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## Article

# The Quality of Public Finance in the Countries of South-East Europe

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## The Quality of Public Finance in the Countries of South-East Europe

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**Abstract:** The subject of this research is to analyze a number of factors that impact the quality of public finances in the selected post-socialist South East countries (SEE). In the theoretical part of the paper we have selected and analyzed the factors (variables). The following key factors of influence (as independent variables) were included: socialist heritage, politicization as an abuse of macroeconomic policies, instability of institutional environment, human capital deficits in the area of public finances, and financial accountability deficits.

In the quantitative part, the level of selected factors was assessed on the quality level of public finances in the observed countries. The hypothesis was that the factors selected had a very significant impact on the quality of public finances.

Mathematical model based on multiple linear regression analysis was created in order to explain the functional relationship between the dependent variable: the quality level of public finances and the selected independent variables. The goal is to estimate the expected mean of the dependent variable (Y) based on individual estimates of the respondents.

Regarding the respondent's perception, the Likert scale (1.0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0) was used, where 1.0 indicates the lowest impact and 5.0 indicates the highest impact. Based on their best knowledge, experience, and (or) intuition, the respondents were asked to assess the dependent variable in the model and independent variables. The empirical data obtained, qualitative and quantitative, have confirmed the hypothesis.

**Keywords:** public finances, institutional environment, SEE countries, financial responsibility

**JEL classification:** E40, E50

## 1. Introduction

Today, there is a growing focus on understanding the determinants related to the quality of public finances in the SEE transition countries. Good public financial management and the establishment of financial responsibility are relevant questions, especially in the context of negative trends in the economies of the countries studied, as they represent the key elements of further progress in economic and social reforms.

Serious reforms of the public financial management system in Montenegro (MNE), Serbia (SRB), and Bosnia and Herzegovina (B&H) are needed to advance the development of all economy sectors, to increase financial accountability, and to ensure sound financial management. Creating a quality public financial management framework and sound financial accountability is an important prerequisite for establishing closer relations with the European Union. This is one of the main government goals in the countries observed. In the process of transition, it is evident that Montenegro, Serbia, and Bosnia and Herzegovina are significantly behind some post-socialist countries, even Slovenia and Croatia (as EU members). This requires speeding up the reform processes, because without them, the overall credibility cannot be increased.

In order to manage public finances in a successful and sustainable way in the long run, and to establish an effective system of financial accountability in the countries considered, it is necessary to formulate a sustainable fiscal framework, planning and budgeting of spending, placed in a strategic framework. Realization of the complete process depends on a large number of participants.

## 2. Theoretical approach

Montenegro, Serbia, and Bosnia and Herzegovina have been in the transition process for a long time. The transition is characterized by a spectrum of different impacts, reflected in both public finances and improving public finances. However, the state of public finances in these countries is still below the European standard.

A common goal pursued by these countries is to establish a modern public financial management system and a sound financial accountability framework, all in accordance with EU standards and best international practices. In this context, we have selected five key factors of influence (independent variables) that directly impact an increase of financial accountability and the quality of public finances in the countries covered by this research, which we will elaborate on below.

## 2.1 Socialist heritage

The research is conducted in the mentioned countries which lived in a socialist system for a long time. This raises the question of an impact of socialist heritage on the phenomenon under study. The starting point of any thorough democratization and market reform analysis in the post-socialist countries is the analysis of historical heritage, as it largely determines the level of political and economic progress during the transition period (Džunić and Golubović, 2018).

Madžar (1990) cites arguments for the unsatisfactory functioning of socialist economies. According to him, poor economic and system arrangements, also “*deep layers of the system*” and all that constituted the socialist (administrative-bureaucratic and dirigisme) essence of the system, have contributed to this. Manifestations of the Path Dependence can be monitored at two levels: (a) individual institutions (legal, institutional, financial, political, etc.), and (b) institutional systems (especially the national economic system). In the SEE countries, inefficient formal institutions (legal, organizational, and political) have been inherited. However, the reasons are always social and cultural, driven by human activities.

