

# Economic Horizons



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# Economic Horizons



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## EDITORIAL

In Issue 2 Volume 20 Year 2018, eight contributions are published: three original scientific papers, three review papers, a book review and the Acknowledgements to the reviewers of the manuscripts submitted to the Editorial Board of the Journal for publication in 2017.

By researching the interdependence of economic growth and the institutional infrastructure on the examples of the Republic of Serbia and the Southeast European countries, *Edvard Jakopin* has established a fact that these countries are still captivated in institutional transition. The mentioned condition is additionally influenced by a high degree of corruption, which reduces economic growth, the investment ambience and the quality of institutions. In spite of the assertion that the influence institutions have on the economic growth in the Republic of Serbia is insignificant, which can be said to be true of the influence of economic growth on the development of institutions as well, the author concludes that no sustainable economic growth is possible without stable and efficient institutions, nor is it possible, either, for stable and efficient institutions to be established in the conditions of the low rates of economic growth.

Given the fact that small and medium-sized enterprises have no adequate approach to financial institutions for the purpose of obtaining loans, there are importantly limited possibilities of the expansion of their business operations. Researching the stated issue in the Nigerian State of Plateau, *Joshua Solomon Adeyele* considers the relevant criteria and mechanisms, such as the financial liquidity indicator(s) and the implementation of the internal

control system, which financial institutions adhere to when making decisions on granting loans in favor of small and medium-sized enterprises. It is also indicated that employees' educational profile significantly influences the selection of the small and medium-sized enterprises that will be granted loans by financial institutions. Pursuant to that, the authors considers it necessary for small and medium-sized enterprises to comply their business activities with the criteria on the basis of which financial institutions extend loans so that they could improve their respective business doing.

Starting from the attitude that the significance of traditional concepts and techniques has been reduced by the transformation of the capital-intensive into knowledge-led economy, the co-authors *Marko Slavkovic*, *Goran Pavlovic* and *Marijana Simic* point out the fact that, in the contemporary conditions of business doing, the focus is on human resources and the management of them. In that context, the management of an enterprise is faced with a challenge of generating employee satisfaction so as to motivate them to be loyal to the employer. It is highlighted that employee recruitment and the employer brand generate a higher degree of employee satisfaction, which is an important precondition for the creation of an image of a company as an acceptable place to work in, which increases the probability of attracting new talents and potentially successfully solves the important problem of creating the personnel potential in the organization.

Pursuant to the attempts made by the creators of economic systems to make them more successful through reforming them, not only from the economic, but also from the social point of view, *Vladan Ivanovic* conducts a research study of the relevant aspects of the concepts of the Social-Market Economy on the example of the Federal Republic of Germany as the model manifesting its economic

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successfulness expressed by the level of the GDP *per capita*, high productivity, innovativeness and export performances. He puts a special emphasis on the significance of the competitive order, the key allocation mechanism without which no construction of an efficient and adaptable economic system as the assumption for achieving respectable economic, social and society-related goals is possible. Together with the market order, the freedom and accountability of economic actors, based on the rule of law principle, are also the starting point of the institutional structure and the irreplaceable generator of economic progress.

By considering the inter-relationship between the competition protection policy and economic growth, with an emphasis on developing countries, *Sinisa Milosevic, Dejan Trifunovic and Jelena Popovic Markopoulos* argue that variations in the national product *per capita* from one developing country to another are for the most part a result of the effective implementation of the competition protection policy. The research study considers the effect of competition on the stimulation of the entrepreneurial initiative and the creation of motivations for innovations and technological progress. It is highlighted that the effective implementation of the competition protection policy in function of meeting conditions for strengthening market competition, which *per se* is an important assumption of economically efficient outcomes, and pursuant to the said, of the accomplishment of more dynamic rates of economic growth and economic development. In order to effectively and efficiently protect competition, it is necessary to have quality legislation and, first of all, to have such legislation responsibly and consistently enforced by competent institutions, such as the Competition Protection Commission.

Within the framework of the considerations of the relevant aspects of reduction in the uncertainty of investment, simultaneously retaining the unchanged

expected return, *Miljan Lekovic* has conducted a comparative analysis of both simple and efficient and national and international diversification, by which he explores the development process of diversification as an investment strategy for mitigating investment risk. Pursuant to that, he has tested the hypothesis that, in comparison with a national diversification, the international diversification of investment enables the achievement of the same or even higher level of the expected return, with the additionally reduced risk of investment. The research study has shown that, in comparison with the national, the international diversification ensures better portfolio performances and, pursuant to that, results in reduction in the risk of investment with the unchanged or even higher expected return on investment.

In this Issue of the Journal, *Ana Krstic* presents her review of the monograph entitled: *Multicriteria decision analysis: State of the art surveys* by Greco, S., Ehr Gott, M. and Figueira, J. R. (Eds.) (2016). New York, NY: Springer-Verlag.

In the name of the Editorial Board of the Journal and in my own name, I would like to thank the authors of the contributions published in this Issue of the Journal, as well as the reviewers, who significantly contributed to the improvement of the submitted manuscripts by providing the authors with their critical comments and suggestions.

Issue 2 Volume 20 Year 2018 contains the *Acknowledgements to Reviewers* of the manuscripts submitted to the Editorial Board of the Journal in 2017, out of which those that had positively been assessed in the double-blind reviewing procedure were published in the Issues 1, 2 and 3 Volume 19 Year 2017.

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Editor-in-Chief  
Vlastimir Lekovic

*Vlastimir Lekovic* is a full professor at the Faculty of Economics of the University of Kragujevac. He earned his PhD at the Faculty of Economics of the University of Kragujevac, in the scientific field of general economics and economic development. He teaches the following teaching disciplines: Comparative Economic Systems, Public Sector Economics, Institutional Economics and Market Regulation Policies in the basic, master and PhD studies. The key fields of his scientific-research interest are the economic system, economic policy and institutional economics.

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## ECONOMIC GROWTH AND THE INSTITUTIONAL TRANSITION OF THE REPUBLIC OF SERBIA

Edvard Jakopin\*

*Ministry of Economy, The Republic of Serbia*

Are the transitional countries of SEE trapped in institutional transition or not? The institutional transition that has been lasting for almost three decades, and almost two decades in the Republic of Serbia, initiated the rapid destruction of the institutions of the previous political and economic system, but the construction of new market institutions has been slow, inefficient and partial. The Republic of Serbia lost the three decades of economic growth and development, which, as evidenced by economic law, takes twice as much time to restore the system to the previous equilibrium of the length of the time which the system is located in off-balance. The average 3% growth in the seventeen transition years is insufficient to compensate for the enormous backlog of the 1990s. The contribution of the research study to the work focuses on the analysis of the interdependence of economic growth and institution building. A special viewpoint is aimed at the corruption factor destroying institutions in all transition countries, reducing their economic growth and productivity, and negatively affecting the attractiveness of FDIs.

**Keywords:** economic growth, institutional transition, corruption

JEL Classification: O11, O43

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### INTRODUCTION

The unique phenomenon of institutional transition in the European transition countries has been existent for almost three decades and in the Republic of Serbia (RS) for seventeen years. Institutional transition in the Southeast European (SEE) countries began with the rapid destruction of institutions from the prior political and economic system, whereas the

construction of new market institutions was much slower and inefficient, with the different dynamics of construction from one country to another, depending on the speed of the implementation of the structural reforms and the European Union (EU) entry.

In particular, in the first decade of transition, only Estonia, Hungary and Poland, out of all the transition countries, built the institutions that would ensure the protection of property rights and the implementation of the regulatory reform of the business environment in order to stimulate investment. Despite the implementation of significant macroeconomic

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reforms, Lithuania and Slovakia failed for a long time to comply with the severe budget constraints on the subsidies to state-owned enterprises. A number of countries (Moldova, Russia, Ukraine) stuck in the so-called “reform trap”, without the essential reforms (“the form instead of the reform”), because the previous system was recycled through the process of privatization and liberalization (Jakopin, 2017b, 106). In general, a number of the transition countries have managed to build a new institutional framework after the fall of socialism, but most transition countries are still trapped in institutional transition.

The transition economies predominantly relying on the resource, labor-intensive economic sectors were, as a rule, more suited to the elites that did not match the new institutional framework (the old nomenclature that benefited from the privatization or the newly-built group of company owners). The reasons for the very slow growth of market institutions in transition countries are that some authors look for previous great economic dependence upon natural resources and the historical experience of these countries during socialism (Bhattacharyya & Hodler, 2010).

The subject of the research study is the institutional performance of the transition of RS, with a special research objective of analyzing the interdependence of economic growth and institutional transition in RS and the SEE transition countries, most of which are in the EU lobby.

The paper examines the hypothesis that without the development of stable institutions there are no sustainable high economic growth rates, and vice versa; that without the high rates of economic growth it is impossible to build stable institutions. Within this hypothesis, the effects of the global recession on institutional transition and economic growth were analyzed.

In this paper, the methods of analysis and synthesis, compilation and comparison were applied. The institutional transition analysis was based on the composite Worldwide Governance Indicators (WGI).

The paper is structured into two interconnected continents. The first explores the performance of

transitional economic growth in RS; in the second, the research reorientation focuses on institutional transition, with a special emphasis on corruption analysis as the factor that affects the decommissioning of institutions.

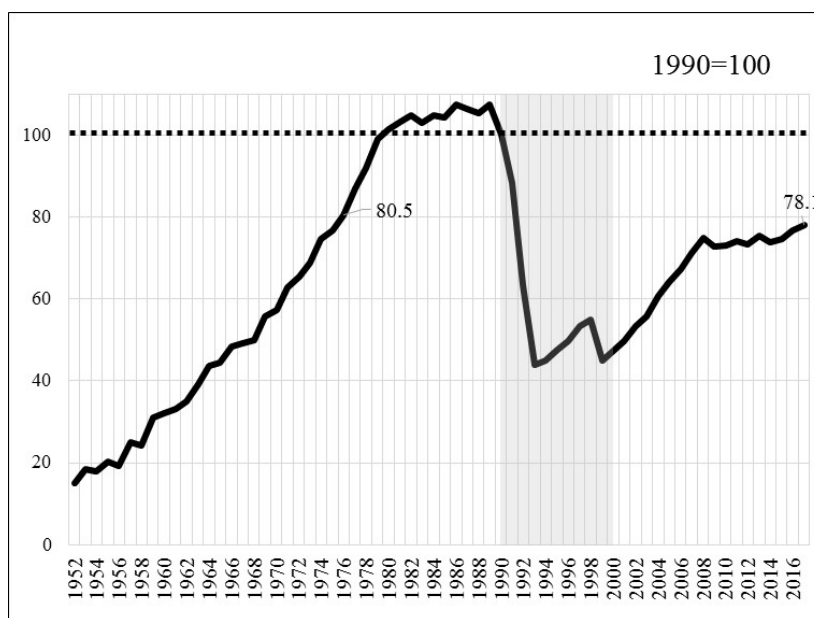
## THE LOST THREE DECADES OF GROWTH

The beginning of transformation in 2001 was welcomed by the RS economy, whose structure had been formed almost three decades before. After seventeen years, the short transition balance would be as follows: the slowdown of the 1990s, which is slowly (only three-quarters of the way now) reaching the lag in relation to the group of the most developed countries in Europe (EU-15) is not decreasing, but it is increasing in relation to the group of transition countries that were admitted to the EU in 2004 (EU-10).

Due to the economic distortions in the last decade of the last century, the sanctions and the NATO bombing, RS has lost three decades of economic growth and development, which confirms the economic legitimacy that it takes twice as much time to return the system to the previous equilibrium from the length of time in which the system was off-balance. Today, Serbia’s economic growth is at the level of that in 1976, only amounting to 78.1% of the average of that of the GDP in 1990 (Figure 1). With an average rate of the annual growth rate of 4%, it will take us other seven years to reach the level of 1990.

Serbia’s industry has gone through a real transition tsunami; more than half a million workers less than in 1990 work in the Serbian industry today. Compared to 1990, the index of the physical volume of industrial production at the end of 2017 is twice lower (51%), being at the same level as in 1972.

The macroeconomic risks of the sustainability of economic growth in the entire SEE region are permanently present, with unemployment being the highest in Europe. The economic disparities between SEE and the EU are constantly at extreme boundaries.



**Figure 1** The lost three decades of growth - the Republic of Serbia GDP 1952-2017

Source: Author

*Methodological note:* Due to the changes in the methodology for the period 1952-2000, a series of trends in the social product (prices in 1994) was used, and in the period 2001-2017, a series of the growth rates of the GDP was used (Jakopin, 2018, 36).

According to all economic parameters, the SEE region belongs to the EU periphery. The living standard in SEE in 2016 was almost three times as low as the EU average, and the unemployment rate was three times as high. Regional and social cohesion in Europe is becoming weaker and weaker, and the SEE region is increasingly being confronted with the various forms of poverty and backwardness (Jakopin, 2017a, 157).

The SEE transition economies are slowly adapting to the globalization process, the ever-growing market competition, and the high demands coming from the competition. In the second half of the 1990s, the successful transitional economies had dynamic economic growth, primarily due to the growth of investments, personal consumption and the greater exports of goods and services. The initiator of their economic growth was the implemented structural reforms that led to significant changes in the structure of industrial production. The structural changes led by the postulate of greater international

competitiveness caused an extremely dynamic growth of the industrial branches based on the use of modern technology and the economies of scale, the development of new industries, and creative economies.

The structural changes implemented through FDI inflows, industrial production and exports growth have contributed to the fact that the majority of the central European transition countries in and some SEE countries (EU Member States) have significantly increased their export performance, raising the entire industry of these countries to a higher level. The EU market has played the key role in the process of increasing exports. Innovative processes in science and technology in all the industrial branches are proceeding at a faster pace in the world, simultaneously bypassing the SEE region.

## TRANSITION GROWTH MODELS

The global recession created by a speculative price growth and the bursting of bubbles in 2007 opened many theoretical and practical dilemmas, beginning with the source of the crisis, the role of the state, market distortions, the systemic forms of the crisis, resource mobility, alternative solutions and growth models (Jakopin, 2018, 38-44).

Imbalances are deepened by the applied transformation model. The model functioned according to the principle of purchasing time with privatization revenues and FDI inflows, as the unstructured export-oriented economy borrowed and increased the external debt. On the other hand, the vulnerable internal stability conditioned by the huge surplus of imports over the exports and overstated the dinar that this huge foreign trade deficit has stimulated and sustained. The overpriced dinar carried the pillar of the anti-inflationary policy and influenced commodity flows, but due to cheap import raw materials and intermediate goods it affected production costs. In such a situation, the global recession only reduced oil to the fire.

A brief theoretical excursion about the causes of the global recession revealed that the causes of the hotbed of the greatest crisis since the Great Depression of 1929-1933 lie in the combination of the three factors:

- the enormous growth of the greediness (greed) of business entities (Keynes' famous "animal spirits"),
- economic policy failures, and
- the institutional framework (the regulatory system).

In recessionary periods, the state is more superior to the market, primarily because it has instruments to mobilize resources. For example, in all the variants of the state, the economic policy stimulates a faster development of entrepreneurship in order to reduce the "perception of risk". The crisis-trigger generator is always the system, not the state with its policy, because the economic system is inherently unstable. Through

its instruments, the state creates structural reforms and changes the system so as to minimize losses. Some authors believe that neither the reconstruction of the system nor the transformation of the economic policy can eliminate the causes of the crisis. In a word, systemic instability is the key determinant of a recession. In addition to systemic causes, recession weights were intensified by the weaker export sector and the wrong economic policy, which manifested itself primarily through the strong domestic currency. Occasional catching was provided by privatization, FDIs and foreign borrowing (Jakopin, 2018, 42).

The basic characteristics of the pre-crisis transition model of economic growth in Serbia in the period 2001-2008. The years that had the greatest impact on economic growth can be described as follows:

- the process of the privatization of social property which was being turned into privately-owned was not followed by consistent institutional solutions, the effects were far less than expected;
- the growth of industrial unemployment was not accompanied by the growth of the entrepreneurial sector;
- the economic growth was based on the growth of services, not on the growth of industries - exchangeable goods (industry, construction);
- consumption grew faster than economic growth, thus resulting in an increase in the external debt,
- the structural reforms in the economy were slow, selective and partial.

The average rate of economic growth in the transition period from 2001 to 2017 is modest, only 3.0%. After the dynamic economic growth in the pre-crisis period 2001-2008 (the average growth rate was 5.9%), there came a fall in the crisis in 2009 (-3.1%) and a long-term recession period (the average fall in the rate of economic growth in the period 2010-2014 was -0, 1%), so that in the period 2015-2017 the mild signs of the recovery of economic growth followed (average growth was 1.8%).

The transformation period 2001-2017 is characterized

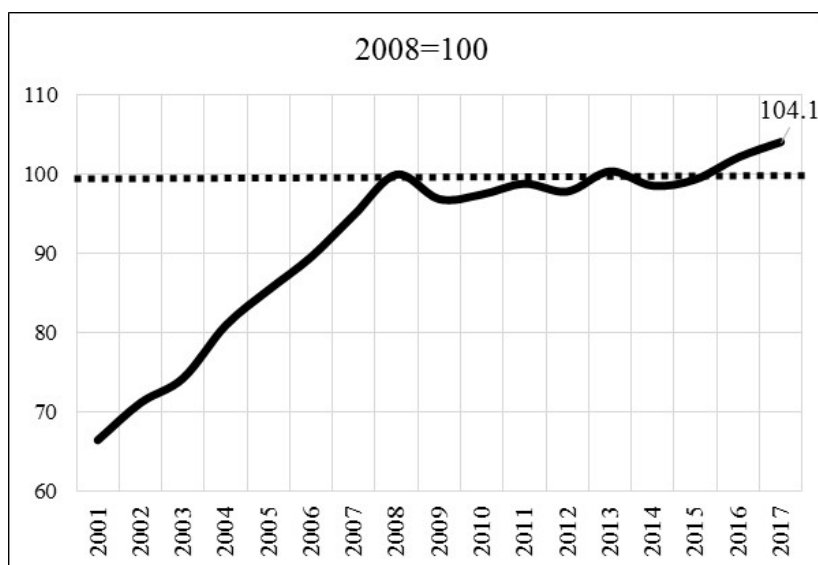
by different models of growth:

- The growth model based on the growth of private consumption and services in the period 2001-2008. In the period leading up to the outbreak of the World Economic Crisis, Serbia's economic growth achieved a high growth average rate (5.9%), which, however, was not enough to compensate for the backlog of the sanctions against and the economic problems in the state at the end of the last century. The service sector was the main contributor to the growth model, with the services in the structure of the gross domestic product (GDP) reaching 60%. In 2008, the level of the Serbian GDP reached the level of 1975.
- The recession period from 2009 to 2014 implies the years without growth, with the average annual fall of -0.2%. Under the impact of the global recession, economic growth was interrupted in 2009, and the economic policy makers were forced to redesign the growth model and face new growth sources, faced with the multi-sectoral negative effects of the global recession (Figure 2).

- A new growth-based investment and export growth in the period 2015-2017 was characterized by the average annual growth of 1.8%. Only in 2016, economic growth reached the pre-crisis level of 2008. At the end of 2017, the level of the GDP was at the level of 1977, which speaks about the extent of the economic distortions in the last decade of the XX century.

By consistently implementing fiscal consolidation in the period 2015-2017, internal and external macroeconomic imbalances were reduced, a structural adjustment began, the economic and investment environment improved, as confirmed by renowned international institutions (WB, IMF, EBRD, WEF).

A comparative analysis of the economic growth trends in the SEE transition countries shows the different effects of the economic recession from one country to another, with some economies having managed to overcome the prior negative crisis strikes on their economies, primarily thanks to the resilience of their processing sectors (Table 1).



**Figure 2** The impact of the crisis on economic growth in the Republic of Serbia

Source: Author

**Table 1** Economic growth in the transition countries of the region

State	Rates of growth/decline in GDP		GDP per capita 2016	
	2001-2008	2009-2016	EUR	PPS EU-28=100
Albania	6.0	2.4	3,700	30
Bosnia and Herzegovina	4.9	0.9	4,400	31
Bulgaria	5.8	1.1	6,748	48
FYR Macedonia	3.0	2.2	4,691	38
Romania	6.3	1.1	8,640	59
Republic of Serbia	5.9	0.3	4,904	36
Croatia	4.3	-1.1	11,142	59
Montenegro	5.0	1.1	6,354	42
Slovenia	4.2	-0.3	19,574	83
Hungary	3.2	0.6	11,588	67

Source: Eurostat, RZS

The pre-crisis period 2001-2008 was characterized by the dynamics of Serbia's economic activities being above the average of the countries in the region. In the period 2009-2016, Albania and Macedonia recorded the highest GDP growth, whereas the highest decline was recorded in Croatia (Table 1). In the majority of the countries of the region, domestic demand (investments and private consumption) had a dominant influence on economic growth. Only in Bulgaria, the net exports made a greater contribution than domestic demand.

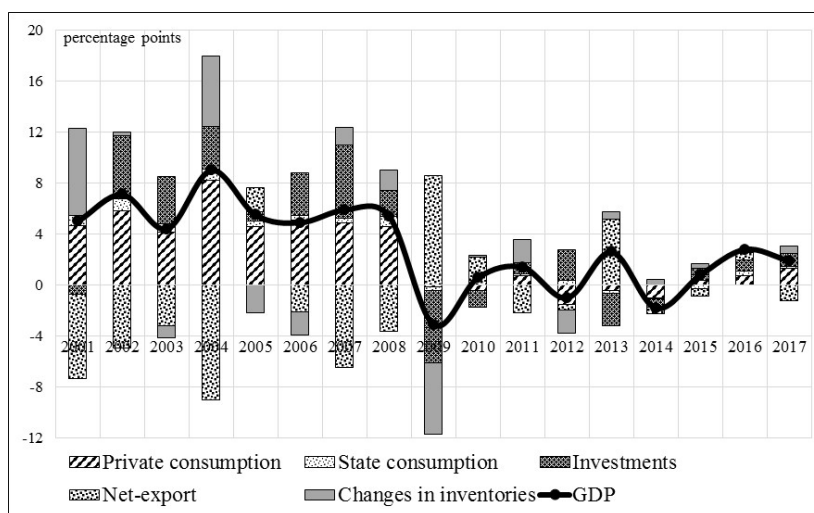
Above all, the effects of transition reflected in the standard of living in these countries. The living standard in RS in 2016 (the GDP *per capita* being

4,904 EUR) was higher than in Albania, Macedonia and Bosnia and Herzegovina, but simultaneously lower than the living standard in Bulgaria (by 37%), Romania (by 76%), Croatia and Hungary (2.3 times) and Slovenia (4 times). Compared to the purchasing power, RS is at 36% of the EU-28 average (the GDP per purchasing power), which is well below the developed transition countries in the region (Hungary lags behind the EU average of 33%, Croatia 41% and Slovenia 17%).

In the pre-crisis period, the employment rate did not change, the unemployment rate fell to 14.9%, inflation was reduced, but was still high, FDIs experienced significant growth, the current account deficit was high, and the public debt was kept under control. The impact of the recession mostly affected the increase in the external debt and the decline in investment (both gross investments and FDIs). The positive macroeconomic results in the post-crisis period are fiscal consolidation (the reduction in the fiscal deficit) and the lowering inflation, below 3%.

The analysis of the transformation period 2001-2017 shows the degree of the unsustainability of the growth model in the period 2001-2008, the negative effects in the recession period 2009-2014, primarily a rise in unemployment, a fall in the living standards and the debt growth and a change in the growth patterns over the last few years (Jakopin, 2018, 43). The consequences of the transformation model of "debt economies" reflected in all of the developmental dimensions ranging from demographic regression, via industrial devastation, the educational gap, regional imbalances, to institutional non-construction.

A shift and change in the new model of economic growth are most plausible according to the analysis of the expenditures structure of the contribution to the GDP growth (Figure 3). The pre-crisis growth model for the period 2001-2008 had almost exclusively been based on the growth of personal consumption, which was understandable to a certain degree, bearing in mind the consequences of the economic distortion on the living standard of the population in the last decade of the last century. The contribution of personal consumption to growth was constantly around 5%,



**Figure 3** The models growth-structures contribution to the GDP growth in the Republic of Serbia

Source: Author

while, for example in 2008, it was as much as 8%. The foreign trade deficit was of a permanent character and the contribution of investments to economic growth was mainly made through the privatization process. State consumption also contributed to the growth achieved by 2009.

During the recession period, there was a drastic fall in personal consumption and investment, whereas a significant drop in the contribution to the recession was also visible in the foreign trade deficit. In 2015, a positive contribution of investments was registered for the first time, which continued in 2016 and 2017. After five recession years, the focus from the growth model based on the growth of consumption slowly shifted in 2015 to the growth model based on investment and, after a long time, on personal consumption. The contribution of personal consumption had an upward trend which resulted in a contribution of 0.4 percentage points in 2015, 0.7 percentage points in 2016, and 1.3 percentage points in 2017.

## INSTITUTIONAL TRANSITION

The theorists of institutional transition define the very notion of institutions broadly, most often as the “formal and informal rules and their implementation mechanisms that shape the behavior of individuals and organizations in society” (Burki and Perry, 1998). Formal institutions are laws, regulations and contracts, whereas informal ones are: trust, ethics and political norms. Political institutions (legislative, political parties, government agencies), economic institutions (private companies, trade unions, business associations) and social institutions (NGOs, schools) are distinguished. The institutional growth theorists who claim that institutions dominate politics define institutions as

“a group of social arrangements that contain constitutional and social constraints based on the power of politicians and elites, the rule of law, provisions for mediation in social conflicts, the strong enforcement of property rights, a minimum volume of equal opportunities, and relatively broad access to education, etc.” (Acemoglu, Johnson, & Robinson, 2005).

Similarly, one group of authors define institutions as “the rules of the game in the society and their contribution to desirable economic behavior” (Rodrik, Subramanian & Trebbi, 2004), especially emphasizing the rule of law and the protection of property rights. “Institutions are primary to the rule of law” and “law enforcement” (Dollar & Kraay, 2002).

The theoretical framework of the connection between institutional development and economic growth is extremely diverse. E. L. Jones (1981), D. North (1990), S. Knack and Ph. Keefer (1995), P. Mauro (1995), W. Easterly and R. Levine (2003), D. Acemoglu, S. Johnson and J. A. Robinson (2005), S. L. Engerman and S. Sokoloff (2010), and others have made a significant contribution to the construction of institutions and economic development. The crucial factor of successful transitional results is the efficiency of newly-established institutions (Hoff & Stiglitz, 2004).

Perhaps one of the biggest shortcomings in the imposed reform agenda intending to help transitional economies is inconsistency and selectivity in strengthening the institute of the rule of law, property rights and the investment climate (all being more or less closely related). The definition of the World Bank insists on the efficiency of institutions, does not put an emphasis on the development of an institute, for example, the rule of law, a long and systemically demanding process implicative of social implications.

The reform agenda of the institutional transition focuses on the rule of law, law enforcement, access to knowledge and education, political participation, social equity and solidarity, tolerance and accountability.

According to the theoretical concept stipulating that institutional transition involves three key factors, namely the process of electing and controlling power, the institutional adoption and implementation of policies, and the development of institutions for the purpose of serving citizens, Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi created the composite Indicators of Effective Institutional Management (Worldwide Governance Indicators, WGI) and developed a methodology for monitoring institutional transition in transition countries (Kaufmann, Kraay

Mastruzzi, 2010). The methodology consists of 6 composite sub-indices (dimensions):

- Voice and Accountability (VA) - This index provides pieces of information on the extent to which citizens can participate in choosing their government, the freedom of expression, the freedom of association and the free media.
- Political Stability and Absence of Violence/Terrorism (PV) - This index provides pieces of information on the likelihood that the government will be destabilized or destroyed by unconstitutional or violent means, including politically motivated violence and terrorism.
- Government Effectiveness (GE) - This index includes pieces of information on the quality of public services, the quality of the civil service and the degree of its independence from political pressures.
- Regulatory Quality (RQ) - This index provides pieces of information on the government’s ability to formulate and apply the sound policies and regulations that allow and promote the development of the private sector.
- Rule of Law (RL) - This index provides pieces of information on the extent to which institutions trust and respect a company’s rules, in particular regarding the quality of contract performance, respect for property rights, the work of the police and courts, as well as the assessments of a possible crime and violence.
- Control of Corruption (CC) - This index includes pieces of information on how much public authority is used to achieve a private gain, including small and large forms of corruption, as well as the degree of the abuse of state institutions by elites and private interests.

The methodology includes several hundred variables from 31 different sources of data, including management perceptions, such as respondents’ reports, non-governmental organizations, commercial information providers and public sector organizations around the world. The databases for 200 countries in the world have been existent since 1996. The

composite indicator WGI, expressed through the equation system, is expressed in standard normal units (ranging from -2.5 to 2.5).

Transition economies have advanced in building institutions, but with varying dynamics, and at different times. In 2000, Serbia had the largest institutional gap in relation to other transition countries (WGI -1.07). In the period 2001-2008, the SEE countries significantly strengthened their new institutions, so that in the period of the recession, the institutional strengthening process of most transition economies was stopped (Table 2). In Bulgaria, Hungary and Slovenia, the recession and the decline in economic growth resulted in the breakdown of institutions. Institutions are the weakest in the least developed countries: Albania, Bosnia and Herzegovina and Moldova (the WGI has a negative value).

