by suspicion, mistrust and lack of cooperation on transit issues. Kazakhstan has significant potential for exporting processed dairy products to neighboring countries, but a number of market barriers reduce real market opportunities. However, despite the mentioned limitations, Immamverdiyev (2017) claims that in the whole of Central Asia only Kazakhstan has comparative advantage in wheat exports which are directed in three key directions: Iran, Azerbaijan, Georgia and Turkey, then Central Asian countries and European countries.

The Free Trade Agreement between the Republic of Serbia and the Republic of Kazakhstan was signed on October 7, 2010, and came into force on January 1, 2011. The objectives of this agreement are: to expand and encourage mutual trade and economic relations aimed at accelerating the economic development of these countries, improving the living and working conditions of their citizens, increasing employment in the field of production, establishing production and financial stability, providing conditions for fair competition between economic entities from the signatory countries. Serbia and Kazakhstan, in accordance with national legislation, the provisions of this agreement and WTO rules, have established a free trade regime in mutual trade in goods and services.

In order to implement the provisions of this Agreement, the signatory countries may conclude international agreements on mutual recognition of test results, certificates of conformity or other documents, which directly or indirectly relate to products that are the subject of their mutual trade. Products exempted from the free trade regime when exported from Serbia to the customs territory of Kazakhstan are: meat, cheese, white sugar, cigarettes, sparkling wine, undenatured ethyl alcohol, pneumatic tires, cotton fabrics, compressors for refrigeration equipment, motor vehicles (Development Agency of Serbia - RAS). On the other hand, products that are exempted from the free trade regime when imported into the customs territory of Serbia from Kazakhstan are: cheese, white sugar, cigarettes, undenatured ethyl alcohol, pneumatic tires, trucks, tractors, motor vehicles. The conditions and methods for determining the conformity of products with technical normative acts shall be determined by the authorized bodies of the Contracting States in accordance with the national legislation of the importing country and the provisions of the WTO Agreement on Technical Barriers to Trade (International Agreements No. 11/10, Article 7). The procedure of monitoring the implementation of this agreement is entrusted to the Commission consisting of representatives of authorized bodies from both countries. The Commission meets once a year, alternately in Serbia and Kazakhstan, and in addition to making recommendations related to achieving the objectives of the agreement, it also considers the results of cooperation provided for in this agreement. The Commission recommends amendments to the agreement and may, if necessary, sets up sub-commissions and working groups to facilitate the achievement of the envisaged objectives.

Table 1

Movements of the export and import values of the Republic of Serbia and the Republic of Kazakhstan by SITC sectors in thousands of USD

Years		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
<i>Export and import by SITC sectors (0-9) in thousands USD</i>	0	<i>Exp.</i>	63,3	131,6	180,7	253,8	83,7	333,7	165,6	417,0	1582,3	1276,1	1124,6	229,9	283,7	99,5	337,2	510,6
		<i>Imp.</i>	13,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	48,3	6,4	12,8	44,5	39,5	42,8	251,6	282,9
	1	<i>Exp.</i>	1,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	9,1	9,1	4,8
		<i>Imp.</i>	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	2,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
	2	<i>Exp.</i>	0,4	23,4	26,1	10,1	23,6	0,4	0,7	264,1	35,8	278,9	51,4	449,8	1052,7	1114,3	393,8	428,1
		<i>Imp.</i>	34,7	0,0	0,0	57,6	0,0	0,0	0,0	0,0	8,1	20,9	45,4	22313,4	8481,3	103,6	1,8	55,4
	3	<i>Exp.</i>	0,0	0,8	0,0	10,2	10,9	0,0	6,1	476,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,4
		<i>Imp.</i>	92039,7	109377,4	50780,2	12480,0	10926,3	14796,1	27801,5	97881,2	387601,7	877684,6	195563,2	112082,0	38586,5	51264,1	4908,3	3423,4
	4	<i>Exp.</i>	0,0	0,2	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,0	5,4	2,5	0,0	14,5	0,0	0,0
		<i>Imp.</i>	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,9	0,0	0,0	0,0	0,0	0,0	0,0
	5	<i>Exp.</i>	290,5	159,1	165,0	290,0	205,6	158,4	166,7	336,8	121,6	23,9	58,9	899,0	727,9	576,5	245,3	300,0
		<i>Imp.</i>	19,7	4,8	8,7	730,9	6418,6	2646,5	1331,7	7872,1	13058,6	4926,8	686,6	9,8	35,1	4,7	0,4	0,4
	6	<i>Exp.</i>	119,0	1683,1	3908,7	2899,1	4748,4	2817,1	1818,3	1491,8	4143,2	4075,6	4368,2	10015,4	8946,0	16214,1	8554,3	5475,9
		<i>Imp.</i>	0,5	0,0	2,0	64,2	4777,4	961,1	423,3	4935,2	14575,1	5490,2	1359,0	7603,6	5700,9	8251,6	79,4	267,2
	7	<i>Exp.</i>	526,7	369,4	821,9	5970,5	4144,7	2316,1	1408,7	2998,5	2134,3	2501,2	2110,5	5321,9	10162,1	2716,7	3825,3	5518,4
		<i>Imp.</i>	0,1	11,6	0,0	0,0	0,0	0,0	14,4	20,7	0,2	0,0	0,5	6,9	70,2	11,8	3,5	0,3
	8	<i>Exp.</i>	2,9	163,2	288,5	1999,0	2556,2	4165,8	1010,0	3882,9	3473,3	3251,2	8385,1	7341,0	3152,5	8039,2	1991,8	852,6
		<i>Imp.</i>	9,5	0,0	0,0	0,0	1,9	0,0	3,7	5,2	1,1	10,5	139,3	0,0	50,5	0,4	2,3	1,0
9	<i>Exp.</i>	34,2	0,5	10,0	0,8	0,0	0,0	0,0	1,3	3,4	147,8	742,0	140,7	6,0	10,3	3,9	69,3	
	<i>Imp.</i>	0,0	0,0	15,2	77,2	6912,4	634,4	852,8	6,5	2,0	27,7	0,0	3,4	3,8	189,6	279,9	12,1	

Note. Adapted according to data of Statistical Office of the Republic of Serbia

Legend:

0 – Food and live animals

1 – Beverages and tobacco

2 – Crude materials, inedible, except fuels

3 – Mineral fuels, lubricants and related materials

4 – Animal and vegetable oils, fats and waxes

5 – Chemicals and related products, not elsewhere specified

6 – Manufactured goods classified chiefly by material

7 – Machinery and transport equipment

8 – Miscellaneous manufactured articles

9 – Unmentioned products in SMTK

SITC – Standard International Trade Classification

Examining the value of exports and imports of Serbia and Kazakhstan, by economic sectors in accordance with SITC (Table 1), it can be concluded that in the period from 2004 to 2019 the value of exports amounted to 202,355.2 thousand USD, while imports reached almost 11 times higher value (2,220,888.7 million USD). During the observed period, Serbia imported the most mineral fuels from Kazakhstan, the value of which accounted for as much as 94% of the value of total imports, while various finished products, machines and transport devices dominated the value of exports from Serbia to Kazakhstan.

Food and live animals as a segment of agricultural production, during the observed period, had a minimal share in the foreign trade of these countries. Namely, the export of food and live animals from Serbia to the customs territory of Kazakhstan made only 3.5% of the total export value, while on the other hand the import of the mentioned products from Kazakhstan to Serbia hardly existed, it amounts to 0.04% of the total import realized among these countries. during the observed period. When comparing the realized values of exports and imports of these products, it can be noticed that the export of food and live animals from Serbia was 7.5 times higher than the value of imports of the same products from Kazakhstan to Serbia. In order to determine the intensity of foreign trade activities before and after the signing of the free trade agreement between Serbia and Kazakhstan, Table 1 shows the trends of exports and imports in the six-year period from 2004 to 2009 (before signing the agreement) and in the period from 2010 to 2015 (after signing the agreement).

Based on the data of the Statistical Office of the Republic of Serbia, it can be concluded that the total value of imports from Kazakhstan to Serbia, before signing the agreement, amounted to 313,802.4 million USD, while after signing the agreement, imports reached 1,784,523.4 million USD, or it was 5.7 times higher than in the previous period. When it comes to the total value of exports from Serbia to the customs territory of Kazakhstan, the situation is different. Namely, it was previously stated that exports were significantly lower than imports, and in the period before the signing of the agreement the value of total exports reached 41,969.2 million USD (7.5 times less than the value of imports), while after the signing of the agreement exports were slightly increased and amounted to 78,740.1 million USD, i.e. the value of total exports after the signing of the agreement increased 1.9 times compared to the previous period. In the period before the signing of the free trade agreement between the

analyzed countries, the value of exports was 7.5 times lower than the value of imports, while in the period after the signing of the agreement this difference was further deepened, and the value of exports became as much as 22.7 times lower than the value of imports.

5. POTENTIALS OF PRODUCTION AND TRADE IN AGRICULTURAL PRODUCTS OF THE REPUBLIC OF SERBIA

Agriculture and food industry in Serbia are especially attractive economic sectors that are also very attractive to foreign investors, which is clearly reflected in the value of invested funds, as well as in the number of realized investment projects. The reasons for that are an excellent raw material base, signed free trade agreements, a long tradition in food production, strong regional brands of agricultural and food products, etc. Jelisavac Trošić, Stojanović Višić and Petrović (2018) point out that in the past, Serbia was a predominantly agricultural country. At the beginning of the eighties of the twentieth century, there was a significant growth of agricultural production in Serbia, which at the end of the eighties began to stagnate, only to fall sharply during the nineties. Then came the negative trend in the production of almost all agricultural products. Bogdanova and Rodić (2014) believe that the decline in agricultural production was due to institutional disruptions, reduced subsidies and market collapse, while Van Berkum and Bogdanov (2012) point out that the influence of several factors, of both subjective and objective nature, caused Serbia's failure to exploit the competitive advantages it possessed over other countries in transition. In Serbia, reforms in the agricultural sector began almost a decade later than in other countries in transition. Šabić et al. (2012) note that in the second half of 1999, a certain recovery of the production sector was recorded in Serbia, and that the structure of production was changed in the direction of reducing the share of industry and increasing the share of agriculture, public services and energy. In the field of agriculture, aspirations were aimed at strengthening the institutional sector, improving legislative solutions, reducing the presence of the gray economy and the stability of the market for basic agricultural products. However, despite the fact that customs and non-customs barriers have been significantly reduced in Serbia, Kuzmanović and Sanfey (2014) point out that the agricultural sector still remains quite protected, primarily by high import duties.

The Republic of Serbia is a country where agriculture and food production have always been part of the culture and rich tradition. About 5 million hectares of agricultural land (of which 60% is arable land) and very favorable climatic conditions, provide a sure impetus to agricultural development. The food industry is one of the strongest sectors of the Serbian economy. According to

the RAS (Development Agency of Serbia), there is a surplus in the trade balance of agricultural products of the Republic of Serbia, which in 2018 reached as much as 1.1 billion euros, with export growth of 1.1% compared to the previous year (RAS, Invest in Serbia Agri-Food).

Table 2

Production of major types of fruits and vegetables in the Republic of Serbia during 2019

Fruit	Quantity (Tones)	Vegetables	Quantity (Tones)
Plum	558.930	Potato	702.086
Apple	499.578	Cabbage	178.308
Grape	163.516	Melon and Waterm.	163.483
Raspberry	120.058	Peppers (“Paprika”)	118.256
Sour Cherry	96.965	Tomato	111.639
Pear	54.859	Cucumber	29.711
Peach	48.204	Onion	29.588
Strawberry	19.608	Peas	25.612

Note. Adapted according to data of Statistical Office of the Republic of Serbia.

During 2019, the structure of fruit production was dominated by plums, then apples and grapes, and raspberries and cherries. As for the production of vegetables in the same year, potatoes were produced the most, much more than other vegetable crops, followed by cabbage, melons and watermelons, peppers and tomatoes. According to the Development Agency of Serbia (RAS) data, during 2018, the export of Serbian fruit amounted to 520.5 million euros, and Serbia was then the leading exporter of apples from Europe to the Russian Federation. The exceptional quality of the fruit, semi-finished products and final products from raspberries, blackberries and other berries provides Serbia with a leading position among exporters in Europe. Serbia is the dominant supplier of frozen fruit in Austria, Russia and Germany. Foreign investors engaged in the production of various fruit products are very interested in investing in the Serbian economy because that is where they can find a quality raw material base.

Thanks to the favorable climatic conditions for growing vegetables, Serbia is becoming one of the leading suppliers of vegetables in Southeast Europe. During 2018, mostly vegetable crops were produced, such as: potatoes, cabbage, melons and watermelons, peppers, tomatoes, cucumbers, onions and

peas. Among the mentioned types of vegetables, the most exported are paprika, cabbage, tomatoes and potatoes.

Livestock in Serbia has a very long tradition, especially the production of fresh and smoked pork and beef, as well as poultry. Serbian meat and processing companies have a very strong position in the CEFTA market. The production of fresh and pasteurized milk of high quality fully satisfies national needs, but a certain amount is also exported to the markets of neighboring countries, mainly Montenegro and Bosnia and Herzegovina.

By adequately exploiting the available natural resources, Serbia can ensure the growth of productivity and competitiveness of the agricultural sector in the future. In the current circumstances, agriculture makes a significant contribution to the value of GDP, affects employment and job creation. Bogdanova and Ristić (2014) point out that the contribution of agriculture to the trade balance of the Republic of Serbia is evident and that the share of the agricultural sector in total exports is about 20%.

The key changes in the dynamics and structure of trade in agricultural and food products on the international market followed the implementation of international integration processes, Serbia's membership in CEFTA and the signing of the Stabilization and Association Agreement with the EU. In this context, Božić and Nikolić (2013) point out that the liberalization of trade, which has occurred, as well as the growing international market of agricultural and food products are an exceptional opportunity to promote exports of these products from the Republic of Serbia, but on the other hand, the opening of the market can cause a serious threat to certain branches of agriculture and bring about changes in the production structure. Dealing with the analysis of intra-industry trade by groups of agricultural and food products, Božić and Nikolić (2013) state the existence of significant differences. Namely, the mentioned authors conclude that within the total foreign trade of agricultural products from the Republic of Serbia, intra-industry trade is more represented in products with a higher level of processing, where there is a significant degree of differentiation, while significantly lower level of intra-industry trade is characteristic of product groups with a lower level of processing.