Kovačević (2011 a) believes that the Western Balkan countries have experienced great failures in the transition of their economies. He explains this by the effect of specific factors, especially war conflicts (in B&H), sanctions and NATO air aggression (in Montenegro and Serbia), which hampered the economies of these countries. According to him, the main cause of the great failure in the transition of the countries studied is the imposed and accepted model of transition, accompanied by rapid, uncritical, and comprehensive privatization, followed by huge defects, looting, and even crime. All this has led to enormous economic and social problems. Legacy of the past has been a limiting factor in the implementation of exemplary world models in public finances and in raising financial accountability

## 2.2 Macroeconomic policy- politicalization as an interest abuse of macroeconomic policy

Economic policy in the countries studied is facing a major and difficult task, and the radical steps to be taken face different constraints. LJ. Madžar (2013) thinks that the unrooted political opportunism of the past has deepened the problems and accumulated difficulties to such an extent that the balance deficits “*have caused a collapse*” of many economic sectors, while the economic system as a whole has been “*pushed to the brink of disintegration*”.

Jakšić and Prašević (2010) point out that the political manipulation of economic policy has left a poor legacy for new economic policy makers. The current fiscal crisis has been inevitable, and economic policy actions that have been driven in recent decades, have directed the economies of the countries studied towards unsustainable growth pathways. All this has led to an imposed process of fiscal consolidation and the establishment of political budget cycles models.

According to the European Commission Report about Montenegro (2018 ) the major problem in Serbia, Montenegro, and Bosnia and Herzegovina is the high budget deficit, which has a significant impact on reducing overall purchasing power and reducing industrial production. The same *Report* states that the level of public debt in these countries is still high and that the budgetary framework needs to be strengthened. Özer, Žugić and Tomas (2018), are pointing out that these countries are facing high level of their current account deficit and it represents one of the major concerns of economic policy, since it raises the question of sustainability and concern about economic growth. Ensuring fiscal sustainability and macroeconomic stability remains a top priority, which implies further reductions in public debt of GDP, maintaining fiscal deficits and intensifying the implementation of structural reforms.

Madžar (2013) also believes that public spending is insufficiently perceived and the fiscal burden is implied, and those are the most important determinants of the so-called economic environment. Economic growth in the transition economies under consideration (MNE, SRB and B&H) is relatively low (unsatisfactory) and poses a significant structural problems. These countries have achieved significant economic growth rates in certain periods. But in many cases, economic growth has not been sufficiently accompanied by adequate fiscal policy measures. It was only after 2014 that economic policy change in most countries in the region was noticeable, having austerity-based fiscal consolidation. A structural reform program has been parallelly implemented. The fiscal consolidation process itself has contributed to the stabilization of key macroeconomic aggregates.

Dumičić (2018), emphasizes the necessity of legal defining a clear framework for cooperation of all actors that could affect financial stability. This is in order to ensure the exchange of information which would enable timely reaction when crisis emerges. Leković (2014) believes that with good rule of law, quality and functional laws, and inclusive institutions in operation, it is possible to achieve macroeconomic stability, monetary, fiscal, and foreign trade balance in the countries considered.

## 2.3 Insufficient development of financial institutions

It is proven and undisputed in economic science that institutions as standards, coordinators, and regulators of individual behavior and appropriate institutional change, determine the pathway of socio-economic development. In addition to people, institutions are among the most important elements of the social environment. Many authors (North, 1990, 1993, 2009; North, Walis, Weingast, 2009) believe that institutions play a key (inevitable and priority) role in economic and social development. Institutional stability is a necessary precondition for high quality public finances and financial accountability. However, the effectiveness of civil society institutions as means of protecting people from government's arbitrariness is not universal. Some authors of the post-socialist countries (Jovović, 2012; Polterovich, 2012) believe that formal and informal institutions developed slowly, inconsistently, and unclearly in the Western Balkan countries. According to them, the main reason is slowness and inconsistency in the achievement of the set goals in this area, as well as the high influence of alternative institutions (in the shadow), which are strengthened by the interest motivation of privileged individuals and groups.