**Table 2** Measuring Institutional Progress

State	WGI-average			
	2000	2008	2009	2016
Albania	-0.62	-0.21	-0.16	-0.02
Bosnia and Herzegovina	-0.52	-0.34	-0.37	-0.32
Bulgaria	0.13	0.20	0.25	0.18
Croatia	0.17	0.37	0.39	0.45
FYR Macedonia	-0.50	-0.07	-0.05	-0.12
Moldova	-0.42	-0.43	-0.45	-0.41
Montenegro	-0.61	0.09	0.15	0.07
Romania	-0.18	0.13	0.14	0.25
Republic of Serbia	-1.07	-0.26	-0.17	0.01
SEE-average	-0.40	-0.06	-0.03	0.01
Slovenia	0.89	1.03	1.03	0.94
Hungary	0.97	0.84	0.74	0.48
Czech Republic	0.56	0.92	0.92	0.96

Source: Author, based on Worldwide Governance Indicators

An analysis of the institutional sub-indexes of the WGI shows that (Table 3):

- the biggest institutional weakness and the weakest institutional transition results in the SEE area in 2016 were the rule of law (the average of the RL sub-indices of the SEE countries being -0.11) and the control of corruption (the average of the sub-index CC being -0.28);
- the biggest breakthrough was made by the institutions in the field of political stability (the PV sub-index moved from the vast negative zone of -0.66 at the beginning of the transition in 2000 to the positive zone) and regulatory quality (the sub-line RQ from -0.32 in 2000 entered the positive zone at +0.25);
- the effects of the global recession had the most negative impact on the Freedom of Speech and Accountability (VA) sub-indices - not only had there been no progress in the period 2008-2016, but the average of the VA sub-index worsened (in Hungary, the decline was -0.60 index points, in Macedonia -0.43, in Bulgaria -0.14, in Montenegro -0.16, and in Serbia -0.07). Interestingly, the post-crisis decline was registered in the successful transition countries of Hungary and Slovenia. In the same period, the Political Stability Institute recorded a slight improvement (from 0.02 to 0.04), but a decline was registered in three more developed countries;
- Bosnia and Herzegovina and Moldova are institutionally extremely inefficient, their sub-indices are in the negative zone, so that the two countries (together with Albania in the RL and CC sub-indices) largely "spoil" the average of the entire SEE region;
- the Government Efficiency Institute was improved in the 2014-2016 period in Albania, Bulgaria and Serbia;
- a decline in the Regulatory Quality (RQ) sub-index in the post-crisis period was particularly reflected in the transition countries of the EU: in the Czech Republic (from 1.15 to 1.08), in Hungary

**Table 3** Institutional Transition in Transition Countries WGI 2000-2016

Country	VA		PV		GE		RQ		RL		CC	
	2000	2016	2000	2016	2000	2016	2000	2016	2000	2016	2000	2016
Albania	-0.29	0.16	-0.54	0.26	-0.76	0.00	-0.25	0.20	-1.01	-0.35	-0.86	-0.40
Bosnia and Herzegovina	-0.11	-0.16	-0.53	-0.38	-0.84	-0.43	-0.50	-0.18	-0.61	-0.29	-0.56	-0.47
Bulgaria	0.46	0.44	0.38	0.03	0.00	0.29	0.20	0.55	-0.12	-0.04	-0.13	-0.16
Croatia	0.51	0.52	0.28	0.68	0.33	0.49	-0.03	0.36	0.03	0.44	-0.07	0.19
FYR Macedonia	-0.34	-0.23	-0.62	-0.38	-0.75	0.09	-0.13	0.45	-0.57	-0.31	-0.60	-0.31
Moldova	-0.14	-0.03	-0.43	-0.28	-0.51	-0.62	-0.29	-0.05	-0.48	-0.54	-0.66	-0.96
Montenegro	-0.50	0.08	-1.64	0.16	-0.85	0.10	-0.86	0.23	0.34	-0.04	-0.17	-0.10
Romania	0.47	0.51	-0.38	0.27	-0.37	-0.17	-0.11	0.59	-0.20	0.30	-0.49	0.00
Republic of Serbia	-0.64	0.21	-1.64	0.05	-0.85	0.09	-0.86	0.14	-1.27	-0.12	-1.18	-0.31
SEE-average	-0.06	0.17	-0.57	0.04	-0.51	-0.02	-0.31	0.25	-0.43	-0.11	-0.52	-0.28
Slovenia	1.11	1.00	0.89	0.99	0.75	1.12	0.69	0.62	1.04	1.08	0.88	0.80
Hungary	1.14	0.37	0.92	0.71	0.98	0.45	1.09	0.77	0.91	0.51	0.79	0.08
Czech Republic	0.76	1.05	0.33	0.99	0.65	1.06	0.76	1.08	0.64	1.09	0.21	0.51

Source: Worldwide Governance Indicators

(from 1.19 to 0.77), in Croatia (from 0.51 to 0.36), in Bulgaria (from 0.69 to 0.55) and in Slovenia (from 0.83 to 0.62), which forced the governments of these countries to pay much more attention to the institutional regulation of the private sector.

Institutional Transition in RS in the transition period 2000-2016 was carried out with different dynamics and intensity (Figure 4):

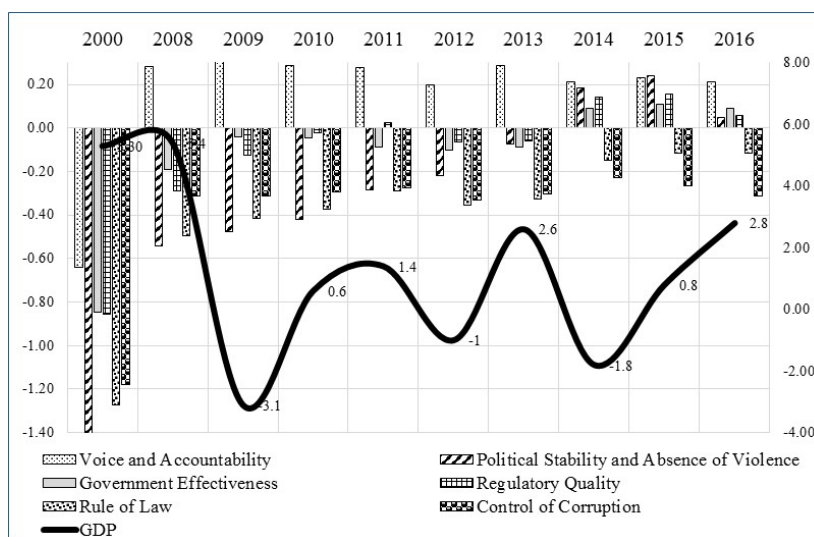
- at the beginning of the institutional transition, all of the institutional sub-indices had the maximum negative values: Political Stability was at a record minimum (PV -1.64), Control of Corruption (CC -1.18), Regulatory Quality (RQ -0.86), Government Efficiency (GE -0.85), Freedom of Speech (VA -0.64) and Rule of Law (RL -1.27);
- in the pre-crisis period until 2008, the greatest institutional breakthroughs were achieved in the Freedom of Speech (VA 0.28), Government Efficiency (GE -0.19) and Corruption Control (CC -0.31) sub-indices;
- in the crisis period 2009-2013, all of the WGI sub-

indices showed slight fluctuations, or worsened, or stagnated;

- in the period 2014-2016, Political Stability (PV), Government Efficiency (GE) and Regulatory Quality (RQ) were improved and located in the positive sub-indices zone;
- the most critical institutional indicator for RS is the constant Control of Corruption (CC) and the Rule of Law (RL), but according to Regulatory Quality (RQ), it is below the SEE average;
- Serbia lags most behind the most successful transition countries with respect to the indicators of the Rule of Law (RL), Government Efficiency (GE), and Regulatory Quality (RQ).

## CORRUPTION AS A FACTOR OF INSTITUTIONAL DEGRADATION

Institutional non-construction is one of the key factors for corruption growth in underdeveloped economies,



**Figure 4** The effects of the crisis on institutional transition and economic growth in the Republic of Serbia

Source: Author

in which market institutions are still developing. It is difficult to unwrap the “vicious circle” of bureaucratic inefficiency and the growth of corruption - what is the cause, and what the consequences. The matrix of the corruption factor (positive and negative) is shown in Table 4.

The influence of unenclosed institutions on the business investment climate was empirically proved, and a fact was established that the high levels of corruption reduce a country’s economic growth, investment climate and investment quality. The effects of corruption destroy institutions and economic growth, cause an inefficient asset allocation, and reduce productivity. Particularly negative is the effect of the degree of corruption on attracting FDIs. As a rule, the investment process involves obtaining a variety of public licenses, which may require a form of bribery, which increases investment costs and reduces the total inflow of FDIs (Saha, Rukmani & Jen-Je, 2009).

Corruption increases the inequality of income (the growth of the Gini coefficient) and poverty through a reduction in growth, the tax system, social programs of a poor quality, inequality in education and the

bias of property ownership (Tanzi, 1998). The effects of the growth of the gray economy which transition economies are faced with affect such economies. In order to combat the gray economy, almost all transition countries adopted strategic documents and action plans. In the period 2012-2017, the Serbian government reduced the size of the gray economy from 21.2% to 15.4%, but in many institutional segments, there is considerable room for increasing the efficiency of fighting against the gray economy.

The emergence of institutionalized non-construction and corruption particularly affects transition countries through “brain drain” and the quality of human capital. A fact was empirically established that the high levels of corruption affect the level of the emigration of qualified labor far beyond unskilled labor (Dimant, Krieger & Meierrieks, 2013). Higher levels of corruption are associated with lower levels of education, health, socio-economic development, which affects reduction in human capital levels.

**Table 4** The Corruption Factor Matrix

+ (an increase in corruption)	- (a reduction in corruption)
Bureaucracy and ineffective administrative and political structure (Tanzi, 1998, Goel and Nelson, 2010)	Citizens' participation/the freedom of the press (Bhattacharyya and Hodler, 2010)
Weak institutions (Pellegrini and Gerlagh, 2007)	Economic growth, investments (Pellegrini and Gerlagh, 2007)
"Resource curse" (Bhattacharyya and Hodler, 2010)	Higher levels of the economic freedom, the freedom of choice, less economic control (Saha, Gounder and Su, 2009)
Political instability (Goel and Nelson, 2010)	Globalization (Charron, 2009)
Poverty (Tanzi, 1998, Goel and Nelson, 2010)	Decentralization (Dell'Anno i Teobaldelli, 2015)
The low level of property rights protection (Pellegrini and Gerlagh, 2007)	The market and competition (Alexeev and Song, 2013)
Low earnings (Goel and Nelson, 2010)	Trade openness (Charron, 2009)
The effects of the environment (Goel and Nelson, 2010)	Transparency (Goel and Nelson, 2010)
Lower education (Pellegrini and Gerlagh, 2007)	eGovernment (Elbahnasawy, 2014)
Immigration from a highly corrupt country (Dimant, Krieger and Meierrieks, 2013)	The Internet (Goel and Nelson, 2010)

Source: Author, based on the cited papers

## CONCLUSION

We are undergoing turbulent global economic changes. The basic characteristics of these changes are:

- first, neoliberal globalism contributes to an increasing social polarization;
- second, there is a progressively increasing marginalization of and alienation from the production process, which leads to the disappearance of the social framework within which a profit could be socially divided;

- third, there are permanent changes in the business cycle and the climate of a permanent downward recession is created; ultimately, the deregulation of global trade exacerbates structural imbalances and does not lead to structural adjustments.

The influence of these processes directly causes "the state elites to engage themselves in a race towards lower competitor strategies" (Jakopin, 2017b, 115).

In the transformation period lasting for almost three decades now, transition countries can see significant differences in institutional and economic development. In the SEE region, the differences between the EU member states and those candidate

ones are increasingly more noticeable in terms of economic (the rate and sustainability of economic growth) and in institutional terms (efficient and stable institutions in the function of economic growth). The global recession had a devastating effect on the degradation of the already fragile institutions of the SEE region (Jakopin, 2018, 51-54). In addition to the late transition phase (Serbia, Bosnia and Herzegovina, Macedonia), institutional and economic policies were influenced by the institutional reforms.

The influence the institutions have on economic growth and development is directly felt through the efficiency of the state (the regulatory, allocative, and incentive functions), especially in the crisis periods when the imperfection of the market, as a convergence instrument, is manifest. An effective institutional framework creates the business environment, instruments, mechanisms and measures for sustainable economic growth. Countries characterized by a high degree of the rule of law have a rate of economic growth three times as high. In addition to the delayed transition and the political legacy, the SEE's economic periphery should also be sought for the reason of the fact that, first of all, the institutional transition has not been successfully implemented.

According to the results of the research work done, the following conclusions can be drawn:

- The applied transitional models of economic growth were not in the function of building stable institutions. Institutional construction was shadowed by the ownership structure transformation process. The inadequacy and inefficiency of institutions directly influenced the effects of the privatization process, as well as the post-privatization effects, not only in Serbia, but also in the surrounding countries.
- Throughout the transition period there is a permanent gap between reform laws and their implementation. Institutions without the law enforcement capacity not only create inconsistencies between the proclaimed and the real, but also encourage the marginalization and non-enforcement of law.
- The institutional gap is mostly contributed to by the corruption factor, which is "fed" by bureaucracy, inefficient administration, low wages and poverty.
- Institutions are faced with the major problem of openness, which is evident from the central to the local level of institutional closure, and non-transparency is growing. The Center for Democratic Transition conducted a research study of the openness of institutions (governments, assemblies, ministries and administration bodies) in the countries of Montenegro, Republic of Serbia, Bosnia and Herzegovina, and FYR Macedonia (October-December 2016) and the obtained results based on the Regional Open Source Index show high institutional closeness, selectivity and arbitrariness (for example, the Serbian authorities were opened 56%, whereas that percentage was 66% in Montenegro, 36% in Macedonia and 44% in B&H). The concept of open governments during the EU integration process did not fully survive, and society's essential need for the necessity of applying and promoting reform values and their positive impact on the citizens was not recognized. In this context, it is necessary to continuously conduct research studies of the openness of institutions at all the levels of government.

The contribution of the research study reflects in the testing of the initial hypothesis of the interaction between institutional transition and economic growth indicates that the influence of institutions on transition economic growth in Serbia was negligible, and the reverse influence, i.e. the impact of economic growth on the development of institutions is the only such interest we can speak about. In the period 2001-2008, when the average rate of economic growth in Serbia was 5.9%, all of the indicators of institutional efficiency recorded significant growth. By contrast, in the recession period until 2014, deprived of virtually any growth at all, the largest number of the indicators of institutional efficiency experienced either a decline or stagnation. A mild recovery and growth in the period 2015-2017 reflected the improvement of a number of institutional indicators (political stability, government efficiency and regulatory quality).

The final message to the economic policy makers is: as sustainable economic growth is impossible without stable and efficient institutions, no stable or efficient institutions are possible, either, in recessionary periods, or in the periods of low economic growth rates.

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## FINANCIAL INSTITUTIONS' CRITERIA AND MECHANISMS IN FINANCING SMALL AND MEDIUM ENTERPRISES IN PLATEAU STATE, NIGERIA

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The inability of small and medium enterprises (SMEs) to access funds from financial institutions has been identified as one of the major problems limiting their expansion horizons. This study assesses the criteria and mechanisms used by financial institutions when granting loans to SMEs. The data were sourced from the relevant financial institutions and analyzed by using different statistical tools. One of the findings revealed that the financial ratio and the internal control system accounted for 28.7% of the part of the conditions for granting loans to SMEs. Similarly, good working capital and the ease of asset conversion accounted for 94.5% of the criteria used by financial institutions to extend credits/loans to SMEs. Also, the educational background of SMEs' operators significantly influenced the financial institutions' choice of SMEs to finance. Based on these findings, the study recommends that there is a need for SMEs' operators to align their business activities with financial institutions' lending criteria.

**Keywords:** small and medium enterprises, liquidity ratio, internal control system, loan access, financial institutions

JEL Classification: G21, H81

### INTRODUCTION

In attempts to industrialize Nigeria's economy, the Federal Government of Nigeria has mainly been focused on the development of small and medium enterprises (hereinafter referred to as SMEs) since the change from the military rule to the present democratic dispensation. This has been demonstrated not only in policy statements and the formulated policy measures,

but also and especially in the establishment of the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) (Iyortsuun, 2017). In spite of the roles played by SMEs in creating employment opportunities, thereby militating against the rural-urban drift, and mobilizing local resources, as well as the stimulation of technological development, their survival in emerging economies is being constrained due to their peculiar characteristics. This has led to the gross underperformance of the SMEs subsector and their contributions to economic growth and development are very low.

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The high risk of SMEs has been noted to threaten their survival more frequently than that of large-scale enterprises (Bank of England, 2001; Bamfordt & Bruton, 2006; Adeyele & Omorokunwa, 2016). While this is arguably true to some extent, not many studies of SMEs financing have investigated how SMEs should be packaged in a form financial institutions will be willing to finance. In order to understand how to address SMEs' lack of access to funds, there is a need to understand the significant role of the capital structure, the age of a business, and the internal control system from financial institutions' point of view, rather than solely relying on reports drafted by SMEs' owners.

The willingness demonstrated by financial institutions to extend a credit facility to SME businesses is contingent to a careful assessment of SMEs' business viability through a financial report. Various mechanisms are employed by financial institutions in order to determine whether to grant loans to SME businesses, including their capital structure. However, the capital structure of SMEs has been a barrier in the sense that, for many times, records for the basis of the assessment by financial institutions are not kept by SMEs' operators. This inability of lenders to assess the credit worthiness and the asset liquidity of SMEs partly explains the reasons why SMEs' operators run into a financial crisis. The International Labor Organization - ILO (2013) reveals the fact that each year the problems of substandard products and services, as well as difficulties in marketing these products and services, lead a great number of SMEs to a bankruptcy. This suggests that, during a crisis period, there is a need for SMEs' owners to devise strategies so as to monitor current expenses and predict the likely future costs that could emanate from risky actions.

When considering business risks, SMEs usually rely on financial factors such as sales or a profit (Waring & Glendon, 1998). The creation of a new business venture involves a thorough understanding of the entrepreneurial process. This process can only be achieved through the capacity training that enables business owners to design the right network that

overcomes the strong forces that every new business venture is faced with. It is expected that if an increase in the training capacity is reduced to practice, it will improve strategies for accessing funds for SME businesses. Consequently, this study is designed to explore how skill acquisition by SMEs operators and the capital structure can help them to effectively network their businesses from the point of view of financial institutions.

Based on the foregoing, the main aim of this study is to examine the criteria and mechanisms used by financial institutions in making decisions on granting loans to SMEs in Jos Metropolis, whereas the specific objectives of the study are: to determine the impact of the age of a business, the financial ratio, and the internal control system as a condition for granting a loan to SMEs; to investigate the influence of good working capital and the liquidity of an asset on SMEs' financial ratio, which financial institutions take into consideration when deciding on financing SMEs in Jos Metropolis; to find out whether the financial ratio and the Education/Vocational training jointly have a significant impact on SME financing; to examine the interrelationship between the financial ratio, a short-term credit collection, good working capital and the liquidity ratio; and to investigate whether access to bank loans by SME businesses significantly varies with financial institutions.

The corresponding hypotheses for this study are stated in an alternate form and are tested at the 0.05 level of significance, which includes the following:

- H1: The age of a business, the financial ratio, and the internal control system have a significant impact on the condition for granting a loan to SMEs.
- H2: Good working capital and the liquidity of an asset significantly influence the SMEs' financial ratio that financial institutions take into consideration in financing SMEs in Jos Metropolis.
- H3: The financial ratio and Educational/Vocational training have a significant impact on SME financing.

- H4: There is a significant interrelationship between the financial ratio, a short-term credit collection, good working capital and the liquidity ratio.
- H5: Access to bank loans by SME businesses varies significantly with financial institutions.

These hypotheses are also restated in the methodology section, alongside the model specifications and the required statistical tools for testing them. This study covers all the commercial banks, as well as the bank of industry and microfinance banks in Jos, the capital city of the Plateau State of Nigeria. This is an investigative approach from the point of view of financial institutions with respect to the qualities they expect SMEs to have prior to extending credit facilities to them. The paper is divided into the subsequent: Section two deals with a review of the relevant literature on SMEs financing. Section three is concerned with the scientific instrumentations used in the research process, whereas the results for the study are presented in Section four. The final section contains the conclusion and the recommendations.

## LITERATURE REVIEW

*New concepts development* - The terms SME financing and SMEs' access to a loan are often used interchangeably in order to imply how business owners or managers obtain loans or raise funds from creditors or financial institutions so as to conduct the affairs of their companies or businesses. In other words, raising funds from whatever means or sources for the purpose of maintaining business continuity could imply business financing. While the two terms have not been challenged, nor have they generated any controversy in the literature, the researcher attempts to use them in a different sense. In this study, the term SME financing is used to imply a form of empowerment programs put in place by financial institutions in order to support government policies on the development of SMEs.

Financial institutions do not collect funds from the general public just for the purpose of safekeeping; they also invest these funds in profitable ventures

by lending to business owners at interest rates. As a part of their subsidiaries, they can even start and develop small businesses to medium-sized ones by financing the activities of their businesses directly or indirectly where they extend a credit to the SMEs that present a business proposal/feasibility studies they believe will generate high returns. This type of a credit facility does not require collateral securities because they (financial institutions) will have an opportunity to monitor and supervise how the businesses they finance are managed. The monitoring of and supervision rights of financial institutions to SME businesses will be derived from the conditions for extending a credit facility. However, in a situation where business owners deliberately approach financial institutions for a credit facility, there are some requirements or qualities the business in question needs to have before loans can be granted. This type of a credit facility can be termed SMEs' access to a loan. Where business owners seek loans from financial institutions, the lender will assess the borrower's credit worthiness through the inspection and analysis of debt items, loan balances and repayment track records (Haron, Said, Jayaraman & Ismail, 2013). If such lenders are satisfied with the information sought, they will grant a loan.

Financial institutions can also use the existing debt and debt application balances in the borrower's financial reports so as to determine the extent of the borrower's indebtedness (Haron *et al*, 2013). The financial crisis that took place in 2008/2009 has forced many financial institutions to take precautions on how they lend out funds to borrowers, which has led to complexities in credit processing. It should be noted that in accessing funds from banks or financial institutions by pledging assets as a form of collateral security before such funds have been released to them they will be faced with a default because a great majority of them only lease and do not own their own building which they operate from.

In terms of poverty alleviation, SMEs have significantly contributed to the development of economies worldwide, being the largest sector generating emplacement even though they lack the capacity to expand their business activities.

For example, in developed countries, especially in Europe, SMEs have been reported to be playing a consistent leading role in the growth of the European economy, constituting more than 98% of all the businesses, generating 67% of the total employment, and 58% of the gross value added in 2012. Similarly, in developing countries, SMEs also play a vital role by contributing up to 45% of employment, as well as 33% of the annual GDP (Nguyen & Luu, 2013).

A. R. Kira (2013) revealed the fact that SMEs' financing difficulties restrict their investment opportunities and slowdown their growth. It was also noted that access to finance is broadly seen as an essential determinant for firms, particularly for SMEs, to effectively run their daily business operations, with the goal of achieving long-term investment opportunities and development targets (Kira, 2013). SMEs usually finance a larger portion of their business outside formal means, such as relations, the family and friends, or mainly rely on short-term financing. This result is in agreement with the theoretical models that applied fixed transaction costs and information asymmetries, and the resulting agency problems as the basis for the financial market conflicts (Nguyen & Luu, 2013). Due to small firms' size and ownership structure that indicate a higher credit risk, the financial institutions which are risk-averse are usually less motivated to extend a credit to SMEs. That is why many of them rely on informal means.

*Access to a loan* - SMEs are also perceived as lacking in meeting the requirements needed for the formal source of financing (Beck, Demirgüç-Kunt, Laeven & Maksimovic, 2006; Singh & Janor, 2013). A lack of access to formal means of financing businesses has been reported as the critical element that hinders SMEs' development (Kira, 2013). However, H. Haron *et al* (2013), noted that, apart from good financial records, accessing bank loans also requires a good rapport with lenders. Commercial banks predominantly earn their profit through lending (Asantey & Tengey, 2014) and also serve as a means of financing many businesses, SMEs in particular, which solely depend on the traditional debt in order to fulfill their business financial needs. Credit risk generates a possibility of SMEs potential defaulting

on the principal and interest repayment obligations (Obamuyi, 2007). Thus, in order to extend a credit to SMEs, commercial banks' decision on lending is often based on the strength of the audited financial statements, long credit histories and a good record of the principal owner, most of which are not found in SMEs. Despite the fact that financial institutions have identified SMEs as fast-growing entities, there are several limitations representing a barrier to SMEs in their accessing funds from financial institutions (Shikumo & Mwangi, 2016).

In an attempt to determine the most crucial factor affecting SMEs' performance, many studies have come to a conclusion that a lack of access to funds plays a dominant role due to high transaction costs, which prevents SMEs from obtaining a credit more than it does larger enterprises (Saito & Villanueva, 1981), together with the information asymmetries associated with SMEs (Beck & Demirguc-Kunt, 2006; Kira, 2013). B. Levy (1993) noted that the non-availability of funds to finance working capital was a part of the constraints that limit SMEs' expansions. This limitation may not be unconnected with owners' experience and education/training. A study by J. Rand (2007) found a negative association between one's being highly or moderately skilled, on the one hand, and accessing a credit, on the other, reflecting that owners with higher skill levels have lower demand for debts and finance themselves from within internal funds, or that better-educated and better-experienced SMEs' owners are more likely to know when their application will be rejected, and therefore refrain from applying. Another study by V. Thanh, T. T. Cuong, B. Dung & T. D. U. C. Chieu (2011) also finds that a firm owner's experience and education of SMEs' owners/operators play a significant role in reducing a probability of a bank loan being rejected.

The age of a firm has also been reported to influence financial institutions' choice of credit financing in many studies (Nguyen & Luu, 2013), as young enterprises, especially start-ups, are likely to seek finance from informal sources, whereas the older ones have more advantages in searching for bank debts or equity. However, J. Rand (2007) finds a negative relation between the age and the holding of debts by

arguing that old firms are usually more settled and less likely to engage in risky activities.

*SMEs financing* - The studies of the determinant of SMEs' financing at both the local and the international levels have been conducted (Shikumo & Mwangi, 2016). In a study by D. G. K. Agyapong and K. Darfor (2011), the criteria for assessing SMEs' borrowers in Ghana were examined. The study revealed that credit managers made decisions on whether to accept or reject a loan application submitted by SMEs based on the previous loans repayment history, the repayment schedule, the type of the business activity involved, the loan size relative to the business. Based on the revealed literature, the subsequent section is dedicated to the detailed methodological approach employed.

## DESIGN AND METHODOLOGY

Financial institutions, such as banks, play a significant role in the growth and survival of SMEs in any economy. Because of this crucial role, this study used banks, including the Bank of Agriculture and the micro-finance banks in Jos Metropolis. Hence, the population for this study is all the commercial banks, as well as the bank of industry and the microfinance banks in the study area. In this study, the primary data sourced from the employees working at the loans and credits departments of the selected banks are made use of. In order to access the respondents, the secretaries of the selected banks were contacted and asked for a permission to distribute the questionnaire. The copies of the questionnaire were distributed to the selected banks and subsequently retrieved from the respondents. The questionnaire consisting of both the closed and the open-ended questions seeking qualitative and quantitative responses from the selected banks in order to test different research hypotheses was applied in the study. All the question items in the questionnaire are based on the conditions under which banks will be willing to lend funds to SMEs if such requirements are met by the applying SMEs' operators in Jos Metropolis. Purposive random sampling was used to select 100 respondents from the financial institutions.

*Model Specification* - As a sequel to the review of the related literature, and in line with the specific objectives of the study, the following hypotheses and corresponding models have been developed:

According to the reviewed literature, it is clear that a good internal control system will lead to good financial ratios, which can easily be achieved by the SMEs that have been operative for a number of years, differently from those newly-emerged. With these criteria in place, it is proposed that all these variables directly or indirectly influence some of the conditions for granting loans to SMEs. Hence, the researcher hypothesized that:

H1: The age of a business, the financial ratio, and the internal control system have a significant impact on the condition for granting a loan to SMEs. The model required for this hypothesis is given as follows:

$$ConBL = (AOB, FinR, ICS) \quad (1a)$$

Stochastically,

$$ConBL = \lambda_0 + \lambda_1 AOB + \lambda_2 FinR + \lambda_3 ICS + \varepsilon \quad (1b)$$

where:

*ConBL* - Condition for bank lending,

*AOB* - Age of Business,

*FinR* - Financial ratio,

*ICS* - Internal control system,

$\varepsilon$  - error term,

$\lambda_0$  is the intercept;  $\lambda_1$  to  $\lambda_3$  represent coefficient of the variables measured.

A good financial ratio achieved through good working capital and the ease of asset conversion to cash is suspected to have a close connection with a financial institution's decision to extend a credit facility to SMEs. Therefore, it is hypothesized that:

H2: Good working capital and the liquidity of an asset significantly influence the SMEs' financial ratio that financial institutions take into consideration when financing SMEs in Jos Metropolis. The model for this hypothesis is given as follows:

$$SMEfinR = (Gwkg, SMEloa) \tag{2a}$$

$$SMEfinR = \lambda_0 + \lambda_1 Gwkg + \lambda_2 SMEloa + \varepsilon \tag{2b}$$

where:

*SMEfinR* - SMEs Financial ratio,

*Gwkg* - good working capital,

*SMEloa* - SMEs Assest Liquidity,

$\varepsilon$  - error term,

$\lambda_0$  is the intercept;  $\lambda_1$  to  $\lambda_2$  represent coefficient of the variables measured.

To compliment Model (2), it is reasonable that, if financial institutions pay close attention to the financial ratio of SMEs before granting them a loan, then a good understanding of the business undertaken by such SMEs' owners/operators can serve the purpose as well. Based on this, the hypothesis for achieving the objective is given as follows:

H3: The financial ratio and Educational/Vocational training have a significant impact on SMEs financing.

$$SMEfin = (FinR, EduVoc) \tag{3a}$$

Stochastically,

$$SMEfin = \lambda_0 + \lambda_1 FinR + \lambda_2 EduVoc + \varepsilon \tag{3b}$$

where:

*SMEfin* - SMEs financing criteria,

*FinR* - SMEs financing ratio,

*EduVoc* - Education/Vocational training,

$\varepsilon$  - error term,

$\lambda_0$  is the intercept;  $\lambda_1$  to  $\lambda_2$  represent coefficient of the variables measured.

*The other hypotheses of the study* - The two remaining hypotheses not subject to the linear and multiple regressions models were tested by applying inferential statistics. These hypotheses are:

H4: There is no significant interrelationship between the financial ratio, a short-term credit collection, good working capital and the liquidity ratio.

H5: Access to bank loans by SME businesses does not significantly vary with financial institutions.

The hypothesis (H4) was tested by applying the partial correlation, whereas the hypothesis (H5) was tested by applying the Analysis of Variance (ANOVA).

## RESULTS

*Descriptive analysis* - Table 1 shows the demographic information about the respondents including their gender, age, educational qualification, and work experience. It shows that the majority of the respondents (64.8%) have worked in finance-related companies for over a period of 6 to 17 years: 6-11 (31.9%) and 12-17 (22.3%). Most of the workforce age brackets fall within the age of 31-40 (46.8%), whereas the respondents within the age brackets of 21-30 and 41-50 account for 29.8% and 18.1%, respectively. The percentage of the male to the female respondents ranges from 51.1% to 48.9%. All this information has an implication for SME businesses because the younger age among banks' staff indicates a larger number of years to be spent in the bank and these groups of people are likely to be the same people who will be making important decisions when SMEs' owners come to their banks to ask for loans after having met the requirements attractive to lenders.