By applying the gravity model of panel data, Matkovski, Lovre and Zekić (2017) covered 97.3% of the total export of agri-food products in Serbia in the period from 2004 to 2013. The model involved the formation of a set of data from 380 observations that included the export of agri-food products to 38 countries (EU member states, CEFTA member states, Russia, Belarus, Kazakhstan, Switzerland and Turkey). The mentioned authors came to the conclusion that the CEFTA agreement had a significant effect on increasing the

export of these products in the signatory countries, by an average of 90.47%, while the Stabilization and Association Agreement also had an impact on increasing the export of agri-food products in the EU member states, by an average of 49.81%. Therefore, Serbia has a double advantage in the export of these products, on the one hand on the global market, and on the other on the markets of EU countries.

6. QUANTITATIVE INDICATORS OF FOREIGN TRADE IN AGRICULTURAL PRODUCTS BETWEEN THE REPUBLIC OF SERBIA AND THE REPUBLIC OF KAZAKHSTAN

In the context of the global environment, Stojanović, Mitrović and Petrović (2013) conclude that trade in agri-food products has been constantly declining during the last decade of the twentieth century. The total export of agricultural products from Serbia is mainly directed towards the EU member states and signatories to the CEFTA agreement. In recent years, there has been a symbolic increase in the value of exports of these products to other countries, supported by the signing of free trade agreements with countries such as Russia, Turkey, Kazakhstan and EFTA members. The research conducted by Božić and Nikolić (2013) concluded that from 2005 onwards, Serbia has achieved a positive trade balance of agricultural and food products. This contributed to the agricultural sector becoming one of the few that contribute to balancing the country's foreign trade. However, Vujičić, Ristić and Vujičić (2012) point out that the productivity of agricultural production in Serbia is still at a very low level, while the production structure is not in line with EU standards. This is due to underdeveloped infrastructure in rural areas of the country, modest investment in modernization of agriculture and low intensity of business activities in this sector.

By researching Serbia's export opportunities in relation to the countries of the Caspian Basin, Stojanović and Jovancai (2015) conclude that economic relations between Serbia and Kazakhstan are very underdeveloped. Namely, the mentioned authors note that the value of potential exports of Serbia to the customs territory of Kazakhstan is many times higher in relation to the real value of exports. They state that the value of exports in 2006 was only \$ 5.4 million, in 2007 and 2008 about \$ 11 million, followed by a decline to \$ 9.8 million in 2009, and after that in 2010 exports halved to \$ 4.6 million. In the mentioned circumstances, the potential export, obtained by applying the derived

coefficients and with the existing undeveloped cooperation, amounts to as much as 18.144 million dollars.

In the period from 2012 to 2014, an intensification of cooperation between Serbia and Kazakhstan in the field of exchange of agricultural products could be noticed. The value of exports from Serbia is constantly higher than the value of imports of agricultural products from Kazakhstan. Simić (2020) notes that only 2017 is different because the value of imports exceeded the value of exports. The existence of a surplus of the foreign trade balance of agricultural products is a long-term characteristic of the Serbian economy, with the exception of 2017, when the deficit was realized (Illustration 1).

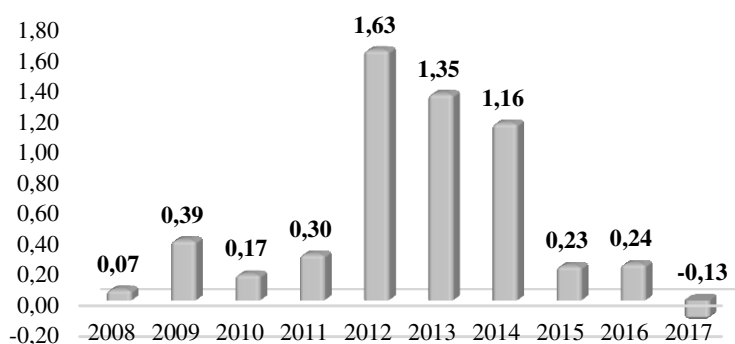


Figure 1. Foreign trade balance of agro-industrial products of the Republic of Serbia with the Republic of Kazakhstan in the period from 2008 to 2017 in millions of USD

Note. Adapted to Simić, M. (2020). *Improving the foreign trade of agro-industrial products of the Republic of Serbia with the countries of the Eurasian Economic Union - problems and perspectives*. Belgrade: Alfa BK Univesity.

Regarding the exchange of agricultural products with Kazakhstan for the period from 2008 to 2017, the average value of net exports indicates that Serbia had a surplus of 0.54 million USD in constant prices. The rate of change in net exports of these products from Serbia to Kazakhstan for the observed period is 1.80%, which indicates that there was almost no real growth in trade between these two countries (Simić, 2020). The coefficient of variation of net exports of agricultural products is 106.36%, and it can be concluded that there are extremely strong variations in foreign trade relations between the analyzed countries, as shown in Figure 1. Researching foreign trade between Serbia and EAEU countries, Simić (2020) concludes that the structure of exports of agricultural products from Serbia to the territory of Kazakhstan is dominated by dairy products, eggs, fruits and vegetables, which together account for close to

80% of total exports. Regarding the imports from Kazakhstan to Serbia, the situation is slightly different, dominated by fruits and vegetables with a share of almost 70%. If we add to that the import of fish and fish preparations and the import of cereals from Kazakhstan, it can be concluded that only these three groups of agricultural items make up more than 95% of the total import of agricultural products from Kazakhstan to Serbia.

In the period before the conclusion of the free trade agreement between Serbia and Kazakhstan, foreign trade in agricultural and food products was at an extremely low level with a pronounced dominance of exports of products from Serbia to the customs territory of Kazakhstan (Table 3).

Table 3

Export and import of agrifood products between the Republic of Serbia and the Republic of Kazakhstan in thousands of USD according to selected SITC sections before concluding a free trade agreement (from 2004 to 2009)

SITC divisions	Export/Import	2004	2005	2006	2007	2008	2009
01	<i>Export</i>		34,3				
02	<i>Export</i>						333,7
03	<i>Export</i>		17,7				
04	<i>Export</i>	64,3	79,6	180,7	176,7	40,0	
05	<i>Import</i>	13,7					
06	<i>Export</i>					2,5	
07	<i>Export</i>					1,3	
09	<i>Export</i>				77,1	39,9	
11	<i>Export</i>	1,9					

Note. Adapted according to data of Statistical Office of the Republic of Serbia.

Legend: 01 – Meat and meat preparations; 02 – Dairy products and bird eggs; 03 – Fish, crustaceans, molluscs and aquatic invertebrates (preparations thereof); 04 – Cereals and cereal preparations; 05 – Vegetables and fruit; 06 – Sugar, sugar preparations and honey; 07 – Coffee, tea, cocoa, spice and manufactures thereof; 09 - Miscellaneous edible products and preparations; 11 – Beverages.

In the period from 2004 to 2008, cereals and cereal preparations were exported every year with uneven intensity. In 2006, the export of these products reached

its maximum, but that year cereal and cereal preparations was the only export agricultural item from Serbia.

During 2009, the export of agricultural and food products from Serbia reached a maximum value of 333.7 thousand USD, thanks to only one section of dairy products and bird eggs. In addition to cereals, beverages were exported in 2004, then meat and meat preparations and fish in 2005, various products for nutrition in 2007, and sugar, sugar preparations and honey as well as coffee, tea, spices and manufacture thereof during 2008.

Table 4

Export and import of agri-food products between the Republic of Serbia and the Republic of Kazakhstan in thousands of USD according to selected SITC sections after concluding a free trade agreement (from 2010 to 2019)

SITC divisions	Export/ Import	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
00	Exp.					98,0	0,3			173,7	
	Imp.			0,1							
01	Exp.					70,0	116,9				
02	Exp.	124,4	211,0	670,0	767,9	321,1				51,6	
03	Imp.			6,3	10,5	6,8	1,5	10,7	49,2		22,0
04	Exp.		20,9	45,2	11,6	69,9	37,6	23,1	6,4	49,3	393,0
	Imp.		46,0				0,2	0,4			
05	Exp.	41,2	179,7	860,1	361,9	402,3	74,8	29,0		11,0	46,1
	Imp.					33,2	37,8	31,7	202,3	233,6	174,0
07	Exp.		5,4	7,0			0,3	164,2	39,5		71,6
08	Exp.									16,1	
09	Exp.				134,8	163,3	0,1	67,4	53,6	35,4	
	Imp.		2,3		2,3	4,5					
11	Exp.								9,1	9,1	4,8
	Imp.			2,2							

Note. Adapted according to data of Statistical Office of the Republic of Serbia.

Legend: 00 – Live animals other than animals of division 03; 01 – Meat and meat preparations; 02 – Dairy products and bird eggs; 03 – Fish, crustaceans, molluscs and aquatic invertebrates (preparations thereof); 04 – Cereals and cereal preparations; 05 – Vegetables and fruit; 07 – Coffee, tea, cocoa, spice and manufactures thereof; 08 – Feeding stuff for animals (not including unmilled cereals); 09 – Miscellaneous edible products and preparations; 11 – Beverages.

During the entire six-year period preceding the signing of the free trade agreement between Serbia and Kazakhstan, Serbia imported only fruits and vegetables in a modest value of 13.7 thousand USD (in the same year, exports of agricultural products from Serbia were almost 5 times higher).

After signing the Free Trade Agreement between Serbia and Kazakhstan, the foreign trade exchange became much more intensive, but still below the potential possibilities. As in the previous period, the export of agri-food products dominated over the import. Dairy products and bird eggs, as well as fruits and vegetables became key export items, differently from the period before the signing of the agreement when cereals and cereal preparations were mostly exported. In addition to the above, Serbia exports to Kazakhstan all other agri-food products belonging to certain SITC sections, except for fish, crustaceans and molluscs and preparations thereof, which Serbia started importing after signing the Free Trade Agreement.

After the Free Trade Agreement was signed, Serbia started exporting fruits and vegetables to the territory of Kazakhstan. Exports were realized with unequal intensity while maintaining consistency during the ten-year period from the signing of the agreement. The situation is similar with the export of cereals and cereal preparations that have been exported to Kazakhstan every year for the last nine years, but in more modest values in relation to fruits and vegetables. Products that Serbia exclusively exports to Kazakhstan belong to the groups: live animals, meat and meat products, dairy products and bird eggs, coffee, tea, cocoa, spices and manufactures thereof and feeding stuff for animals. Almost the same could be said for various food and beverage products, in which case, in addition to evident exports, symbolic imports from Kazakhstan were also recorded. In the structure of imports of agricultural and food products from Kazakhstan to Serbia, products belonging to two groups clearly stand out: fish, crustaceans, molluscs and preparation thereof, and fruits and vegetables. Import of these products is constant and has been especially intensified after the signing of free trade agreements between these countries.

Additionally, Simić (2020) researched foreign trade between the countries in question, taking into account the classification of products according to SITC sections. She pointed out that in the case of most products, Serbia had a foreign trade surplus, while the deficit was manifested only in the third section (fish, crustaceans, molluscs and preparations thereof). In addition, in the period from 2008 to 2017, certain sections with a positive foreign trade balance only had a

deficit in certain years (e.g. 04 - Cereals and cereal preparations in 2011, 05 - Vegetables and fruits in 2017). The mentioned author concludes that the highest level of import-export coverage was achieved within the SITC section: 00 - Live animals other than animals of division 03, 09 - Miscellaneous edible products and preparations, 04 - Cereals and cereal preparations 05 - Vegetables and fruits, while the lowest level of coverage was recorded in the case of SITC section 12 - Tobacco and tobacco products, 03 - Fish, crustaceans, molluscs and preparations thereof, 06 - Sugar, sugar preparations and honey and 08 - Feeding stuff for animals (not including unmilled cereals).

7. CONCLUSION

By researching the foreign trade exchange between Serbia and Kazakhstan, it can be concluded that in the period from 2004 to 2019, the value of imports from Kazakhstan to Serbia was almost 11 times higher than the value of exports of Serbian products to the customs territory of Kazakhstan. During the observed period, Serbia imported the most mineral fuels from Kazakhstan, the value of which reached as much as 94% of the value of total imports, while various finished products, including agricultural products, machinery and transport devices, dominated the value of exports. Food and live animals, as a segment of agricultural production, during the observed period had a minimal share in the foreign trade of these countries. Namely, the export of food and live animals from Serbia to the customs territory of Kazakhstan made only 3.5% of the total export value, while on the other hand the import of the mentioned products from Kazakhstan to Serbia hardly existed, it amounted to 0.04% of the total import realized among these countries. When comparing the realized values of exports and imports of these products, it has been noticed that the export of food and live animals from Serbia was 7.5 times higher than the value of imports of the same products from Kazakhstan to Serbia.

Based on the conducted analysis, the authors also conclude that the value of total imports from Kazakhstan to Serbia after the signing of the free trade agreement was almost 6 times higher than the value of imports in the period before the signing of the agreement. When it comes to the total value of exports from Serbia to the customs territory of Kazakhstan, the situation is different. Exports were otherwise significantly lower than imports, regardless of the observation period. In the period before the signing of the free trade agreement between the analyzed countries, the value of exports was 7.5 times lower than the value of imports, but despite the fact that the value of total exports after signing the agreement increased 1.9 times, the difference was further deepened so in the period after the signing of the agreement, the value of exports became as much as 22.7 times lower than the value of imports.

In the current circumstances, the agricultural sector of the Republic of Serbia provides a significant contribution to the value of GDP, affects employment and job creation. With adequate use of available natural resources, in the future we can expect growth in productivity and competitiveness of the agricultural sector. Given that EU membership is one of the goals that Serbia strives to achieve, according to Zekić and Matkovski (2014), a complementary agricultural policy and the growth of agricultural competitiveness will be a fundamental imperative of national policy in the field of agriculture. In the period before the conclusion of the free trade agreement between Serbia and Kazakhstan, the foreign trade of agri-food products was at an extremely low level with a pronounced dominance of exports of products from Serbia to the customs territory of Kazakhstan. Cereals and cereal preparations were mainly exported, followed by dairy products and bird eggs, and to a lesser extent by beverages, followed by meat and meat preparations and fish, then sugar, sugar preparations and honey as well as coffee, tea, spices and manufactures thereof. In the period that preceded the signing of the free trade agreement, Serbia only imported fruits and vegetables from Kazakhstan, and in a very modest value.