Considering the institutional development of financial markets in Montenegro, Serbia, and Bosnia and Herzegovina, it can be concluded that they have more or less similar features. This is due to the fact that they are underdeveloped and having insufficiently strong economic and institutional basis for further economic development. Countries with weak institutional structures, as is the case here, are much more vulnerable to crises, which are, among other things, measured by the decline of production and other economic indicators. Praščević & Ješić (2018), indicate that weak institutions, as well, provide the outcomes that are extremely sensitive to the shocks, which could make the collaboration between the policymakers impossible to sustain. Regarding the public finances, it is important to note that institutions limit policy dominance (Acemoglu, D., Johnson S. and Robinson J. 2003). Also, the support of institutions in the budgeting process is important in the public finances of every country.

State audit institutions as well as private audit firms, which play an important role in controlling the economy, must provide an additional level of control and focus more on monitoring whether public funds are used effectively. We will present an example of Montenegro, where the Assembly has limited access to audit findings of the State Audit Institution (SAI); where there is no discussion or reporting on the implementation of major policies and legal solutions. It is inevitable that a) the quality of institutions in these countries should be improved, b) conditions of business (which must be equal for all) should be improved, c) fiscal discipline should be strengthened, and d) protection of property and contracts should be guaranteed

## 2.4 Financial knowledge (competence) deficit

Finance is an area that has been changing rapidly over the last two decades. These changes have been particularly facilitated and provoked by innovations in information technology, accompanied by new financial products, financial standards, and financial regulations. Therefore, it is necessary to innovate financial education, to abandon traditional behavior, and to implement new approaches to financial accountability. The issue of personnel competence in all three considered countries has been inadequately addressed. M. Kovačević (2011) –points out that in all the Western Balkan countries, professionally “problematic” persons were frequently found in very important political positions, forcing negative staff selection, valuing political suitability more than professional skills. All this has negatively effected the traditional and economic performances.

It is a fact that there are too many employees in the state administration with inadequate qualification structure. Frequent training of public sector personnel is needed in order to “transform” theoretical knowledge into practical. Respect for legal norms and high ethical standards are also the grounds on which a reliable and open government should be built. Each of these three countries lacks adequate administrative capacity to utilize funding for investments approved by international financial organizations.

## 2.5 Lack of financial accountability

As stated, financial accountability is primarily seen as the relationship between citizens and the government, where citizens control the government that manages public money. The essence of financial accountability is the government’s obligation to ensure that citizens spend their money in the best and most efficient way. The government must provide reports and justification for its actions, and to regularly inform the public on how it spends public funds. A sound system of financial accountability indicates that a country must have a strong treasury department, effective internal control, and independent external audit, which form the basis of effective democratic and parliamentary control of public finances.

Financial accountability is a cornerstone of public finances. In addition to theoretical analysis, the study includes respondents’ perceptions of its impact on the level of public finances achieved. This is a particularly important factor in influencing the quality of public finances and an important goal of this research.