**Table 1** Demographic Information

Gender		Frequ- ency	Percent	Valid Percent	Cumul- ative Percent
Valid	Male	46	48.9	51.1	51.1
	Female	44	46.8	48.9	100
	Total	90	95.7	100	
Missing	System	4	4.3		
Total		94	100		
Respo- ndents' age	21-30	28	29.8	31.5	31.5
	31-40	44	46.8	49.4	80.9
	41-50	17	18.1	19.1	100
	Total	89	94.7	100	
Missing	System	5	5.3		
Total		94	100		
Work experience	1-5	20	21.3	24.7	24.7
	6-11	30	31.9	37.0	61.7
	12-17	21	22.3	25.9	87.7
	18-23	8	8.5	9.9	97.5
	24-29	2	2.1	2.5	100.0
	Total	81	86.2	100.0	
	Missing	System	13	13.8	
Total		94	100.0		
Educational qualification	OND/NCE	16	17	17.4	17.4
	HND/B.Sc.	64	68.1	69.6	87
	MBA/M.Sc.	12	12.8	13	100
	Total	92	97.9	100	
Missing	System	2	2.1		
Total		94	100		

Source: Field Survey, 2018

The majority of the respondents (78.7%) have at least either an HND certificate or the First Degree. The education and experience variables show the reliability of the information supplied for the purpose of conducting this research study. As can be seen in Table 1, about 78.3% have at least 12 years of work experience in their respective banks.

*Conditions for Granting SMEs a Loan and the Nature of Business* - Table 2 shows a comparison between the track record expected from SMEs and the work experience of the financial institutions' staff. At least 86.4% (70/81) of the respondents have agreed (29.6%)/strongly agreed (56.8%) that SMEs with a good record of performance as viewed by the respondents will be able to access loans. As can be seen in Table 2, there is an about 66.7% perpendicular agreement for "strongly agreed" and 12-17 work experience among the banks' staff. It is also evidenced in Table 2 that about 93.8% of the respondents have agreed (50.6%)/strongly agreed (43.2%) that a good business understanding by the owners of SMEs forms the basis for granting a loan to them, whereas 79.8% have agreed (50.6%)/strongly agreed (29.6%) that the SMEs with the ability to demonstrate a good feasibility study for the survival of a new business startup will attract bank lending at an affordable rate.

Table 3 reveals that technological businesses are more likely to have access to bank loans (41.1% "strongly agreed") than manufacturing businesses (33.7%), agro-businesses (farming) (31.5%), construction/building businesses (33%), and servicing businesses (26.1%). Also, banks have agreed to finance agro-businesses (farming) (50%) much more than manufacturing businesses (38.2%), processing businesses (15.4%), technology-related businesses (40%), construction / building-related businesses (37.4%) and service-related businesses. The table also reveals that many of the respondents are well-educated, which is reflected in their responses.

*Procedures for testing the hypotheses* - Having considered the extent to which the respondents have agreed with the type of the business to be financed, it is not clear which of the businesses is the most attractive for financing because of a different rating. Hence the need to carry out a further testing so as to ascertain which of these businesses is the most attractive for bank lending. The hypotheses for this study are tested below with the aid of the relevant statistics.

In the model summary (Table 4), Model 1 represents the entry of the age of the business that accounts for only 13.8% of the variance of the SMEs' access to a loan ( $R^2 = 0.138$ ,  $F = 13.239$ ,  $p < 0.000$ ). The inclusion

**Table 2** Work experience by conditions for granting loans to SMEs

		Work Experience					Total
		1-5	6-11	12-17	18-23	24-29	
Track records for good performance	Strongly Disagreed	1(5.00%)	0(0.00%)	1(4.80%)	0(0.00%)	0(0.00%)	2(2.50%)
	Disagreed	1(5.00%)	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	1(1.20%)
	Neutral	1(5.00%)	3(10.00%)	1(4.80%)	2(25.00%)	1(50.00%)	8(9.90%)
	Agreed	6(30.00%)	10(33.30%)	5(23.80%)	3(37.50%)	0(0.00%)	24(29.60%)
	Strongly Agreed	11(55.00%)	17(56.70%)	14(66.70%)	3(37.50%)	1(50.00%)	46(56.80%)
Total		20(100.00%)	30(100.00%)	21(100.00%)	8(100.00%)	2(100.00%)	81(100.00%)
Business understanding	Disagreed	1(5.00%)	0(0.00%)	1(4.80%)	0(0.00%)	0(0.00%)	2(2.50%)
	Neutral	1(5.00%)	0(0.00%)	2(9.50%)	0(0.00%)	0(0.00%)	3(3.70%)
	Agreed	12(60.00%)	16(53.30%)	8(38.10%)	5(62.50%)	0(0.00%)	41(50.60%)
	Strongly Agreed	6(30.00%)	14(46.70%)	10(47.60%)	3(37.50%)	2(100.00%)	35(43.20%)
	Total		20(100.00%)	30(100.00%)	21(100.00%)	8(100.00%)	2(100.00%)
Good feasibility study for survival	Disagreed	0(0.00%)	0(0.00%)	1(4.80%)	0(0.00%)	0(0.00%)	1(1.20%)
	Neutral	4(20.00%)	5(16.70%)	5(23.80%)	1(12.50%)	0(0.00%)	15(18.50%)
	Agreed	9(45.00%)	17(56.70%)	10(47.60%)	3(37.50%)	2(100.00%)	41(50.60%)
	Strongly Agreed	7(35.00%)	8(26.70%)	5(23.80%)	4(50.00%)	0(0.00%)	24(29.60%)
	Total		20(100.00%)	30(100.00%)	21(100.00%)	8(100.00%)	2(100.00%)
Good internal control	Disagreed	0(0.00%)	1(3.30%)	1(4.80%)	0(0.00%)	0(0.00%)	2(2.50%)
	Neutral	3(15.00%)	2(6.70%)	3(14.30%)	1(12.50%)	0(0.00%)	9(11.10%)
	Agreed	9(45.00%)	11(36.70%)	5(23.80%)	1(12.50%)	1(50.00%)	27(33.30%)
	Strongly Agreed	8(40.00%)	16(53.30%)	12(57.10%)	6(75.00%)	1(50.00%)	43(53.10%)
	Total		20(100.00%)	30(100.00%)	21(100.00%)	8(100.00%)	2(100.00%)
Good financial record	Disagreed	1(5.00%)	1(3.30%)	0(0.00%)	1(12.50%)	0(0.00%)	3(3.70%)
	Neutral	1(5.00%)	4(13.30%)	1(4.80%)	0(0.00%)	0(0.00%)	6(7.40%)
	Agreed	13(65.00%)	16(53.30%)	10(47.60%)	5(62.50%)	0(0.00%)	44(54.30%)
	Strongly Agreed	5(25.00%)	9(30.00%)	10(47.60%)	2(25.00%)	2(100.00%)	28(34.60%)
	Total		20(100.00%)	30(100.00%)	21(100.00%)	8(100.00%)	2(100.00%)

Source: Field Survey, 2018

of the financial ratio variable (Model 2) increases the explained variance from 13.8% to 21.5%, and is significant ( $R^2 = 0.215$ ;  $F = 8.099$ ,  $p < 0.006$ ). Similarly, the entry of the SMEs' internal control system (Model 3) brings the total explained variables from 21.5% to

28.7%, and is also significant ( $R^2 = 0.287$ ;  $F = 8.207$ ,  $p < 0.005$ ). The results output in Table 4a imply that the age of a business, the financial ratio, and the internal control system explained about 28.7% of the condition for granting a loan to SMEs.

Table 3 Respondents' education by SMEs financing

		Educational Qualification			Total
		OND/NCE	HND/B.Sc.	MBA/M.Sc.	
Manufacturing Companies	Strongly Disagreed	2 (13.30%)	0 (0.00%)	0 (0.00%)	2 (2.20%)
	Disagreed	0 (0.00%)	2 (3.20%)	1 (8.30%)	3 (3.40%)
	Neutral	3 (20.00%)	13 (21.00%)	4 (33.30%)	20 (22.50%)
	Agreed	3 (20.00%)	28 (45.20%)	3 (25.00%)	34 (38.20%)
Total		15 (100.00%)	62 (100.00%)	12 (100.00%)	89 (100.00%)
Processing Businesses	Strongly Disagreed	0 (0.00%)	1 (1.60%)	0 (0.00%)	1 (1.10%)
	Disagreed	0 (0.00%)	4 (6.30%)	0 (0.00%)	4 (4.40%)
	Neutral	4 (25.00%)	10 (15.90%)	0 (0.00%)	14 (15.40%)
	Agreed	8 (0.00%)	28 (44.40%)	3 (25.00%)	39 (42.90%)
	Strongly Agreed	4 (25.00%)	20 (31.70%)	9 (75.0%)	33 (36.30%)
Total		16 (100.00%)	63 (100.00%)	12 (100.00%)	91 (100.00%)
Technology	Disagreed	2 (12.50%)	3 (4.80%)	0 (0.00%)	5 (5.60%)
	Neutral	2 (12.50%)	8 (12.70%)	2 (18.20%)	12 (13.30%)
	Agreed	4 (25.00%)	30 (47.60%)	2 (18.20%)	36 (40.00%)
	Strongly Agreed	8 (50.00%)	22 (34.90%)	7 (63.60%)	37 (41.10%)
Total		16 (100.00%)	63 (100.00%)	11 (100.00%)	90 (100.00%)
Agro-business (farming)	Disagreed	1 (6.30%)	3 (4.70%)	0 (0.00%)	4 (4.30%)
	Neutral	3 (18.80%)	9 (14.10%)	1 (8.30%)	13 (14.10%)
	Agreed	6 (37.50%)	33 (51.60%)	7 (58.30%)	46 (50.00%)
	Strongly Agreed	6 (37.50%)	19 (29.70%)	4 (33.30%)	29 (31.50%)
Total		16 (100.00%)	64 (100.00%)	12 (100.00%)	92 (100.00%)
Construction/ Building	Disagreed	1 (6.30%)	2 (3.20%)	0 (0.00%)	3 (3.30%)
	Neutral	4 (25.0%)	19 (30.2%)	1 (8.30%)	24 (26.40%)
	Agreed	6 (37.50%)	21 (33.30%)	7 (58.3%)	34 (37.4%)
	Strongly Agreed	5 (31.30%)	21 (33.30%)	4 (33.30%)	29 (33%)
Total		16 (100.00%)	63 (100.00%)	12 (100.00%)	91 (100.00%)
Service	Strongly Disagreed	2 (12.50%)	0 (0.00%)	1 (.8.3%)	3 (3.3%)
	Disagreed	0 (0.00%)	3 (4.70%)	0 (0.00%)	3 (3.3%)
	Neutral	5 (31.30%)	22	0 (0.00%)	27 (29.3%)
	Agreed	6 (37.50%)	23 (35.90%)	6 (50.00%)	35 (38.0%)
	Strongly Agreed	3 (18.80%)	16 (25.00%)	5 (41.70%)	24 (26.10%)
Total		16 (100.00%)	64 (100.00%)	12 (100.00%)	92 (100.00%)

Source: Field Survey, 2018

Table 4b shows a direct impact of the independent variables on the requirement for granting loans to SMEs. Based on the data provided in the table, while it is evident that the age of a business ( $\lambda_1 = 0.146$ ,  $t = 1.637$ ,  $p > 0.05$ ) has no significant influence on SMEs'

access to a loan, the financial ratio ( $\lambda_2 = 0.226$ ,  $t = 2.779$ ,  $p < 0.007$ ) and the internal control system ( $\lambda_3 = 0.311$ ,  $t = 2.865$ ,  $p < 0.005$ ) have a significant influence on SMEs' access to bank lending. Based on the findings accounted for in Tables 4a-b, it can be concluded that

the age of a business is not supported, whereas the financial ratio and the internal control system are supported. Consequently, it can be concluded that a good financial ratio and the internal control system have a significant impact on the conditions for loan access, whereas the age of a business has nothing to do with the condition for accessing loans from financial institutions.

Table 5a shows how SMEs' good working capital and liquidity ratio are related to bank lending. In the table, good working capital (Model 2) explains 66.2% of a part of the criteria for SMEs' financial ratio by the F Change ( $R^2 = 0.662$ ;  $F = 168.719$ ,  $p < 0.000$ ). Also, the entry of SMEs' liquidity (Model 2) results in an R square change of 0.283, which means that the variable of asset liquidity contributes 28.3%, which

**Table 4a** The model summary of SMEs' years in business, financial ratio and internal control system related to access to bank lending

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.371 <sup>a</sup>	0.138	0.127	0.52421	0.138	13.239	1	83	0.000
2	.464 <sup>b</sup>	0.215	0.196	0.50313	0.078	8.099	1	82	0.006
3	.536 <sup>c</sup>	0.287	0.261	0.48238	0.072	8.207	1	81	0.005

a. Predictors: (Constant), Age of Business

b. Predictors: (Constant), Age of Business, Financial Ratio

c. Predictors: (Constant), Age of Business, Financial Ratio, Internal Control System

Source: Author

**Table 4b** The impact of the SMEs' years in business, financial ratio and internal control system on their access to bank lending

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.838	0.365		7.784	0.000	2.113	3.564
	Age of Business	0.314	0.086	0.371	3.639	0.000	0.142	0.485
2	(Constant)	2.121	0.431		4.916	0.000	1.263	2.979
	Age of Business	0.245	0.086	0.29	2.85	0.006	0.074	0.417
	Financial Ratio	0.241	0.085	0.29	2.846	0.006	0.072	0.409
3	(Constant)	1.247	0.514		2.427	0.017	0.225	2.27
	Age of Business	0.146	0.089	0.173	1.637	0.106	-0.032	0.325
	Financial Ratio	0.226	0.081	0.272	2.779	0.007	0.064	0.387
	Internal Control System	0.311	0.109	0.296	2.865	0.005	0.095	0.527

Dependent Variable: Condition for Granting Loans to SMEs.

Source: Author

significantly brings the total explained variables from 66.2% to 94.5% ( $R^2 = 0.945$ ;  $F = 8.207$ ,  $p < 0.005$ ).

Table 5b contains the regression results of good working capital and the liquidity ratio. Good working capital and the ease of the liquidity of the asset explains 94.5% of the reasons why financial institutions extend a credit to SMEs. According to the findings accounted for in the table, good working capital ( $\lambda_1 = 0.365$ ,  $t = 12.717$ ,  $p < 0.0000$ ) and the liquidity of an asset ( $\lambda_2 = 0.553$ ,  $t = 20.972$ ,  $p < 0.000$ ) have a significant influence on the SMEs' financial ratio that financial institutions consider when financing SMEs in Jos Metropolis. Hence, the hypothesis is supported. Based on these results, a conclusion can be drawn that good working capital and the liquidity of an asset significantly influence SMEs' financial ratio, which can be used

as one of the criteria of financial institutions when granting loans to SMEs.

The relationship between the financial ratio and SMEs financing is significant according to the F Change test ( $R^2 = 0.118$ ,  $F = 10.844$ ,  $p < 0.001$ ). The introduction of educational/vocational training (Model 2) results in an R square change of 0.071, which means that education and vocational training contributes 7.1% and brings the total explained variables from 11.8% to 19% ( $R^2 = 0.19$ ;  $F = 7.055$ ,  $p < 0.001$ ). The extent to which the SMEs' owners' financial ratio and educational/vocational training are related to SMEs financing is only explained by 19%.

Table 6b shows the impact of SMEs' financial ratio and the entrepreneur's educational/vocational training on

**Table 5a** The model summary of how SMEs' good working capital and liquidity ratio are related to bank lending

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.814 <sup>a</sup>	0.662	0.658	0.39517	0.662	168.719	1	86	0.000
2	.972 <sup>b</sup>	0.945	0.944	0.15996	0.283	439.836	1	85	0.000

a. Predictors: (Constant), Good working capital

b. Predictors: (Constant), Good working capital, Liquidity of asset.

Source: Author

**Table 5b** The impact of SMEs' good working capital and liquidity ratio on bank lending

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.171	0.234		5.003	0.000	0.706	1.637
	Good working capital	0.731	0.056	0.814	12.989	0.000	0.619	0.843
2	(Constant)	0.364	0.102		3.557	0.001	0.16	0.567
	Good working capital	0.365	0.029	0.406	12.717	0.000	0.308	0.422
	Liquidity of asset	0.553	0.026	0.67	20.972	0.000	0.5	0.605

Dependent Variable: Financial Ratio

Source: Author

the business undertaken. The results show that the financial ratio ( $\lambda_1 = 0.466, t = 3.198, p < 0.001$ ) and Edu/ Voc. training ( $\lambda_2 = 0.454, t = 2.656, p < 0.01$ ) jointly have a positive and significant impact on SMEs financing. The hypothesis is also supported, which means that banks will have to consider SMEs' financial ratio, as well as the educational/vocational training of SMEs' operators, before extending a credit to them for running their business.

Table 7 also contains the interrelationships between the financial ratio, a short-term credit collection, good working capital and the liquidity ratio. The results show that the financial ratio has a very strong

and significant relationship with a short-term credit collection ( $r = .881, p < 0.05$ ), good working capital ( $r = .8140, p < 0.05$ ) and the liquidity of the asset ( $r = 0.917, p < 0.05$ ). Similarly, a short-term credit collection has a significant relationship with good working capital ( $0.530, p < 0.05$ ) and the liquidity of an asset ( $0.774, p < 0.05$ ). In addition, good working capital and the liquidity of an asset both demonstrate a significant relationship with each other ( $r = 0.608, p < 0.05$ ). Hence, the hypothesis is upheld and a conclusion can be drawn that there is a strong and significant interrelationship between the financial ratio, a short-term collection period, good working capital and the liquidity of assets that a financial institution

**Table 6a** The model summary of the relationship between the financial ratio and Educational/Vocational training, and SMEs financing

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.344 <sup>a</sup>	0.118	0.107	0.93491	0.118	10.844	1	81	0.001
2	.435 <sup>b</sup>	0.19	0.169	0.90181	0.071	7.055	1	80	0.01

a. Predictors: (Constant), Financial Ratio

b. Predictors: (Constant), Financial Ratio, Educational / Vocational Training

Source: Author

**Table 6b** The impact of the financial ratio and Educational/Vocational training on SMEs financing

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.099	0.637		3.292	0.001	0.83	3.367
	Financial Ratio	0.496	0.151	0.344	3.293	0.001	0.196	0.796
2	(Constant)	0.285	0.919		0.31	0.757	-1.543	2.114
	Financial Ratio	0.466	0.146	0.323	3.198	0.002	0.176	0.756
	Edu / Voc. Training	0.454	0.171	0.268	2.656	0.01	0.114	0.794

a. Dependent Variable: SMEs Financing

Source: Author

uses in order to make an assessment of SMEs' credit worthiness.

*The variability of SMEs' access to a bank loan among financial institutions* - Table 8a reveals a mean-standard test of financial institutions' conditions for granting loans to SMEs in Jos Metropolis. The scale of the measurement ranges from 1 to 5. Amongst the conditions listed for granting a loan to SMEs, the SME's ability to monitor how a loan is used, SMEs'

operators' ability to account for the judicious use of a loan and the government as a guarantor are also included as the key conditions, in which the overall averages for individual banks are reported in Table 8a. The means in the table reveal that the largest number of the banks are more likely to agree upon these conditions.

Also, assessing individual financial institutions by applying the level of the mean/standard of a number

**Table 7** The interrelationship between SMEs' financial ratios

Pearson Correlation	Financial ratio	Short collection period	Good working capital	Liquidity of the asset
Financial Ratio	1			
Short-term credit collection period	.881*	1		
Good working capital	.814*	.530*	1	
Liquidity of the asset	.917*	.774*	.608*	1

Source: Author

**Table 8a** The condition for granting loans to SME Businesses by financial institutions in Jos Metropolis

Financial institutions	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Access Bank	11	4.2879	.24823	.07484	4.1211	4.4546	3.83	4.83
Bowans Microfinance	5	4.2000	.29814	.13333	3.8298	4.5702	3.83	4.50
Diamond Bank	5	3.3000	1.06979	.47842	1.9717	4.6283	2.33	4.67
Ecobank	11	4.3333	.27889	.08409	4.1460	4.5207	4.00	4.83
FCMB Bank	6	4.2500	.17480	.07136	4.0666	4.4334	4.00	4.50
First Bank	7	3.6667	.31914	.12062	3.3715	3.9618	3.17	4.00
IBTC Bank	8	4.2917	.44320	.15670	3.9211	4.6622	3.50	4.83
Light Cooperative Microfinance	1	3.5000	.	.	.	.	3.50	3.50
Sky Bank	1	4.1667	.	.	.	.	4.17	4.17
UBA	2	4.5000	.70711	.50000	-1.8531	10.8531	4.00	5.00
Union Bank	6	4.2500	.64765	.26440	3.5703	4.9297	3.33	5.00
Unity Bank	7	4.2619	.50787	.19196	3.7922	4.7316	3.50	4.83
Zenith Bank	6	3.8056	.66179	.27017	3.1111	4.5001	2.83	4.50
Light Microfinance	8	4.3958	.62955	.22258	3.8695	4.9221	3.00	5.00
Bank of Agriculture	3	4.2222	.67358	.38889	2.5490	5.8955	3.50	4.83
Total	87	4.1437	.55578	.05959	4.0252	4.2621	2.33	5.00

Source: Author

of the respondents reveals that Access Bank ( $n_A = 11$ ,  $A_{\bar{x}} = 4.2879$ ,  $\sigma_A = 0.24823$ ) is very much stable with respect to these conditions when granting a loan, more than Eco Bank ( $n_E = 11$ ,  $E_{\bar{x}} = 4.3333$ ,  $\sigma_E = 0.2788$ ) (Table 8a) Similarly, the FCMB ( $n_F = 6$ ,  $F_{\bar{x}} = 4.25$ ,  $\sigma_F = 0.1748$ ) is more likely to grant a loan to SMEs than the IBTC ( $n_I = 8$ ,  $I_{\bar{x}} = 4.2917$ ,  $\sigma_I = 0.4432$ ).

The other financial institutions' mean standards are as shown in the table. Diamond Bank ( $n_D = 5$ ,  $D_{\bar{x}} = 3.3333$ ,  $\sigma_D = 1.06979$ ), however is very likely to be instable with respect to the conditions for extending loans to SME businesses in Jos Metropolis. Figure 1 also reveals the degree at which financial institutions are involved and the variability with the mean conditions listed. Hence, Table 8b allows us to conclude that access to bank loans by SMEs businesses significantly varies from one financial institution to another ( $F = 2.249$ ,  $Df[14, 72]$ ,  $p < 0.013$ ). The extent of the variability of the financial institutions' conditions for granting loans to SMEs is shown in Figure 1.

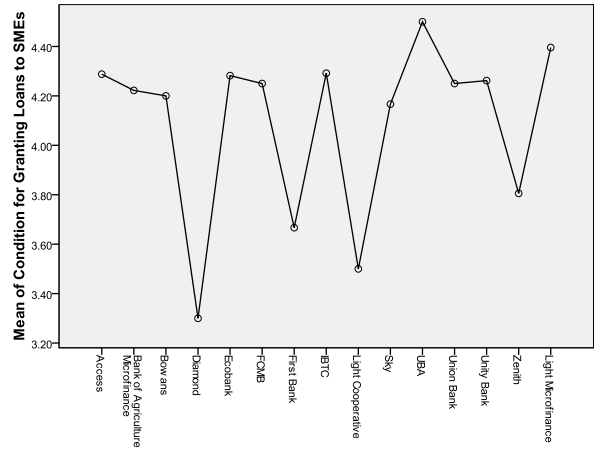
**Table 8b** The condition for granting loans to SMEs

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	8.083	14	.577	2.249	.013
Within Groups	18.483	72	.257		
Total	26.565	86			

Source: Author

## CONCLUSION

When seeking a loan from a bank, SMEs' operators/ owners in Nigeria are faced with one of the major challenges. Financial institutions impose the criteria such SMEs need to meet before such financial institutions extend loans to them; most frequently, however, the SMEs in question are not aware of those criteria. This research study has examined these



**Figure 1** Financial institutions

Source: Author

criteria and mechanisms applied by the selected financial institutions in Jos Metropolis. Some of the major findings account for the fact that the age of a business, a good financial ratio and the internal control system, such as well-kept financial records or another book-keeping of business activities, significantly influence financial institutions' decision-making mechanisms when granting loans to SMEs. These results show that financial institutions are more likely to grant loans to older SME businesses with a good financial ratio and a good internal control system.

Similarly, good working capital and asset liquidity are found to significantly influence SMEs financing. This suggests that, as SMEs' working capital and the ease of the asset conversion into cash increase, there is a greater chance for SMEs to access credit facilities extended by financial institutions. The findings have also revealed that the financial ratio and education/vocational training jointly have a positive impact on SMEs financing. This is implicative of the fact that well-educated SMEs' owners/operators with a good business financial ratio tend to have better access to financial institutions' credit facilities.

Also, there is a strong significant interrelationship between the credit collection period, working capital,

asset liquidity and the financial ratio. This means, the shorter asset liquidity, the better SMEs' working capital and financial ratios. SMEs' access to a loan has also been found to significantly vary from one Jos Metropolis's financial institution to another.

Based on the the above findings, the research study suggests that there is room for SMEs to increase the volume of their working capital and devise means to reduce the time necessary to collect all credit sales in order to meet banks' lending criteria. Also, SMEs' operators need to acquire relevant skills with respect to the type of the business activities they are engaged in, and also to train their staff in requisite skills so as to make their businesses attractive to banks' financing. The need to maintain the internal control system is also of the key importance for attracting loans from banks.

Finally, this study also suggests that financial institutions must be stable with respect to the criteria and mechanisms applied in the process of granting loans to SME businesses.

The risk management techniques employed by SMEs' operators determine the degree of their business vulnerability. Good risk management reduces the level of SME businesses exposure to risk, which forms a part of the criteria applied by financial institutions in the process of granting a loan to SMEs businesses. However, poor risk management techniques limit the extent of SMEs financing by a financial institution. The current study has left this important aspect unexamined, which future studies need to focus on. Also, even though a comprehensive review of the mechanisms used by financial institutions when determining SMEs' financial strength has been conducted, SMEs' financial reports should simultaneously be used in order to examine any bias in the criteria listed by financial institutions. It is recommended that future studies should look into this unexamined variation. The disconnection between financial institutions and the business financing of SMEs' operators/owners represents yet another asymmetric piece of information that needs to be investigated in future research studies so as to address the issue of SMEs financing.

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## EMPLOYEE RECRUITMENT AND ITS RELATIONSHIP WITH EMPLOYEE SATISFACTION: VERIFYING THE MEDIATING ROLE OF THE EMPLOYER BRAND

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The transformation of a capital-intensive to knowledge-driven economy has marked the beginning of a new epoch in business doing. Carrying out business activities in an extremely dynamic environment has greatly reduced the importance of traditional concepts and techniques, which is the reason why the focus has shifted to human resources and their management. Accordingly, a company should attract, retain and motivate its employees in order to ensure a high level of their satisfaction by ensuring the achievement of strategic goals. A possible direction of achieving the desired position is based on the development of the employer brand. Therefore, the aim of this paper is to determine the impact of practice in conducting employee recruitment activities on their satisfaction, as well as the influence of the employer brand as a mediator on the identified relationship between the recruitment and satisfaction of employees in Serbia. The results of the conducted empirical research study have proven the existence of a statistically significant positive influence of employee recruitment on satisfaction, while the mediating influence of the employer brand has also been fully confirmed.

**Keywords:** recruitment, employee satisfaction, employer brand, talents, fit model

JEL Classification: M12, M39, M51

### INTRODUCTION

The digitalization of the business environment and the development of related technologies have an impact on the different aspects of business and require a rapid adaptation to emerging circumstances in order for organizations to maintain their competitive

advantage. In their respective reports, well-known consulting companies and HR agencies highlight the existence of a gap in the supply of and demand for skills and human resources, and emphasize the need for a strategic approach to tackling the problem of global talent deficits. In its regular quarterly report, McKinsey states that digitalization requires an urgent change in an organization's existing behavioral patterns in the domain of the structure, strategy and capabilities of its employees, especially in the

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domain of the personalization of talent programs and the existing leadership models (McKinsey, 2018, 44). ManpowerGroup (2018, 7) states that the global trend of talent shortages is continuing, a 12-year maximum is expected to be reached in 2018, a lack of applicants and a lack of experience are the most common causes of the non-fulfillment of open positions, and companies with more than 250 employees are being faced with the biggest talent deficit problem. In its talent report, the Boston Consulting Group states that 57% of the participants in the conducted research study would wish work abroad, which is significantly less than in the previous survey, conducted in 2014 (Boston Consulting Group, 2018, 5). According to the leading Global Competitiveness Index (GTCI) formed on the basis of the ability of the country to attract, develop and retain talents, leading positions have been developed by high-income countries, with a high degree of correlation between the GDP *per capita* and the values of the GTCI (Lanvin & Evans, 2018, 12). In addition to the evident lack of talents, these reports point to the fact that highly developed countries, currently providing the best conditions for attracting and retaining talents, will have a lesser talent inflow than those less developed because their aspirations to work abroad are being reduced. The potential causes for such a trend should be sought in the fact that an increasing number of less developed countries have been working on their own talent retention programs. The second conclusion stemming from the above reports suggests that large companies, which are dominated by multinational companies, have much more problems to fill positions than small companies and small and medium-sized enterprises, which can indirectly indicate the relatively lesser attractiveness of multinational companies as employers.

The operating arena for HR managers and HR specialists is becoming increasingly competitive with respect to the efforts companies are making to meet their talent needs in the global labor market. The simultaneous work performed by both national leaders and company leaders in attracting, developing and retaining talents is entering the zone of decreasing returns to scale, which in practice means that additional efforts do not lead to an increase in the number of applicants appearing for open positions. High-income countries and companies with a good

compensation package reduce their attractiveness as a place for jobs and work because of the trend of reducing talent aspirations to work abroad, whereas the assumption of the outflow of talents from less developed countries into developed ones is taken as the key trend of the global migration. Confronted with the fact that people, intellectual capital and talents are increasingly becoming the critical factors of an organization's strategic success, and that the existing mechanisms for attracting talents do not assure the expected results, HR managers and company leaders are active in identifying the other factors that can positively influence the attraction and retention of talents. In other words, welfare and the amount of the compensation, as the material motivators, are becoming less effective in attracting talents, which is the reason why attention is increasingly being focused on the intangible factors such as employee satisfaction, the employer brand, intrinsic motivation, or a work-life balance.