After the signing of the free trade agreement between Serbia and Kazakhstan, the foreign trade exchange has become much more intensive, but it is still below the potential possibilities, with the key feature of the dominance of the export of agricultural and food products over the import. In the last decade, most dairy products and bird eggs were exported from Serbia, as well as fruits and vegetables, the export of which began only after the signing of the agreement. As in the previous period, cereals and cereal preparations were exported from Serbia, but in more modest values in relation to fruits and vegetables. In the structure of imports of agricultural and food products from Kazakhstan to Serbia, products belonging to two groups clearly stand out: fish, crustaceans, molluscs and preparations thereof, and fruits and vegetables. Import of these products is constant and has been especially intensified after the signing of free trade agreements between these countries.

Regardless of the fact that after the signing of the free trade agreement between Serbia and Kazakhstan, the foreign trade exchange has become more intensive, it is certainly still below the real possibilities of the economies of these countries as well as below the potential possibilities provided by the agreement itself. In Serbia, the available funds would be most effectively directed to new investments in the agricultural sector, then to infrastructure projects in rural

areas of Serbia, encouraging intensive and export-oriented agricultural production, as well as the development of sustainable agriculture (Kuzman, Djurić, Mitrović and Prodanović, 2017). Future reforms of the agricultural policy of the Republic of Serbia should include a long-term and clear strategy for the export of agricultural products to the market of Kazakhstan, as part of the EAEU market. Improving the competitiveness of agricultural products of Serbian companies in the mentioned market is of great importance for stimulating foreign trade. In this context, Drucker (1993) points out that all export products that enjoy success have a clear differentiation. Their price is set in a competitive way, but none of them is sold mainly because of the price but because they provide high "added value". In addition, Serbian export companies must have a competitive advantage in the application of appropriate sales channels, while respecting optimal deadlines and other non-traditional marketing tools.

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ASSESSMENT OF THE APPLICABILITY OF THE BALANCED SCORECARD CONCEPT IN SMALL AND MEDIUM-SIZED ENTERPRISES

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Abstract: *The modern management concept Balanced Scorecard (BSC), thanks to the efficient solutions it offers, draws increasing attention from the management across the globe. BSC is a performance measurement system which unites a traditional, financial perspective with the consumer, internal business processes, and learning and growth perspectives; and provides intelligibility of the company's vision and strategic goals, strengthening of the internal communication of employees, and more efficient realization of key business activities. The implementation of the BSC concept in large enterprises is a quite simple and efficient process, while the procedure of incorporating its postulates into the structure of small and medium-sized enterprises is extremely complex and uncertain. For that reason, the aim of this scientific research is the assessment of the applicability of the BSC in small and medium-sized enterprises, with a simultaneous overview of examples of successful and less successful implementation practices, and the most frequent reasons for non-implementation of the concept itself. The research is inspired by the observation that the world literature has, to a certain extent, neglected the analysis of the application of the BSC concept in small and medium-sized enterprises. The descriptive and comparative method, the technique of analysis and synthesis, as well as analysis of the content of relevant literature of reference, national and foreign authors were used for research purposes. The result of the research is the confirmed assumption that the implementation of the BSC concept in small and medium-sized enterprises is possible but at the same time quite complex and demanding due to the influence of different variables. Accordingly, the recommendations such as that the BSC model should be simplified and burdened with a smaller number of metrics in order to become more applicable in small and medium-sized enterprises were derived in the research.*

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JEL classification: *L25, M10, M40*

OCENA PRIMENJIVOSTI BALANCED SCORECARD KONCEPTA U MALIM I SREDNJIM PREDUZEĆIMA

Sažetak: *Savremena upravljačka koncepcija Balanced Scorecard (BSC), zahvaljujući efikasnim rešenjima koja nudi, privlači sve veću pažnju svetske menadžment javnosti. BSC je sistem merenja performansi koji objedinjuje tradicionalnu, finansijsku perspektivu sa perspektivama: potrošača, internih poslovnih procesa, učenja i rasta, te omogućava razumevanje vizije i strateških ciljeva preduzeća, jačanje interne komunikacije zaposlenih i efikasnije obavljanje ključnih poslovnih aktivnosti. Implementacija BSC koncepta u velikim preduzećima predstavlja prilično jednostavan i efikasan proces, dok je postupak ugrađivanja njegovih postulata u strukturu malih i srednjih preduzeća izuzetno složen i neizvestan. Iz tog razloga, cilj istraživanja naučnog rada je ocena primenljivosti BSC-a u malim i srednjim preduzećima, uz istovremeno sagledavanje primera uspešnih i manje uspešnih implementacionih praksi i najčešćih razloga neprimenjivanja same koncepcije. Istraživanje je inspirisano zapažanjem da je svetska literatura donekle zanemarila analizu primene BSC koncepta u malim i srednjim preduzećima. Za potrebe istraživanja korišćene su: deskriptivna i komparativna metoda, tehnika analize i sinteze, kao i analiza sadržaja relevantne literature referentnih nacionalnih i inostranih autora. Rezultat istraživanja je potvrđena pretpostavka da je implementacija BSC koncepta u malim i srednjim preduzećima moguća, ali istovremeno i prilično kompleksna i zahtevna usled dejstva različitih varijabli. U skladu sa time, u istraživanju su izvedene preporuke da BSC model treba pojednostaviti, opteretiti manjim brojem metrika i na taj način učiniti primenjivijim u preduzećima male i srednje veličine.*

Ključne reči: *Balanced Scorecard, BSC, mala i srednja preduzeća, MSP, sistemi merenja performansi*

1. INTRODUCTION

The key to the continuous improvement of an organization's business results lies in its ability to timely assess the degree of realization of set strategic goals and execution of planned business processes - in a word, in the ability to measure its own business performances. Recognizing the importance of constant and consistent measurement of the performance of the key processes

they conduct, numerous organizations have adopted various performance measurement systems over the last few decades. A system that stands out among others, and which is often characterized by the label of the latest “managerial vogue”, is known as the Balanced Scorecard (BSC).

Most authors do not perceive the BSC concept as an ultimate destination but as a continuous process. Empirical studies emphasize the smoothness of the implementation of this concept in large enterprises, which, by using it, gain additional benefits and effects. On the other hand, by analyzing the available studies it can be concluded that the professional public across the globe, and even the creators of this concept, have not paid enough attention to the issue of (un)successful application of this concept in small and medium-sized enterprises. In accordance with the desire for fulfillment of the aforementioned theoretical gap, the subject of the research refers to the examination of the applicability and efficiency of the BSC concept as a modern measurement-management-control system in small and medium-sized manufacturing companies. The aim of this scientific research is the assessment of the applicability of the BSC in small and medium-sized enterprises, with a simultaneous overview of examples of successful and less successful implementation practices, as well as highlighting the most frequent reasons for non-implementation of the concept itself.

The research will contribute to a clearer perception of the opportunities and challenges that, in the process of application of the BS card, have been put in front of small and medium-sized market participants for almost three decades. The actuality of the research is corroborated by the fact that the general interest in the nature of the BSC model does not subside, and that this concept has become an integral part of the business strategies of many companies. There is a realistic expectation that the research itself will affect the awareness of owners-managers of small and medium-sized enterprises on the importance of applying the BSC concept; the awareness of employees on the importance of their contribution to the realization of the company’s business strategy; and the encouragement of the organizations of small and medium size to implement the model within their own strategic frameworks.

Null and alternative research hypothesis are, based on the subject and the aim of the research, and in accordance with the collected available information, defined as follows:

- H_0 : The implementation of the BSC concept in small and medium-sized enterprises is possible, but at the same time quite complex and demanding due to the influence of different variables;

- H_a : The implementation of the BSC concept in small and medium-sized enterprises is not possible, nor is considered as complex and demanding.

In order to achieve objectivity, reliability, generality, and systematicity as basic methodological postulates (Miljević, 2007), descriptive and comparative method, analysis and synthesis technique, as well as analysis of the content of available domestic and foreign literature, i.e. works of reference of national and foreign authors on the possibility of applying the BSC concept in small and medium-sized manufacturing companies, will be used in this paper.

2. THE BSC CONCEPT AS A MODERN SYSTEM OF MEASUREMENT, MANAGEMENT, AND CONTROL

Using the practice of measuring the performances of the company “ECI”, which they observed for almost two years, in 1992. the authors Kaplan and Norton in one of their studies presented the idea of merging the financial perspective (the backbone of traditional performance measurement systems) and non-financial perspectives (consumers, internal business processes, learning, and growth) into a unique model of success - a modern system for performance measurement “Balanced Business Scorecard”. In their later papers, the mentioned authors omitted the word “business” from the model, so nowadays the model is known under the abbreviated name “Balanced Scorecard” (Hoque, 2014).

The name of the BSC concept reflects the balance that the model provides between the company’s short-term and long-term goals, financial and non-financial indicators, lagging and leading indicators, as well as between the company’s internal and external perspectives of performance (Pešalj, 2006). The BSC can simply be defined as a management tool that provides a framework for translating strategy into concrete actions. This tool provides a set of performance measures, i.e. metrics that monitor the company’s progress in relation to the set goals and certain tasks, and for the sake of fulfilling the strategic plans (Gumbus & Lussier, 2006). Strategic metrics are arranged within a certain number of perspectives that enable consideration of the complexity of the target function of the company, the importance of intangible resources, and the variability of environmental conditions (Pešalj, 2006). These metrics are decomposed to lower levels, most often in the way that there is no horizontal connection between them (Simeunović, Slović & Radaković, 2015).

The BSC model was originally conceived as a control system for the measurement of performances, i.e. measurement of the effects of applied strategies of the company and its organizational units. Over time, the theorists have developed the concept in the direction of a strategic management system

that contributes to the realization of the strategy and its translation into actions at different organizational levels (Krstić & Sekulić, 2013). Therefore, the BSC concept has evolved over time - it has developed through three generations, encompassing the theoretical and practical development of the model itself. Today it can be observed through its three-generational functions - BSC as a performance measurement system, BSC as a strategic management system, and BSC as a control system. These three functions have been studied empirically, experimentally, and as case studies. All of them reflect different forms of applying BSC, both in large, small, and medium-sized enterprises (Basuony, 2014).

As previously noted, the BSC needs to translate the business strategy of economic entities into measurable goals and indicators. The BSC concept as a performance measurement system includes indicators among which balance has been achieved on three bases. It is meant of the balance between external indicators (shareholders and consumers) and internal indicators (critical business processes, innovation, learning, and growth); the balance between indicators of achieved results and indicators of factors (generators) of future performances; and the balance between objective, easily measurable indicators of achieved results and subjective indicators of the result generators (Pešalj, 2006).

However, the BSC is more than a measurement system used for short-term management purposes. Numerous innovative companies also use this model as a system of strategic management and control. Accordingly, the mentioned management system may include management and monitoring processes such as clarifying and decomposing the company's strategy into specific strategic goals and tasks; communicating strategic goals to employees at the operational level so that each employee understands how his activities can contribute to the realization of the company's strategy; planning, setting goals (for a period of 3 to 5 years) and harmonizing strategic initiatives for improving the quality and speed of response through the setting of short-term control benchmarks; and improving strategic feedback and organizational learning at the executive level (Pešalj, 2006).

The fact is, therefore, that the BSC has evolved from managerial reporter to strategic tool used by executive teams for the establishment of a strategy, coordination of the operations, and communication with internal and external environment and stakeholders (Gumbus & Lussier, 2006). In order for the company's strategy, which is otherwise very general and broadly defined, to serve as a basis for daily decision-making and action, the BSC concept

translates it into a system of understandable and measurable goals and indicators arranged in four perspectives. These are the financial perspective, the consumer perspective, the internal business processes perspective, and the learning and growth perspective (Pešalj, 2006).

The financial perspective encompasses traditional financial metrics; the consumer perspective reflects the relationship that the organization has established with its current consumers; the internal business processes perspective focuses on the analysis of practices and methods used in the organization during the value creation process, as well as ways in which they can be improved; while the learning and growth perspective prioritizes finding ways to create an environment that is conducive to organizational change, innovation, and growth (Mehralian, Nazari, Nooriparto & Rasekh, 2017). The first two perspectives reflect the long-term goals of the company, while the other two enable the realization of the aforementioned strategic ambitions.

Table 1

Metrics classified according to affiliation to the perspectives of the BSC concept

Perspectives of the BSC	Metrics/Performance measures
Financial perspective	<i>13 metrics:</i> profitability, liquidity, revenue per product, revenue per employee, contribution margin, level of indebtedness, return on investment, unit cost, cost minimization, profit maximization, inventory, total earnings, and level of operating costs.
Consumer (customer) perspective	<i>12 metrics:</i> customer satisfaction, customer loyalty, number of new customers, market share, brand value, profitability per customer, revenue per customer, the satisfaction of business partners, delivery time, responsiveness to customer requirements, market share growth, and sales maximization.
Internal business processes perspective	<i>14 metrics:</i> new products, new processes, product turnover, delivery delay, after-sales support, productivity per business unit, operating cycle, suppliers, supplier responsiveness, flexibility, the time required to respond to customers, storage time, waste, and material integration.
Learning and growth perspective	<i>10 metrics:</i> investment in training, investment in technology, investment in information systems, the level of employee motivation, employee capability, managerial efficiency, employee satisfaction, innovative management, number of complaints, and risk management.

Note. Authors, according to “Balanced Scorecard Metrics and Specific Supply Chain Roles”, by A. A. Cunha-Callado & L. Jack, 2015, *International Journal of Productivity and Performance Management*, 64(2), pp. 290-291.

The financial and the consumer perspective, therefore, represent two key perspectives of the BSC concept (Pešalj, 2006). In the Table 1 classified according to the four perspectives of the BSC, the 49 metrics that can be used in this modern measurement model will be presented.

All presented metrics/performance measures can be included in the BSC model of the company in accordance with the assessment of their significance by the current management team. Nevertheless, Punniyamoorthy and Murali (2008) point out that the BSC should include at least 20 to 25 balanced metrics arranged in the financial and consumer perspective, as well as in the internal business processes and learning and growth perspective. A study by Cunha-Callado and Jack (2015) highlights the view of Johanson, Skoog, Backlund, and Almqvist (2006) that the balance between aforementioned perspectives represents a central issue of the BSC concept, but that the achieving of the same does not imply these four perspectives are equally important.