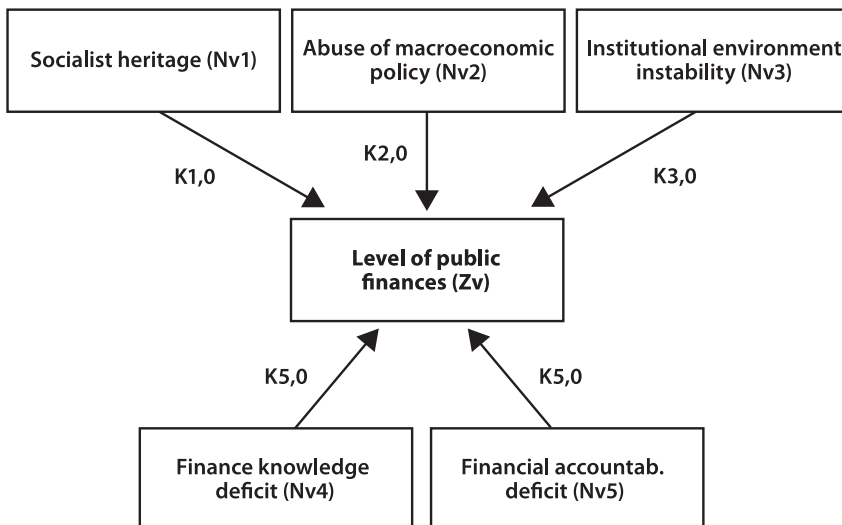
### 3. Research model

The research was conducted in three Southeast European countries: Montenegro (MNE), Serbia (SER), and Bosnia and Herzegovina (B&H). For the purpose of this research, a survey was designed in accordance with the theoretical framework outlined above. A total of 360 highly educated respondents were interviewed, with a high level of education and reasoning. The respondents were business and research related to the public finances of Serbia (120 respondents), Montenegro (120 respondents), and Bosnia and Herzegovina (120 respondents). Before being sent to the respondents, the questionnaires were given to experts from the academic community for a semantic review. They gave us suggestions for their possible improvement, ie. avoidance of repetition and respondent fatigue.

After correcting and distributing the questionnaires, the respondents were asked to answer five questions related to the subjective experience of the degree (level) in which independent variables (*socialist heritage* - Nv1, *politicization as an abuse of macroeconomic policy* - Nv2, *institutional environment instability* - Nv3, *human capital deficit in finance* - Nv4, and *financial accountability deficit* - Nv5), affect the dependent variable (*quality level of public finances* - Zv).

Schematic illustration of the research framework is given in Figure 1.

Figure 1: Research model framework



Source: own modeling



The constructs used in this research were measured on a Likert scale from 1 to 5. In order to express a subjective assessment of the independent variables impact on the dependent variable, the respondents used the following linguistic qualifiers: very strong (5), strong (4), intermediate (3), weak (2), and very weak (1) influence. Subsequently, the linguistic qualifiers were coded in a Likert scale, with corresponding numerical values previously marked off by brackets next to each linguistic qualifier. Based on this, we have made an appropriate Survey. Based on the results obtained from the completed and collected surveys, multiple regression analyzes were applied to the cases of the countries studied. The regression model and results are presented below.

### 3.1 Multiple linear regression model

The goal was to determine the functional dependency between the dependent variable ( $Z_V$ ) and the independent variables ( $Nv1$ ,  $Nv2$ ,  $Nv3$ ,  $Nv4$ , and  $Nv5$ ) in the model. Our intention was to determine the mean expected value of the dependent variable ( $\bar{Z}_V$ ), based on individual respondents' assessment. Since the respondents evaluated the dependent and independent variables according to their subjective judgment, our task was to determine the coefficients:  $O$ ,  $K1$ ,  $K2$ ,  $K3$ ,  $K4$ , and  $K5$ , and to calculate ( $\bar{Z}_V$ ), using the following expression (1):

$$\bar{Z}_V = O + KNv1_1 + K2Nv_2 + K3Nv_3 + K4Nv_4 + K5Nv_5 \quad (1)$$

where:

$\bar{Z}_V$  - mean expected value of the dependent variable;

$O$  - segment in ordinate, determined on the basis of input data;

$K1$ ,  $K2$ ,  $K3$ ,  $K4$  and  $K5$  are coefficients with the independent variables  $Nv1$ ,  $Nv2$ ,  $Nv3$ ,  $Nv4$  and  $Nv$ . They actually represent the slopes of the corresponding lines on the abscissa. Based on these values, the value of the dependent variable can be calculated for each new value of the independent variable. It can be said that  $\bar{Z}_V$  is the mean estimated value based on the values of  $Nv1$ ,  $Nv2$ ,  $Nv3$ ,  $Nv4$  and  $Nv5$ . The least-squares method was used to determine  $\bar{Z}_V$  (Bertskas et al., 2008). Therefore, our effort was to determine the coefficients:  $O$ ,  $K1$ ,  $K2$ ,  $K3$ ,  $K4$ , and  $K5$ , with the aim of minimizing the sum of squared errors (SSE), as represented by expression (2):

$$\begin{aligned}
 SSE &= \sum_{k=1}^n (Z_{v_k} - \overline{Z_{v_k}})^2 = \\
 &= \sum_{k=1}^n (Z_{v_k} - (O + K1 * N_{v1} + K2 * N_{v2} + K3 * N_{v3} + K4 * N_{v4} + K5 * N_{v5}))^2 \quad (2)
 \end{aligned}$$

where:

$Z_{v_k}$  - the actual value of the dependent variable, estimated by the k-th respondent ( $k = \overline{1, n}$ );

$\overline{Z_{v_k}}$  - the estimated value of the dependent variable for the k-th respondent ( $k = \overline{1, n}$ );

n - the total number of respondents (360 from Montenegro, Serbia, Bosnia and Herzegovina).

Using the least-squared method was determined a line which minimizes the sum of the vertical differences for each pair of points by which that line was determined. In other words, a line that best fits into a given set of point pairs was determined using the section (O) on the ordinate and the coefficients with independent variables ( $K1, K2, K3, K4$ , and  $K5$ ). In fact, the optimal mean value of the dependent variable  $\overline{Z_v}$  is determined, based on the given, ie. subjectively assessed by the respondents, values of independent ( $N_{v1}, N_{v2}, N_{v3}, N_{v4}$  and  $N_{v5}$ ) and dependent variable ( $Z_v$ ), for  $\forall k, k = \overline{1, n}$ .

### 3.2 Results and discussion

The implementation of multiple linear regression analysis is very complex in terms of manual calculations, therefore, the advanced statistical software was used. For the purpose of this research we used statistical softwares: MS Excel VBA tool in the form of Modules Solver and SPSS 21.0). The obtained results are shown in Table 1. In addition to the coefficients:  $O, K1, K2, K3, K4$ , and  $K5$ , the following statistical indicators were also determined: mean absolute deviation (MAD), correlation coefficient r, coefficient of determination ( $r^2$ ), mean square error (MSE), mean absolute percent error (MAPE), and standard error of the regression estimate (SE).

**Table 1: Key parameters and statistics in a multiple linear regression model (Source: own)**

Param.	Case 1: MNE	Case 2: SER	Case 3: B&H
O	1.392361	0.244308	-1.58005
K <sub>1</sub>	0.021143	0.322236	0.588258
K <sub>2</sub>	-0.02433	-0.16969	0.064553
K <sub>3</sub>	-0.04691	0.053416	0.188654
K <sub>4</sub>	0.889045	0.510586	0.39819
K <sub>5</sub>	-0.06005	0.086648	0.00801
r	0.780	0.530	0.862
r <sup>2</sup>	0.608	0.271	0.730
MAD	0.245	0.502	0.198
MSE	0.163	0.495	0.123
MAPE	6.9	19.7%	6.33%
SE	± 0.41	± 0.72	± 0.36

Below is a description of the statistical indicators presented in Table 1:

Mean absolute deviation (MAD) indicates to what extent the value of the dependent variable, obtained by multiple linear regression analysis, corresponds to the respondents' estimates. In other words, this statistical indicator shows to what extent the model reflects the respondents' estimates. The concrete values of the mean absolute deviation over the samples from Montenegro, Serbia, Bosnia and Herzegovina are: 0.245, 0.502 and 0.198 respectively. These values indicate high correspondence of the models and the respondents' estimates;

Mean square error (MSE) is the mean value of individual square errors in the estimate. It is a deviation of: 0.163, 0.495 and 0.123, respectively, in the case of analyzed samples from Montenegro, Serbia, Bosnia and Herzegovina. The indicated values also show satisfactory matching of the model with the real data collected during the survey.

Mean absolute percent error (MAPE) represents the percentive relationship between error in estimating the value of the dependent variable by the respondents and based on the model. It is the simplest statistical magnitude in terms of interpretation. In the case of our research, it takes the values: 6%, 19% and 6%, respectively, for the cases of the analyzed questionnaires from Montenegro, Serbia, Bosnia and Herzegovina. These values also indicate the appropriate level of correspondence between the models and the respondents' estimates.