Academic researchers have contributed to tackling this problem through extensive research into the coherence of the relationship between the employee and the company, and the factors that influence this relationship. Aligning the relationship between an individual and the organization (PO fit) increases the probability of an individual's entering and remaining with the organization. The perception of this compliance is the predictor of the decision to join the organization, directs the behavior of individuals while working in the organization and influences the decision to leave the organization (Greguras & Diefendorff, 2009, 467). Organizations employ different individuals and, therefore, need to harmonize their PO fit with a specific category of employees, in which way they can improve organizational outcomes (Sekiguchi, 2007, 122).

In the given context, recruitment and selection activities offer a possibility of aligning PO fits, which can affect organizational outcomes, such as performance or employee satisfaction. Generally, the subject of the research carried out in this paper is the impact of employee recruitment activities on employee satisfaction through the development of the employer brand.

The purpose of this article is to determine, through an analysis of the recruitment activities containing the pre-selection criteria, its impact on the satisfaction of the existing employees as an important intangible factor for attracting new employees. In addition to recruitment, the employer brand, as an individual's perception of the company or the alignment of PO fits, is another intangible factor that can enhance the attractiveness of the organization and, therefore, is the subject matter of the research study presented in this paper.

The aim of the research study is to determine whether the recruitment process has an impact on the satisfaction of employees and whether the employer brand can strengthen this relationship and increase employee satisfaction.

Based on the results of the theoretical research, a research model based on three hypotheses was designed, which was done through the statistical data processing obtained from the original research. The data were collected by applying the survey method in the form of a structured questionnaire. The results of the regression analysis used to test the hypotheses have shown the existence of a statistically significant influence between the observed variables. The results obtained through this research have practical implications through determining the factors that can positively affect the solving of the problem of the deficit of candidates for a certain position in the organization.

The work is structured into seven parts. After the introductory part, the second part gives an overview of the relevant literature used as the basis for defining the research model and for the formulation of the hypotheses. In the third part, the research methodology is presented, and in this part the primary data collection method, the sample statistics and the presentation of the statistical techniques applied in testing the hypotheses are presented. The fourth part accounts for the results of the research study through the presentation of the results of the regression analysis carried out when testing the hypotheses. Also, this part of the paper discloses the results of the reliability analysis and the descriptive

statistical analysis. In the fifth part of the paper, the discussion of the results obtained is presented, and the practical implications of the conducted research study as well. At the end of the paper, the conclusions are given, prior to which the limitations of the research done and the direction for future research are accounted for in a separate part.

## LITERATURE REVIEW

There are two possibilities for organizations to fulfill their needs for human resources, i.e. knowledge, skills and talents:

- internal recruitment, through their own talent development, and
- external recruitment, through the acquisition of talents from the environment or other organizations.

External employee recruitment is one of the initial human resource management's activities that define the preliminary criteria for individuals' entering the organization. Recruitment can be understood as a set of the activities whose primary goal is to identify, attract and engage the best individuals who will enable the achievement of the strategic goals of the company (Ofori & Aryeetey, 2011, 48).

In academic research and HRM practice, it is often the primary task to provide a realistic piece of information about the job in order for candidates to know what is expected of them, with the primacy of applying traditional recruitment methods. In the current business environment, only vacancy advertising is often not sufficient to ensure the required number of quality candidates. Competition in the labor market requires that the company should implement the recruitment process in a timely manner, using modern technological solutions, whereby recruitment itself must be guided by a marketing strategy (Slavić, Bjekić and Berber, 2017, 89). In general, candidate recruitment can be internal and external, with companies applying different approaches in practice and using different means of advertising for vacant

posts. In addition to traditional ways, it is especially attractive and useful to recruit through the Internet and social networks. Internet sites and social networks often provide candidates with a variety of information regarding the work, working conditions, organizational culture, necessary qualifications, the exchange of knowledge, experience, and so on.

The recruitment process can have a positive impact on different organizational outcomes. A quality-driven selection process has a positive impact on an increase in the retention rate, organizational commitment and the productivity of employees (Sutanto & Kurniawan, 2016, 377). In order to achieve the appropriate level of employee satisfaction, the recruitment process needs to be implemented so that employees know what is expected of them at the workplace. It is known that the "blind advertising" strategy in which the company seeks to hide the key information is not efficient as employees are not familiar with what is expected of them, and do not accept the job or quickly leave it. When the employee in the recruitment process is provided with all of the relevant pieces of information regarding what is expected of him, as well as of what he can expect from the company, there is no inflationary expectation at the workplace, but it is easier to meet work demands, reduce the rate of absenteeism, increase employees' confidence in the company, as well as the level of their job satisfaction (Suszko & Breaugh, 1986, 521). As a result of satisfied employees, there are improvements in performance, efficiency, improvements in interpersonal relationships, reductions in the fluctuation and absenteeism rates (Inuwa, 2015, 289). Summarizing the above said, and in the context of the research involved in this work, it is possible to formulate the first hypothesis:

H1: Employee recruitment has a statistically significant, positive impact on employee satisfaction.

The overall recruitment activity can usually be divided into three phases: generating applicants, retaining applicants, and influencing decisions on accepting a job. Therefore, it is necessary to properly manage the recruitment process since any activity

in the process can affect the number of applicants, their decision to apply and accept the job if offered (Breaugh & Starke, 2000, 407). The sources used to advertise the workplace, as well as the image of the company, play a very important role. In order for the recruitment process to be successful, i.e. to attract and retain the best candidates from the labor market, marketing principles must be adhered to, especially so the principles of branding. The employer brand is also one of the ways in which a company differentiates itself from others and presents itself as a unique and desirable place to work. Developed as a result of the integration of marketing and human resources management, the employer brand represents a company's effort to communicate the organizational culture, systems, values and interpersonal relationships that make a workplace different from others (Singh & Rokade, 2014, 45).

The implementation of the marketing and branding principles in the human resource management discipline leads to the emergence of the employer brand that can be used as a means of attracting and retaining the best candidates from the labor market. Since the emergence of this concept in 1996, many researchers have sought to identify the key characteristics and factors that a particular company identifies as a unique and desirable place to work.

The conceptual designers of this concept, T. Ambler and S. Barrow (1996, 187), define the employer brand as a set of the functional, economic and psychological benefits that are secured by employment, and which are characteristic of the employer's enterprise. It is a process of building a picture in the minds of labor-market candidates that the company is the "preferred place to work in" (Ewing, Pitt, Bussy & Berthon, 2002, 12). As the process of building a recognizable and unique identity, the employer brand is the concept of the enterprise that makes it different from others (Backhaus & Tikoo, 2004, 502). So, the company will be an attractive or good place to work in if it offers a good balance between life and work, stimulating compensations, quality products and services, a challenging task, promotion, participation in humanitarian activities (Tanwar & Prasad, 2016, 4-5). In this way, the employer brand becomes a strategic

tool for attracting and retaining talents from the labor market (Mihalce, 2017, 290).

In order to build the employer brand, it is necessary to follow the marketing principles. First, it is necessary to perform an internal analysis, i.e. to examine the existing system of values, culture, employees, human resources management policy and the competitive position, and on the basis of such analyses to determine which benefits can be offered to the existing and potential employees. In the next step, external marketing efforts are identified and attracted by the candidates who match their capabilities and their value system to the company's. Internal marketing is the last stage in building an employer brand. In internal marketing activities, the company delivers the promised value to its employees in order to create the motivated workforce loyal to the company (Backhaus & Tikoo, 2004, 502-503; Chhabra & Sharma, 2014, 51).

As a result of building the employer brand, two very important outcomes emerge: brand associations and loyalty to the brand (Backhaus & Tikoo, 2004, 504). Employer brand associations are the ideas that emerge in employees' awareness when thinking of a particular company and of the reasons for which it is good to work in it. In other words, employer brand associations shape the image of an enterprise as an employer in the labor market. Loyalty to the employer brand represents employees' commitment to the company. If the company has a developed employer brand, the employees will not easily change their jobs, even if there is another possibility of employment (Chhabra & Sharma, 2014, 50-51).

As a result of the creation of the employer brand, the company approaches qualified employees, improves interpersonal relationships, increases performance and retention rates, the identification with the organization and a commitment to the company and employees' self-confidence easily and at lower costs (Chhabra & Sharma, 2014, 51). Like the recruitment process, the employer brand also has an impact on job satisfaction. The results of numerous studies have shown that the employer brand positively links to the level of employee satisfaction with the work

(Schlager, Bodderas, Maas & Cachelin, 2011, 502; Yalim & Mizrak, 2017, 99; Davies, Mete & Whelan, 2018, 74). The results obtained can also be explained by the fact that business satisfaction factors, such as good interpersonal relationships, challenging work, stimulating compensations and the like, are already included in the employer brand and provided to employees. The above research is the basis for formulating the second hypothesis in this paper, which reads as follows

H2: The employer brand has a statistically significant positive impact on employee satisfaction.

As the employer brand represents an effective means of attracting labor market candidates, its significance in the human resource management process (Starineca, 2015, 27) is evident, primarily in the recruitment process. Those enterprises that have a developed employer brand are distinguished as recognizable and desirable places to work in, and have a positively built image in the public, thus acting positively on the perception of candidates (Gilani & Cunningham, 2017, 242). There are two essential elements of this image: the employee's attitude towards the brand and the perceived characteristics, i.e. the benefits that the company offers to its employees, on the basis of which the decision to accept the job is made. By applying various techniques to attract candidates, a company can act on these elements and form a positive image in the public before the recruitment process has begun. This can be achieved through sponsorship activities, cooperation with schools, faculties and government agencies, participation in humanitarian activities, etc. (Agrawal & Swaroop, 2011, 162). In this way, the recruitment process improves, the best candidates are attracted, and simultaneously the company's resources are saved (Khalid & Tariq, 2015, 358).

The employer brand can be used as a strategic tool in the recruitment process that will enable the attracting and retaining of talents from the labor market (Franca & Pahor, 2012, 90). If a company has built a good reputation in the public, the recruitment process is facilitated as the candidate already has a positive attitude towards the given company (Saini, Gopal & Kumari, 2015, 38). In some cases, as a result of such

a reputation, an enterprise is able to attract those candidates who are willing to work in the given company, as their value system fits into the value system of that company. This can be explained by the theory of social identity, according to which people tend to be members of a particular group because they have common characteristics, values and attitudes (Khalid & Tariq, 2015, 356).

A number of studies have shown that the companies that have developed the employer brand more easily implement the recruitment process, attract and retain more qualified candidates, and achieve numerous other benefits (Lemmink, Schuijf & Streukens, 2003; 11, Collins & Stevens, 2002). As a result of the implementation of the employer brand strategy in the recruitment process, employees have a higher level of trust and feel a higher degree of identification with and commitment to the company, which increases their work ethics. Numerous benefits are also present for employers. A positive public image allows them access to the best candidates, new recruitment strategies are developed, the retention rate increases, as well as employee satisfaction does (Tanwar & Prasad, 2016, 861). Satisfied employees transfer their experience to others, in which manner positive word-of-mouth propaganda additionally strengthens the reputation of the company on the market. Respecting these benefits, the third hypothesis of this study is formulated, reading as follows:

H3: The employer brand is the mediator of the positive relationship between employee recruitment and employee satisfaction.

## RESEARCH METHODOLOGY

An empirical research study was conducted so as to identify the impact of employee recruitment and the employer brand on employee satisfaction. In order to collect the primary data, the survey method was used in the form of a questionnaire consisting of 25 statements, of which 5 items refer to employee recruitment, with the 10 statements measured by the employer brand, whereas the independent variable,

employee satisfaction, is measured by 10 statements. The survey was conducted through a direct contact with the respondents, leaving them the time to complete the questionnaire. The first part of the questionnaire contains the questions intended for collecting descriptive data about the respondents and the business organizations included in the sample. The second part of the questionnaire contains the observations that observe the condition of the observed variables. The findings were based on the relevant previous research done in this field, which created the assumption of the high consistency of the conducted research (Lu, While & Barriball, 2007; Schlager, Bodderas, Maas & Cachelin, 2011; Peltokorpi & Jintae Froese, 2016). The respondents showed a degree of agreement with the stated conclusions on the five-point Likert scale.

Using the data of the Business Registers Agency, the business organizations were randomly selected and a procedure for collecting data was initiated. The survey covered 180 companies, whose managers and employees assessed the employee recruitment process, the strength of the employer brand and satisfaction. The largest number of the companies in the given sample employ in excess of 250 employees, being followed by the companies with between 50 and 250 employees. The development of the employer brand in the companies with less than 10 employees is impossible in practical terms. Nevertheless, these companies were not excluded from the sample for the two reasons: firstly, these companies also take care of their reputation in the public, and secondly, their number in the sample is small enough so as not to affect the results of the research. In the sample, almost 50 percent of the respondents from the multinational companies or the other smaller companies operating in the Republic of Serbia, whose owners are from abroad, are also present. Their presence in the sample enables a better understanding of the employment context in the Republic of Serbia because these companies employ a significant number of employees. The other data related to the sample statistics for the companies and the respondents are given in Table 1.

The processing of the collected data was carried out with the computer support of the IBM SPSS Statistics

statistical package, Version 23 (Statistical Package for Social Sciences). The application of the regression analysis measured the influence of the independent variable on the dependent and the mediator effect was tested through the results obtained by the multiple regression analysis. In order to determine the statistical significance of the obtained results, the following confidence levels were used:  $\alpha = 0.05$ ,  $\alpha = 0.01$ .

**Table 1** The sample structure: the summary

Variable	Absolute frequency	Proportion (%)
Number of employees		
2-9 employees	1	0.6%
10-49 employees	35	19.4%
50-249 employees	64	35.6%
Over 250 employees	80	44.4%
Business		
Production	126	70.0%
Trade	28	15.6%
Service	26	14.4%
Ownership		
Domestic private capital	90	50.0%
Foreign private capital	88	48.9%
State	2	1.1%
Sex of respondents		
Male	81	45.0%
Female	99	55.0%
Education		
Secondary education	62	34.4%
Higher education	32	17.8%
High education	86	47.8%

Source: Authors

## RESEARCH RESULTS

In order to determine the internal consistency of the items used, Cronbach's alpha coefficient was calculated. The values obtained for the employee

recruitment variables, the employer brand and employee satisfaction are 0.908, 0.884, 0.910, respectively, and the presented values are indicative of a high level of the internal consistency of the given findings. In addition, Table 2 shows an overview of the results of the descriptive statistical analysis (the arithmetic mean and the standard deviation). Based on the given values, it is concluded that the highest degree of agreement between the respondents is achieved in the case of the developed employer brand, since the highest values of the arithmetic mean are identified in the conclusions related to the quality of the products/services of the given company, as well as its potential for future development.

In order to test the defined hypotheses, a regression analysis was performed by using the smallest squares method. In addition, in order to determine the mediator effect, a procedure developed by R. M. Baron and D. A. Kenny (1986) was implemented. The above procedure is based on the creation of several regression models, which relate to:

- determining the impact of the independent variable on the variable representing the mediator;
- determining the impact of the independent variable on the analyzed dependent variable;
- determining the influence of the mediator on the dependent variable.

The last step is the implementation of a multiple regression analysis, which implies the identification of the influence of the independent variable and the mediator on the dependent variable. According to R. M. Baron and D. A. Kenny (1986, 1177), the mediating influence exists when, in the last step, there is a decrease in the influence of the independent variable on the dependent variable, or the effect of the independent variable on the dependent variable becomes insignificant.

In accordance with the procedure described, four regression models were created. The regression model 1 examines the nature and strength of the relationship between the employee recruitment activities and the created employer brand, with the dependent

**Table 2** The reliability analysis and the descriptive statistical analysis

Recruitment: Cronbach's alpha coefficient 0.908			
	Item	Mean	St. dev.
RZ1	The company spends considerable resources on finding suitable individuals for vacancies.	3.02	1.286
RZ2	Finding suitable individuals for vacancies is an objective and impartial process.	3.49	1.197
RZ3	Various sources, such as the Internet, specialized agencies or human resources experts, are used to find potential candidates.	3.57	1.260
RZ4	The company uses different strategies to attract talented individuals.	3.30	1.246
RZ5	The company is trying to engage people who have the ability to think creatively.	3.39	1.378
Employer brand: Cronbach's alpha coefficient 0.884			
	Item	Mean	St. dev.
BP1	As the employer, the firm in which I work stands out in relation to other firms.	4.02	1.020
BP2	To me, the firm in which I work is attractive as an employer.	3.99	1.069
BP3	Other people think the company where I work is a good place to work in.	4.12	1.029
BP4	Jobs in the company are paid above the average.	3.06	1.291
BP5	Work is done in good working conditions.	3.79	1.075
BP6	There is a good balance between the time spent at work and free time.	3.50	1.275
BP7	There are good opportunities for promotion and an improvement in the company.	3.53	1.243
BP8	Relationships among the employees are good.	3.90	1.088
BP9	The company offers quality products and/or services.	4.36	.881
BP10	The company has a good potential for development in the forthcoming period.	4.20	1.000
Employee satisfaction: Cronbach's alpha coefficient 0.910			
	Item	Mean	St. dev.
ZZ1	Generally, I am satisfied with the fact that I work in this company.	3.88	1.035
ZZ2	I am satisfied with the working environment which I do my job in.	3.94	.966
ZZ3	I enjoy my work.	3.75	1.141
ZZ4	I am adequately paid for the job I do.	3.18	1.283
ZZ5	Doing my current job is not too stressful.	2.97	1.256
ZZ6	The job gives me a sense of personal fulfillment.	3.49	1.289
ZZ7	In the company, I have all the necessary conditions and resources for doing business.	3.84	1.091
ZZ8	I am satisfied with collegiality at work.	3.97	.968
ZZ9	I am satisfied with the relationship with my superiors (managers, bosses, directors).	3.94	1.051
ZZ10	I have a feeling that the company takes care of its employees.	3.60	1.198

Source: Authors

variable being determined independent in 50.9% of the cases ( $R^2 = 0.509$ ). Within the regression model 2, the interdependence of recruitment and employee satisfaction activities was observed, whereby the resulting value of  $R^2$  points to a somewhat worse model than the previous one ( $R^2 = 0.460$ ). The value of the beta coefficient is relevant at the level of 0.01, whereby the positive value of this coefficient imposes the conclusion that there is a positive influence of recruiting employees on their satisfaction.

The third regression model is aimed at establishing a link between the employer brand and employee satisfaction. The employer brand, as the independent variable, determines the dependent variable change, employee satisfaction in 57.7% of the cases ( $R^2 = 0.577$ ). Based on the results shown and the positive value of the beta coefficient, which is significant at the 0.01 level, a statistically significant positive effect of the created employer brand on job satisfaction is determined.

The fourth model presented in Table 3 implies the implementation of the multiple regression analysis, which is aimed at identifying the impact of employee recruitment and the employer brand on the dependent variable, employee satisfaction. In this case, even 61.5% of the variability of the dependent variable is explained by the independent variables involved. Multicollinearity is not a problem, given the fact that the variance factor varies by less than 5. There is no problem with autocorrelation, as the Durbin-Watson coefficient approaches 2.

**Table 3** The results of the regression analysis

Variable	Model 1: the employer brand dependent variable	Model 2: the employee satisfaction dependent variable	Model 3: the employee satisfaction dependent variable	Model 4: the employee satisfaction dependent variable
Recruitment	0.714**	0.678**		0.277**
Employer brand			0.760**	0.562**
R <sup>2</sup>	0.509	0.460	0.577	0.615
Adjusted R <sup>2</sup>	0.506	0.457	0.575	0.610
ANOVA F	181.567**	149.032**	238.861**	138,900**

Agenda: \*\*p < 0.01; \*p < 0.05. The table shows the beta coefficient.

Source: Authors

## DISCUSSION AND PRACTICAL IMPLICATIONS

There are three hypotheses set in this paper. The first hypothesis seeks to point out the importance of recruiting employees in order to generate a higher degree of satisfaction. The results of the conducted statistical analyses have shown that the way of recruiting employees is positively reflected in the level of employee satisfaction, which is confirmed in

the works of M. K. Suszko and J. A. Breaugh (1986), and J. A. Breaugh (2008). Therefore, the H1 hypothesis has been fully confirmed.

The second hypothesis has been defined in order to identify the interdependence of the developed employer brand and employee satisfaction. In the concrete case, the image of the company built in the eyes of its employees, i.e. the brand, has a significant positive impact on employee satisfaction, as is confirmed in T. Schlager *et al* (2011), G. Davies, M. Mete and S. Whelan (2017), and F. Yalim and K. C. Mizrak (2017), due to which fact the H2 hypothesis is fully accepted.

The third hypothesis has been set so as to determine the median impact of the developed employer brand in the case of the interdependence between the recruitment process and the level of employee satisfaction. The procedure implemented in the form of the created regression models shows that in the last step, i.e. in the regression model, there is a reduction in the strength of the recruitment impact on employee satisfaction. Therefore, the strong employer brand is the mediator of the influence between employee recruitment and their satisfaction, which is the reason why the H3 hypothesis has also been confirmed.

The results of the conducted research study have important practical implications:

- The obtained results are a confirmation that the desired level of employee satisfaction can be influenced through the recruitment process, which should lead to the achievement of a superior performance through the motivation mechanisms.
- The way human resources management activities are conducted has an important impact on the creation of an image of the given employer in the eyes of the public, namely his potential and existing employees. Therefore, it is necessary that systematic efforts towards the development of a positive, unique and recognizable employer brand should be invested, taking into account the loyalty of the existing employees to the employer and their commitment to the realization of the set tasks.

- The built employer brand also affects employee satisfaction, so it should be seen as an important precondition for the effective recruitment process. By investing in the development of the employer brand, employee satisfaction can increase, the attractiveness for appropriate candidates simultaneously being enhanced.
- Employee satisfaction is a prerequisite for productivity growth, the improvement of interpersonal relationships, as well as a reduction in the fluctuation and absenteeism rates (Inuwa, 2015, 289).

It is, therefore, important to have an integral approach in generating the desired level of employee satisfaction, starting with: attracting potential candidates; selecting and retaining the best candidate; creating a favorable environment for work, with a focus on achieving a balance between job requirements and private life, which in turn contributes to a reduction in the absenteeism and fluctuation rates.

## LIMITATIONS AND FUTURE RESEARCH

Despite the contribution of the research conducted for the purposes of producing this paper, it has a number of limitations, which is also a guide for future research. The first is the structure of the sample, which is considered to be a potential constraint from the aspect of the core business. Since the sample constitutes enterprises operating within the manufacturing, trade and services sectors, each of the sectors listed has certain specificities that primarily relate to the performance of certain operations that may affect the observed variables in the survey. Consequently, the research focus needs to be carried out so that the sample includes companies from one particular sector. In this way, the generalization of attitudes will be avoided, and the results obtained would contribute to the improvement of the human resources management practices within the given activity or sector, as well as to providing guidelines for the development of a positive employer brand, simultaneously respecting the specific nature of the specific activity.

The second potential restriction is that concerning the size of the sample. Compared to the studies previously conducted in this area, the need for an increase in the number of interviewed respondents is imposed. This constraint is due to a relatively underdeveloped business culture and the closeness of enterprises in transition economies, which inevitably reflects a limited number of options for collecting questionnaires and increasing the number of units in a sample.

The third limitation refers to the examination of employees' attitudes about the method of recruiting. Namely, the respondents did not agree on the key source of recruitment, since the two key sources, i.e. internal and external recruitment, are referred to in the literature. In the future, it is therefore necessary to distinguish between the two types of recruitment, focusing on the identification of the effectiveness of the given type, especially in order to generate a higher degree of employee satisfaction.

The fourth limitation concerns the absence of variables or statements to evaluate the recruitment process or the effects of the recruitment strategy applied. On the other hand, in practice and in the professional literature, the view that the purpose of recruitment is not about attracting the best candidates, but rather the candidates who are best suited to the organization and those candidates who are best fitted with the organization (the best fit model), is increasingly prevalent. Thus, the importance of traditional criteria for successful recruitment activities is simultaneously relativized.

In addition to the foregoing, future research should focus on incorporating the contemporary dimensions of the employer brand. In this way, we would gain an insight into the overall potential of the employer brand as a strategic tool in carrying out recruitment activities and provide recommendations for formulating the principle of building a positive image of the company in the eyes of the existing and potential employees. Ultimately, in terms of determining the level of employee satisfaction, it is recommended that the Minnesota Satisfaction Questionnaire (Martins & Proenca, 2012, 4) should be used and that the Job

Descriptive Index (Tanwar & Prasad, 2016, 880) should be calculated as well. The instruments created would enable the empirical results presented in the paper, as well as a detailed analysis of the various aspects of job satisfaction.

## CONCLUSION

The results of the regression analysis demonstrate that employee recruitment has a statistically significant impact on employee satisfaction, as well as the employer brand, thus confirming the H1 and H2 hypotheses. Also, through the model of the multiple regression analysis, the mediating role of the employer brand has been confirmed in the paper, thus confirming the H3 hypothesis. In practical terms, the results of the research presented in the paper show that, through directing the employee recruitment process, important organizational outcomes can be influenced, such as, for example, employee satisfaction. In addition, representing a company in the public as a desirable employer through the development of the employer brand also contributes to an increase in employee satisfaction. The general conclusion is that the mentioned "recruitment" and "employer brand" variables can positively influence employee satisfaction, which is an important prerequisite for creating an image of the company as an attractive place to work in. This increases the likelihood of attracting new talents to the organization and potentially solves the problem of the current deficit in talents and skills in the local and global labor markets. By investing in certain dimensions of the employer brand, a company actually works on aligning PO fits as an important assumption of attracting and retaining individuals within the company.

Defining the recruitment process implementation method can affect employee behavior in the organization and their satisfaction with the work they do, which has been confirmed in the paper. The mediator influence of the employer brand, which in practical terms has been determined by this research study, accounts for the fact that investing in the employer brand increases the degree of individuals'

consent to the pre-selection criteria contained in employee recruitment and also increases the degree of the identification of individuals with the company. On the other hand, the inflow of potential candidates into recruitment activities can be significantly reduced through the selection process, which is the reason why it is necessary to include the selection process in future research, although in a situation where there is a significant shortage of human resources in the labor market, selection criteria are modified and adjusted to current circumstances.

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## FROM ORDER TO PROSPERITY: THE IMPORTANCE OF COMPETITION IN THE SOCIAL MARKET ECONOMY MODEL

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Searching for an institutional structure which enables economic success is in the midst of the practical efforts of governments all around the world, as well as the academic studies endeavoring to understand the sources of success in the most prosperous national economies. The supremacy of the German economy in the European Union, as well as worldwide - from the level of the GDP *per capita* to high productivity, innovativeness and export performances - is the basic motivation this study rests on. Due to the fact that, unlike a failure, an economic success is always achieved in the long run, this study is aimed at revealing the (historical) institutional roots that have paved the way for the economic success of contemporary Germany. In that context, the model of the Social market economy, i.e. the competitive order (*Wettbewerbsordnung*), its meaning and importance in solving the allocative equation and reaching the high levels of economic efficiency are the subject matter of analysis in this paper. The key results refer to the identification of the diverse economic and social benefits that a competitive order brings into being, as well as the determination of and pointing to the essential institutional preconditions which such an order is feasible in.

**Keywords:** Social market economy, German model, competition, economic efficiency, institutions

JEL Classification: B25, B52, P10

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### INTRODUCTION

There is abundant evidence in the economic history of the attempts various countries have made in order to reform their economic systems. Successful stories are, however, rare. Although the development of the majority of today's developed countries can be seen as an evolutionary path, rarely or never interrupted

by radical social, political, or economic changes, yet there are some exceptions. One of these exceptions is the German model of the Social market economy (SME). The decisive moment in the emergence of this model relates to the monetary reform conducted in West Germany in 1948. The way in which the transformation came into being and the principles by which it was shaped were to a large extent the opposite of the practices in other Western countries at that time. The SME model was based on a free market mechanism and a strong institutional structure

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with limited state intervention. It was quite different from the extensive state regulation of the economy in some other developed countries, especially Great Britain under the rule of the Labor Party after WWII. Furthermore, it was a radical breakthrough not only with respect to the period when National Socialists were in power, but also with respect to the period preceding 1933. Even in the period of the Weimar Republic, the German economy was faced with a serious malfunction and was burdened with numerous social and economic problems. Even the rising of National Socialists to power can to a large extent be explained by the weaknesses of the system that had preceded them.

The ideas which the SME model is based on have had and still have a great influence on the institutional design in many countries and supranational organizations. Institutional solutions, especially those related to the high degree of independence of the German Bundesbank, have had a major impact on the institutional solutions that were applied in transition economies (Loungani & Sheets, 1997), as well as in developed countries, such as Great Britain (Hielscher & Markwardt, 2012). Particularly significant has been the impact on the institutional design of the ECB (Berger, 2006). On the other hand, the numerous challenges which developing countries and rapidly growing economies are being faced with, especially given the recent failures (in most of them) and the new risks created by the onset of the financial and economic crisis in 2008, the SME model can represent a significant alternative to further development in these countries (Wrobel, 2012). Some authors (John, 2007; Hillebrand, 2015) point to the potential significance of the SME model for redesigning the institutions which the economic and social policies at the EU level lie on. According to the EU founding agreements, the open market economy and free competition are the core mechanisms of an economic system. They are construction elements in the SME model as well. The potential of the SME model is also reflected in the comprehensiveness that addresses the economic reality (Wrobel, 2014) enabling the creation of the institutional environment which would enable a simultaneous accomplishment of a whole range of economic and social goals. Incorporating

both the constitutive principles (free prices, private property, the freedom of contracting, the openness of the market, the principle of the responsibility and consistency of the economic policy) and the regulatory principles (the strict competition policy, the labor market intervention, the internalization of external effects, the social policy measures and the provision of public goods), the SME model provides a potential framework in which economic and social problems are solved in the most efficient way.

The motivation for studying the SME model is manifold. The history of the economic thought, as well as economic history, may serve as a substitute for experimenting in real life, thus helping policy makers to avoid mistakes. On the other hand, this research also contributes to the relatively limited scope of research into the SME model in the Serbian-speaking area. The supremacy of the German economy at both the European and the global levels, whether with respect to the level of the GDP *per capita* or export results (Simonazzi, Ginzburg & Nocella, 2013), or innovation performances, or the adaptability of the economic system, especially confirmed after the financial crisis (Storm & Naastepad, 2015), suggests that this is a story about the specific economic system worth of being further investigated. The impressive evidence of economic excellence is the \$5,000 higher GDP *per capita* of those in the cradle of the industrial revolution, namely Great Britain! Such an outcome in an economic system is only possible to achieve over a long period of time. Therefore, the importance of the ideas which this system was built on and on which it still operates is apparent. The theoretical foundations of the SME model are found in the works of a number of authors, some of whom were active participants in the reconstruction of the German economy after WWII. Their particular role was in defining the institutional framework in which the market economy in Germany would be operating. Therefore, the story about the SME model brings together economic history and the history of the economic thought in a specific manner.