3. APPLICATION OF THE BSC CONCEPT

The key question that arises is how long it takes to introduce the BSC concept into an organizational business system. In large enterprises, this multiphase process can take up to several years, while in smaller organizations it usually requires managerial commitment for only six months or less. The process of the BSC implementation, as expected, requires a phased approach and involves making a plan and schedule for all activities (Krstić & Sekulić, 2013). In this process not only the final result - the making of the BSC model - is the important one, but also continuous management of it. Accordingly, sufficient time should be set aside to adapt the general BSC model to the specific organizational structure, and to ensure a full understanding of the process by all employees. Some of the statements in the literature that suggest that the process of the BSC implementation should actually never end are quite interesting - namely, the process should constantly be the subject of modification and improvement (Pešalj, 2006). The average time interval required to pass through all the planned phases and to the timely achievement of the goal - the application of the BSC concept in a particular company - is presented by the following graphic view (Graph 1).

It should be noted that the presented development and application of the BSC model take into account the assumption that the company operates within only one branch and that there exists a strong correlation between its organizational units. In that sense, it is possible to form a BS card system for the company and its organizational units.

Graph 1

The time frame of the multiphase process of the BSC concept application in the company

Recommended time	Phase description
1-2 months	Defining the characteristics and requirements of the branch in which the company operates, describing its development, and the current strategic company's position in it.
1-2 meetings lasting 1-2 days	Defining the vision and the long-term strategy of the company.
1-2 days	Determining critical perspectives in the company's BS card.
2-3 days in total for both phases	Parsing out the vision downwards according to each perspective in the BS card and formulating strategic goals for each.
	Identifying critical success factors.
1-2 days	Identifying critical company's metrics driven by cause-and-effect relationships in order to establish balance.
1-2 days	Presenting and setting of BS card at the highest level.
2 or more months in total	Moving the BS card and common metrics downwards to the centers of responsibility within the organizational units.
-	Formulating operational goals and developing an action plan.
-	Application of the BSC model and eventual subsequent revision of it.

Note. Authors, according to *Upravljanje performansama preduzeća* (pp. 173-175), by B. D. Krstić & V. M. Sekulić, 2013, Niš: University of Niš, Faculty of Economics.

If it is about a complex, highly diversified, and divisionally structured company with business operations related to different activities, the formation of a single, comprehensive BS card at the organizational level is very challenging and difficult (Krstić & Sekulić, 2013).

3.1. APPLICATION OF THE BSC CONCEPT IN SMALL AND MEDIUM-SIZED ENTERPRISES

Theorists had openly stood behind the premise that companies of all sizes are quite good at developing a business mission, but also quite bad at implementing an operational strategy to accomplish the said mission, as well as they are especially bad at assessing (measuring) whether they are actually achieving their mission and strategy. The BSC solves this problem by linking the mission to the company's strategy and then translating the strategy into operational goals and measures. The usefulness of the BSC concept is, therefore, reflected in the fact that it can be used not only by 5, but even by 5,000 employees working on the achievement of the same goals (Gumbus & Lussier, 2006).

In one of his studies, Basuony (2014) has critically observed the BSC concept from different perspectives, and through the same, pointed out the most common differences in the implementation of a given model in companies with a small number of employees (small and medium-sized enterprises) on one hand, and companies with a significant number of engaged staff (large enterprises) on the other hand. The aforementioned comparison is presented in the following tabular presentation (Table 2).

In a study by Reynolds, Fourie, and Erasmus (2019), it is pointed out that the BSC can be considered as a useful tool for managing small and medium-sized enterprises, although the procedures of its application in such enterprises may differ significantly from those typical for larger organizations. This view is also confirmed in a study by Singh, Olugu, Musa, and Mahat (2015), in which it is stated that the BSC can be used effectively to assess the performance of small and medium-sized enterprises, taking into account their characteristics.

Table 2

Differences in the application of the BSC concept in large, and small and medium-sized enterprises

Subject of comparison	Large enterprises	Small and medium-sized enterprises
Application of the BSC generation	Application of all BSC generations, namely: 1. BSC as a performance measurement system; 2. BSC as a strategic management system; 3. BSC as a control system.	Application of the first and the second BSC generation only.
Used metrics/ performance measures	<ul style="list-style-type: none"> • Required in-depth BS card system that descends to the level of the unit operational department; • The number of metrics ranges from 18 to 23; • Involves a complex process of identifying and describing the metrics chosen to inform management about the organization's progress. 	<ul style="list-style-type: none"> • In-depth BS card system is not required, but the focus should be on the breadth of the organization; • The number of metrics ranges from 5 to 15; • The usefulness of a formal definition of metrics is lower than in large enterprises.
Application of the strategy	It is easier to harmonize metrics and strategic goals.	It is difficult to harmonize metrics and strategic goals.
Design of the BSC	<ul style="list-style-type: none"> • The BSC design process is similar to the one that characterizes small and medium-sized enterprises; • The duration of the process is longer than in small and medium-sized enterprises. 	<ul style="list-style-type: none"> • The BSC design process is similar to the one that characterizes large enterprises; • The duration of the process is shorter than in large enterprises.
Advantages of the BSC usage	The potential benefit is realized thanks to the control role of the BSC in the area of communication, coordination, feedback, and subsequent information.	The benefits differ from those in large enterprises. Through the BSC, small and medium-sized enterprises focus on controlling the strategic vision and associated strategic goals.
Cost-benefit analysis	They have the ability to cover the costs incurred due to the application of the BSC concept.	They do not have the ability to cover the higher costs incurred due to the application of the BSC concept (especially not small enterprises).
Essence of the BSC	The BSC concept combines financial and non-financial metrics; short-term and long-term plans.	The BSC concept seeks to develop long-term plans and uses non-financial metrics.

Note. Authors, according to “The Balanced Scorecard in Large Firms and SMEs: A Critique of the Nature, Value, and Application”, by M. A. K. Basuony, 2014, *Accounting and Finance Research*, 3(2), pp. 19-20.

3.2. USEFULNESS OF THE APPLICATION OF THE BSC CONCEPT IN SMALL AND MEDIUM-SIZED ENTERPRISES

It is well known that the use of the BSC concept in small and medium-sized enterprises significantly differs from the use in large enterprises. Even though the steps that small, medium and large organizations need to take in the process of designing the BS card do not differ much, the fact is that in smaller organizations the duration of taking each step is considerably shorter. In addition, the benefits of adopting the BSC oscillate depending on the type of organization and the way in which that organization applies the aforementioned concept. Large enterprises often realize more benefits effectively communicating their strategy to employees and stakeholders through the BSC model, while small and medium-sized enterprises achieve the same by improving the efficiency of the strategic management process through describing strategic goals and aligning them with priorities (Rompho, 2011).

The continuous use of the BSC creates a platform for a broad assessment of different dimensions of the company. The BSC, for example, improves organizational control by increasing clarity of goals among employees and by creating an accountability structure in which individuals are labeled as those who have metrics at their disposal. More precisely, the managerial commitment to the BSC concept is actually the one that introduces formalization into traditionally informal operational control structures of small and medium-sized enterprises, enabling strategic alignment of employees so that they can effectively follow the set strategy of the company. Furthermore, the use of the BSC for the needs of advanced control initiates regular meetings and discussions between managers and subordinates for the purpose of a more detailed assessment of the information contained in the BSC. These gatherings aim to anticipate possible business outcomes that will result from current activities, and as such represent an opportunity for interpretation and integration of the knowledge for the purpose of converting the achieved efficiency of individual employees into an organizational asset (Malagueño, Lopez-Valeiras & Gomez-Conde, 2017).

Despite the possibilities that the BSC concept offers, owners-managers should be aware that the use of this method does not automatically improve the company's operations. The BSC concept can be interpreted and used in different ways, which is in practice usually accompanied by serious pitfalls. Nevertheless, a study by Braam and Nijssen (2004) emphasizes that regardless of the manner in which the BSC is used, monitoring the realization of a strategy within it is a key issue for the success of the concept itself. The results of their

research suggest that the use of the BSC that complements corporate strategy will have a positive impact on business performance. However, the mechanical use of the aforementioned model without a clear link to corporate strategy can become a disruptive factor for achieving performances and/or even a reason for their reduction.

4. ASSESSMENT OF THE APPLICABILITY OF THE BSC CONCEPT IN SMALL AND MEDIUM-SIZED ENTERPRISES

The evaluation of the applicability of the BSC concept in small and medium-sized enterprises will be conducted gradually, first by analyzing the issue of success and failure of its implementation, and by corroborating the same with practical examples. The special emphasis of the research will be on the analysis of the reasons for the non-application of this measurement-management-control system in companies of all sizes.

4.1. SUCCESSFULNESS OF THE APPLICATION OF THE BSC CONCEPT IN SMALL AND MEDIUM-SIZED ENTERPRISES

BSC is becoming a significant subject of interest in theory and a widely applied concept in practice. This topic is followed by numerous literature publications in which are given examples of successful implementation of the concept in companies that belong to different business sectors. Thus, for example, the study by Fernandes, Raja, and Whalley (2006) highlighted an estimation that about 60% of the 1,000 “Fortune” companies (1,000 largest U.S. companies ranked by realized revenues) either have adopted or become familiar with the BSC concept. Extensive research conducted by the authors Rigby (2001); Marr, Neely, Bourne, Kennerley, Franco, Wilcox, Adams, and Mason (2004) indicated that 44% of organizations in North America and 35% of large U.S. companies use the BSC method. Additionally, numerous expert studies have confirmed that the use of the BSC concept is also widespread throughout the world (Rompho, 2011).

Although these studies support the argument that the BSC concept is widely applied, they do not indicate a fact that the aforementioned model is mainly used in large enterprises. It is certain, therefore, that there is very limited systematic research on the application of the BSC in small and medium-sized enterprises (Fernandes et al., 2006). For this reason, through a review of empirical studies, positive examples of the implementation of the BSC concept in small and medium-sized enterprises will be presented below, and all this for

the sake of encouraging them to try to apply this modern measurement-management-control system.

The first example of successful application of the BSC in small and medium-sized enterprises refers to a study by Malagueño and co-authors (2017) who explored the effects of the BSC usage by small and medium-sized enterprises in terms of financial performances and research innovations. Their observations refer to the increase in efficiency and potential losses in flexibility associated with the formalization of managerial practice in small and medium-sized enterprises. The survey, conducted by the aforementioned authors on a sample of 201 small and medium-sized enterprises in Spain, aimed to find out whether companies that used the BSC as a strategic tool for management and control realized better financial performances and achieved a higher degree of exploitation of innovations. The results of the mentioned study showed that small and medium-sized enterprises benefit from the use of the BSC in controlling and managing the progress of the enterprise and that those which use this method record higher financial performances and exploitative results of innovation than those companies that do not use it. This positive impact on financial performances is stronger at already established small and medium-sized enterprises. Also, the same study provided quantitative empirical evidence that the use of the BSC is an efficient mechanism for an increase of organizational efficiency without any apparent reduction in flexibility (Malagueño et al., 2017).

The second example of successful application of the BSC in small and medium-sized enterprises refers to a study by authors Gumbus and Lussier (2006) which also confirmed that small and medium-sized enterprises can successfully apply the BSC concept, and realize numerous benefits based on its use. That claim is, in the aforementioned research, corroborated by three case studies, and it included the study of three small and medium-sized enterprises - “Hyde Park Electronics”, “Futura Industries”, and “Southern Gardens Citrus”. This research emphasized that more than half of “Fortune 1,000” companies use BSC to improve their own performances, and that, as shown in the example of the three aforementioned enterprises, small and medium-sized organizations can also benefit from the use of this management tool. The implication for entrepreneurs is, therefore, that they also can successfully develop and implement the BSC concept within their borders. The three observed companies, for example, had quite different BS cards which, despite that dissimilarity, worked pretty well in their interest. Consequently, another important implication of this study is that there is no BSC model that could suit everyone, and that, in general, BSCs can be used to encourage thinking about the relative, personalized metrics within the

framework of critical success factors for any independent business (Gumbus & Lussier, 2006).

The third example of successful application of the BSC in small and medium-sized enterprises refers to the findings of the authors Dudić, Dudić, Gregus, Novackova, and Đaković (2020) who examined the applicability of the BSC concept in small and medium-sized enterprises as a basis for evaluating innovative activities model in the Slovak Republic and the Republic of Serbia. The research was conducted on a sample of 223 small and medium-sized enterprises that operate across the territories of the two aforementioned countries. The results of the research indicated that the application of the BSC concept in the observed small and medium-sized enterprises was successfully realized, made a positive business impact on all performances of these companies, and empowered not only the company's management but also the employees so they were able to overcome problems and monitor market demand quickly and easily. Yet, in the opinion of the aforementioned authors, the difference between companies from developed and developing countries is evident in terms of ease of application of the BSC model - companies operating in countries in transition are facing more significant obstacles during this process. Nevertheless, the authors maintain the view that the mentioned model is applicable in all companies and all countries, and that its implementation leads to the improvement of the global economy (Dudić et al., 2020).

The fourth example of successful application of the BSC in small and medium-sized enterprises relates to the research conducted by Reynolds and co-authors (2019) who worked on the issue of generic BSC model development which could be applied in small and medium-sized manufacturing companies (in their case, those operating in the territory of South Africa). The findings of the expert team during the development of generic BSC confirmed the assumption that the model itself can be applied in small and medium-sized enterprises, but that it should be adapted and made less complicated and easier to use in order for the enterprises to conduct its implementation successfully. In their opinion, the ability to adapt the generic BSC model (by including sufficient flexibility) to the needs of the aforementioned companies makes this managerial tool outstanding. The authors of the aforementioned study recommend that the owners-managers of small and medium-sized manufacturing companies, with extensive consideration, adapt the generic BSC to the specific key success factors related to their organizations. Also, these authors advise companies to approach the implementation of the BSC concept economically, i.e. to choose easily measurable key success factors that do not require additional resource investments into their calculation processes (Reynolds et al., 2019).

4.2. UNSUCCESSFULNESS OF THE APPLICATION OF THE BSC CONCEPT IN SMALL AND MEDIUM-SIZED ENTERPRISES

Many theorists believe that the main reason for the widespread use of the BSC model, both in large, and small and medium-sized enterprises, lies in the assumption that it can positively affect the performance of enterprises. Previous research on the contribution of BSC to small and medium-sized enterprises has indicated a positive correlation between the BSC implementation and the development of new capabilities and research initiatives of these organizations (Malagueño et al., 2017). However, despite numerous examples of successful implementation of the BSC concept, the authors Kaplan and Norton (2001), according to the research conducted by Rompho (2011), and with the help of several more detailed studies, identified two, as they claim, basic sources of failure of the BSC application in companies. It is about design and process.