Standard error of regression estimate (SE) is also called the standard deviation of regression. This statistical size is suitable for the formation of the so-called confidence intervals around the regression line. It shows how much the dependent variable, obtained by the model, can vary. In our study, standard deviation takes the following values:  $\pm 0.41$  in the case of a sample from Montenegro,  $\pm 0.72$  in the case of analyzed data from Serbia, and  $\pm 0.36$  in the case of a sample from Bosnia and Herzegovina.

In accordance with the data shown in Table 1, the lines representing the functional dependence between the dependent ( $Z_v$ ) and independent variables ( $Nv_1-5$ ) are given below.

- *Case 1: Montenegro:*

$$\overline{Z_{v_{mne}}} = O + KNv_1 + K2Nv_2 + K3Nv_3 + K4Nv_4 + K5Nv_5 \quad (3)$$

$$Z_{v_{mne}} = 1,392 + 0,021 \times Nv_1 - 0,024 \times Nv_2 - 0,046 \times Nv_3 + 0,889 \times Nv_4 + 0,060 \times Nv_5$$

- *Case 2: Serbia:*

$$\overline{Z_{v_{ser}}} = O + KNv_1 + K2Nv_2 + K3Nv_3 + K4Nv_4 + K5Nv_5 \quad (4)$$

$$Z_{v_{ser}} = 0,244 + 0,322 \times Nv_1 - 0,169 \times Nv_2 - 0,053 \times Nv_3 + 0,510 \times Nv_4 + 0,086 \times Nv_5$$

- *Case 3: Bosnia and Herzegovina:*

$$\overline{Z_{v_{b\&h}}} = O + KNv_1 + K2Nv_2 + K3Nv_3 + K4Nv_4 + K5Nv_5 \quad (5)$$

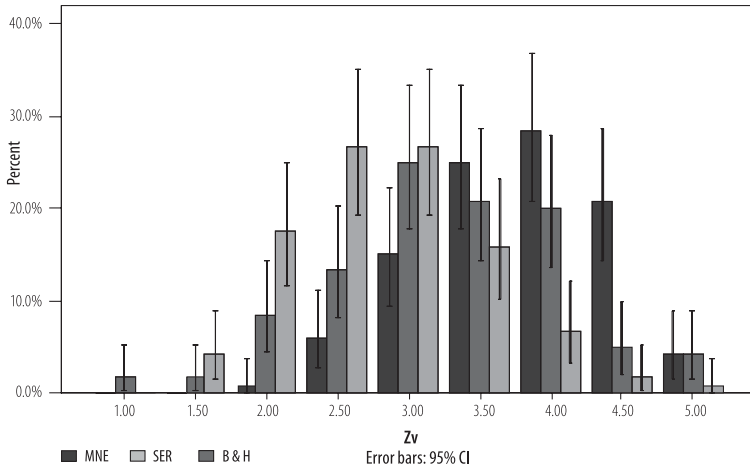
$$Z_{v_{b\&h}} = -1,580 + 0,588 \times Nv_1 + 0,064 \times Nv_2 - 0,188 \times Nv_3 - 0,398 \times Nv_4 + 0,008 \times Nv_5$$

Mean values of the dependent variable, estimated by the respondents for all analyzed countries: Montenegro, Serbia, Bosnia and Herzegovina, are shown in Graph 1, expressed in %. Obviously, the highest percentage of respondents (over 30%), from all three countries, had a high quality level as intermediate (3-4). A smaller percentage of respondents opted for a low impact (2), and a strong (4-4.5) impact on the quality of public finances.