The request for the imposition of the competitive order (*Wettbewerbsordnung*) through the creation of a comprehensive institutional frame, which on its

part has a decisive influence on the efficiency and adaptability of the economic system, is at the heart of the SME model, which is at the same time the subject matter of the research conducted in this paper as well. At the same time, we are speaking about the order since it implies not only the establishment of the market structures based on competition, but also the establishment and implementation of a whole range of the principles that enable an economy to operate efficiently.

In that sense, the paper is aimed at identifying the potential advantages, both economic and social, which the establishment of the competitive order brings with itself, and at determining the basic principles which are necessary to follow in the construction of the institutional structure, which on their part enable the establishment of this order, all this being done through an analysis of the original texts by using a qualitative analytical instrumentarium.

The hypothesis that will be tested in the paper is as follows:

H: From the point of view of the results achieved in the competitive order, the competitive order generates a high quality of economic performances and leads towards the resolving of a significant portion of the social problems that appear in society.

The competitive order stands for a superior alternative to the other (available) mechanisms of resource and income allocation. This may be inferred directly from the very definition of the SME model given by A. Rüstow (1960, 51), according to which "in the social-market economy, production and distribution are determined by the system of free prices through competition between (mainly private) enterprises, which is done far more productively, purposefully, in a fair manner, at a lower price and more reliably" compared with other market and non-market economic models. The SME model provides an efficient allocation of resources, as well as the elimination of poverty, and the avoidance of the wrong distribution of income (Karsten, 1985). The chosen topic is interesting not only from the point of view of the results generated by Germany, but also because

the SME model was sharply criticized and caused skepticism in the period when its implementation began, especially by British economists. These criticisms, especially from today's perspective, are not supported by evidence. An additional reason for conducting this research lies in the close relationship between the ideas within the SME model and those of new paradigms in economics, such as the institutional economics, political economics, constitutional economics (Vanberg, 1988) or the Limited Access Order/Open Access Order (LAO/OAO) concept developed by D. C. North, J. J. Wallis, S. B. Webb and B. R. Weingast (Zweynert, 2015). In addition, there are various research studies in the domain of economic theory, as well as the numerous empirical studies, that found the link between (economic) freedom and economic growth (De Haan & Sturm, 2000; Gwartney, Holcombe & Lawson, 2004; Doucouliagos & Ulubasoglu, 2006; Ivanović & Stanišić, 2017). These findings represent the additional line of argumentation towards the validity and importance of the SME model. The reason for that lies in fact that freedom is of pivotal value in the SME model. It is a leading principle in building the institutional structure and an irreplaceable generator of economic progress.

The paper is structured into six parts. After the Introduction, the next three parts are dedicated to the analysis of the specific importance of the competitive order for generating efficient outcomes. The second part deals with the ways in which the competitive order stimulates economic agents towards a productive behavior, which results in an efficient allocation of resources. The third part addresses the issue of the significance of the competitive order in securing the (individual) freedom of economic actors in the broadest sense, which in turn affects the efficiency of the economic system as a whole. The fourth part is dedicated to the specific social benefits that the competitive order produces. As the SME model hinges on a clear and robust institutional structure, the fifth part focuses on identifying the requirements necessary for achieving such an order. In the Conclusion, the results of the research are summarized and the possible directions of future research are pointed out.

## COMPETITION AS THE *PERPETUUM MOBILE* OF ECONOMIC EFFICIENCY

One of the basic assertions within the SME model is that only the competitive order leads to efficient and sustainable social and economic outcomes. The especially visible link goes beyond competition and economic growth, and this relationship reflects “the relationship between a cause and a consequence” (Müller-Armack & Erhard, 1972, 215).

Competition is generally observed as a situation in a specific market segment in which there are no restrictions either on the supply side or on the demand side (Böhm, 1961). A large number of agents on both sides of the market imply that exchange relations are governed and dominated by cooperation rather than by subordination. This aspect is vital for an efficient exchange. In real life, however, the number of participants on the supply side is much more important than the number of participants on the demand side. It is particularly significant regarding the amount of potential efficiency losses.

The problem of the egoism of economic agents is solved in the competitive order in the best manner. Competition hinders the destructive effect of egoism, simultaneously using its enormous potential by channeling the engagement of economic agents towards the most productive activities. As a consequence, the best alignment between individual and group interests is achieved (Nawroth, 1961; Böhm, 1942). Such an alignment is possible in the competitive order because economic agents have no power to influence the exchange process on the market. In such circumstances, egoism and a lack of the power of individual agents lead to a behavior characterized by self-compliance to prohibitions and, generally, to the rules of the game. It is also a prerequisite of a useful and rationally structured interaction and cooperation. As a consequence, transaction costs are reduced and economic efficiency is additionally stimulated.

The price system is the pivotal mechanism by which competition affects economic dynamics and determines economic agents’ behavior. Only in the competitive order will the prices correctly direct

economic agents’ behavior. Prices are exogenously determined in the competitive order (Eucken, 1952). They are beyond the influence of any single agent. Economic activities and the planning of business operations are carried out on this basis. Prices are *ex ante* determined for all market participants and are not subject to change due to the action of any state or private instance or entity. If prices depended on the decisions of the state authorities or market participants’ individual decisions, there would neither be security nor a justifiable assumption that such prices are appropriate. If they were the result of someone’s will, they would inevitably lead to allocative inefficiencies. Such inefficiencies would be a consequence of the wrong basis on which economic agents would formulate a business strategy and make business decisions. As opposed to this, competitive constraints ensure that prices and costs are adequately linked, which leads to the business calculus which is highly exact (Röpke, 1961). The aforementioned exogenous character of prices does not mean that they stay unaltered over time. In fact, although monetary stability is one of the constitutive principles of an efficient economic system in the SME model, the variability of prices does not jeopardize this principle in any way as individual prices can go up and down, whereas the overall price level remains stable. In addition, competitive prices are essential for long-term cost alignment. They ensure that the prices of individual products are adjusted with the level of necessary costs in the short run and long run as well. The obvious advantage of such a price regime is especially evident if compared with the market structures characterized by the existence of an extra profit, where price responsiveness is far lower.

The main advantage of a flexible price regime within a competitive market structure reflects in producing relevant information for economic agents. A free price system corresponds to decentralized governance structures. Economic agents’ needs will be the most efficient within the competitive order, under the given income and the availability of production factors (Lutz, 1962). Not only does competition lead to the cheapest and largest possible production, but it also makes economic agents constantly motivated to reduce costs. In real economic life, there is a

constant differentiation of the needs on the demand side and competition compels economic agents on the supply side to constantly adjust themselves to this differentiation. This additionally ensures the adaptability of the system. The ultimate result of competitive pressure is not only the reduction of costs, but also a higher level of the product quality (Böhm, 1942).

The competitive order creates the stimulating structure of incentives that affects the engagement, actions, as well as reactions of economic agents towards the most productive economic activities. In this manner, complicated transactions are coordinated and regulated in the most efficient way. Exchange becomes well-structured and predictable. Economic agents' business calculus depends on the quality of business decision-making, and to a lesser extent on the external factors beyond their control. Creative engagement and an entrepreneurial initiative are in the best possible way awarded in such circumstances (Eucken, 1947). Since nothing is *ex ante* determined, all economic agents are maximally motivated to run for a better position on the market. Within the competitive order, the capabilities, ideas, and especially the efforts and abilities of the participants in the economic process are continuously contested (Stegmann, 1999).

Competition also provides the best framework for the adequate governance and the efficient use of capital. The competitive order gives the largest possible freedom to economic agents, which has to be accompanied by a proportional responsibility for the decisions they make. In such circumstances, the caution by investment decisions will be the largest. It is a prerequisite for a more efficient use of capital. A cautious approach to the market can only be ensured if business decisions are followed by the accountability of economic agents. According to W. Eucken (1953, 20) "whoever has the benefit must also bear the cost" of the economic activity. Responsibility for decisions and undertaking risk are adequately linked through that (Böhm, 1942). No less important is the fact that freedom has a sense only if it is coupled with responsibility (Eucken, 1953). The creative power of an order based on competition also stems from the fact that in such an order a large number of

individuals are independent. It enables a high degree of self-determination and motivates economic agents to search their most productive engagement.

The maintenance of stability and the mitigation of a cyclical downturn are also the strengths of the competitive order. Competition forces economic agents to also constantly invest in the other entrepreneurial activities that ensure that their activities are always focused on the maximum possible performance. Such a behavior leads to necessary adjustments and raises necessary reactivity of the system as a whole.

The relationship between competition and technical progress is ambivalent. On the one hand, technical progress leads to the takeover of small enterprises by large companies. As a result, concentration rises on many markets. On the other hand, it contributes to the development of (product and service) substitutes, the expansion of the market, and an increased adaptability in the production process, as well as the expansion of the labor market. As a consequence, the flexibility and mobility of the factors of production and products in many markets are increased (Eucken, 2001). In addition, competition stimulates technical progress, as economic agents are compelled by competitive pressure not only to continuously innovate according to customer preferences, but also to seek to accelerate the implementation of innovative solutions (Symanski, 1999).

It is as well certain that competition causes certain losses, especially when those weaker on the market are concerned. However, even they attain net benefits from participation in the competitive process through many other advantages generated by the competitive order (Vanberg, 2002). Therefore, not only does competition provide an adequate system of rewards for those who are the most successful, but it also provides a sort of compensation for the less successful. For example, there would be no effect of learning or focus on innovation on the part of individual agents unless they were under competition pressure. Although no order is perfect, and thus neither competitive one, it has nevertheless accentuated superior in comparison with alternative market structures (Lutz, 1953). This above all concerns the efficiency of functioning, the quality of results and their sustainability.

## FREEDOM AS THE STARTING POINT AND THE ULTIMATE OUTCOME OF THE COMPETITIVE ORDER

Only in the competitive order can it be expected that the order, understood as the system of rules which creates the institutional structure, and freedom are in equilibrium. In such an order, there is no force that could jeopardize freedom. In the competitive order, the freedom of every economic agent is protected from the activities of those in power (Eucken, 1947). Another aspect of freedom enshrined in the competitive order relates to the fact that an individual is free to act in accordance with his/her own interests and according to his/her own personal judgment (Müller-Armack & Erhard, 1972). It is the key requirement for an efficient exchange.

The point of departure in the relationship between freedom and economic efficiency in the SME model starts from freedom. The reversibility of the relationship is, in the best case, the fact of secondary importance. The significance is, therefore, in the welfare benefits of freedom (Böhm, 1961), not in the impact of prosperity on freedom. In that sense, the best way to create an economic value is to establish and protect freedom. Ensuring freedom through competition means securing growth in the economy (Müller-Armack & Erhard, 1972). The freedom provided by the competitive order is first and foremost intangible value (Böhm, 1942), securing it is a decisive requirement in enhancing economic efficiency.

The freedom inextricably related to the existence of the competitive order is also the main argument for the supremacy of this order in relation to the alternative forms of the organization of economic life. The competitive order ensures the freedom of planning for all economic agents. Under such conditions, the minimum resistance from and the violation of the rules are expected. There is no third party able to influence unilateral and arbitrary (inefficient) prices. As economic agents are free to plan their activities, also bearing responsibility for them, which is underpinned by market and institutional sanctions, the violation of the rules of the game is expected to be minimal. Such a behavior leads to the minimization

of transaction costs, an increase in the volume and number of transactions and the deepening of business relationships amongst economic agents.

The competitive order provides the highest level of the freedom of choice for both consumers and manufacturers. As competition fosters exchange relations, it also contributes to the peaceful resolution of disputes on the market. This aspect heavily relies on the price system. The price system in the competitive order implies that everyone freely decides how to use their own resources. There is no one in a position to force someone else to make decisions in a certain way. Reliance on prices is entirely based on the freedom of decision-making (Böhm, 1950). Although coordination shapes relationships between economic agents and although the freedom of individual actors is at the heart of such relationships, freedom is not absolute. Economic agents are faced with a limited (but not small) number of the business choices and behavioral options defined by the rules of the game. Furthermore, economic actors are not absolutely free because their actions depend on the behavior of other actors. They have to take into account the interests and behavior of other economic agents in order to be successful in their entrepreneurial activities. Although freedom is limited in the aforementioned way, it is far greater than the freedom available to economic actors in alternative market structures. Therefore, freedom does not imply freedom from (any) rules that are a condition for well-governed and structured transactions.

Competition is not only a prerequisite for the broadest and universally understood freedom of the individual, but it is also the assumption that some rights that constitute the guarantee of liberty do not deviate from and do not transform into the means of power. This particularly applies to the freedom of contracting. The freedom of contracting is essential for economic efficiency and the competitive order is irreplaceable when the preservation of the essence and nature of this freedom is concerned. The reason for this is that the very principles of the freedom of contracting depend on the economic and market order based on competition. Competition prevents the abuse of the freedom of contracting by restricting

the freedom of the parties in contractual relations (Eucken, 1953). The principle of freedom does not allow the abuse of power with the aim of narrowing down the freedom of the parties in a transaction. For that very reason, the meaning of the freedom of contracting is far beyond the formal legal meaning of its content.

The competitive order is directly related to the individual aspects of freedom, such as the freedom of contracting. However, the efficiency of the economic system is in the long run determined by the degree of freedom in the broadest sense. This arises from the fact that there is a close interconnection between different domains of freedom. Safeguarding one aspect requires the existence of another aspect. For example, the freedom of entrepreneurial engagement is a precondition for the consumer's freedom to choose (Müller-Armack & Erhard, 1972).

The competitive order is a precondition for the functionality of private law. Formal (legal) rules define relationships, responsibilities and the terms of exchange between equal parties in a transaction. These parties do not possess political power or social privileges in relation to one another (Böhm, 1966). Competition also works preventively against the establishment of political power. As such, it is compatible with both democracy and the legal order based on it. Relying on market forces, securing the functionality of the legal order and limiting state interventionism that would have consequences for restricting freedom (Böhm, 1961), the competitive order ensures the highest degree of economic efficiency. By limiting state interventions, competition preserves the autonomy of economic agents and thus the allocation of both production resources and (free) consumer decisions. For this reason, the competitive order is, by its very nature, a democratic mechanism.

## SOCIAL BENEFITS IN THE COMPETITIVE ORDER

The mere fact that a competitive order is considered to be the most efficient of all of the other alternatives

poses the issue of the consequences it produces in the social domain. The social benefits of the competitive order are of particular importance in the circumstances of an economic system facing difficulties. In these circumstances, there is an especially evident claim that what contributes to productivity growth has much more of a social than of an economic value (Stegmann, 1999). The social value of the competitive order should primarily be considered in this context. The market is unable to produce desirable social outcomes if the competitive order does not function adequately. Thus, the competitive order is *per se* a precondition for solving a significant part of the problems that arise in the social sphere. The need for relying on competition in the distributive domain arises from yet another assumption within the SME model: it is impossible to find a universal (material) indicator of justice. For each distribution, there is a danger that it will be influenced by the forces that will draw the distribution away from the principle that everyone has what he deserves according to the effort he has made. This principle tends to be materialized automatically in the competitive order (Lutz, 1953).

Within the competitive order, the largest and most diversified production is provided in the long term, which does not restrict the participation of any individual. Participation in the overall economic success of the national economy is also realized through the better accessibility and quality of public goods and services, job opportunities for employees or salary rises. The competitive order creates the framework in which the material basis of society develops in such a way that the existing social problems can be largely solved by such development. By providing a large number of opportunities to different individuals, regardless of their social background, it contributes to greater mobility and social cohesion. Since the existence of the competitive order implies the absence of power, the exploitation of individuals is largely hampered. The competition contributes to solving social problems "in the spirit of freedom" (Eucken, 1953, 24). Competition forces economic agents to react promptly, whether it is the question of solving problems or exploiting business opportunities. This may also be seen as a kind of the (economic) advantage that has a social character

because "he who reacts promptly helps twice" (Müller-Armack & Erhard, 1972, 280).

Since the competitive order rests on coordination rather than on subordination (Lutz, 1971), the terms of exchange between economic agents take place freely, which implies the relaxation of social relations and contributes to conflict mitigation. Coordination allows continuous adjustment regarding entrepreneurial plans. In this respect, coordination is a mechanism for regulating interpersonal relations in the sphere of trade and production. The mitigation of social conflicts in the competitive order also refers to the fact that such a structure contributes to the growth of wages for the majority of the population (Müller-Armack, 1962). Although a higher level of income is an explanation of economic agents' motivation mechanism and consequently of economic efficiency in general, its importance also reflects in the fact that it simultaneously contributes to the greater social recognition of the individual who achieves it. A higher level of income is a confirmation of an individual's work effort (Symanski, 1999).

The competitive order is based on the idea of justice arising from the fact that economic agents do not have power. In such an order, everyone is rewarded according to their contribution. If the balance of power changes in the sense that there is a significant asymmetry of power in the system, the system of relative prices and generally the efficiency of the economic system tend to be distorted. Not only are prices in such a system not a good basis for a business calculus, but the very idea of equity is also undermined by the nature of the decisions of those in possession of power. Opposite to that, prices in the competitive order prevent the formation of inefficient institutional structures by motivating economic actors to make continuous efforts and adjustments. It promotes the self-responsibility of all economic agents and supports efforts towards the continued efficiency of the economic process. This is also an explanation of the reasons why the principle of competition is seen as the core cause of social, economic and social progress. It has equal importance and equally tangles all of the members of a society, from entrepreneurs to all other professions. Prices in a competitive system

reflect a necessity, fairness and rationality (Böhm, 1947), making it an indispensable element of both economic efficiency and the precondition of equity in the system. The prices formed on the competitive market cannot be misused by any participant in the economic process. There is no individual will that determines them, but rather a certain collective will, which prescribes how and at what level they should be. However, they have a compelling effect and all participants in the economic process must adhere to them. This effect is a result of numerous, equal, free and spontaneous reactions following exchange. Due to that, competitive prices have no influence on political, social and economic freedoms.

As the competitive order denotes a state of the absence of restrictions on participation in a particular economic process, all those who participate or seek to participate in it have equal chances for achieving a success. Only under these assumptions, i.e. the absence of restrictions on entering and exiting the market, is it possible to expect all advantages from competitive structures (Kersting, 2010).

A reduction in costs in production is one of the significant impacts of competition in the social sphere. In the long run, every economic agent is forced to minimize his/her costs in order to survive. Consequently, products are cheaper. When cost reduction on a wider scale is in question, there is also a decrease in prices in an appropriate range. So, the benefits of reducing costs are not only attributable to the producer, but partly to the consumer as well. This leads to the socialization of economic progress without the use of legal coercion.

Although the competitive order generates many social and economic advantages, its fruition requires a political and ideological support. It needs to provide the long-term climate that protects and promotes such an order (Böhm, 1961). Economic agents' believing in themselves and their own power in a continuously changing environment occupies the central place in understanding certain prerequisites of the competitive order. Such attitudes of economic agents, together with the power of competition, provide such economic agents' mobility and a continued quest for

their most productive engagement. No less important characteristic attributed to economic agents is the attitude of individuals towards monopolies and other alternatives of the competitive order (Böhm, 1942). This is especially important because the attitudes and preferences of individuals determine the space in which the (formal) institutional structure is created and in general the overall political process takes place.

### INSTITUTIONAL PREREQUISITES FOR THE DEVELOPMENT OF THE COMPETITIVE ORDER

Within the framework of the SME model, there are basically three fundamental preconditions that could be identified as the prerequisites for the competitive order, and thus for the achievement of the advantages that this order brings. The list of the requirements is much broader, but these three conditions are pivotal.

According to the first, an economy should be open as much as possible. The competitive order is not conceivable within an autarchic economy. The highest degree of market openness must be an imperative and should be the guideline principle in shaping the economic policy (Eucken, 1952). An exception to this rule is the situations where foreign competitors are subsidized by the state and as such represent unfair competition. The importance of foreign trade is not only reflected in competitive pressures on domestic economic agents, but also in the fact that the competitive order cannot be fully developed without an adequate inclusion in the international division of labor. Only by the inclusion in the world economy will the fundamental incentives provided by competition be secured. Hence, it is not only the pressure foreign competitors provide in the internal market, but also the appearance of domestic producers in the foreign market, that provides irreplaceable incentives for overall efficiency in an economy.

The incentives resulting from competition exceed the immediate impact on the economic agents exposed to them. They are of decisive significance for the overall market. Competition influences the parties who are

only indirectly related with those who are directly competing. For example, suppliers will be strongly influenced to innovate and lower their costs in order to maintain contracts, although they are not under direct competitive pressure. In addition, market openness could be a significant factor in the stability of prices in the national economy. In this regard, the competitive order based on a free-price regime cannot be imagined without market openness.

The narrowing of the (specific) market through the protection policy in the domain of foreign trade not only results in the impact on the market segment which is under such measures, but also produces significantly wider consequences. Protection itself is a significant prerequisite for the creation of asymmetric power positions in exchange. In addition, such a policy distorts the links between individual markets, as the narrowing of one market automatically leads to the narrowing of other markets, too (Eucken, 1952). In the case of the distortion of the links between individual markets, the market system as a whole will not function in an efficient way. Closing the market works against one of the constructing principles in the SME concept: the interdependence of orders (*Interdependenz der Ordnungen*). There is a misallocation of resources. If the part of a market that is protected makes a significant part of the overall economic system, the effects on other orders can be particularly strong. It is especially true for the legal or political system (Eucken, 2001). Inefficiencies are caused by the phenomenon of rent-seeking, or the influence of interest groups, when the institutions of the political and legal systems are shaped according to the interests of certain groups, rather than being driven by the efficiency of the economic system as a whole.

The second request refers to private property. A successful market system is based on private property (Müller-Armack & Erhard, 1972). Private property represents a structural right and a fundamental prerequisite for the efficiency of the entire order (Nawroth, 1961). Based on this very fact, compatibility between private property and the competitive order is unequivocal. However, the impact that goes from competition to private property is of great importance as well. The competitive order is the only one that

secures the (highest) social value of private property. It also contributes to its legitimization (Rüstow, 1960). Competition is an irreplaceable instrument for controlling private property (Eucken, 1953). The mere existence of the competitive order implies a high degree of the dispersion of ownership in an economy (Böhm, 1942).

Private property is not only a feature of the competitive order. It is also a prerequisite of individual freedom. Private property is a warranty of individual freedom in two ways. First, private property protects individuals by providing a guarantee for the independence of their decisions and the responsibilities vis-à-vis other agents in the economic process. Second, it protects individuals from the state and its coercive monopoly (Röpke, 1957). On the contrary, in the absence of the competitive order, private property may become an instrument of restricting freedom, generating rents and may generally lead to disruption in the economic process and serious social costs (Eucken, 1952). Thus, the competitive order enables the use of private property in an efficient way and prevents its abuse. Private property brings a greater predictability for the parties to transactions, as well as greater security for its owners. In this sense, entering into a transaction will be facilitated if a business partner has assets. It implies the absence of the influence of a third party in business relations not directly involved in the transaction. Likewise, the business activities that are covered by the assets provide a higher degree of safety to the titular by providing greater responsiveness to change in market conditions. Such a type of responsiveness may to a large extent be narrowed if business activities are financed by a third party. Private property is a precondition not only for freedom, but for responsibility as well. If private property is a guarantee for decisions made by economic agents, then it will also be an important instrument affecting the allocation of resources (Lutz, 1962).

The third request refers to the rule of law. It is the key mechanism for protecting the competitive order, and consequently economic efficiency and productivity growth (Stegmann, 1999). It is only the state that may ensure adherence to the rule of law by providing

equality before law for all. The decision on the model of a legal order is the most important decision regarding an institutional structure (Lutz, 1971). A reverse causality also appears between the rule of law and the competitive order: the ability of the state is determined by the presence of the competitive order (Nawroth, 1961). *Interdependenz der Ordnungen* is especially visible between the state and the economic order.

The rule of law provides double protection for economic agents. The rule of law ensures the protection of an individual from the state or a coercive authority. An individual is protected by creating an institutional structure that clearly specifies the procedures and ways of state intervention, taking into account the preservation of the maximum level of freedom and protection of the individual. These procedures exclude the arbitrary and *ad hoc* treatment of state authorities. Many of these aspects are normatively regulated by the Constitution and are operative by solutions within administrative law. The second level of protection refers to the protection provided by a legal order to individuals in relation to other parties in an exchange. This aspect gains in importance especially in the situations characterized by the asymmetric relations of power (Eucken, 2001). A possibility of disrupting the exchange relationship is twofold. First, the one with power is able to directly determine the terms of exchange. Second, the agent with power may be able to influence the content of the rules created in the political process. Only in a situation where there is a symmetry of power is an individual forced or even able to achieve his/her goal by only taking into account the interests of (all of) the parties in the transaction (Nawroth, 1961). In this situation, the maximum freedom of each individual is guaranteed. Steadiness and impersonality are the features of the good rules underpinning an individual's freedom (Böhm, 1942). In addition, the rule of law also provides protection against interest groups. Thus, the rule of law protects the freedom by controlling the political and/or economic power of an individual or a group (Gutmann, 1991). Protecting an individual's freedom from the state and from the abuse of freedom by those who have power, the rule of law creates conditions for the emergence and survival

of the competitive order. In a system where there is an abuse of power by an individual and/or interest groups, as well as unregulated state intervention, the competitive order cannot arise, and, even if it exists, the same cannot survive (Müller-Armack & Erhard, 1972).

## CONCLUSION

One of the basic assumptions within the SME model is that the competitive order leads to efficient and sustainable economic and social outcomes. It does so in a better way than other market and non-market orders. The competitive order motivates economic agents to engage in the most productive activities, causes a reduction in transaction costs and enables mutually beneficial and rationally structured interactions and cooperation amongst them. Competitive constraints ensure that prices and costs are adequately linked, which makes the business calculus of economic agents exact to the greatest extent. Not only does competition lead to the cheapest and largest possible production, but it also makes economic agents constantly motivated to reduce costs. In addition to cost adjustment, competition makes it necessary for economic agents to adapt to the constant differentiation of needs on the demand side of the market. It consequently leads to a higher quality of products. Greater adaptability, as well as an innovative economy are the end result. In such a system, there are continuous changes followed by the fast implementation of innovative solutions.

Freedom is the leading feature following the activities undertaken by economic agents, but it has a(n) (economic) value only if it is followed by economic agents' responsibility. Freedom leads to progress only if economic agents bear responsibility for the decisions they make. The creative power of competition stems from the fact that, in such a system, a large number of individuals are independent. It enables a high degree of self-determination. Consequently, self-determination encourages a constant search for productive engagement.

Not only does the competitive order ensure freedom and encourage the productive behavior of economic agents, but it also produces significant social benefits. In accordance with the basic postulates within the SME model, everything that contributes to productivity growth is of great social importance. This aspect is of particular importance in the periods of economic downturns. The competitive order also provides a generally acceptable distribution of income. The social benefits of the competitive order are also reflected in a series of other results: it makes possible the largest and the most diverse production, the better accessibility and quality of public goods and services, better and plentiful job opportunities, and rising wages for the majority of the population as well. In such an order, the accent is on results. They are continually questioned, so individuals move upwards and downwards. As a consequence, the competitive order leads to greater social mobility. The system that provides everyone with the same chances implies a far higher degree of social cohesion and acceptability for the broadest population.

The attainment of effective social and economic outcomes implies the existence of an adequate institutional environment, in which such results are possible. It is imperative that there should be the highest degree of market openness, which, as a principle, must be incorporated in all of the domains of the economic policy. The competitive order is impossible without clearly defined proprietary rights. The competitive order lies *de facto* on the dominant importance of private property. Its significance reflects in strong incentives by economic agents towards the preservation of and increasing the value of property, and in providing greater security and predictability for parties in transactions. Private property provides an efficient allocation of resources, as well as certainty and the lowest obstacles when its use and entry into business transactions are concerned. However, if the institutional structure does not consistently protect what the competitive order requires, namely the freedom and responsibility of economic actors, among other things, it will consequently lead to deviations in exchange and efficiency will be distorted. If the institutional structure is weak, the individuals or groups that have economic power tend to socialize

losses and/or make gains thanks to the market position, rather than the competitiveness of the product or the service they offer. For this reason, the existence of the rule of law is the crucial precondition. The rule of law makes everyone equal before the law, deprives everyone of a privileged position and prevents rent seeking and the socialization of losses after the promulgation of wrong business decisions.

There are several possibilities of further research. The one concerns the possibility of further research study of the constitutive principles of the SME model and the relationship between them in the establishment of the competitive order. In addition to this, as the competitive order sometimes produces undesired consequences, the SME model provides certain principles which should underpin an institutional framework with the aim of mitigating them. These are regulatory principles. The significance, content and implications of these principles represent a potentially interesting field of research. A particularly interesting study would concern the rule of law and its importance and meaning for efficient exchange. In addition, it would be fruitful to analyze the cases that involve a deviation from competitive market structures and finding ways of preventive actions against the establishment of asymmetric market relations. Furthermore, the empirical analysis of the individual aspects of the SME model could represent an additional inspiration for future research. Particularly interesting would be the analysis of the similarities between the institutional economy and the SME model. An additional reason for this may be the fact that the founding fathers of the SME model sharply criticized classical economic theory, whereas institutionalists sharply criticized certain limitations of neoclassical economic theory. The future directions of the research are also the most important constraints of this paper, and they include reliance solely on theoretical analysis, the missing link between theoretical assumptions and the degree of their operationalization in the functioning of the German economy, and, possibly, the empirical valorization of the SME model in a comparative context.

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## THE IMPACT OF THE COMPETITION POLICY ON ECONOMIC DEVELOPMENT IN THE CASE OF DEVELOPING COUNTRIES

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In this paper, we will analyse the impact of the effective application of the competition policy to the economic development of developing countries. Many empirical papers suggest that the existence of the competition policy does not significantly affect the level of the GDP *per capita*, and that only its effective application is important. We will take the same approach and use the World Economic Forum index as a proxy for the effective application of the competition policy. We will demonstrate that a part of the variations in the GDP *per capita* between developing countries could be explained by an effective application of the competition policy.