In their opinion, a poorly designed BS card can lead to the failure of the implementation of the entire BSC system in the organization. The poor design includes too few metrics presented within each BSC perspective, too many indicators without identifying several critical and key ones, and the “inability” of selected metrics to reflect the organization’s strategy itself. On the other hand, poorly implemented processes are the most common causes of failure of the implementation of the entire BSC model and include the insufficient commitment of senior management; too few people engaged; hiring inexperienced expert consultants; keeping the BS card at the top, i.e. “not lowering” it to the levels of unit operational departments; the excessive duration of the BS card development process; treatment of the BSC as a disposable measuring instrument; as well as the introduction of the BSC by management only for the purpose of obtaining financial compensation on that basis (Rompho, 2011).

The causes of the failure of the application of the BSC concept identified in the research publications of the authors Kaplan and Norton can be confirmed and expanded in accordance with the opinions of other authors. For example, Fernandes and co-authors (2006) argue that lack of human resources, rather than financial ones, is one of the main obstacles for the application of the BSC in small and medium-sized enterprises. The author McAdam (2000) adds that the lack of systematic training and development plans for employees disrupts the implementation of the mentioned application process. In addition, the success of the implementation of this process can be affected by additional factors, such as working conditions and overall employee satisfaction; and social issues that include attitudes and behavior, lack of openness and trust of employees

(Basuony, 2014). Problems in the implementation of the BSC concept could be caused even by the owner-manager, his initial perception of the importance of each goal, factor, or measurable parameter and thus, by the consequent actual implementation of the established strategic goals within the company itself (Kozel, Vilamová, Baránek, Friedrich, Hajduová & Behún, 2017); and by his individual (in)ability to process a large number of different information in a limited time. This, consequently, can prevent the organization from realizing optimal benefits based on information gathered using the introduced BSC concept (Handoko & Wehartaty, 2017). In addition, it is believed that the same problem can be encountered and by the owner-manager who shows extreme caution when it comes to sharing business information and strategic plans with employees (Basuony, 2014).

Building on the last, above-mentioned statement it is worth to highlight the view of authors Synek, Dvořáček, Dvořák, Kislingerová and Tomek (2011), presented in a study by Lesáková and Dubcová (2016), that in the process of designing (construction) and application of the BSC model in the company the whole team of experts should work together. Besides, the theoretical knowledge and practical experiences of many companies indicate the indisputable fact that the adequate application of the BSC concept (primarily due to the competencies and authority they possess) in companies of all sizes requires a strong commitment of the highest management levels and their active participation in all systemic activities of the aforementioned application. However, the importance of lower-level managers' commitment to the process of the application of the BSC method is also negligible, as well as the importance of the basic awareness of employees engaged on those levels. Awareness and informing of all employees reduce resistance to change and minimize collective and individual fear of new and unknown (Lesáková & Dubcová, 2016).

An example of the unsuccessful application of the BSC in small and medium-sized enterprises refers to the research by Rompho (2011) conducted in “SAQ Company Limited”, a small-sized enterprise. The aforementioned company ensured the fulfillment of all factors that are listed in the literature as critical for the success of the BSC but still failed to apply the aforementioned model in practice. Interviews and observations revealed that the main cause of failure were frequent changes of the company's strategy. In this company, since the beginning of the use of the BSC, a series of metrics have either been added or revised. For example, three months after the launch of the BS card, the company's sales fell due to a poor distribution channel. The company sold its products to traders who were also selling the products of competitors. This meant that the aforementioned dealers did not have the right motivation to

especially encourage the sale of the “SAQ” products. Then, the owner-manager decided to change the distribution channel, moving from distribution through dealers to distribution through supermarkets. The results were impressive, and sales doubled the following month. However, this change has also resulted in changes in several metrics that address the consumer perspective, and in changes in metrics that address the internal business process in a way that reflects modifications in the consumer perspective (Rompho, 2011).

In the aforementioned case study, it was found that the cause of the BSC failure due to the presented changes, however, would not be usual in large organizations. This limitation of the BSC concept is, therefore, specific to the nature of the businesses of small and medium size, where the reactions to market changes are more frequent and greater than in large enterprises that operate on a much more stable market. In the above-mentioned company, thus, over a two-year period, the metrics of the BS card were revised several times due to strategy changes that were inevitable in a rapidly changing business environment. This, however, created confusion, both in the relations among the employees and in the communication between the employees and the owner-manager. Frequent revision of the BSC also required obtaining new data for newly added metrics, which ultimately disabled monitoring of the cause-and-effect relationship of the BS card’s metrics and led to the significantly higher expenditures of organizational time and effort. Accordingly, the findings of this case study expand the knowledge base on the application of the BSC, revealing that the factors which, according to the literature, lead to the successful use of this concept in small and medium-sized enterprises, although necessary, are not sufficient and cannot guarantee success. Frequent changes in strategy that require revision of the BSC are, therefore, another important factor that determines the success or failure of the implementation of the previously mentioned model (Rompho, 2011).

4.3. REASONS FOR NON-APPLICATION OF THE BSC CONCEPT IN SMALL AND MEDIUM-SIZED ENTERPRISES

In practice, there often exists a low interest of numerous enterprises to apply the BSC method in their business process. The most common reasons for disinterest in the application of the BSC include incomprehension of the method itself, usage of other strategic management instruments, perceiving the BSC only as a performance management tool, as well as the misperception that the model does not contribute to strategic management (Lesáková & Dubcová, 2016).

Compared to large enterprises, small and medium-sized enterprises are fundamentally different in three aspects - uncertainty, innovativeness, and evolution. As a result, the BSC system in small and medium-sized enterprises is somewhat different from the one that exists in large enterprises, in a manner that it is often much more complicated and difficult to implement. In general, small and medium-sized enterprises are usually difficult to involve in performance measurement processes due to lack of free time and/or insufficient involvement of top management in that process. In addition, small and medium-sized enterprises often implement only some parts of a performance measurement system or modify models without carefully examining the impact of such modification. Also, it is confirmed that small and medium-sized enterprises rarely apply a performance measurement system as a holistic approach, that metrics in their models are mainly focused on operational and financial performances, and that they neglect metrics related to non-financial performance indicators (Rompfo, 2011).

As it is pointed out at the very beginning, one of the reasons why the BSC model is not applying, either in small or medium-sized enterprises, is that the owners-managers of these organizations are not familiar with it. When formulating a proposal for overcoming the mentioned reason for non-application of the BSC, i.e. in order to increase the small and medium-sized enterprises' knowledge about the BSC method, one can start from the preferred company's methods of collecting information. Owners-managers acquire new knowledge mainly through the educational system, i.e. by education through professional training. A significant number of companies, on the other hand, gain new knowledge by studying professional journals and scientific publications, or by analyzing the experiences of other companies - the experiences of the companies with which they cooperate, and/or the experiences of the competitor companies. Also, these companies often have services of specialized agencies at their disposal. More precisely, companies can decide to apply the BSC method independently (internal implementation) or to use the skills of qualified individuals specialized in the mentioned field and the help of consulting agencies for these purposes. The BSC method, therefore, can be applied in different ways, i.e. through various channels (Lesáková & Dubcová, 2016).

An additional reason why the BSC concept, certain small and medium-sized organizations do not apply in business practice can be found in the observations of several authors related to the use and peculiarities of managerial practice in these companies. In a study by Malagueño and co-authors (2017), some of them are presented. First, as authors Ates, Garengo, Cocca, and Bititci (2013) state,

resource constraints, especially managerial time and expertise, indicate that management practice routine is much more demanding for small and medium-sized enterprises than for larger organizations, and that application of such concept would further jeopardize their time and possibly bring to light their incompetence. Second, as authors Hudson-Smith and Smith (2007) argue, the lack of a cash security network for small and medium-sized enterprises and their high reliance on few customers obliges their managers to be more careful while developing metrics and covering costs arising from their use. Third, the flexible structure that characterizes small and medium-sized enterprises usually “requires” employees to perform multiple activities and roles, with unclear boundaries and business commitments. This is an obvious deficiency of the quality of management control. In accordance with such management status, there is a fear that with the introduction of new methods, the obligations of employees will increase, and duties will further intertwine, which will in the final instance further aggravate the already unstable position of the company. Finally, the application of the BSC as a formal management practice can easily confuse employees of small and medium-sized enterprises by introducing another, additional layer of control that will subsequently weaken even more the already flexible existing communication and control structures (Malagueño et al., 2017).

Authors Dobrovič, Urbański, Gallo, Benková and Čabinová (2018) in their study highlight the views of the author Onyusheva (2017) who confirms that some of the reasons why small and medium-sized enterprises do not use the BSC concept as a measurement-management-control model include lack of qualified people for its implementation in the management system and the high financial costs for its running. The human resources area, mentioned as a significant factor for non-use of the BSC in smaller organizations, in practice often encompasses the incompetence of the company’s employees to apply strategic management principles. In line with this is the interpretation of the author Witek-Crabb (2016), also presented in the aforementioned study, that the ability of managers to implement strategic management principles in smaller companies is significantly lower compared to the ability of employees at the same functions in large organizations to do so. These statements are followed by the results of the scientific research conducted by Tomić, Komazec, and Jevtić (2017), according to which small and medium-sized enterprises that do not apply the BSC agreed that the main reason for the waiver of the application of this method lies in the fact that BSC usage is complicated, expensive, and long-lasting.

The issue of financial requirements and complexity of the classical BSC concept for small and medium-sized enterprises, according to the current views of the authors Malbašić and Marimon (2019), can be solved through the application of the latest method - the balanced BSC. This measurement system is based on only 25 key performance measures/metrics which can be easily and simply collected since most organizations already use them for daily management. As these authors argue, it is even superfluous to mention the numerous positive managerial implications for small and medium-sized enterprises, which arise from the use of the simplified BSC method. According to the mentioned theorists, these organizations are not able to invest resources in defining a classic, complex BSC, nor they have the ability to adequately apply and monitor its principles. The balanced BSC enables the application and monitoring of an acceptable business model, analysis, and improvement of results, influencing simultaneously the entire “plan-do-check-act” cycle (Malbašić & Marimon, 2019).

As pointed out in one of the studies conducted by Lonbani, Sofian and Baroto (2016), even the BSC concepts constructed in small and medium-sized enterprises in a less formal and complex way can prove to be very efficient and do equally good a “job” as concepts used by large enterprises. The implementation of the BSC concept, in any case, is not a universal issue that equally reflects on all companies, so it is certain that some of these organizations will always apply it with less, and some with more effort (Benková, Gallo, Balogová & Nemeč, 2020).

5. CONCLUSION

Based on the analysis of literature sources and previous empirical studies, i.e. the views presented in the scientific paper, the research can be summarized through the presentation of several significant findings. One of them is that the successfulness of the implementation of the BSC concept in small and medium-sized enterprises depends on the level of awareness, qualifications, and commitment of their human resources since the paper points out that attitudes and behavior of employees, working conditions, and overall job satisfaction, levels of trust and openness of employees; the level of commitment of senior management, (in)ability of managers to process a large amount of information in a limited time; introduction of BSC by the management only for the purpose of obtaining financial compensation on that basis; hiring inexperienced consultants; and an inadequate number of involved people, cumulatively affect the successfulness of the application of the BSC model in practice.

In addition, it was found that the success of the implementation of the BSC concept in small and medium-sized enterprises is determined by the adequacy of BS card design and the quality of measurement, management, and control processes, since the paper proved that poor BS card design and inadequate processes, more precisely, too few metrics presented within each BSC perspective; too many indicators without identifying several critical and key ones; the “inability” of selected metrics to reflect the organization’s strategy itself; and keeping the BS card at the top, i.e. “not lowering” it to the levels of unit operational departments; the excessive duration of the BS card development process; and the treatment of BSC as a disposable measuring instrument, affect the successfulness of the application of the BSC model in practice.

The finding of the conducted research is also that the complexity and a large number of metrics in the BSC model often represent an excessive burden for small and medium-sized enterprises, which either aggravates or prevents the implementation of this concept since, according to many authors (of whom in the paper were mentioned Reynolds, Fourie, Erasmus, Malbašić, and Marimon), the classic BSC concept is too complicated and expensive for small and medium-sized enterprises. More precisely, the above-mentioned organizations are not able to adequately apply and monitor complex BSC models, nor to use a larger number of metrics, since their collection and calculation often cause significant financial and labor costs.

In accordance with all the facts presented in the paper (especially practical examples of successful application of the BSC concept in small and medium-sized enterprises), it is possible to accept the null, i.e. reject the alternative research hypothesis, and conclude that the implementation of the BSC concept in small and medium-sized enterprises is possible, but at the same time quite complex and demanding due to the influence of different variables (such as the level of awareness, qualifications, and commitment of human resources; the adequacy of BS card design and the quality of implementation of measurement, management, and control processes; the complexity and a number of metrics in the BSC model; etc.).

The summary assessment of the applicability of the observed concept is positive. However, the recommendation is to make the BSC model for small and medium-sized enterprises less formal and complex, to burden it with fewer metrics compared to those applied in large enterprises, and thus make it cheaper and more affordable, and therefore more applicable. Another conclusion is that it is worthwhile to invest the organizational time, effort, and resources in the

entire implementation process since the BSC concept can undoubtedly contribute to improving aspects of organizational control, managerial skills, mutual communication, and realized performances of small and medium-sized enterprises.