According to the linear dependence analyzes between the dependent variable and the mean values of the independent variables, it is clear that the variables  $Nv_5$  and  $Nv_3$  have the most pronounced influence on the dependent variable. (see Graph 2  $Nv_1$  is in third place,  $Nv_4$  is fourth, and  $Nv_2$  is in fifth place. These analyzes were performed on the entire sample. The ranking of independent influence on the de-

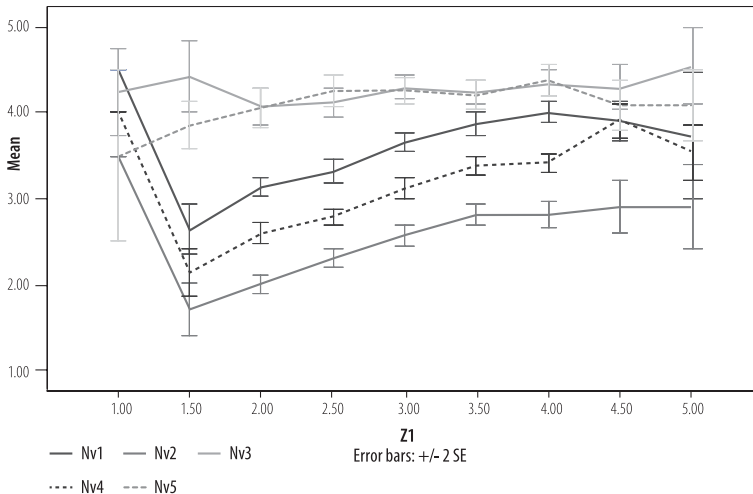
pendent variable was obtained, based on individual sample analyzes (from Montenegro, Serbia, Bosnia and Herzegovina), and is shown in Table 2.

**Graph 1: Percentage of respondents' estimates from 1 to 5 in the set of dependent variable (Zv)**



Source: authors

**Graph 2: Dependent Variable (Zv) Vs. Independent Variables (Nv1-5) in Model**



Source: authors

Considering the mean values of independent variables (Table 2) it can be concluded that lack of financial responsibility has the greatest impact on the the quality of public finance in Montenegro, and Bosnia and Herzegovina, and lack of institutions in Serbia. Also, the institutional environment is highly influential and it is ranked second in Montenegro, and Bosnia and Herzegovina. On the other hand, the socialist heritage in the case of all three countries has the weakest impact on the quality of public finance.

**Table 2: Mean values of independent variables (Nv1-5) and ranking of their influence on the dependent variable (Zv)**

Ranking	Case1: MNE	Case 2: SRB	Case 3: B&H
1	Nv5 [4.24]	Nv3 [4.3]	Nv5 [ 4.24]
2	Nv3 [4.27]	Nv5 [4.06]	Nv3 [ 4.27]
3	Nv1 [3.72]	Nv1 [ 3.62]	Nv1 [ 3.75]
4	Nv4 [3.17]	Nv4 [3.25]	Nv4 [ 3.17]
5	Nv2 [2.62]	Nv2 [ 2.45]	Nv2 [ 2.62]

Source: authors

## 4. Conclusion

This paper provides a brief overview of the state of public finances and financial responsibility in Montenegro, Serbia, and Bosnia and Herzegovina. As we have noted, the situation in these areas is far from ideal and some reforms and strategies need to be undertaken to improve. We have identified five key factors that influence an increase of financial accountability and the level of public finances, namely: 1) socialist heritage, 2) politicization as an abuse of macroeconomic policy, 3) insufficient development of financial institutions, 4) lack of human capital, and 5) lack of financial accountabilities.

An empirical and hypothetical study of public perception was also conducted on the basis of selected samples of persons with higher education in public finances on the quality level of public finances in Montenegro, Serbia, and Bosnia and Herzegovina. The constructs measured on a Likert scale from 1 to 5 were used in the study. Based on the linguistic qualifiers coded in the Likert scale, a corresponding survey was created. Subsequently, based on the results obtained from the completed and collected surveys, the multiple regression analysis was applied in the cases of the observed countries. According to linear dependency analyzes, and considering the mean values of the independent variables, the greatest impact on the quality of public finances in the observed countries was the lack of

financial accountability in Montenegro and BiH, and the lack of development of financial institutions in Serbia. The weakest influence on the quality of public finance was a socialist heritage.

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