**Ključne reči:** competition policy, intensity of competition, economic development, developing countries

JEL Classification: L51, O12

### INTRODUCTION

The objective of this research is to examine the impact the competition policy has on the economic development of developing countries. Although this policy has been in existence in the world for more than a century, in some countries it does not have a long history of application. Its main function is to contribute to an increase in welfare and to increase the efficiency and productivity of the entire economy. Most countries intend to formulate a sustainable growth strategy that will provide a better standard

of living. Such circumstances have led to a change in the paradigm of economic development, so that developing countries are increasingly shifting to solving internal problems, as their impact at the global level is limited.

One of the basic internal problems of developing countries is certainly solving the issue of the competition protection policy. The adoption of a regulatory framework and the establishment of a regulatory agency in this area are also conditions for admission to the full membership in the European Union. There is extensive literature on the competition policy, and within it, there are the theoretically founded claims that the implementation of such a

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policy contributes to the economic progress and well-being of the entire society. The question imposing itself is whether this is achieved in practice, and above all whether this applies to developing countries.

The objective of this paper is directed towards testing the following hypothesis:

H: The effective enforcement of the competition policy has a positive impact on the economic development of developing countries.

To test this hypothesis, the indicators of the effective application of the competition and economic development policy will be formulated.

This research study is aimed at demonstrating the fact that there is a positive impact of an effectively guided competition policy on the economic development of developing countries. In addition, its objective is also to contribute to understanding the importance that the competition policy has within the regulatory framework of a country's economy. If the accuracy of the hypothesis is confirmed, developing countries should pay greater attention to the development and implementation of the competition policy due to the processes and changes occurring in their markets. The competition policy directly influences the decisions made by individual economic entities. In this way, it also has an indirect impact on consumers, on the one hand, and the whole economy, on the other.

The rest of the paper is organized as follows; in the second part, a brief overview of the literature that examines the impact of the competition policy on economic development is presented. In the third part, the methodology for selecting a sample of countries for the purpose of conducting our empirical analysis is explained. In the fourth part, an explanation for the selection of the independent variables is given, and their behavior in developing countries is analyzed. In the main part of the paper, the hypothesis that there is a positive impact of the effective application of the competition policy on the economic development of developing countries is tested. The last part of the paper is reserved for the conclusion.

## LITERATURE REVIEW

According to the convergence hypothesis, developing countries should have a higher rate of economic growth than developed countries. However, the continuation of sustainable economic development and the convergence of developing countries were undermined during the global economic crisis. In such an environment of slow economic progress at a global level, developing countries should pay more attention to the internal issues that could contribute to their economic growth.

Competition encourages market participants to be more efficient and to offer a greater choice of products and services at lower prices. At the same time, competition increases economic efficiency, through a reduction in production costs, technological progress and innovation. Even though the protection of competition may increase welfare due to the previously mentioned reasons, the competition policy might often be in conflict with other policy objectives.

In the past, most jurisdictions had no clearly defined priorities when shaping the competition policy and setting its objectives. In the period of the Great Depression, in order to mitigate the consequences of a worldwide economic downturn for the economy, the US were benevolent to certain forms of agreements between companies, even though these agreements represented the most severe violation of competition, such as price fixing. For similar reasons, the European Commission tolerated the so-called "crisis cartels" at specific moments.

While the historical evidence undoubtedly shows that market forces, when left to themselves, do not always produce the best results in terms of market structures, the view that economic efficiency should be the core function of the competition policy prevails in modern industrial organization. Economic efficiency has often been viewed and assessed in terms of the three mutually compatible concepts of efficiency - allocative, productive and dynamic - in relation to which the objectives and effects of the competition policy are observed.

In a situation when the existence of the market power enables a monopolist to set prices above marginal costs, the loss of social welfare stems from allocative inefficiency. The monopolist becomes productively inefficient as well, since a lack of competitive pressure minimizes incentives to lower operational costs, and a higher cost is fully shifted forwards to consumers in the form of increased prices. The managements of these companies are not motivated to improve their business and production processes. (Liebenstein, 1966). Productive efficiency is also discussed in M. Motta (2002), who examines the two main arguments which suggest that a monopolistic firm is likely to be productively inefficient. The first argument is based on the so-called principal-agent models and empirical evidence of individual firms' productivity, presented by S. J. Nickell (1996) and K. M. Schmidt's (1997). The second is the so-called "Darwinian" argument, according to which competition increases industrial productivity by enabling the survival of the most efficient firms. The empirical evidence for this argument was found in G. S. Olley and A. Pakes (1996), who study the impact of technological change and gradual liberalization in the telecommunications equipment industry in the US on aggregate productivity, and in R. Disney, J. Haskel and Y. Heden (2000), who analyze the relative importance of external restructuring in the entry-and-exit form in explaining productivity growth.

Unlike the two static concepts of efficiency, whose main focus is on the existing production capacities, the third concept of efficiency refers to the ability of market participants to invest in new technologies. Under normal circumstances, competition forces businesses to innovate their production processes, introduce new technology and new products so as to improve their competitiveness. However, if research and development costs are high, as in the pharmaceutical industry, possessing a certain market power might have a positive effect on innovation. This "trade-off" between competition and innovation has been captured by a number of theoretical models. .

Market competition fosters the entrepreneurial initiative by creating incentives to innovate and, in the long-term, promotes economic efficiency,

technological progress and economic growth and development. In the past, a number of countries, particularly developing ones, held the view that competition leads to the excess capacity and diseconomies of scale, and most of them lived in the fear of weakening the position of national champions in global trade. The main idea for this type of the industrial policy, as explained in M. Richardson and S. Knowles (1999), is that by limiting the number of firms in the market, the government can more easily implement some policy objectives, such as an increase in the share of tradable goods in industrial production. Simultaneously, a high concentration enables firms to obtain a high profit, and in this way the government provides high incentives to firms so as to pursue its industrial policy objectives. Therefore, M. Richardson and S. Knowles (1999) conclude that a combination of the competition policy and the industrial policy that controls a number of firms in the market was pursued by some developing countries. According to A. Amsden and A. Singh (1994) and A. Singh (2002) these countries were searching for the optimal level of competition in order to promote dynamic efficiency.

The illustration of the previous approach could be found in Japan's competition policy between 1950 and 1973, when Japan was in the position of a developing country according to A. Singh and R. Dhumale (2001). In that period, the industrial policy was more important for than government than the competition policy, and mergers between large firms in some strategic industries were encouraged by the idea that high savings and investment rates could only be achieved by big companies. A. Amsden and A. Singh (1994) explain that the optimal mix of competition and cooperation depended on the phase an industry found itself in. In young industries, competition was suppressed; in the phase of technological maturity, competition was encouraged, whereas in the declining phase, it was discouraged again. This policy brought about the high rates of economic growth and the paradoxical result was that even though the industrial policy dominated, the level of concentration in the industry declined due to the entry and larger production of small companies. In this case, economic growth reduced concentration.

The same policy was applied in South Korea and also resulted in high growth rates. B. Song (1994) claims that the share of the 3 biggest firms in industrial production in South Korea was 62%, whereas the same measure for the US economy was 3 times lower. However, economic growth did not result in a decline in concentration since growth was mainly governed by the higher production of big firms.

Such concerns have faded away over the last decades as economies have become aware of the fact that exposure to competition is the best way to strengthen the capacity of individual business entities and the entire industries in order to successfully compete in the international market.

The stagnation of the Japanese economy since 1994 has revealed that, after the first stage of development, the industrial policy must be subordinated to the competition policy. This is the line of the reasoning of D. Açemoglu, P. Aghion and F. Zilibotti (2003), who claim that high saving rates and factor accumulation are important for less and mid-developed countries, in which limited competition can be beneficial for their economic growth. When a country becomes developed, however, the growth potential of factor accumulation diminishes. In that stage, the economy is based on knowledge and sophisticated innovations require more competition.

In some developing countries, high concentration is a consequence of the dominant position of state-owned enterprises, rent seeking behavior by private companies, and high barriers to entry (Parker & Kirkpatrick, 2004). High concentration also provides high incentives to collude. Collusion may also include local authorities and the companies with the dominant position in the local market in the form of administratively imposed barriers to entry. In this case, high concentration represents an obstacle for economic development.

The rest of the paper is organized as follows: in the second part, a brief review of the theoretical and empirical papers that deal with the impact of the competition policy on economic development is provided. In the third part, the methodology for choosing the sample of the countries for our empirical

analysis is explained. In the fourth part, an explanation for the choice of the independent variables and their behavior in developing countries is explained. In the main part of the paper, the hypothesis that there is a positive impact of the effective application of the competition policy on the economic development of developing countries is tested. The ultimate part of the paper is reserved for the concluding remarks.

The theoretical literature that deals with the impact of the competition policy on economic growth suggests that competition can boost or dampen economic growth, whereas the empirical literature mainly finds a positive influence of competition on economic growth. In the theoretical literature, the impact of the competition policy is measured through its impact on innovation, whereas innovation, on the other hand, is the most important factor of economic growth.

The negative effect of competition on innovation is described in P. Aghion and R. Griffith (2008) in Hotelling's model, where a higher level of competition is represented by a reduced transport cost. Higher competition reduces a firm's profit and incentive to innovate. The same conclusion is obtained in the Dixit-Stiglitz monopolistic competition model, where higher-level competition is represented as a higher substitutability between products. Yet another possibility is presented in the Schumpeterian quality-ladder model of P. Aghion and P. Howitt (1998), where property rights protection is beneficial for economic growth, and higher-level competition adversely affects economic growth through the innovator's lower profit.

According to P. Aghion and R. Griffith (2008), the positive effect of competition on innovation is explained by the rent dissipation effect in a market with a monopolist and a potential entrant. An incumbent can deter entry and retain a monopoly profit by investing in innovation. Otherwise, he has a duopoly profit. On the other hand, the entrant's profit is 0 if he stays out of the market, and he obtains a duopoly profit if he enters. Rent dissipation exists if the difference between the monopoly and duopoly profits is greater than the duopoly profit, which means that the incumbent is more motivated to innovate than the

entrant is. An alternative explanation is provided in the model of vertical differentiation, where firms have different costs. Low-cost firms have a higher market share and this will motivate the entry of new low-cost firms. Moreover, bigger competition will induce high-cost firms to innovate the production process in order to become low-cost firms.

There are some methodological problems identified by P. Aghion and R. Griffith (2008) in the relationship between a firm's size and innovation. The first issue is that a firm's size is correlated with its age, and that older firms possibly innovate more. The second issue is a reverse causality, meaning that the firms which innovate gain a market share, and a firm's size is a consequence of its innovative efforts. The last aspect implies that even if larger firms innovate more, there are fewer firms in the market and the effect on aggregate innovation is ambiguous.

An interesting approach in which the intensity of competition and innovation are mediated by asymmetric information is provided by P. Aghion, M. Dewatripont and P. Rey (1999). They assume that firms can have two possible forms of behavior: profit maximizing and conservative behavior. Under the profit maximizing assumption, competition reduces benefits from R&D for an individual firm and the overall amount of research in the industry. Therefore, under this assumption, higher-level competition reduces the endogenous growth rate. Under the assumption of conservative behavior, firms have the private costs of introducing innovation and their motivation is to delay the introduction of new technology until the very last moment before the old technology has become useless. Higher-level competition reduces the lifecycle of technologies, which means that firms will introduce new technologies earlier, in which case higher-level competition leads to a higher endogenous rate of economic growth. Firms' behavior can be made endogenous in the model when it is related to the size of agency problems between their managers and their owners. If agency problems are at a low level, firms maximize their profits, whereas if agency problems are at a high-level, firms adopt conservative behavior. This perspective offers an important recommendation

for developing economies where agency problems are at a higher-level than in developed economies. In this case, higher-level competition is beneficial for economic growth.

Concerning the empirical relationship between competition and innovation, S. J. Nickell (1996) measures innovation with the total factor productivity (TFP) and finds that the growth rate of the TFP is higher in more competitive industries. The same conclusion is drawn by R. Blundell, R. Griffith and J. Van Reenen (1999), who find a higher rate of innovation in more competitive industries. By using microdata, G. R. Clarke (2011) finds that the countries with stricter competition laws have more innovations, whereas a higher-level price competition between firms reduces innovations.

The impact of the competition policy on economic development is discussed by P. Rey (1997). In developing countries, market concentration is high in some industries with high barriers to entry, implying that an appropriate merger control and an anti-collusion policy are the important elements of economic development. The underlying assumption is that high concentration does not increase dynamic efficiency.

The second aspect is related to predatory behavior, when a dominant firm in the market can initiate a price war and reduce a small firm's cash flow and increase the interest rate for a small firm's new credits. Due to the fact that financing opportunities are scarcer in developing countries and the information asymmetry is higher in the credit market, predatory behavior is a more important issue in developing than in developed countries. Therefore, the competition policy that prevents predatory behavior is beneficial for economic development.

In the empirical literature related to the impact of the competition policy on economic development, the choice of the variable that measures the competition policy and its effectiveness is the key issue. One possible measure is the Antitrust Law Index (ALI) that consists of several sub-indices. The first considers the sanctions that the competition authorities may impose, such as fines or imprisonment. The second

relates to the merger policy. The third dimension covers collusive agreements, whereas the last one covers the restrictions of trade.

In the literature, there are also alternative approaches to the measuring of the existence of the competition policy. The first is the binary approach that uses a variable with the value 1 if a certain competition law is adopted, and the value 0 in other cases. The second approach suggests that input measures, such as the budget of the competition commission, or output variables, such as the number of the investigated cases or the number of appeals in the court against the competition commission's decisions, should be used. In order to control the size of the economy, the commission's budget should be calculated per staff or as a share of the GDP.

M. W. Nicholson (2008) shows that the Antitrust Law Index (ALI) is not an appropriate measure of the effectiveness of the policy. The variable that captures the effectiveness of the policy application is published by the World Economic Forum (WEF) and is calculated based on business leaders' opinions about the effectiveness of the competition policy. The paradox identified by M. W. Nicholson (2008) is that the ALI is the highest for transitional economies, but in these countries the laws are not accompanied by an effective application. This claim is supported by the fact that the correlation between the WEF index and the ALI is -0,198 indicating that the countries that have formally stricter laws have a less effective application in practice.

The impact of the competition policy on economic development can be assessed in a three-stage procedure, the idea of which came from M. Krakowski (2005). In the first stage, the effective application of the competition policy based on the WEF survey is the dependent variable, whereas the independent variables are the existence of the competition policy, the experience of the competition commission and the government's effectiveness in the general policy application. The results reveal that the variables for the competition commission's experience and the government's experience in the general policy application are significant. In the second stage, the intensity of competition based on the WEF survey is

the dependent variable. Concerning the independent variables, the results reveal that the effectiveness of the competition policy and the GNP are significant, whereas the variables of external protection (tariffs, quotas and non-tariff barriers) are not significant. In the last stage, the GNP *per capita* is the dependent variable, while the intensity of competition is the independent variable. The results show that the economies with a higher level of competition have a higher level of economic development.

The empirical analysis of the implementation of the competition policy in transition economies is studied by M. A. Dutz and M. Vagliasindi (2000). They measure the implementation of the competition policy by applying three dimensions: enforcement, competition advocacy and institutional effectiveness.

Enforcement measures the effective application of the competition policy against firms. It consists of sub-dimensions, such as the abuse of the dominant position, cartels and mergers. Competition advocacy concerns a large set of the different economic policies that interact with the competition policy.

Institutional effectiveness is measured by the independence and transparency of the competition commission. The sample includes 26 transitional countries in Central and Eastern Europe, as well as some post-Soviet countries. The descriptive statistics reveal that the countries that have first adopted a competition policy, namely the Baltic States and Romania, lead in the implementation of the competition policy. Regression suggests that law enforcement and institutional effectiveness have a significant impact on the intensity of competition, whereas the impact of competition advocacy is not significant.

The paper that analyzes the impact of the competition policy on the GDP growth in developing and developed countries in the Solow growth model framework is T. C. Ma's (2011). The presence and scope of the competition policy is captured by the SCOPE variable that is defined in the paper by K. N. Hylton and F. Deng (2007). The overall effectiveness of the government's application of policies, not only of the competition policy, is captured by the

EFFICIENCY variable that is defined in the paper by D. Kaufmann, A. Kraay and M. Mastruzzi (2009). The results show that the SCOPE variable is not significant and the formal existence of the competition law cannot influence economic growth. The interacting variable of SCOPE  $\times$  EFFICIENCY is named EFFLAW. For poor countries, the coefficient for this variable is 0.04 and is significant, whereas for rich countries the coefficient is 0.064 and is also significant. Therefore, the competition law must be complemented with the effective enforcement of this policy.

## SAMPLING METHODOLOGY

The term “developing country” is commonly used to indicate the country that has a relatively low living standard, the underdeveloped industry and a lower level of the overall wellbeing relative to more (economically) developed countries. Various institutions use different thresholds of material and non-material wealth to classify individual jurisdictions in certain categories of development, and it is extremely difficult to accurately answer the question of how much a country should (or should not) be “rich” to be considered as a developing country. Even among developing countries, one might encounter evident differences in the level of economic and social development. These issues have brought about a widespread debate on the use of the term developing country in recent years, and have ultimately encouraged international organizations to soften their approaches or even cease to distinguish between “developed” and “developing” countries in the presentation of their data.

The GDP or income *per capita* is usually considered as the initial criterion for classifying countries in the different stages of development. For both operational and analytical purposes, the World Bank classifies countries according to their gross national income *per capita* into four income groups: low income countries, lower and upper middle income countries and high income countries. Other institutions use slightly different classification schemes. The International Monetary Fund, for example, applies a flexible

classification system by taking into account *per capita* income, the diversification of exports and the degree of integration into the global financial system. According to these three criteria, countries are classified into advanced economies, on the one hand, and emerging market and developing economies, on the other.

Until 2004, the IMF had clustered all the Central and Eastern European countries, including the former Soviet Union countries in Central Asia and Mongolia, into countries in transition, whereas today, they all belong to developing countries. The UNDP broadly classifies all countries into three categories: developed economies, economies in transition and developing countries. Certain economies within developing and transition countries are further classified as fuel-exporting countries, whereas a fair percentage of developing countries fit into the group of the least developed countries. Developing countries are also divided into landlocked and small island developing countries.

When deciding upon which countries to include in our sample, we commenced with the WB List of Economies from December 2016. Initially, we included all of the lower and upper middle income countries, namely 70 of them in total. In order to avoid extreme discrepancies in terms of income, we decided to exclude low-income countries from our analysis, despite the fact that until recently they have also been considered as developing countries. Further research showed that 60 out of the 70 initially considered countries had competition legislation in force, so the final sample was composed of 60 countries. This is a considerable improvement compared to 1990, when only 16 developing countries had a formal competition policy according to A. Singh (2002), and were assisted by the WTO and other international institutions to adopt competition laws in the period that followed.

Although the countries in the sample constitute a heterogeneous group, the results of the research will be of great importance since the testing of the initial hypothesis will provide an answer to the importance of the effective implementation of the competition policy for economic development.

## INDICATORS OF THE EFFECTIVE APPLICATION OF THE COMPETITION POLICY AND ECONOMIC DEVELOPMENT

Before testing the initial hypothesis set in this research study, we analyzed the individual indicators that would be used as the variables in the regression model. As the indicator of the effective application of the competition policy, we used the country scores provided by the World Economic Forum (WEF, 2016). Since its establishment, the WEF has created a number of indices to measure and compare the competitiveness of national economies. The indicator that has been in use since 2005 is called the Global Competitiveness Index (GCI), and it assumes that, in today's globalized economy, there are a number of the factors that explain the competitiveness of national economies. Another important feature of the GCI is that all the factors of competitiveness are grouped into 12 categories, i.e. the 12 pillars of competitiveness.

In order to create a global competitiveness index, the WEF uses a total of 114 competitiveness factors. The data used in the research study were obtained in two ways: by the direct measurement (the quantifiable data), obtained from the relevant statistics and international institutions, and the executive opinion surveys, where data are obtained by interviewing the representatives of the business community. The WEF includes the majority of the factors that are key to economic growth and development: institutions, macroeconomic factors, the infrastructure, education, technology and so on. Every year, the WEF conducts a survey which covers a significant number of countries. Respondents are business leaders who evaluate the effectiveness of the competition policy in their country. The effectiveness of the competition policy of each country is given a score, ranging from 1 to 7. The score 1 means that the competition policy is weak and ineffective, while the score 7 means that there is an effective protection of competition in that country. One of the shortcomings of the GCI, as well as of the individual factors, is the fact that the indices mostly rely on the data obtained from different surveys, which, to some extent, makes the obtained estimates biased and may affect the research outcome.

However, for the purpose of this study, the data to be used can be considered as relevant.

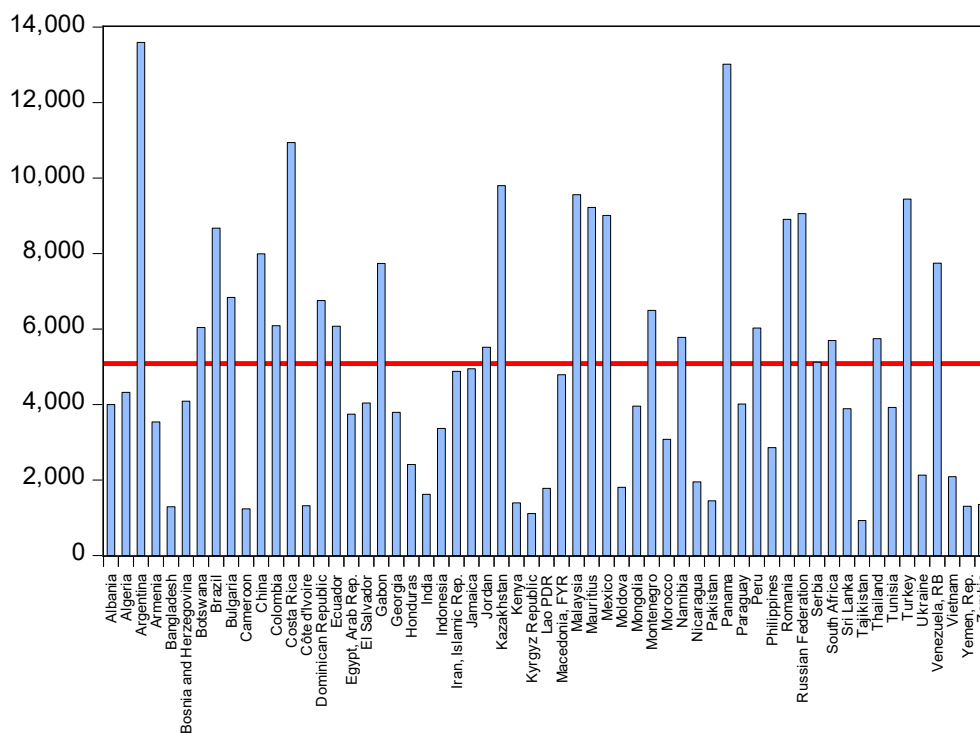
The first variable that we present is the average GDP *per capita*, which is the dependent variable in our regression, the indicator in our analysis being the GDP *per capita*. The GDP *per capita* is used as an indicator of the economic development of the observed countries in order to test the hypothesis. The GDP *per capita* for the year 2015 for the observed countries is shown in Figure 1.

The average GDP *per capita* for the observed countries amounts to about 5000 USD. Argentina, Panama and Costa Rica feature the very high levels of the GDP *per capita* compared to the remaining sample. We will neutralize the negative impact of these extreme values on the estimated regression model by introducing a dummy variable. Such a high level of the development of Argentina and the other two countries in Central America is explained by A. Saravia, C. Machicado and F. Rioja (2014), who explain it by alleging high productivity in agriculture, which enabled these countries to relatively early commence the process of industrialization.

The comparative analysis of the indicators of the effective implementation of the competition policy is provided in Figure 2.

Figure 2 shows that the average score for the countries in the sample is about 3.5. South Africa is the top-rated country, whereas the worst performing country in terms of the effective application of the competition policy is Venezuela. South Africa adopted its Competition Act in 1999, when it recognized the necessity for a strong competition policy due to the high level of concentration in the South African economy (Roberts, 2004).

In addition to the previously presented independent variables, on which we base the hypothesis testing, we included in our analysis certain other independent variables: the consumer price index, the exports of goods and services (% of the GDP), the population growth, start-up procedures to register a business (the number of days) and the unemployment rate (% of the total workforce). All of the indicators are graphically presented below.



**Figure 1** The GDP *per capita* in 2015 (USD)

Source: World Bank

The highest consumer price index, as the proxy of inflation, was observed in the Russian Federation and Iran, whereas Thailand, Jordan and Romania had the lowest (negative) consumer price indices in 2015. The majority of the countries in the sample that have a low level of inflation pursue the policy of inflation targeting (Volz, 2015).

The exports of goods and services of the countries in the sample account for about 35% of the GDP on average. The highest share of exports in the GDP was recorded in Vietnam, above 80%, whereas Yemen, Tajikistan and Pakistan are the least dependent upon exports (around 10% of the GDP).

The next explanatory variable is the population growth rate. The average population growth rate among the selected countries amounts to about 1.2% (Figure 3). The highest rate in 2015 was recorded in Zambia and Kenya, whereas Bulgaria, the Republic of Serbia and Romania, among others, faced negative population growth. The negative growth rate is an

obstacle for economic development since the ageing of a population diverts resources from investments in economic development to the healthcare system and pensions (Teixeira, Renuga Nagarajan & Silva, 2016). An interesting analysis of the relationship between pollution, fertility and the GDP *per capita* is provided by D. Varvarigos and I. Z. Zakaria (2017).

The average number of the days needed to start up a business in the selected countries is around 8. The best performing countries in terms of the easiness of registering a business are the FYR of Macedonia and Jamaica, whereas the worst rated are Venezuela and the Philippines.

The highest unemployment rates among the countries in the sample were observed in the FYR of Macedonia, Bosnia and Herzegovina and South Africa (above 20% of the total workforce), whereas on the other hand, Thailand faces the unemployment rate of close to 0 (Figure 4).

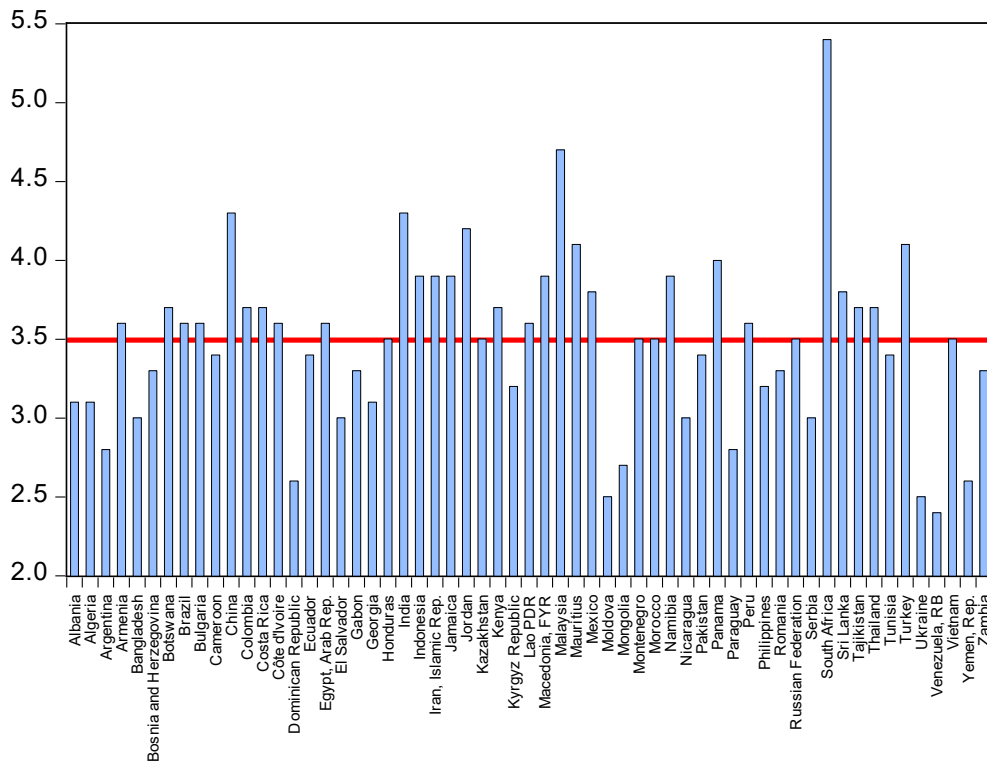


Figure 2 The effective implementation of the competition policy

Source: WEF, 2016

According to H. Feldmann (2008), the unemployment rate in developing economies could be reduced by more cooperative industrial relations that reduce companies' turnover rate and consequently the unemployment rate as well.