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TRANSFER PRICING IN A FUNCTION OF ABUSING TAX COMPETITION INSTRUMENTS

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Abstract: *The paper focuses on elucidating transfer pricing as a means of tax competition instruments misuse. Tax competition instruments have a key role in creating national tax attractiveness for foreign direct investment. However, in order to protect the local tax base on the basis of abuse of tax competition instruments, a large number of countries apply the principle of sources of income, i.e. taxation of business profits made by a non-resident legal entity exclusively in the country where the business was conducted and revenue generated. But with the process of globalization and the expansion of multinational companies, i.e. related legal entities, the instruments of tax competition have remained a suitable area of legally permitted transfer of profits through the application of transfer pricing. The data presented in the paper indicate that, although the trend of global corporate tax rate (as the dominant instrument of tax competition) has a downward trajectory, there are still fluctuations in rates between countries around the world, including the existing inconsistencies and ambiguities of national tax regulations. Taking this into account, the aim of the paper was to emphasize that transfer prices, through the instruments of tax competition, have threatened the economic, social, and tax stability of individual countries for more than two decades. The paper shows that developed countries have managed, to a certain extent, to gain control over their application by introducing more aggressive tax audits of transfer pricing. However, special attention is paid to developing countries which remain an active source of tax competition instruments abuse through the inadequate application of transfer pricing, due to the lack of adequate regulatory and control mechanisms, financial and human resources, and efforts to attract foreign investment through various instruments of tax competition.*

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Key words: *transfer pricing, tax competition instruments, profit tax rate, tax incentives, tax havens*

JEL classification: *M41, H26, F23*

TRANSFERNE CENE U FUNKCIJI ZLOUPOTREBE INSTRUMENTATA PORESKE KONKURENCIJE

Sažetak: *U radu je pažnja usmerena na rasvetljavanje transfernih cena kao sredstva zloupotrebe instrumenata poreske konkurencije. Instrumenti poreske konkurencije imaju primarnu ulogu pri kreiranju nacionalne poreske privlačnosti za direktne strane investicije. Međutim, u cilju zaštite lokalne oporezive osnovice po osnovu zloupotrebe instrumenata poreske konkurencije, veliki broj zemalja primenjuje princip izvora prihoda, odnosno oporezivanje dobiti od poslovanja koje ostvari nerezidentno pravno lice isključivo u zemlji u kojoj je poslovanje obavljeno, tj. prihod kreiran. Ali sa procesom globalizacije i širenjem poslovanja multinacionalnih kompanija, odnosno povezanih pravnih lica, instrumenti poreske konkurencije ostali su pogodno područje zakonski dozvoljenog iznošenja dobiti putem primene transfernih cena. Podaci prikazani u radu ukazuju da, iako trend kretanja globalne stope poreza na dobit (kao dominantnog instrumenta poreske konkurencije) ima silaznu putanju, još uvek su izražene oscilacije u stopama između zemalja širom sveta, uključujući i postojeće nepodudarnosti i nedorečenosti nacionalnih poreskih propisa. Uzimajući to u obzir, cilj rada je bio da se naglasi da transferne cene, preko instrumenata poreske konkurencije, već više od dve decenije ugrožavaju ekonomsku, socijalnu i poresku stabilnost pojedinih zemalja. U radu je prikazano da su razvijene zemlje uvođenjem agresivnijih poreskih revizija transfernih cena uspele, u određenoj mjeri, da ostvare kontrolu nad njihovom primenom. Međutim, posebna pažnja je skrenuta na zemlje u razvoju koje zbog, sa jedne strane, odsustva adekvatnih regulatornih i kontrolnih mehanizama, finansijskih i kadrovskih resursa, a sa druge strane, nastojanja da putem različitih instrumenata poreske konkurencije privuku strane investicije, i dalje predstavljaju aktivno žarište zloupotrebe instrumenata poreske konkurencije putem neadekvatne primene transfernih cena.*

Ključne reči: *transferne cene, instrumenti poreske konkurencije, stopa poreza na dobit, poreski podsticaji, poreska utočišta*

1. INTRODUCTION

Globalization, as an inevitable phenomenon from the end of the 20th century, is a process with a pronounced tendency to develop free trade, including the flow of people, goods, and capital. Reducing legal barriers for the movement of

capital and goods has contributed to the intensification of trade between countries, and encouraged investments in other countries in the form of foreign direct investments.

At the same time, one of the main carriers of the concept of globalization in the context of increasing international trade are multinational companies (MNCs), i.e. multinational business entities, which have become significant when it comes to indirectly increasing the participation of developing countries in international trade through foreign direct investments. For this reason, countries that want to increase foreign direct investments, emphasize the concept of appropriate instruments of tax competition in the field of direct taxes (primarily corporate income tax) when formulating their tax policy, in a way that should attract foreign investors. They introduce income tax rates that are lower than in other countries, allow different types of tax incentives and exemptions, while some completely waive income based on taxation of realized profits (Elkins, 2016, p. 912). Such countries receive the status of "tax havens" because they represent countries with a more favorable tax climate, low (or zero) corporate tax rates, and a high degree of banking and business secrecy (Davies, Martin, Parenti & Toubal, 2018, p. 127). As a rule, they have moderate or simple financial regulation, a relatively large number of financial institutions primarily dealing with non-residents, which emphasize banking secrecy and anonymity, where the legislation of these countries allows the establishment of companies of unknown origin within their borders, protecting the owner's identity through the guarantee of absolute secrecy (e.g. there is no obligation to enter the name of the owner or director in the court register, etc.). In other words, these are jurisdictions or territories that have deliberately adopted a fiscal and legal framework that allows non-residents to minimize the amount of taxes they pay when undertaking significant economic activity (Berkhout, 2016, p. 11). However, given that a significant number of countries has introduced the obligation to pay income tax in the source country, as a protective mechanism against the export of profits from the country and in order to protect the local budget, transfer pricing came to the fore as a means of transferring profits to appropriate tax havens. Transfer pricing is on the very border between legal and illegal tax evasion or reduction, because it enables the exploitation of prices of products and services in relation with related parties. Specifically, lowering sales prices to related parties operating in an area with a low or zero tax burden, while at the same time unjustifiably increasing the cost of procurement from them, leads to a reported transfer of profits and "legal" abuse of tax regulations in different countries with the aim of creating low or even zero tax liabilities.

In the next part of the paper, the basic instruments of tax competition in the segment of taxation of realized profit are listed and explained, as well as how the application of transfer pricing, in accordance with certain interests, can lead to their abuse. For that purpose, appropriate scientific methods were used, such as: the method of description, comparative method, method of analysis and synthesis, method of content analysis, method of generalization, etc.

In this way, the intention was to point out that tax evasion has become a reality and a growing phenomenon in most tax systems due to the application of transfer pricing in the misuse of tax instruments of different countries.

2. BASIC INSTRUMENTS OF TAX COMPETITION IN THE DOMAIN OF PROFIT TAXATION

Some authors (domestic and foreign), such as Mikerević (2011), Paić (2012), Pezerović (2012, 2013), Jakšić, Andrić and Mijić (2014), but also Adams and Drtina (2010), Rectenwald (2012), Pak (2012), point out in their works that an important component for survival, growth, and development within the business environment is precisely the tax environment, and in terms of considering the effects of transfer pricing by related legal entities (multinational corporations or domestic economic groups) the emphasis is placed primarily on tax implications. These authors emphasize that the existing discrepancy between global capital mobility and national tax jurisdictions puts national tax authorities in a disturbing position when it comes to trying to identify and separate the global profits of legal entities and obtain tax relief in the local area. In other words, one must not forget that transfer pricing is not only an accounting technique, but also a way of allocating funds and tax avoidance that affects the distribution of income, wealth, as well as the quality of life itself (Sikka & Willmott, 2010, p. 352). For this reason, in recent years, there has been a growing awareness of developing countries about the negative challenges of transfer pricing as a dominant means of conducting business transactions between related legal entities and the need to introduce transfer pricing regulations (Lohse, Riedel & Spengel, 2014).

However, the emergence of tax policy instruments materialized in the tax system has created completely new opportunities for, on one hand, legal entities in terms of minimizing and avoiding tax liabilities and, on the other hand, individual countries to develop tax systems that would primarily aim to attract foreign investors. Greater investment needs, which is the case with developing countries and countries in transition, lead to the emergence and strengthening of the intensity of tax competition. The most successful countries in transition are precisely those countries that have managed to achieve a significant inflow of

foreign capital by providing preferential tax treatment to foreign investors through various reliefs in the income tax system, but also through other necessary general economic and social conditions. Increased inflow of foreign capital entails numerous benefits such as: easier transfer of knowledge and new technologies, GDP growth, employment rates and living standards, easier access to developed markets and increased exports, more efficient budget filling, etc.

However, tax competition also brings about a negative effect that is expressed through the creation of significant distortions in international trade and investment flows, which represents the so-called harmful tax competition. Harmful tax competition results in the attraction of foreign economic entities, but only for tax reasons. This type of competitive pressure imposes the need to modify national tax systems in order to avoid or reduce the respective "spillover effect", which increases opportunities and expands the space on the international business scene for finding different legal ways to reduce tax liability based on profits.

The basic instruments that participate in creating the tax competitiveness of a country in the field of corporate taxation are:

- nominal (legally prescribed) tax rate,
- tax treatment of accrued revenues and expenses,
- tax incentives and tax exemptions.

In terms of *nominal tax rates*, as a means of tax competition, the low nominal income tax rate is treated positively by investors, and the tax system characterized by a low tax rate has fewer exemptions as a rule, and is considered relatively neutral, that is, simple and transparent. It is evident that the differences between nominal income tax rates have an impact on the level of foreign direct investments.

From the aspect of the *tax treatment of accrued revenues and expenses*, a tax system that, on the one hand, has several exemptions from accrued income taxes, and on the other hand, allows or recognizes more accrued expenses for tax purposes (certainly their amount is also important, not just the number) is considered a more competitive tax system.

Tax incentives and exemptions cause great confusion and discussions regarding the need for their (non) existence, due to possible negative consequences for the market and the fiscal system itself. The basic issues that must be taken into account when granting tax relief are:

- what are the possible side effects of tax relief, primarily the extent to which they can cause tax evasion,
- the extent to which market neutrality is undermined,

- whether the incentive measures in the corporate income tax system are synchronized in such a way that they are not mutually annulled and
- whether the tax administration of a certain tax system is able to respond to the requirements of the control of that tax system.

Tax incentives and tax exemptions are a reflection of active tax policy, with the aim to stimulate the desired behavior of economic entities, i.e. taxpayers. However, the practice has shown that the positive effects of tax incentives can be disrupted and ruined by their abuse. Tax incentives are a stimulus and a legally provided space to favor short-term and even speculative investments, in terms of a conscious invasion of income through high costs through related legal entities from jurisdictions with high effective income tax rates to jurisdictions with low or zero effective rates. It is estimated that developing countries lose over \$100 billion annually due to the misuse of tax reliefs (Berkhout, 2016, p. 3; Jansky & Prats, 2015, p. 275).

A large number of tax reliefs, incentives, exemptions on several different bases, increases the complexity and endangers the transparency of the tax system, thus raising the question of the ability of the tax administration to conduct appropriate tax control within such a tax system. For this reason, the decision of the taxing authorities when creating certain tax incentives must be based on an appropriate "cost-benefit" analysis in order to preserve a certain, necessary minimum income and preserve the basic purpose of their introduction.

The pronounced intensity of the application of various tax competition instruments in order to attract foreign direct investment has reduced the distortion between the prescribed nominal tax rates, and only a small number of countries still have extremely high corporate tax rates (Figure 1).

According to the data used, the Figure 1 shows that in 2019, 79 out of 218 countries (which participated in the data processing), had a profit tax rate of up to 20%, 111 countries 20-30%, 26 countries 30-40%, and only 2 countries in the world had a profit tax rate of over 40%.

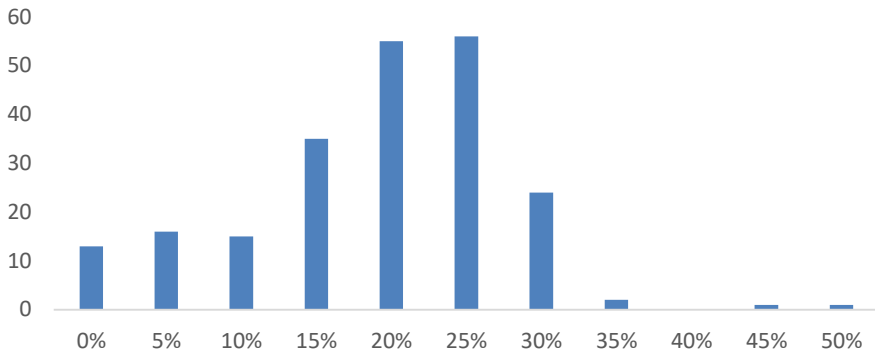


Figure 1. Distribution of the corporate income tax rate in the world in 2019

Note. Retrieved from *Tax Foundation* (2019). Corporate Income Tax Rate around the World. Retrieved from: <https://taxfoundation.org/publications/corporate-tax-rates-around-the-world>

In the period 2003-2019, there was a trend of average corporate tax rate decrease in all regions of the world (but not their equalization). The largest absolute decline in the average corporate tax rate, as shown in Figure 2, was recorded in Asia where there was about 9 percent decline (from 30.19% to 21.18%), while the smallest absolute decline was recorded in Oceania, 1.7 percent (from 30.20% to 28.43%).

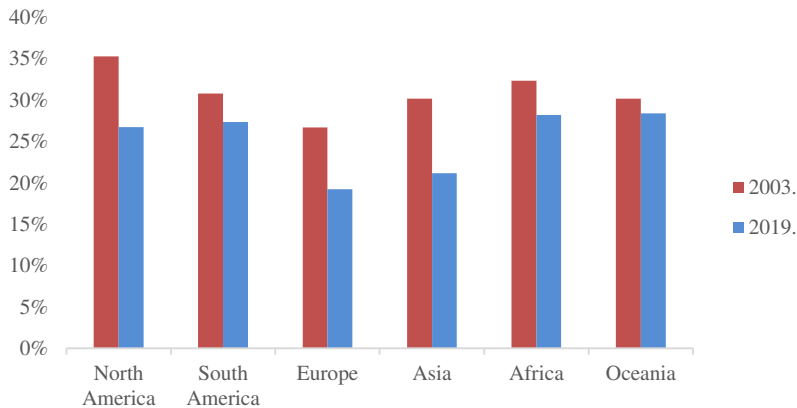


Figure 2. Decrease in the average corporate tax rates by regions in 2003/2019

Note. Prepared by authors based on data retrieved from *KPMG, Corporate tax rates table*. Retrieved from: <https://home.kpmg.com/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html>

The decrease in average corporate tax rates in countries around the world consequently led to a reduction in the world average tax rate (Figure 3). In 2003, the world average was around 30% and by 2019 it fell by slightly more than 6 percent to 23.81%.

The income tax rate is one of the key characteristics of a country's tax attractiveness as an investment economy. Although the data presented in the charts show a general decline in corporate income tax rates in the world, the differences by regions indicate that the corporate tax rate remains a significant instrument of tax competition. Also, within the regions themselves, there are significant oscillations when it comes to corporate tax rates in developing countries and developed countries. For this reason, in an effort to emphasize the existing diversity in terms of prescribed corporate income tax rates within a region, the following table provides an overview of corporate income tax rates in 2019 in individual European countries, emphasizing the comparison of former Yugoslavian countries and some developed European countries in the region, members of the European Union (EU).