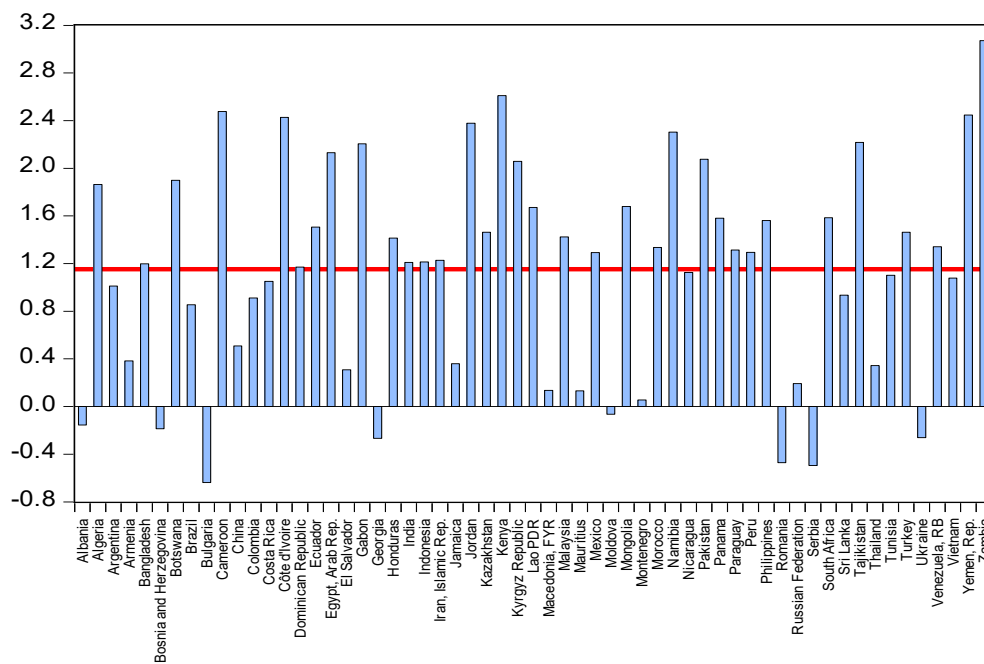
### THE IMPACT OF THE COMPETITION POLICY ON ECONOMIC DEVELOPMENT

In this part of the research study, the main hypothesis that there is a positive impact of the effective application of the competition policy on the economic development of developing countries will be tested. In order to test the hypothesis, we will use the previously described and analysed indicators. By using the regression analysis, we estimated the linear model of the following form:

$$GDP\_pc = \beta_0 + \beta_1 WEF + \beta_2 CPI + \beta_3 EXP + \beta_4 POPG + \beta_5 STARTUP + \beta_6 UNEMPLOYMENT + \varepsilon \quad (1)$$

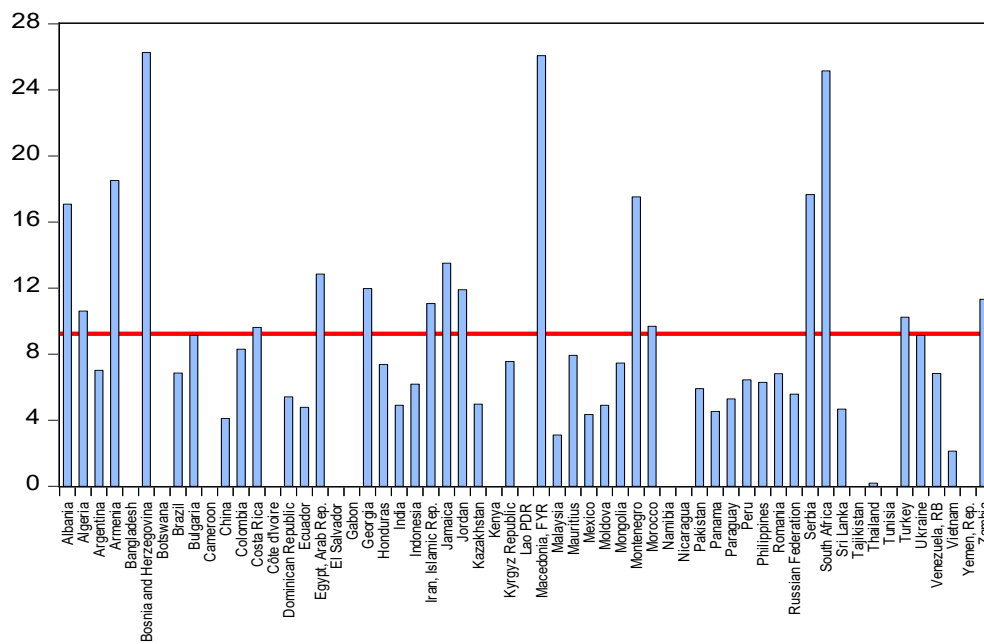
where the dependent variable measuring the development level is the GDP per capita. The other previously mentioned indicators are used as the independent variables: the WEF (the effective competition policy), the CPI (the inflation rate), the EXP (the share of export in the GDP), STARTUP (the procedures to register a business), and UNEMPLOYMENT (the unemployment rate). In the initial model, the CPI, EXP and STARTUP variables are not statistically significant, and are excluded from a further analysis. The initial model is presented in the appendix.

After the exclusion of the variables that were not significant, we estimated the reduced form of the model. In the second regression, we added a dummy



**Figure 3** The population growth 2015

Source: World Bank



**Figure 4** The unemployment rate (% of the total workforce) 2015

Source: World Bank

variable which eliminated the extremely high values of the GDP *per capita* for three countries: Argentina, Costa Rica and Panama. The dummy variable took the value 1 for these countries, and 0 in other cases. The estimated model showed that all the coefficients were statistically significant at the 10% significance level, whereas the coefficient for the Unemployment Rate was not statistically significant at the 5% level. The last result triggered a more detailed analysis of the residuals of the estimated model, by which it was determined that the residual had the highest absolute value for India. A further analysis of the indicators for this country revealed that the GDP *per capita* and the unemployment rate were inconsistent. In other words, the low level of the unemployment rate should be coupled with a high GDP *per capita*, and vice versa. Since this was not the case here, we added yet another dummy variable that had the value 1 for India, and the value 0 for the other countries. By introducing the two dummy variables, we built the final model that was used for testing the main hypothesis:

$$GDP_{pc} = \beta_0 + \beta_1 WEF + \beta_2 CPI + \beta_3 POPG + \beta_4 UNEMPLOYMENT + \beta_5 DUM + \beta_6 DUM_2 + \varepsilon \quad (2)$$

The estimated model shows that all of the variables are statistically significant, including the two dummy variables at the 5% significance level.

In order to test the validity of the model, additional econometric tests are needed. First, the existence of a residual autocorrelation should be determined. The value of the Durbin-Watson statistics is 2.25, based on which the hypothesis of the existence of the first-order autocorrelation can be rejected.

The same conclusion is reached from the correlogram analysis. After testing for autocorrelation, we test for the residual normality. The value of the Jarque-Bera statistics is 1.06, with the *p* value 0.59, which means that at the significance level  $\alpha=0.05$  we cannot reject the hypothesis that residuals have a normal distribution.

The test of the heteroscedasticity of the residuals was performed by applying the White test. The values of the F and  $\chi^2$  statistics are 1.35 and 16.29, respectively,

with the corresponding *p* values of 0.23 and 0.23, respectively, implying that at the  $\alpha=0,05$  level of statistical significance we cannot reject the hypothesis of the absence of the heteroscedasticity and regularity of the model's linear form. From the correlation matrix of the independent variables, it can be inferred that there is no multicollinearity in the model.

**Table 1** *The estimated model*

Variable	Coeff.	Std. Error	t-Statistic	Prob.
C	818.9172	2055.959	0.398314	0.6925
WEF_VALUE	1909.741	599.4599	3.185769	0.0028
POPG	-1011.617	412.9202	-2.449910	0.0188
UNEMP	-135.8814	58.85549	-2.308729	0.0262
DUM	7196.002	1334.294	5.393118	0.0000
DUM2	-5524.342	2315.986	-2.385309	0.0219
R-squared	0.546669	Mean dependent var	5661.415	
Adj. R-sq.	0.490002	S.D. dependent var	3103.315	
S.E. of regression	2216.206	Akaike info criterion	18.36609	
Sum squ. Resid	1.96E+08	Schwarz criterion	18.60461	
Log likelihood	-416.4200	Hannan-Quinn criter.	18.45544	
F-statistic	9.647135	Durbin-Watson stat	2.257815	
Prob (F-statistic)	0.000004			

Source: The results of the estimated model from Eviews.

The most important conclusion of the previous regression analysis is that there is a positive impact of the effective application of the competition policy on the economic development of developing countries at the 5% significance level. Moreover, the whole regression is statistically significant and can be accepted with the equal level of significance. The determination coefficient is 0.55, which means that the independent variables account for 55% of the variations of the GDP *per capita* for the countries in our sample.

## CONCLUSION

The competition policy has the role of protecting and strengthening market competition, which, in itself, provides economically efficient outcomes. Nevertheless, increasing economic efficiency has not always been the main or the sole aim of the competition policy. Throughout history, certain economies have given greater importance to the specific socio-political functions of the competition policy, whereas other countries' aspirations to creating national champions have prevailed over the need for the efficient protection of competition. Such attempts have not yielded the expected results, especially not so in the long-run. Therefore, the main objective of this paper is to establish the positive relationship between the competition policy and economic development.

The choice of the variable that best captures the effectiveness of the competition policy has proved to be the key issue related to measuring the impact of the competition policy on economic development. In the existing empirical literature, various simple and composite indicators of the competition policy have been used for that purpose. The most important conclusion to draw from these attempts intended for the estimation of the impact of the competition policy is that the mere existence of competition legislation is insufficient and must be complemented with its effective enforcement. This is the approach that we have followed in our paper, where we have chosen the WEF indicator as the proxy for the effective application of the competition policy.

Nevertheless, the limitation of the previous analysis is that the WEF indicator is based on business leaders' subjective opinions about the effectiveness of the competition policy. It would be better to use a certain composite index that would contain objective measures, such as the number of the cases successfully resolved by the Competition Commission, or the number of appeals against the Competition Commission's decisions in the court. However, these data are not available for all countries, and previous studies were faced with the same obstacle.

The choice of the other independent variables was made with the objective to avoid multicollinearity in the model. Some of these variables proved not to be statistically significant in the initial model estimation, for which reason we estimated the model by excluding these variables. Needless to say, there is room for the inclusion of other independent variables so as to increase the explanatory power of our regression.

The main contribution of our paper rests on the identified positive relationship between the effective application of the competition policy and the economic development of developing countries. The results presented in this paper are based on the sample of the 60 developing countries that currently have competition legislation in force. The initial hypothesis of this research was confirmed within the linear regression framework, where the WEF variable is highly statistically significant. The additional econometric tests confirmed the validity of the model.

Based on these results, it can be concluded that the effective implementation of the competition policy has a positive impact on the economic development of developing countries. For this reason, the entities responsible for the implementation of the economic policy in developing countries are recommended to pay special attention to the implementation of the competition policy.

The additional implication of this research study of ours is that the models of economic growth may miss one important variable: the effective application of the competition policy. Within the Solow model framework, the residual may not only capture technical progress, but also the factor that we ourselves identified. However, making the overall effect of the competition policy endogenous in the growth model, not just its effect on innovations, which was the main idea of the previous attempts, would be a challenging task to do.

This paper opens many interesting issues for further research. One possible topic for future research could be the assessment of the impact of the competition policy on the economic development of the specific sectors of the economy, which would enable policy-makers to better understand which

sectors require further supervision and control of the level of competition. The second issue is related to methodological aspects of the model specification, its functional form, and the group of the observed variables.

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**Review paper**

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## INVESTMENT DIVERSIFICATION AS A STRATEGY FOR REDUCING INVESTMENT RISK

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Investment diversification is a widely accepted investment strategy, aimed at reducing investment uncertainty, while simultaneously keeping the expected return on investment unaltered. The development of investment diversification coincided with the development of portfolio theory. At the time when traditional portfolio theory was recognized as the leading portfolio management practice, the simple diversification of investments was the most commonly used strategy; however, due to its inability to recognize the importance of the correlation between returns on different investments, simple diversification was later rejected in modern portfolio theory and replaced with efficient diversification. The research study is aimed at conducting a comparative analysis between the simple and efficient diversifications of investments, together with the inevitable analysis of the optimal number of securities in a portfolio and the testing of the validity of the international diversification of investments. By applying a qualitative research methodology, it is concluded that the benefits of the international diversification of investments are still substantial, and as such outweigh specific limitations, and that the number of securities in a portfolio should be increased as long as its marginal benefits, in the form of reduced investment risk, exceed its marginal costs – in terms of increased portfolio management costs, which also represents the main result of the research.

**Keywords:** simple diversification, efficient diversification, national diversification, international diversification

JEL Classification: G11

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### INTRODUCTION

Economic reality undoubtedly confirms the existence of the interrelatedness of and correlation between

return and risk as the basic postulates of modern financial theory. Due to the fact that return and risk are interdependent, any rational investor, in addition to estimating a future, expected return, seeks to identify and assess the risk of certain investment alternatives. In this regard, achieving the expected return is the key driver of an investment activity, while its maximization at the given level of risk is the main goal pursued by any investor.

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An investor who knows future returns with certainty will invest in only one security, namely the one with the highest future return (Markowitz, 1999). However, being certain about what the future holds is quite an unrealistic assumption that ignores risk and oversimplifies the investment process. Modern investors do not concentrate their wealth in a single security or a single type of securities; they rather invest their assets in different types of securities, thus building a diversified portfolio.

In terms of finance, an investment portfolio is a collection of different types of investments, i.e. a mix of different financial instruments held by investors. Holding a securities portfolio is a part of the investment strategy called the diversification of investments, which is carried out in order to reduce the total variance of a portfolio without changing the expected return. A simpler way to reduce portfolio risk is to allocate a portion of assets to risk-free assets. However, this strategy of risk reduction, quite opposite to diversification, would result in lower expected portfolio returns.

With regard to the above-mentioned, this research focuses on the analysis of the development process of the diversification of investments as an established investment risk reduction strategy.

The aim of the research is to examine the positive and negative aspects of the simple and efficient diversifications of investments, including the ever-present issue related to the selection of the optimal portfolio size and the comparison of the potential benefits and limitations of the international diversification of investments.

In accordance with the subject matter of the research study and the defined research goal, the initial hypothesis set out in this paper reads as follows:

H: The international diversification of investments, compared to the national diversification, achieves the same or a higher level of the expected return, including a further investment risk reduction.

The qualitative research method, based on the analytical description, is used in this study. This methodological toolkit makes it possible for the author to produce relevant conclusions about the research topics, based on the study of the relevant and for the most part foreign literature.

Taking into account the defined subject, goal and hypothesis, after the introductory considerations and the review of the relevant literature, this paper presents the analysis of the differences between the simple and the efficient diversifications of investments, which is followed by the identification of the disadvantages and limitations of diversification as an investment strategy. The paper continues by presenting the potential benefits and limitations of the international diversification of investments. In the last, concluding section of the paper, the opinions about the confirmation of the initial hypothesis are presented and the implications for future research considered.

## LITERATURE REVIEW

The common concept of portfolio theory is that by combining different assets one can achieve better results than by simply investing funds in a single asset. The often-cited recommendation in the financial literature on how to allocate one's funds was written down in the IV century and reads as follows: "put a third in land, a third in merchandise and a third in cash". Although this idea had been around for centuries, it is during the mid-XX century that it actually took shape. In fact, before the emergence of modern portfolio theory (MPT), investors had used to construct their portfolios without considering the degree of the correlation between returns on different investment assets. The main disadvantage of this type of diversification, known as simple (naive) diversification, is that efficiency decreases as the number of assets in a portfolio increases (Jakšić & Leković, 2015, 32). Being based on the "law of large numbers" - i.e. on holding a large number of securities in a portfolio, simple diversification results in an excessive diversification, which in turn results

in high portfolio management costs. According to J. C. Francis and D. Kim (2013), simple diversification can reduce portfolio risk, but cannot minimize it since it ignores the correlation between returns on different assets.

Simple diversification and the application of the law of large numbers were first rejected by H. M. Markowitz (1952). The author points out that a portfolio with 60 different securities from a single industry would not be as well diversified as a same-size portfolio with securities from different industries. According to H. M. Markowitz (1952), if one wants to make the variance small, it is not enough to invest in many securities, but it is necessary to avoid investing in securities with high covariances among themselves instead. Accordingly, H. M. Markowitz (1952, 89) suggests that we should diversify across different industries since companies in different industries, especially the industries with different economic characteristics, have lower covariances than the companies within a single industry. Therefore, H. M. Markowitz (1952) identified the importance of the correlation between the returns of individual securities in a portfolio; in this respect, a lower value of the correlation coefficient implies greater benefits from diversification. The founder of the MPT favors efficient diversification instead of simple diversification, i.e. recommends investing in low-correlated securities.

Unsystematic risk can be eliminated by efficient diversification, while the total investment risk can be reduced to the level of systematic risk. In the case of efficient national diversification, the lower limit in terms of risk reduction is actually the level of national systematic risk. However, in addition to national diversification, investors can also opt for international diversification. H. G. Grubel (1968) first pointed to the importance of international diversification and the possibility of reducing portfolio risk below the level of systematic risk. His viewpoint was supported by B. H. Solnik (1974), H. Levy and Z. Lerman (1988), W. Bailey and R. M. Stulz (1990) and the many others who emphasized the advantages of constructing an internationally diversified portfolio, i.e. the benefits of investing money in foreign securities. Unfortunately, due to the growing international market integration,

the benefits of international diversification are being reduced - however, they are still significant and evident. The substantial benefits of international diversification are also supported by the research carried out by K. Li, A. Sarkar and Z. Wang (2003), R. Gupta (2006), W. J. P. Chiou (2009), C. S. Asness, R. Israelov and J. M. Liew (2011), O. Bouslama and O. B. Ouda (2014), G. Mansourfar, H. Didar and S. Jodatnia (2017) and others. K. Li *et al* (2003), R. Gupta (2006) and O. Bouslama and O. B. Ouda (2014) point out the fact that although the growing integration of different capital markets reduces the benefits of investing in foreign markets (especially the emerging markets), this does not necessarily mean that it eliminates them. The authors agree that emerging markets still represent an important component of a well-diversified portfolio. P. Christoffersen, V. R. Errunza, K. Jacobs and H. Langlois (2012) came up with the evidence supporting the aforementioned statement. The authors used the weekly rates of return of a large number of countries for the period 1973-2009, and found an increasing correlation between developed markets, as well as between emerging markets; the important conclusion of their research is that investing in emerging markets still brings significant benefits to investors.

In addition to selecting an optimal method for diversification, economists have been trying to determine an optimal number of securities in a portfolio for decades. The first study which measured the effects of an increase in the portfolio size on risk reduction for the purpose of determining the optimal size of a portfolio was carried out by J. L. Evans and S. H. Archer (1968), who found that, eight to ten securities in a portfolio on average are sufficient to achieve the largest number of benefits from diversification. The authors argue that a portfolio consisting of 15 securities is fully diversified, for which reason any further increase in the number of the securities held in that portfolio does not affect risk reduction. M. Statman (1987) rejected the above conclusion based on his research, which showed that an optimally diversified portfolio must include 30 securities at least. J. Y. Campbell, M. Lettau, B. G. Malkiel and Y. Xu (2001) point out that the number of the securities required in order to achieve the

optimal portfolio diversification increases with an increase in unsystematic risk. The authors divided the observed period from 1963 to 1997 into the three sub-periods: 1963-1973, 1974-1985 and 1986-1997. They concluded as follows: in terms of the first two sub-periods, most of the benefits from diversification were achieved by investing in 20 securities, whereas the similar effects of the diversification in the third sub-period were achieved by investing in 50 securities. H. Benjelloun (2010) came to a similar conclusion about the optimal size of a portfolio and an increase in the optimal number of the securities held in a portfolio. He pointed out that, in order to achieve a sufficient diversification of investments, a portfolio must include between 40 and 50 securities.

While examining the efficiency of simple diversification, G. Y. N. Tang (2004) came to a conclusion that a 20-stock portfolio was good enough in terms of eliminating 95% of unsystematic risk, whereas the additional 80 stocks (the 100-stock portfolio) were required for the elimination of the additional 4% of such unsystematic risk (99% of unsystematic risk). M. Statman (2002, 2004) and D. L. Domian, D. A. Lawton and M. D. Racine (2007) argue that the optimal number of stocks in a portfolio has increased from 10 to 15 stocks at the beginning of the 1950s to a hundred and over a hundred shares at the beginning of the XXI century.

Based on the example of the capital markets of the USA, the UK, Japan, Canada and Australia, V. Alexeev and F. Tapon (2013a) proved that the optimal number of securities in a portfolio depended on market conditions, and that this number increased during the periods of the financial and economic crisis. In this regard, the different capital markets have established different optimal portfolio sizes. Based on the survey they had conducted in the capital markets of Australia, V. Alexeev and F. Tapon (2013b), concluded that 24 to 30 shares were sufficient to construct a well-diversified portfolio. In terms of the capital market of Canada, the same authors found that the optimal portfolio size was that exceeding 50 shares (Alexeev & Tapon, 2014). The results of the research carried out by M. R. Sarker (2013) in the capital market of Bangladesh indicate that the optimal portfolio consists of 33

shares, whereas the optimal number of shares in a portfolio in the capital market in Kenya, ranges from 18 to 22 shares, according to a survey conducted by S. E. Kisaka, J. A. Mbithi and H. Kitur (2015).

It should be noted that the research findings referring to the optimal size of a portfolio in the bond market are highly correlated with the findings relating to the stock market. The results of the study carried out by W. R. McEnally and M. C. Boardman (1979) indicate that between eight and 16 securities should be included in a portfolio so as to significantly reduce volatility, whereas recent studies, such as those conducted by W. Dbouk and L. Kryzanowski (2009), suggest that an optimal portfolio should include a greater number of components, which is generally estimated to be between 25 to 40 securities.

## THE SIMPLE AND EFFICIENT DIVERSIFICATIONS OF INVESTMENTS

The traditional approach to increasing the number of securities in a portfolio for the purpose of reducing the total risk is known as simple (naive) diversification. According to this approach, investing in 100 different securities is ten times less risky than investing in 10 securities. The simple diversification of investments, based on the law of large numbers, was supported by the proponents of traditional portfolio theory: J. R. Hicks (1935), J. B. Williams (1938), D. H. Leavens (1945) and others, who separately evaluated individual securities, i.e. they did not make investment decisions within the context of a particular portfolio. Furthermore, they were not interested in determining the correlation between returns on individual securities within a portfolio. Traditional portfolio theory and its proponents did not recognize the importance of correlation for a portfolio construction. Correlation is important because it is essential for us to think about and make decisions based on the entire portfolio, rather than on individual securities. According to traditional portfolio theory, if investors want to eliminate risk, they should invest in a large number of securities; therefore, during the period when traditional portfolio theory was considered to

be the most influential concept, portfolio performance was evaluated solely based on the actual return.

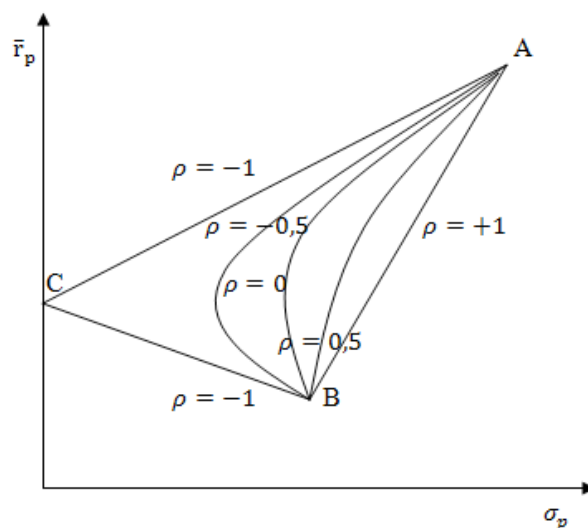
In addition to completely ignoring correlation, another important disadvantage of simple diversification is, usually, reflected in an excessive number of securities held in a portfolio. An excessive number of components in an investment portfolio lead to the high transaction costs related to both portfolio construction and portfolio management. Therefore, it can be concluded that simple diversification represents a traditional approach to diversification; however, it is still applied in practice by those investors and portfolio managers who use heuristics (mental shortcuts), such as the application of the 1/N rule.

Unlike traditional portfolio theory and simple diversification as its main characteristic, the MPT has shifted the emphasis from the analysis of the characteristics of the individual securities held in a portfolio to the analysis of the characteristics of the entire portfolio, simultaneously underlining the importance of the correlation between returns on held securities. If investors seek to reduce portfolio risk, they should not invest in a large number of different securities; they should rather invest in low-correlated securities (Jaksic, 2012, 161). H. M. Markowitz (1952) provided the mathematical proof that a proper diversification can indeed minimize the variance of a portfolio for a given level of return. He was the first scientist and author to have formally quantified the return-risk *trade-off*. Understanding the nature of the correlation between returns on different assets enabled the construction of the sets of the efficient portfolios that minimize risk for a given level of return, i.e. they maximize return for a given level of risk.

According to H. M. Markowitz (1952), efficient diversification implies that investors should avoid securities with high covariances among themselves when constructing their investment portfolios. In an extreme case of perfectly positively correlated securities, diversification has no effect on risk. However, in all other cases, namely in every instance where the correlation between returns

on the securities is less than perfectly positive, such a diversification will help reduce risk without sacrificing the expected return. The strongest positive effects of diversification can be achieved if all of the elements of a portfolio are perfectly negatively correlated. However, a perfect negative correlation, i.e. the complete canceling out of the variability of returns on securities against each other is not realistic; this is rather an idealized image of reality. It is difficult to find uncorrelated or negatively correlated securities on financial markets. The most common case is a moderate positive correlation, which moderately adds to reducing portfolio risk.

Figure 1 shows the effect of Markowitz's efficient diversification for a portfolio composed of two securities: Security B and Security A.



**Figure 1** The effect of Markowitz's efficient diversification

Source: Author, based on: Francis & Kim, 2013, 39

All the possible combinations of the positively correlated ( $\rho = +1$ ) B and A securities are represented by the straight line BA. Each point on this line marks the portfolio whose characteristics match the weighted characteristics of its components. This means that by combining the perfectly positively correlated A and B securities portfolio risk can be reduced; however, the expected return is also reduced in this manner.

Starting from the point B and moving towards the point A, the expected return and portfolio risk grow due to the fact that the share of the riskier security that offers a higher return also increases. Starting from the opposite direction, i.e. from the point A and moving towards the point B, we see that both the expected return and portfolio risk become reduced. This supports the conclusion that diversification does not produce any benefits in the case of a perfect positive correlation among portfolio components.

On the other hand, all of the combinations of the negatively correlated ( $\rho = -1$ ) B and A securities are distributed along the two straight lines, the one of which (the line BC) is negatively inclined, whereas the other (the line CA) is positively inclined. Moving from the point B towards the point C implies the inclusion of the riskier security A in the portfolio, which results in a decrease in the standard deviation of the portfolio and a concurrent increase in the expected return. If we were to assume an infinite divisibility of the observed securities, portfolio risk should be reduced to zero at the point C. Therefore, portfolio diversification provides the complete stabilization of returns at the point C. This is the ideal situation achieved due to a perfect negative correlation between the elements of a portfolio. By including the additional, riskier security A, portfolio returns continue to grow along the positive slope of the line CA; however, this is accompanied by a certain increase in portfolio risk (Figure 1).

Finally, by connecting the described straight line BA with the lines BC and CA, we obtain a triangle BCA, within which all the combinations of the imperfectly correlated ( $-1 < \rho < +1$ ) B and A securities represented by the respective BA curves are contained. It is important to note that the curves BA initially have a negative slope due to the fact that the introduction of the riskier security A causes portfolio risk to briefly decrease because the correlation is less than perfectly positive. As the correlation coefficient decreases, the curves BA shift to the left, which actually illustrates an increase in benefits from diversification in terms of the stabilization of portfolio returns. Therefore, in the case of imperfectly correlated securities, portfolio risk is located between the zero value, attained due to the

perfect negative correlation, and the maximum value, achieved as a result of an ideal positive correlation among the elements of a portfolio. The general conclusion is that an efficient diversification implies, as well as requires, a low coefficient of correlation (Figure 1).

According to M. Rubinstein (2002), H. M. Markowitz was hardly the first to recognize the desirability of diversification; however, he indeed was the first person to produce a mathematical formalization of the idea of the diversification of investments. H. M. Markowitz (1952, 77) rejects the rule that the investor should maximize discounted expected returns. This rule does not imply diversification, which is why it is rejected both as a hypothesis and as the maximum to guide investment behavior. According to H. M. Markowitz (1999), the existence of uncertainty in terms of investment is the essential point in analyzing the behavior of a rational investor, whereas the diversification of investments is a reasonable and common practice, as it reduces the mentioned uncertainty.

The effect of the efficient diversification on reducing the mentioned uncertainty, i.e. investment risk, can be mathematically interpreted. The general formula used for the portfolio variance calculation is written as follows (Elton, Gruber, Brown & Goetzmann, 2011, 58):

$$\sigma_p^2 = \sum_{i=1}^n w_i^2 \sigma_i^2 + \sum_{i=1}^n \sum_{\substack{j=1 \\ i \neq j}}^n w_i w_j \sigma_{ij}, \quad (1)$$

where:

$\sigma_p^2$  - the variance of the portfolio  $p$ ,

$w_i$  - the share of the  $i$ -th security in the portfolio,

$w_j$  - the share of the  $j$ -th security in the portfolio,

$\sigma_{ij}$  - the covariance between returns on securities  $i$  and  $j$ ,

$n$  - the number of the securities held in the portfolio.

Assuming that all the elements of a portfolio are uncorrelated, i.e. that the covariance between their returns is equal to zero ( $\sigma_{ij} = 0$ ), we rewrite the previous expression as:

$$\sigma_p^2 = \sum_{i=1}^n w_i^2 \sigma_i^2. \quad (2)$$

By introducing the additional assumption of the equal amount of the funds invested in each security  $w_i = \frac{1}{n}$ ,

Equation (2) is written as follows:

$$\sigma_p^2 = \sum_{i=1}^n \left(\frac{1}{n}\right)^2 \sigma_i^2 = \frac{1}{n} \sum_{i=1}^n \frac{\sigma_i^2}{n} = \frac{1}{n} \bar{\sigma}_i^2. \quad (3)$$

The effect of efficient diversification on portfolio risk

reduction, represented by the equation  $\sigma_p^2 = \frac{1}{n} \bar{\sigma}_i^2$ ,

is evident. It is clear that the portfolio risk expressed by the variance ( $\sigma_p^2$ ) decreases as the number of the uncorrelated elements of the portfolio ( $n$ ) increases. For an extremely large number of uncorrelated elements in a portfolio, the portfolio variance approximates to zero.

However, in a real market environment, it is impossible to construct a portfolio which only includes uncorrelated securities; therefore, the effects of the diversification of investments are significantly weaker. Uncertainty cannot be completely eliminated solely by diversification. The idea is to eliminate unsystematic risk, thus leaving only systematic risk, which is defined by the beta (Vincent, 2011). If an investor implements effective diversification, his/her portfolio will not contain unsystematic risk (the risk inherent in the issuer's company, such as insolvency risk, failed promotional activities, labor strikes, etc.), but only systematic risk (the risk inherent in the entire market, such as the interest-rate risk, foreign-exchange risk, inflation risks, etc.). Systematic risk is the risk compensated for by the market itself, whereas unsystematic risk is the risk which cannot be compensated for. Therefore, in terms of appropriately constructed portfolios, systematic risk - the risk that cannot be eliminated by implementing diversification - is the only type of risk considered as relevant.

Some authors, including I. Omisore, M. Yusuf and N. Christopher (2012), have quite interestingly put

forward the idea that unsystematic risk can be eliminated by diversification; however, this is followed by an increase in systematic risk. Diversification compels portfolio managers to invest in different types of assets, thereby artificially increasing demand for such assets. In this way, this artificially increased demand drives up the asset prices, which if analyzed individually have a small real value. Therefore, the entire portfolio becomes more expensive, which in turn results in a lower probability of achieving the expected positive return, i.e. leads to an increase in portfolio risk.