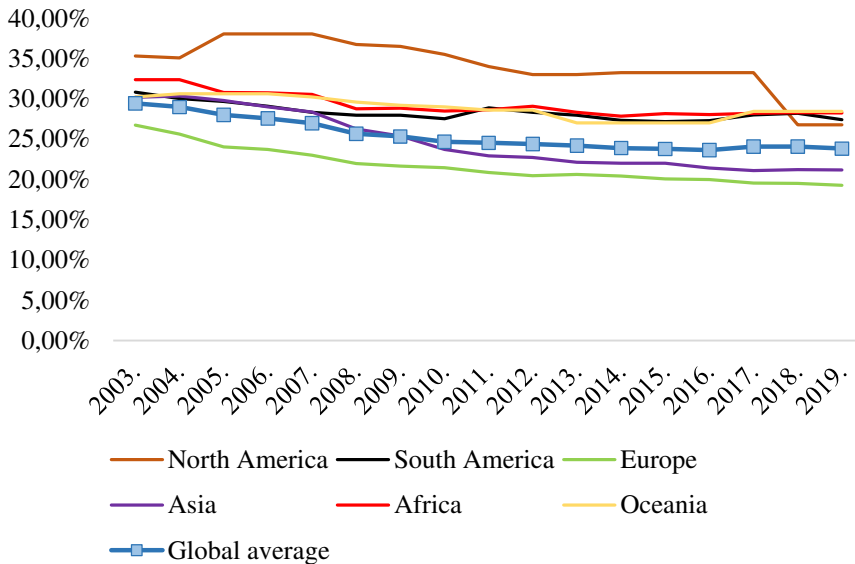


Figure 3. Global corporate tax rate trend for the period 2003-2019

Note. Prepared by authors based on data retrieved from KPMG, *Corporate tax rates table*. Retrieved from: <https://home.kpmg.com/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html>

Table 1

Variety of corporate tax rates in some European countries

Former Yugoslavian countries	Serbia	Slovenia	Croatia	Bosnia and Herzegovina	Montenegro	Macedonia
<i>Prescribed income tax rates</i>	15	19	18	10	9	10
European countries	Germany	Italy	Austria	France	Netherlands	Belgium
<i>Prescribed income tax rates</i>	30	24	25	31	25	29

Note. Prepared by authors according to data retrieved from Deloitte. *Deloitte International Tax Guide*. Retrieved from <https://dits.deloitte.com/#TaxGuides>

The data show significant ranges in terms of existing corporate tax rates. It is evident that former Yugoslavian countries have significantly lower rates compared to developed European countries. Also, by comparing only former Yugoslavian countries, it can be seen that EU member countries have higher corporate tax rates compared to candidate and potential candidate countries. On the other hand, there are certain variations among the developed EU member states in terms of nominal corporate tax rates, while in the entire territory of the EU this disparity is very pronounced. According to the Deloitte International Tax Guide (<https://dits.deloitte.com/#TaxGuides>), the maximum income tax rate in 2019 in the EU was 35% (Malta), and the minimum was 9% (Hungary). In her 2012 work, that is based on the appropriate results of research on the situation in EU member states, Paić points out that despite the pronounced public tendency to harmonize direct taxes (primarily corporate income tax), corporate tax rates as well as rules and regulations on determining the tax base are not harmonized. The fact that this practice has continued was confirmed by Chirculescu in his 2018 paper, which indicated that EU member states continued to retain their sovereignty in the field of direct taxation (even when it comes to income taxation, with appropriate harmonization of regulations to avoid double international taxation), and that they practice bidding to attract jobs and companies in a country through tax reliefs.

In an effort to protect the local budget against the transfer of taxable profit to other more attractive tax jurisdictions, a significant number of countries have opted for the introduction of a legal obligation to pay income tax in the source country, i.e. in the country of realization (acquisition) of that profit. However, with the process of globalization and the spread of the concept of different

business combinations, i.e. with the emergence of related legal entities and, on that basis, more intensive application of transfer pricing, tax competition instruments have remained a suitable area of abuse, in line with the need to transfer profits in order to reduce the tax liability.

3. THE ABUSE OF TAX COMPETITION INSTRUMENTS THROUGH TRANSFER PRICING

In a business economy, transfer pricing is the amount that a related legal entity charges to another related legal entity for a delivered product/service or property, within the same economic entity. In this way, through transfer pricing, financial resources are allocated in a reasonable way to different members of that economic unit, i.e. group (Cottani, 2018). Although, at first glance, the relevant definition does not indicate the possibility of abuse, detailed analysis shows a deep involvement of transfer pricing in increasing the wealth of the group itself, by creating an adequate cost and revenue structure in accordance with the interests of the group and its participants, which creates a possibility for “justified” exploitation of existing tax competition instruments in different tax jurisdictions (Figure 4). Such behavior falls under aggressive tax planning, because it leads to a reduction of the tax liability by legal acts that are legal, but the intention of the taxpayer is contrary to the goal of the legislator.

In this light, multinational business entities, i.e. multinational companies (MNCs) have a wide range of opportunities for tax planning, i.e. have the freedom of legally allowed choice in terms of several factors:

- locations of the company's main headquarters, as well as branches and affiliates,
- conducting sales,
- calculation of business expenses,
- employment of workers,
- borrowing money,
- registration of intellectual property rights,
- claims for tax benefits, etc.

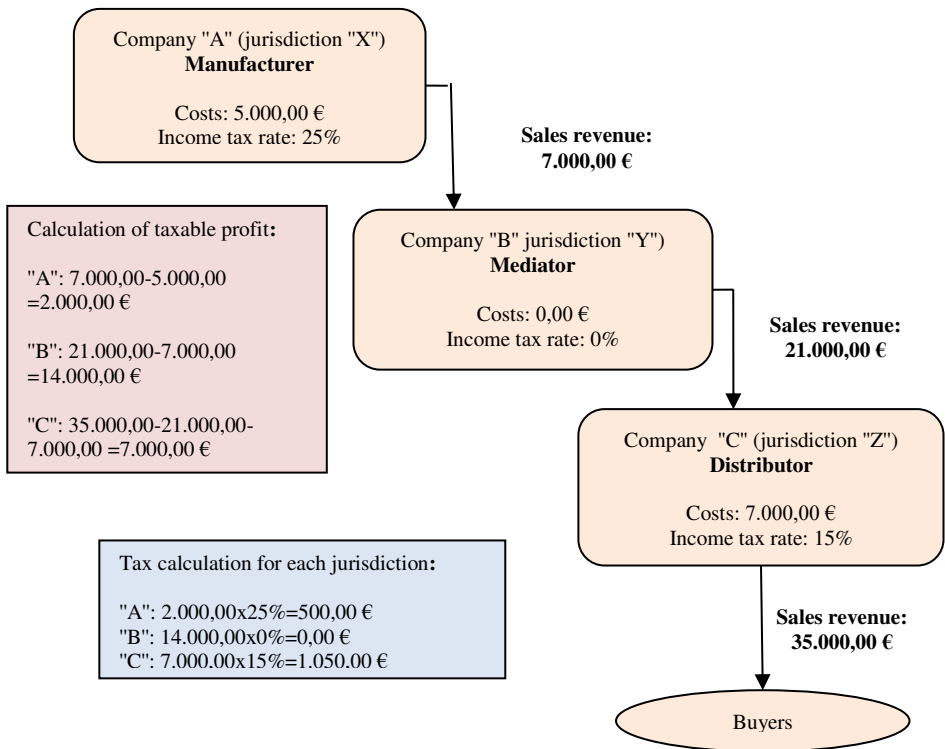


Figure 4. The application of transfer pricing between related legal entities

Note. Prepared by authors.

Considering all of the above, the key advantage of transfer pricing for the purpose of reducing tax liability is reflected in the high subjectivity of cost and revenue allocation mechanisms, which allows related entities a certain degree of discretion in their products/service allocation and certain location-allocation. On this basis, Sikka (2018, p. 13) emphasizes that tax avoidance strategies give large multinational businesses the opportunity to design complex corporate structures that use tax havens to divert profits, thus avoiding corporate taxes and securing additional cash flows. In other words, through transfer pricing, most of the profits are transferred to countries with more favorable tax competition instruments, thus minimizing the tax burden, with a parallel consequent increase in final profit.

Transfer pricing as part of aggressive tax planning has taken its full form with the development of the globalization process. Globalization has created the possibility for products, for example, to be designed in countries A and B,

produced in countries C and D, assembled in countries E and F, while countries G and H have trademark and patent rights, and the rights to global marketing activities are granted to countries I and J.

In this way, it is possible for national companies to become multinational, and for foreign companies to become part of the national business scene by establishing new companies, through joint ventures with local companies or through some other business combinations. In the 1970s, there were 7,000 multinational companies in the world, in 1998 there were just over 53,600, and in 2006 that number rose to 78,000 with at least 780,000 registered branches worldwide (Rixen, 2011, p. 207). With the increase in the number of multinational business entities, the volume of trade transactions within one business entity at the international level increases, and it is estimated that about 2/3 of all business transactions in the world are performed within multinational companies or groups of related legal entities.

As early as the beginning of the 21st century, 51 out of the 100 largest economies in the world were multinational and transnational companies, not nation states. During that period, the 100 largest companies controlled \$3.400 billion in assets worldwide, 40% of which were located outside the home country (Sikka & Willmott, 2010, p. 345). With the process of globalization, the dominance of multinational and transnational companies in the world economy has been achieved (Figure 5).

These data are not surprising considering the fact that it was already recorded in 2001 in the U.S.A. that trade between related legal entities accounts for 46% of total U.S. imports and 33% of exports (Pak & Zdanowicz, 2002). Zucman, in his 2015 paper, points out that 55% of U.S. companies' foreign profits are reserved in tax havens. Cost-sharing arrangements (see more in: Barker, Asare & Brickman, 2017), intragroup services, and transfer of intangible assets (see more in: Reineke & Weiskirchner-Merten, 2018) have been identified as the main channels of transfer pricing abuse.

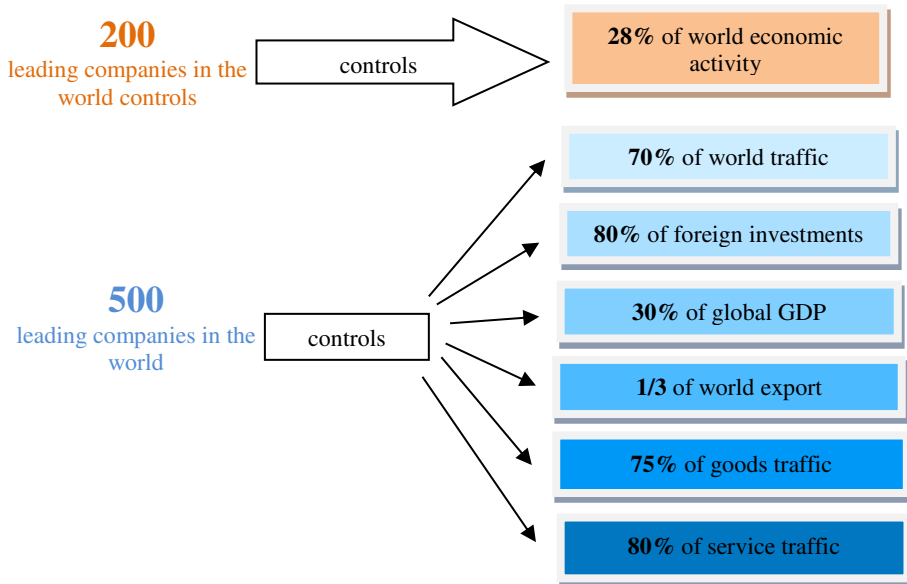


Figure 5. The dominance of multinational and transnational companies in world wealth

Note. Prepared by authors based on data retrieved from *The dark side of transfer pricing: Its role in tax avoidance and wealth retentiveness*, from Sikka, P. & Willmott, H., (2010). *Critical Perspectives on Accounting*, 21(4), pp. 345-456.

Due to the lack of an adequate market for determining an impartial equivalent transaction (especially when companies use specific trademarks, patents, brands) or the monopolistic operations, it is very difficult to check whether there is a (mis)match of transfer pricing and the "out of reach" principle. For this reason, it is considered almost impossible, from the tax point of view, to accurately monitor all these transactions and provide a convincing quantification of the relative income through cross-border tax avoidance (Crivelli, De Mooij & Keen, 2016, p. 20).

However, relying on data from the Bureau of Economic Analysis survey of U.S. multinational corporations from 1983 to 2012, Clausing points out in his 2016 paper that the U.S. lost between 77 and 111 billion dollars in income tax revenue by 2012, which was more than 30% of U.S. income tax revenue, while for the entire world (including the U.S.) in 2012, the estimated loss on that basis was over \$280 billion. Cobham and Janský also estimated the annual global loss of about \$500 billion in 2019, noting that the greatest intensity of losses occurs in low-income and lower middle income countries and across sub-Saharan Africa, Latin America and the Caribbean and South Asia.

4. THE OVERVIEW OF PROMINENT PRACTICAL EXAMPLES OF TRANSFER PRICING ABUSE

Tax evasion due to inadequate application of transfer pricing is a serious global problem that threatens the stability of national tax systems in both developed and developing countries. In order to concretize and visualize the practical abuse of transfer pricing through the instruments of tax policy, below are various examples of the fraudulent application of controlled transfer pricing between related legal entities.

The data in Illustration 1 represent an extreme variant of transfer pricing abuse, but indicate that developed countries have also faced a widespread systematic approach to applying transfer pricing in any direction in order to avoid taxes and increase profits. Today, the oil industry, high-tech industry, chemical, and pharmaceutical industry represent the most expressive segment of the application of various arrangements around transfer prices around the world. This way of cheating the tax system enables "the protection of profits from taxation" in tax havens, while in the manufacturing countries the minimum amount of the tax base is recorded. The international non-governmental organization Oxfam found that US MNCs reported \$80 billion in profits in Bermuda in 2012 (a country identified by Oxfam as the largest corporate tax haven), more than their total reported profits in Japan, China, Germany, and France combined (Berkhout, 2016, p. 5). According to the results of the survey, which included more than 1,500 multinational businesses operating in India, it was found that multinational businesses that have related entities in tax havens reported 1.5% less profit and paid 30.3% less tax per unit profit than multinational businesses that do not have related legal entities in tax havens (Jansky & Prats, 2015, p. 280).