Bearing this in mind, it can be concluded that effective diversification is desirable; however, it is not a perfect investment strategy. The benefits of diversification in terms of maintaining the same level of a portfolio's expected return (while reducing portfolio risk at the same time) achieved by combining assets with low or even negative correlation are evident. However, the problem here is to find negatively correlated assets since the most common type of correlation present in modern financial markets is a positive one. Also, in the conditions of a financial and economic crisis, correlation coefficients are close to 1, thereby reducing or completely eliminating the benefits of diversification. This is the major disadvantage of such an investment strategy because, if diversification does not produce the expected results in a situation when investors need to be protected from risk, the general usefulness of diversification must be considered. A financial and economic crisis and attempts to lower correlation coefficients are the factors that drive investors to invest their available funds not only in securities (primarily stocks and bonds), but also in new assets, such as precious metals, oil, real estate, works of art, and so on, and to include such assets in their portfolios. It should be noted that during financial and economic crises, the optimal number of securities held in a portfolio increases, which imposes higher costs in terms of portfolio management.

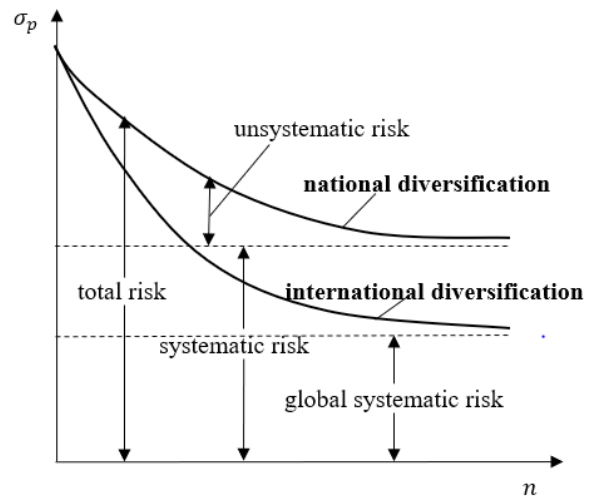
Certain empirical studies suggest that in the absence of constraints a simple diversification of investments is a more successful investment strategy in terms of reducing investment risk compared to efficient diversification. Based on the conducted comparative

analysis, V. DeMiguel, L. Garlappi and R. Uppal (2009) determined that 14 optimal portfolio strategies showed inferior performance in comparison to the naive 1/N strategy. The authors specify the length of the time period analyzed and the number of assets, i.e. the elements of a portfolio, as the main criteria that determine the level of the success of the optimal portfolio strategies (optimal diversification) and the 1/N strategy (simple diversification), respectively. It is to be expected that optimal portfolio strategies will deliver better results than the 1/N strategy in the case where assessment refers to a long estimation window, and where the number of assets in a portfolio is small. Vice versa, it is expected that simple diversification will exceed optimal diversification if the number of assets in a portfolio is large and if the estimation of the expected return refers to a short estimation window. The key question that should be addressed in this matter is the critical length of the estimation window that would support specific models of the optimal allocation of assets in their achieving better results than the 1/N strategy. The aforementioned research, conducted on the US capital market, found that the critical length of the estimation window was 3000 months for the portfolio consisting of 25 assets, i.e. over 6000 months for the portfolio containing 50 assets. Bearing in mind the fact that the price estimates were generally done on the basis of the short-term sample of 60 to 120 months, the rationale supporting the determined superiority of the 1/N strategy is clear.

M. Kritzman, S. Page and D. Turkington (2010) argue that the application of the 1/N rule is not a viable alternative to the careful optimization of the portfolio, and consider the argumentation on the superiority of the 1/N strategy to be a misconception. The conclusion of their study is that the alleged superiority of the 1/N approach does not rest on the limitations of optimization, but rather on the forecasting based on the short estimation window. The results of the research conducted, based on the long-term estimation window, show that the performance of the optimized portfolios significantly exceeds the performance of the equally weighted 1/N portfolios, meaning that simple diversification thus loses its significance.

## POSSIBLE BENEFITS AND LIMITATIONS OF THE INTERNATIONAL DIVERSIFICATION OF INVESTMENTS

By combining different types of securities traded on the financial market of a country, which are not perfectly positively correlated, the total variance, i.e. the total risk of a portfolio, is reduced. The lower limit of reducing the overall portfolio risk, achieved thanks to the national diversification of investments, actually represents national systematic risk. By reducing unsystematic risk, national diversification levels the total portfolio risk with national systematic risk (Figure 2).



**Figure 2** The effects of national and international diversifications

Source: Author

Lowering portfolio risk below the level of national systematic risk is made possible thanks to the international diversification of investments. By including foreign securities in a portfolio, one portion of the risk characterized as systematic risk in terms of the national market is transformed into unsystematic risk. The risk that remains after an effectively implemented international diversification is global systematic (market) risk, which cannot be avoided due to the fact that global macroeconomic factors affect all countries of the world. Therefore,

international diversification transforms a portion of national systematic risk into unsystematic risk, thus contributing to a further risk reduction and bringing it to the level of global systematic risk (Figure 2). The conclusion is that the investor can reduce the risk exposure of individual assets by holding a nationally diversified portfolio of assets and lower the exposure to national systematic risk by holding an internationally diversified portfolio as well.

The adequacy of the international diversification of investments predominantly depends on the correlation among the financial markets of different countries. E. J. Elton *et al* (2011) calculated the correlation coefficients of the 15 stock indices of different world countries for the period 1990-2007 by using monthly returns data. The correlation among the stock indices of those different countries was 0.48 on average, and was two times smaller than the correlation between various stock indices in terms of a particular country. This illustrates the potential benefits of international diversification because, as a rule, a lower correlation coefficient results in a lower portfolio risk. However, the fact that the correlation between the markets of different countries increases from one year to another is a worrying one. This is confirmed by the calculations performed by the same authors for the previous period 1980-1988, where the value of the average correlation coefficient relating to international stock indices amounted to 0.40. The increase in the correlation in the following period was a result of an increased integration of the world economy and the establishment of the European Monetary Union (EMU), as well as the increased correlation among the markets of the EMU member countries. However, despite this increase, the correlation among the international markets remained lower than the correlation relating to the market of a particular country. Therefore, it is reasonable to expect that international diversification will continue to reduce the total portfolio risk in the future.

R. A. De Santis and L. Sarno (2008) come up with the evidence in favor of the application of the international diversification of investments. By using the monthly data for the period 1991-2007 relating to 18 countries and the USA, the authors identified

which capital markets of the 18 mentioned countries highly correlated with the US market and vice versa, which capital markets showed a weak correlation with the US market. In this way, the authors provided recommendations for US investors concerning the specific markets in which they should invest free assets in order to achieve the desired benefits of international diversification. The general conclusion is that, by combining the assets of a selected group of countries (weakly correlated ones), better results, i.e. greater benefits, are achieved than when combining the assets of all the countries of the world (the global portfolio), or the assets of a single country (the domestic or national portfolio).

The results of the research study analyzing the case of 23 developed countries in the period 1980-2005, conducted by G. Bekaert, R. J. Hordick and X. Zhang (2009), confirm still significant benefits of international diversification. The authors did not find evidence in favor of the increased correlation of returns, except in the case of European capital markets. The study even points out the fact that, in terms of the financial literature, "there is no definitive evidence that cross-country correlations are significantly and permanently higher now than they were, say, 10 years ago." At the same time, the authors acknowledge that the effects of globalization are obvious and that investors from America and Europe can achieve greater benefits by investing in the Far East; they, however, argue that the globalization process has not led to major and permanent changes in the international correlation yet.

From the viewpoint of Chinese investors, the usefulness of the international diversification of investments was examined and confirmed by C. Jiang, Y. Ma and Y. An (2013). The Chinese capital market has become more strongly integrated with the international capital market, following the implementation of the new foreign-currency exchange system in 2005, which has reduced, but not eliminated, the benefits of international diversification. However, the authors acknowledge that the study did not include transaction costs, which leaves the following question open: if transaction costs were included in the analysis of the benefits of

international diversification, would these benefits still manage to outperform associated costs?

A number of studies (Ramchand & Susmel, 1997; Kunovac, 2011) analyzing the correlation between the capital markets of different countries have concluded that the international correlation is significantly higher in turbulent periods in comparison with quiet market periods. A turbulent period implies a period of high market volatility (high absolute returns), whereas a quiet period implies a period of low market volatility (low absolute return). L. Ramchand and R. Susmel (1997) found that the correlation between the US and other world capital markets (Japan, the United Kingdom, Germany, Canada) was on average two or three-and-a-half times higher during the turbulent period compared to the quiet market period. Similarly, by analyzing monthly returns, D. Kunovac (2011) determined that the correlation between the Croatian and foreign capital markets was on average more than two times higher in the turbulent period. The mentioned studies confirmed the existence of the phenomenon of asymmetric correlation. In terms of international diversification, the results of these studies suggest that the benefits of international diversification in a turbulent market period are limited and significantly lower than in a quiet period. During a quiet market period, correlation is lower and the benefits of international diversification are greater, whereas turbulent periods are characterized by an increase in correlation and the consequent diminishing of the benefits of diversification.

The previously described statement that correlation increases with an increase in the volatility level, i.e. that it is higher in the case of large absolute returns, was examined by F. Longin and B. Solnik (2001), who concluded that the above-mentioned statement applied in terms of the bear market, but not in terms of the bull market. The results of their research based on using the monthly rates of return in the period 1958-1996 showed that the correlation of the US capital market with the capital markets of Great Britain, France, Germany and Japan was growing in the conditions of the bear market and large negative returns, but was decreasing in the conditions of the bear market and large positive returns. Therefore, the

correlation of large negative returns indicates a trend of growth, whereas the correlation of large positive returns indicates a decreasing trend and converges to zero. The authors conclude that correlation does not depend on the level of market volatility, but rather on the market trend. Volatility on its own does not affect correlation. In the context of international diversification, the results of the aforementioned research suggest that the benefits of international diversification in the conditions of the bear market are limited and considerably smaller than in the conditions of the bull market. In the conditions of the bull market, correlation is lower and the benefits of international diversification are greater, whereas the bear market is characterized by an increase in correlation and a consequent reduction in benefits from diversification.

On the example of the US capital market, A. Ang and J. Chen (2002) proved that the phenomenon of correlation asymmetry was not only the characteristic of international capital markets, but also of the capital markets of individual countries. The authors also found that the correlation between individual shares and the overall capital market is significantly higher in the conditions of the bear market compared to the bull market. In their study, they developed a model for measuring the degree of asymmetry and concluded that asymmetry was greater in the following cases: the shares of small companies in comparison with the shares of large ones, the past loser portfolios compared to the past winner portfolios, shares with a lower beta coefficient compared to those with a higher beta coefficient; in addition, the authors determined that there was no relation between the leverage and correlation asymmetries.

As the starting point of scientific papers and empirical studies, the evidence in favor of the phenomenon of correlation asymmetry has been found by L. Yuo and R. T. Daigler (2010), J. Danielsson (2011) and others. The authors reject the constant and linear correlation between returns of financial instruments, noting that the findings on the benefits of the international diversification based on the constant correlation are often misleading and incorrect. Therefore, the adoption of the final position

on the presence or absence of the superiority of the international diversification of investments over national diversification is a difficult task that requires caution. This is supported by the numerous other factors that reduce the usefulness of international investment and international diversification, such as: trade restrictions, political barriers, restrictions on currency exchange, and so on. According to W. F. Sharpe, G. Alexander and J. V. Bailey (1995), investing in a foreign security carries the risk associated with that particular security on its domestic market, plus an additional risk in the form of political and foreign-exchange risks. Political risk refers to the uncertainty regarding the possibilities of investors to convert a foreign currency into the local currency because the government of some foreign country may restrict, tax or completely ban the conversion of one currency to another. On the other hand, foreign-currency risk relates to the uncertainty about the exchange rate at which some foreign currency will be converted to the investor's local currency in the future. In other words, currency risk is expressed as the variability of the portfolio returns caused by fluctuations in the exchange rate, i.e. change in the exchange rates in terms of the domestic and foreign currencies.

Good news is that changes in the currency exchange rates of different countries are not highly correlated, for the reason of which fact exchange-rate risk represents a small part of the total risk of an internationally diversified portfolio. Some authors, such as J. C. Van Horne and J. M. Wachowicz (2007), even argue that currency risk contributes to the success of international diversification, i.e. boosts its effectiveness. In addition, foreign-exchange risk can be reduced or even completely eliminated by hedging it with forwards or futures. The full protection against foreign-exchange risk is possible in the case of risk-free fixed-income securities. On the other hand, it is not possible to completely eliminate the foreign-exchange risk related to the risky investments whose returns vary. Futures contracts can cover the expected cash flow; however, if the actual cash flow is greater than the expected, then a portion of the foreign-currency funds must be converted to local currency at the forward exchange rate. The proponents of hedging warn that the investors who do not implement

foreign-exchange risk hedging miss the opportunity to reduce portfolio risk without diminishing portfolio return. They point out that a significant reduction in the variability of portfolio returns can be achieved through hedging. On the other hand, the opponents of hedging opine that the costs of hedging exceed its benefits related to risk reduction. Namely, the total annual hedging costs are estimated at between 0.25% and 0.50% of the value of the hedged assets - this fact is sufficient to persuade the opponents that the hedging of foreign-exchange risk is not profitable (Sharpe *et al*, 1995, 976). According to B. H. Solnik (1974), if an investor in foreign securities does not protect him-/herself against the exchange rate fluctuations, he/she is in fact intentionally speculating on currencies. Foreign-currency risk, as well as any other financial risks, carries a potential reward; therefore, such a speculation can be quite profitable. The conclusion is that, in addition to reducing the level of risk, international diversification often generates higher returns because it involves a larger choice of investments and provides opportunities to make a profit from exchange-rate fluctuations.

Taking into account the uncertainty regarding the future price movements of foreign securities, as well as the uncertainty about the future exchange rates at which capital gains and dividends will be converted from some foreign currency to the investor's local currency, international investments can be classified as:

- investment in foreign securities and
- investment in a foreign currency.

In this respect, the total return on an international investment includes:

- the returns earned from investing in foreign securities and
- the returns earned from investing in a foreign currency.

The previous statement can be mathematically proved to be true; we start with an algebraic expression for calculating the actual rate of return on shares (Francis & Kim, 2013, 411):

$$r_{c,it} = \frac{(p_{c,it} - p_{c,it-1}) + d_{c,it}}{p_{c,it-1}}, \quad (4)$$

where:

$r_{c,it}$  - the actual rate of return on shares of the company  $i$ , located in the country  $c$ , at the time  $t$ ,

$p_{c,it}$  - the share price of the company  $i$ , located in the country  $c$ , at the time  $t$ ,

$p_{c,it-1}$  - the share price of this company at the time  $t-1$ ,

$d_{c,it}$  - the dividend per share of this company.

However, from the standpoint of, say, some US investor, the actual rate of return on shares of the mentioned company is calculated by applying the following formula:

$$r_{US,it} = \frac{(p_{c,it} + d_{c,it})(x_{c,t}) - (p_{c,it-1})(x_{c,t-1})}{p_{c,it-1}(x_{c,t-1})}, \quad (5)$$

where:

$r_{US,it}$  - the total rate of the return earned on the stock  $i$  by a US investor,

$x_{c,t}$  - the exchange rate of the currency of the country  $c$  against the US dollar at the time  $t$ , expressed in US dollars as per foreign-currency unit,

$x_{c,t-1}$  - the exchange rate of the currency of the country  $c$  against the US dollar at the time  $t-1$ .

By simplifying this expression, the following expression is obtained:

$$\begin{aligned} r_{US,it} &= \left[ (1 + r_{c,it})(1 + r_{x,t}) \right] - 1 = \\ &= r_{c,it} + r_{x,t} + r_{c,it}r_{x,t}, \end{aligned} \quad (6)$$

where:

$r_{c,it}$  - the rate of the return that the investor would earn if, as a national of the country  $c$ , he/she bought a portion of the shares offered for sale by the company

$i$  at the time  $t - 1$  and sold them at the time  $t$ , (the domestic return on assets, i.e. the return on assets earned on the domestic market),

$$r_{x,t} = \frac{(x_{c,t} - x_{c,t-1})}{x_{c,t-1}}$$

- the rate of the return generated by the foreign-exchange rate fluctuations,

$r_{c,it}r_{x,t}$  - the effect of the changes in exchange rates on a capital gain (loss) and dividends.

The final expression in the equation presented above ( $r_{c,it}r_{x,t}$ ) can be omitted since its result is significantly smaller than the results of the first two expressions (it is actually equal to their product, and as a rule, these values are smaller than 1.0), following which the following equation is obtained (Elton *et al*, 2011, 211):

$$r_{US,it} = r_{c,it} + r_{x,t}. \quad (7)$$

In this manner, we have proved that return on an international investment consists of:

- return on investment in a foreign asset (return on asset on its domestic market, which it was issued in) and
- return on investing in a foreign currency.

Furthermore, it is concluded that, in terms of investors from different countries, return on the same international investment differs due to differences in exchange rates.

By applying the previous approximation, the expected return ( $\bar{r}_{US,it}$ ) and the standard deviation of return on foreign stock ( $\sigma_{US,it}$ ), the equation below reads as follows (Elton *et al*, 2011, 211):

$$\bar{r}_{US,it} = \bar{r}_{c,it} + \bar{r}_{x,t}, \quad (8)$$

$$\sigma_{US,it} = \sqrt{\sigma_{c,it}^2 + \sigma_{x,t}^2 + 2\sigma_{c,it} \sigma_{x,t}}. \quad (9)$$

Since the individual risks associated with investing

internationally are weakly correlated, the *total risk* which an investor investing in foreign securities is exposed to is smaller than the sum of *domestic risk* and *exchange risk*. In this particular example, the standard deviation of the return on foreign stock ( $\sigma_{US,it}$ ) is smaller than the sum of the standard deviation of the return on this stock in terms of the domestic market ( $\sigma_{c,it}$ ) and the standard deviation of the return generated by exchange-rate fluctuations ( $\sigma_{x,t}$ ), i.e.  $\sigma_{US,it} < \sigma_{c,it} + \sigma_{x,t}$ . This relationship is a result of the effects of two factors:

- there is a very low correlation between return on stock in terms of the domestic market and the return generated by exchange-rate fluctuations, so the last expression  $\sigma_{c,it x,t}$  approximates to zero;
- the root sum square of standard deviations is smaller than their simple sum.

It should be noted that international diversification contributes to a further reduction in portfolio risk; however, its benefits are constantly diminished from one year to another as a result of the international market integration and consequently of the increased correlation between the markets of different countries. The studies based on the data from the 1960s and the 1970s point to a reduction in the variability of returns, i.e. portfolio risk, by about 50%, as a direct result of international diversification, whereas recent studies have shown that international diversification reduces the variability of returns by less than 1%. For example, while analyzing the influence of the international diversification in the period 1990-2007, E. J. Elton *et al* (2011) found out that the total investment risk could be reduced by only 0.6% by applying the optimal US and global portfolio mix. In this particular case, the minimal risk is achieved by investing 68% of assets in the US portfolio and the remaining 32% of assets in the global portfolio. The discussion presented in this paper points to the conclusion that although the benefits of the international diversification of investments have been significantly reduced, they still exist.

## CONCLUSION

At the time when traditional portfolio theory was a commonly accepted concept, the simple diversification of investments based on the law of large numbers, meaning namely that the correlation among the returns of the individual securities held in a portfolio was ignored, which often resulted in an excessive number of investment portfolio components, and thereby in an excessive cost of portfolio management. Efficient diversification is the new model of investment diversification proposed by the MPT. This type of investment diversification takes into consideration the degree of the correlation among returns on individual securities, thus minimizing investment risk and including an optimal number of securities in a portfolio and also maintaining the same level of the expected return.

The number of securities in a portfolio required in order to achieve the satisfactory effects of diversification depends on the correlation among returns on individual securities. A positive correlation implies a larger number of securities, whereas a negative correlation requires a smaller number of securities to be included in an efficiently diversified portfolio. If there are a very small number of securities in a portfolio, that results in a potentially high unsystematic risk, whereas a large number of securities incur high transaction costs both in terms of creating such a portfolio and in terms of the high costs of portfolio management. The general conclusion is that the number of the securities held in a portfolio should be increased as long as its marginal benefits in the form of reduced investment risk reach the level of its marginal costs in terms of increased portfolio management costs. The equality of the marginal cost and marginal benefits is a condition for maximizing diversification benefits.

Due to the fact that the correlation among the financial markets of different countries is lower than the correlation in terms of a particular country and its market, investors are advised to opt for international diversification as an optimal investment strategy. Indeed, the effect of international diversification on risk reduction is diminished

due to globalization and an increasing economic integration of countries. However, any risk reduction is significant; furthermore, if we also include the possibility of earning higher returns, which may be achieved based on a wider investment horizon (especially by investing in emerging markets) and favorable exchange-rate fluctuations, the benefits of international diversification are real and more than evident. By converting one part of national systematic risk into unsystematic risk, the international diversification of investments reduces the level of investment risk from the level of national systematic risk to the level of global systemic risk, simultaneously maintaining or even increasing the expected return on investment. Therefore, compared to national diversification, international diversification provides a better portfolio performance, which confirms the validity of the hypothesis.

A large number of studies argue that the benefits of the international diversification of investments are still substantial; however, many authors warn that the only way to come to a valid conclusion is to include a realistic assumption of asymmetric correlations. In this regard, a conclusion has been drawn that the benefits of international diversification in a quiet market period are greater than those in the period of market turbulence. Furthermore, it is concluded that during a turbulent period it is important that a distinction between the sub-periods of the bear market and the sub-periods of the bull market should be made because, in terms of the bull market, the benefits of international diversification are significantly higher compared to those in the bear market conditions. In short, the benefits of the diversification of international investments are the smallest in the conditions of the bear market since the correlation of large negative returns indicates the tendency of growth.

The empirical analysis of the benefits of the simple, efficient, national and international diversifications of investments followed by a corresponding comparative analysis was not carried out in this study, nor was the empirical analysis of the optimal size of a portfolio in terms of the Serbian capital market conducted, either, which is the key limitation of this paper.

Simultaneously, however, it makes an interesting suggestion for future research.

The opinions presented in this paper are aimed at emphasizing the importance of diversification as an investment strategy, as well as the importance of its advantages, disadvantages and limitations. By identifying the shortcomings and limitations, their significance is diminished, whereas the importance of diversification as an investment practice is improved. A particularly interesting fact is that, in the contemporary world, the optimal number of portfolio components exceeds 100; some investors, however, still hold three to four securities in their investment portfolios. This suggests the direction of future research: to try to analyze this issue, which is referred to as the *diversification puzzle* in the financial literature, which should include the elements of behavioral portfolio theory.

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**Book review**

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## MULTICRITERIA DECISION ANALYSIS: STATE OF THE ART SURVEYS

Figueira, J., Greco, S., & Ehrgott, M. (2016). New York, NY: Springer-Verlag  
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Multicriteria analysis and its methods have developed very rapidly in the last few decades. Basically, multicriteria analysis deals with solving unstructured management problems and, in practical terms, facilitates making an optimal decision. In order to make a good decision, however, it is necessary to specify possible alternatives by defining appropriate criteria. Multicriteria analysis belongs to the decision-making field, where the following meet: economics, mathematics, statistics, psychology, sociology, organizational theory, philosophy, information technology and other sciences.

In a monograph entitled: *Multicriteria Decision Analysis: State of the Art Surveys*, the editors Salvatore Greco (a professor at the University of Catania, Italy), Matthias Ehrgott (a professor at the University of Lancaster, UK) and Jose Figueira (the University of Lisbon, Portugal) enable us to gain an insight into the decision-making area, which is very useful for many areas of research, and as such has

led to the rapid and continuous development of the multicriteria analysis applied in solving the most complex problems. The purpose of the book is to cover the latest and the most interesting concepts of multicriteria analysis, and also show the link between the theoretical and methodological development of a problem and its practical applications. The book is easily and comprehensively written so that beside researchers working in this field, it is also intended for the students interested in the field of multicriteria analysis and its methods. It consists of eight parts and each part is organized into several sections. Forty-nine authors recognized in the field of multicriteria analysis took part in the creation of this monograph.

In the first part of the book, entitled *An Overview of MCDA Techniques Today* (pp. 3-18), which consists of one authorial article, multicriteria analysis is shown to be not only a set of theories, methodologies and techniques, but also a means providing a specific perspective for solving the problem of decision-making. Multicriteria Decision Analysis (MCDA) is the crucial aspect of any research study because it fundamentally considers all of the possibilities of solving a research problem. In this section,

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“pretheoretical” MCDA assumptions are discussed and a detailed overview of this area is given. In addition to making many important theoretical contributions, the key concepts that have been accepted throughout the MCDA community are also subjected to consideration.

The second part of the book, entitled *Foundations of MCDA* (pp. 27-60), focuses on the main problem of multicriteria analysis, which is the presentation of preferences. In two authorial articles, a very rich field of research is shown, which is important to the researchers interested in the theoretical aspects of the MCDA. Also, this section may be interesting to the readers who apply multicriteria analysis in practice. In order to adopt a particular model, it is necessary to know which conditions the preferences should satisfy. An overview of preferential modeling is presented, starting with classical results, only to later address the questions related to fuzzy and neoclassical logic. On the other hand, the axiomatic basis of different models is discussed so as to aggregate preferences for multiple criteria.

The third part of the book is entitled *Outranking Methods* (pp. 133-260) and describes the ELECTRE and PROMETHEE methods. The three chapters provide a detailed overview of the basic concepts and characteristics of these methods. The authors describe the application of these methods in research and the recommend pieces of the software used in the selection of the best alternative. In addition to the ELECTRE and PROMETHEE methods, many other interesting MCDA methods are based on a pairwise comparison. At the end of this paper, a literature review is presented, inclusive of other outranking methods.

*Multiattribute Utility and Value Theories* is the title of the fourth part of the book (pp. 265-438), and consists of four authorial articles. This MCDA approach tries to assign a utility value to each action. This utility is a real number representing the preferability of the considered action. A utility is very often a sum of the marginal utilities that each criterion assigns to the considered action. One chapter is dedicated to the Analytic Hierarchy Process (AHP) and the Analytic Network Process (ANP), created by Tomas Satty. The analytic hierarchy process is one of the best known methods of the expert analysis of scenarios and decision-making by consistently evaluating the hierarchies that consist of goals,

criteria, and alternatives. Enabling the capturing and quantification of intangible criteria, the AHP is a problem-solving framework and a systematic procedure for presenting the elements of any problem, which is applied in a huge number of areas, such as decision-making and conflict resolution. On the other hand, the influences and interactions that exist between elements and clusters, which can be internal (between cluster elements) and external (between clusters) are the essence of the Analytic Network Process. This in fact indicates that, in this method, it is not necessary to clearly define the levels of the hierarchy, and that there is a network consisting of elements and influences instead. This section also explores the Measuring Attractiveness by a Categorical-Based Evaluation Technique (MACBETH). It is the MCDA approach that only requires qualitative judgements about the differences between the values of the attractiveness of one action over another action so as to help an individual or a group to quantify the relative preferability of different actions.

The fifth part of the book, entitled *Non-Classical MCDA Approaches* (pp. 445-634), deals with the issue of uncertainty in multicriteria decision-making and explains the fuzzy approach in multicriteria analysis. It is necessary that we should distinguish between internal uncertainties (related to the decision-maker’s values and judgements) and external uncertainties (related to the imperfect knowledge concerning the consequences of actions). The four broad approaches to dealing with external uncertainties are discussed, namely: multi-attribute utility theory and some extensions; stochastic dominance concepts, primarily in the context of the pairwise comparisons of alternatives; the use of surrogate risk measures, such as additional decision-making criteria; and the integration of the MCDA and the scenario planning. The fuzzy set approach is applicable to the real problems that occur in a complex environment, where all conflicting logic systems, uncertain and imprecise knowledge and all possible ambiguities must be taken into account. In that sense, preferential modeling requires the use of the specific tools, techniques and concepts that make information accessible. In this perspective, fuzzy set theory has been receiving a lot of attention in the MCDA for a long time. All of these topics are explained by the authors in the five chapters.

The sixth part of the book, entitled *Multiobjective Mathematical Programming* (pp. 641-787), explains that

the classical formulation of an operations research model is based on the maximization or minimization of an objective function which is subject to some constraints. In the first part (out of the four parts) of this chapter, the focus is on the basic concepts of multiobjective programming. Because criteria are generally mutually opposed, a decision is made on which of them should be reduced and which should increase in order to make an optimal decision. An overview of the use of multiobjective programming in combination with fuzzy coefficients is given. Since fuzzy programming has a relatively long history, many approaches related to the different interpretations of fuzzy multiobjective programming have been proposed. The chapter provides a broad overview of the most representative multiple criteria location problems which have been divided into the three classes of continuous, network, and discrete problems.

The seventh part of the book, entitled *Applications* (pp. 799-981), consists of four articles and explains the importance of success and the development of multicriteria analysis for decision-making. The application is very wide because the problems that the MCDA encompasses are numerous and cover different areas. It is clear that to cover all of the fields of the application of the MCDA is impossible. A significant contributions are made in the fields of finance, energy planning, telecommunications and sustainable development. All of these areas require complex, well-structured, flexible decision-making systems with different decision levels and different timeframes. The chapter aims to examine the extent to which the use of multicriteria analysis in these areas has influenced the effectiveness of complex decisions made and their responsiveness to all the requirements of a complex and turbulent environment.

The last, eighth part of the book, entitled: *MCDM Software* (pp. 989-1035), provides an overview of the software support that contributes to the rapid development of multicriteria analysis methods. It is important to keep in mind the fact that software is an important element in the application of MCDA methodologies, which, on the other hand, does not mean that only a good piece of software is sufficient for the correct application of the methodology. Prior to using a piece of software, a good knowledge of the problem and the methodology adoption are needed. In this section, one authorial article provides the reader with the presentation of the known software and the basic information that are to be taken into consideration when assessing the manner in which a particular software package problem should be solved.

Greco, S., Ehrgott, M., Figueira, J. are the authors renowned in the field of multicriteria analysis, its methods and applications. Their impressive biographies and rich experience in this field have contributed to the quality of the book, and the considerations provided are relevant, current and applicable in practice. The most important concepts and methods, and the application of multicriteria analysis in solving research problems are sublimated in one place. In order to make the book even more complete, the other methods based on linear programming that supplement multicriteria methods could be processed. Data Envelopment Analysis (DEA) is one of them, and has recently been in the focus of attention of many authors dealing with contemporary environmental issues.

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Appreciating the contribution and significance of the reviewers in making an attempt to continuously improve the quality and role of the Journal, the Editorial Board of the *Economic Horizons* Journal wants to thank the reviewers of the contributions submitted to the Editorial Board during the year 2017.

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