The frequency of the related practice is extremely difficult to estimate. Primarily because almost all of these types of aggressive tax planning (such as holding companies, capitalization, tax arbitration, and the application of transfer pricing) are more or less legal within certain tax systems and national tax authorities have no apparent basis to challenge the taxation procedure. Also, some countries (tax havens or jurisdictions with harmful tax practices) have no interest in cooperating with other countries in terms of exposing certain segments of aggressive tax planning, because it leads to an increase in national wealth. Based on this, the abuse of transfer pricing mainly becomes evident through sudden business collapses of companies, corruption investigations, investigative journalism, regulatory interventions, or court proceedings.

In the USA, according to customs data, as well as data on exports and imports, in 2001 some products were imported at the following prices:

- \$ 972.98 / pc. plastic spoons (from the Czech Republic),
- \$ 1,853.50 / pc. fences (from Canada),
- \$ 2,052.00 / l apple juice (from Israel),
- 4,121.81 / kg toilet paper (from China),
- \$ 4,896.00 / pc. tweezers (from Japan),
- \$ 8,500.00 / pc. ballpoint pens (from Trinidad).

While the export prices of certain American products were:

- \$ 1.20 / pc. prefabricated buildings (in Trinidad),
- \$ 1.75 / pc. portable toilet with tank (in Hong Kong),
- \$ 52.03 / pc. rocket and launcher (in Israel),
- \$ 387.83 / pc. bulldozer (in Venezuela).

Based on the above data, it is estimated that the U.S. government lost about \$53.1 billion in tax revenue in 2001.

Illustration 1. Extreme transfer pricing abuse

Note. Retrieved from *An estimate of 2001 lost US federal income tax revenues due to over-invoiced imports and under-invoiced exports* from Pak, S.J., Zdanowicz, J.S., (2002), Working paper, Penn State University.

The two largest financial frauds, which were among the first to be detected in this way and which triggered a transfer pricing alarm as a means of abusing tax competition instruments, are shown in Table 2.

Table 2

Accounting scandals based on the transfer pricing abuse

„Enron“ scandal (Houston, Texas)	
Year/Activity	2001, Electro distribution
Scandal:	Shareholders lost \$74 billion, thousands of employees and investors were left without pension funds, and a large number of employees lost their jobs.
How was the fraud detected?	High stock prices have fueled public suspicion, which was confirmed by the internal auditor's report on accounting irregularities in the financial statements.
Results of additional investigation	<i>By creating 3,500 domestic and foreign branches (some of which were located on the Turks and Caicos Islands, Bermuda and Mauritius), "Enron", in accordance with the advice of the consulting companies "Arthur Andersen", "Deloitte & Touche" and cooperation with banks "Cash Manhattan", "Deutsche Bank" and several leading law firms, developed a strategy of tax avoidance through the income transfer to tax havens. Infrastructure development projects in the countries where branches were established brought Enron tax-free profits of \$1.785 billion in the period 1996-2000. The essence of tax avoidance is reflected in the conception of an appropriate transfer pricing policy. In the initial stages of project development, the project was usually handed over to local companies, which were a joint venture of "Enron" and at least two other companies registered in the Cayman Islands. Such a business structure enabled, on one hand, the extraction of a large part of taxable income to tax havens, and on the other hand, paid taxes and other fees in tax havens were treated as a tax deduction in other jurisdictions.</i>
"WorldCom" scandal (Ashburn, Virginia)	
Year/Activity	2002, Electro distribution
Scandal:	In the financial reports, the number of funds was "inflated" by as much as 11 billion dollars. 30,000 employees lost their jobs, and investors suffered a loss of 180 billion dollars.
How was the fraud detected?	An internal audit revealed a fraud worth \$3.8 billion.
Results of additional investigation	<i>For a fee of \$9.2 million, the consulting company "KPMG" advised a company to increase its profit after tax by adopting a special transfer pricing program for intangible assets. The company has created a product called "forecast management" (a package of telecommunications services over a global network that aims to create a horizontally and vertically integrated corporate structure), as a hitherto unknown type of intangible asset. The parent company registered this product in a low-tax jurisdiction and then licensed its subsidiaries in high-tax jurisdictions for a certain amount of annual fee. In this way, annual tax savings in the amount of 25 million dollars were ensured. In the period 1998-2001, the use of this license obtained over \$20 billion in fees. Subsidiaries treated the license fee as an expense recognized for tax purposes, while the revenue was transferred to a jurisdiction with a low tax burden. This transfer pricing policy has enabled tax evasion in the amount of 100 to 350 million dollars.</i>

Note. Prepared by authors based on several resources, retrieved from Healy & Palepu (2003), Kaplan & Kiron (2004), Kuhn & Sutton (2006), Zekany, Braun & Warder (2004).

These accounting scandals were a "trigger" for more aggressive tax audits and legal actions of tax authorities in developed countries, in order to clarify and timely detect the use of transfer pricing as a means of abuse of tax competition instruments. By amending and completing the tax regulations, as well as by hiring an additional number of employees in the bodies for the implementation of tax control, a more detailed study of the corporate policy of the considered related legal entities was enabled. In this way, the tax authorities of developed countries have been able to, up to a point (in accordance with the data shown in Illustration 2), detect the inadequate application of transfer pricing and to make additional tax collections on that basis.

In the U.S., tax authorities are allowed to, in accordance with section 482 of the Internal Revenue Act, subsequently distribute revenues and expenses between related parties involved in controlled transactions, in order to prevent or reduce tax evasion. On that basis, in 2009, the US tax authorities hired 1,200 new workers for a detailed control of the application of transfer pricing, and in 2010 another 800.

In the United Kingdom, there were 1,724 corrections of tax calculation in 2005/2006 due to subsequent corrections of transfer pricing by similar legal solutions with similar legal solutions. From 2005 to 2007, an additional £1.1 billion in taxes was levied on the basis of the respective corrections, while an additional £2.1 billion was levied in the following two-year period.

In Australia, in the period 2001-2005, a subsequent revision of transfer pricing collected an additional \$2.5 billion in income tax revenues.

Illustration 2. Additional tax collections based on subsequent adjustments to the application of transfer pricing

Note. Retrieved from The dark side of transfer pricing: Its role in tax avoidance and wealth retentiveness, od Sikka, P., Willmott, H., (2010). Critical Perspectives on Accounting, 21(4), p. 343.

Tax havens have a key role in the operations of multinational businesses when it comes to implementing a transfer pricing strategy. In practice, almost every day goods are physically moved from the sending country to the destination country, but from the aspect of financial records the transfer of goods is directed through tax havens with contracts (Illustration 3).

A company located in the Caribbean deals with the delivery of bananas to a company located in the United Kingdom, with the contracted transactions being performed through related legal entities (Cayman Islands, Bermuda, Isle of Man, etc.). The selling price of 60 pence/kg at which bananas are delivered to supermarkets in the UK consists of several elements:

- 13 pence / kg in the country of production (Caribbean), which includes 10.5 pence / kg of production costs, 1.5 pence / kg of labor costs and 1.0 pence / kg of profit;

- 47 pence / kg of intragroup transactions, including 8 pence / kg for the use of the shopping channel network (Cayman Islands), 8 pence / kg for financial services (Luxembourg), 4 pence / kg based for the use of the trade name (Ireland), 4 pence / kg for insurance services (Isle of Man), 6 pence / kg for management services (Jersey) and 17 pence / kg for the use of the distribution network (Bermuda).

Basically, a company pays itself for provided services and, since revenues are recorded in jurisdictions with low or zero tax burdens, 47 pence of revenue is virtually non-taxable.

Illustration 3. Banana trade through tax havens

Note. Retrieved from The dark side of transfer pricing: Its role in tax avoidance and wealth retentiveness, od Sikka, P., Willmott, H., (April 2010). *Critical Perspectives on Accounting*, 21(4), p. 351.

Large tax frauds, which accentuated the preferential tax treatment of MNCs in certain tax havens, also indicated the abuse of tax competition instruments by applying transfer pricing through advanced pricing agreements (APAs). The APA is a mechanism for ex ante dispute resolution between MNCs and the tax administration, where negotiations are not transparent (see more in: Markham, 2012; Byrnes & Cole, 2018). As a rule, the APA is designed as a neutral tax procedure that improves the overall process of determining taxable income between MNCs and tax jurisdictions. However, given that these are individual agreements between MNCs and tax authorities, there is room for tax favoring of a particular MNC over other multinational as well as national businesses (Eden & Byrnes, 2018, p. 11). At the end of 2013, the European Commission began a process of extensive investigations into the abuse of the APA arrangement in some member states by certain MNCs. Investigations showed that MNCs (in certain European tax havens), such as Apple - US (Ireland), Starbucks - US (Netherlands), Inter IKEA - Sweden (Netherlands), Fiat - Italy (Luxembourg), ENGIE - France (Luxembourg), Amazon - US (Luxembourg), McDonald's - US (Luxembourg), illegally reduced taxable profits and total tax payments (see more in: Lyal, 2015; Gormsen, 2016; Barrera & Bustamante, 2017; Barker,

Asare & Brickman, 2017; Wang, 2018; Eden & Byrnes, 2018). In order to indicate the impact of transfer pricing abuse on the economic, social, and tax stability of individual countries, it is important to point out that the estimated tax debt, based on the realized evasion, for e.g. Fiat and Starbucks, for 2012, amounted to between 20 and 30 million euros for each company (European Commission, 2015). Also, only for Apple, for the period 2003-2014, the estimated debt was approximately 13 billion euros (14.5 billion dollars), plus interest on unpaid taxes (Barrera & Bustamante, 2017). This amount is equal to the annual cost of the Irish Health Service or a significant portion of the Irish national debt (Wang, 2018, p. 561).

Also, the International Consortium of Investigative Journalists, which has been working intensively in recent years to publish a number of discoveries, such as Luxembourg Leaks in 2014 (see more in: <https://www.icij.org/investigations/luxembourg-leaks/>), HSBC Leaks in 2015 (see more in: <https://www.icij.org/investigations/swiss-leaks/>), Offshore Leaks in 2015 (see more in: <https://www.icij.org/investigations/offshore/>), Panama Papers in 2016 (see more in: <https://www.icij.org/investigations/panama-papers/>), Paradise Papers in 2017 (see more in: <https://www.icij.org/investigations/paradise-papers/>), Mauritius Leaks in 2019 (see more in: <https://www.icij.org/investigations/mauritius-leaks/>), showed that corporations are the main bearers of global tax avoidance. Disclosures have enabled the launch of major subsequent tax investigations and audits and income tax collections. Thus, e.g. in one of the largest and most comprehensive actions of investigative journalism "Panama Documents", an investigation was launched in 82 countries, and in the period 2016-2019, more than \$1.2 billion was reimbursed in only 22 countries. The investigations conducted have partially quantified the seriousness of transfer pricing abuse as a global issue that threatens the national budget revenues of a large number of countries.

These examples, as well as various studies, show that the misuse of tax competition instruments through transfer pricing is a serious global issue, on the basis of which some countries have lost astronomical amounts. For example, the United Kingdom lost £12 billion per year, while Germany lost €90 billion in tax revenue as a result of the transfer of profits, i.e. the base erosion (Fuest, Spengel, Finke, Heckemeyer & Nusser, 2013, p. 9). Euronews data from 2013 indicated that EU member states together lost about one trillion euros each year. Also, there are estimates that between \$7.6 and \$32 billion, or about 8% of the world's wealth, is located in areas with low or zero tax burdens (Henry, 2012; Zucman, 2015). Various models estimate that global tax losses due to tax evasion by multinational businesses can amount to up to \$600 billion each year,

approximately \$400 billion in developed countries and \$200 billion in developing countries (Crivelli et al. , 2016; Cobham and Janský, 2019). At the same time, developing countries are in a much more unfavorable position in terms of the abuse of transfer pricing for the purpose of reducing tax liability. Namely, their deficiency is reflected in the absence of adequate regulatory and control mechanisms, which is a consequence of the lack of financial resources, and thus the inability to hire experts to study in more detail the corporate policy of related legal entities regarding the application of transfer pricing. For this reason, transfer pricing is a challenge for developing countries, because their efforts to attract foreign investment through various instruments of tax competition may be responsible for the outflow of capital from these countries.

5. CONCLUSION

The data presented in the paper indicate that the creation of appropriate instruments of tax policy in terms of profit taxation affects the attraction of direct foreign investments. In addition, the noticeable application of various instruments of tax competition has conditioned a continuous trend of decreasing corporate tax rates at the global level, but the variability of these rates by continents and even within continents remains pronounced, taking into account the existence of tax havens.

The introduction of profit taxation in the source country sought to limit the abuse of tax competition instruments, but the process of globalization enabled the enormous growth of MNCs and, on that basis, a more intensive application of transfer pricing as a new source of their abuse. Transfer pricing, as the bearer of transactional relations between related legal entities, represent a means of exploiting the basic instruments of tax competition with the aim to increase the welfare of individual members within the group, as well as the group as a whole, leaving negative consequences on national tax systems and budgets.

Developed countries have introduced more aggressive tax audits and legal actions of tax authorities regarding the application of transfer pricing as a means of abusing tax competition instruments in order to protect the local tax base. However, in developing countries, due to the lack of financial and human resources to create an appropriate regulatory and control mechanism, the national tax base has remained a suitable area of tax evasion through the exploitation of tax competition instruments through the application of transfer pricing.

The main contribution of the paper is to quantify the magnitude of transfer pricing abuse and emphasize that it is still a growing tax problem of the 21st century that requires more active global and national attention of developed countries, and especially of developing countries, by stating certain data and

concrete examples of tax evasion. On this basis, it is necessary for the tax control authorities of developing countries to take the problem more seriously, and it would be desirable to consider the benefits of preferential tax competition instruments for national budgets, as well as and potential losses of their abuse through transfer pricing. It is very likely that the respective losses significantly outweigh the benefits. And as shown in the paper, in most situations, related abuse usually extends for a period of several years until the moment of its "accidental" disclosure, which means that the lack of data on the existence of transfer pricing abuse does not mean that it does not exist, but it may mean that the respective abuses and their impact on the national tax budget have not yet been publicly disclosed.

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Table 1

The scope of the variance in the space of the questionnaire EPQ

Component	The initial solution		
	The characteristic root	The percentage of the variance	The cumulative percentage
1	3,76	37,65	37,65
2	1,45	14,50	52,16
3	0,93	9,35	61,52

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