ORIGINAL SCIENTIFIC ARTICLE
UDK: 334.012.61(497.11)"2006/2013"
005.71-022.5
Date of Receipt: December 9, 2014

Dejan Malinić
University of Belgrade
Faculty of Economics
Department of Accounting and Corporate Finance

Vlade Milićević
University of Belgrade
Faculty of Economics
Department of Accounting and Corporate Finance

Milan Glišić
University of Belgrade
Faculty of Economics
Department of Accounting and Corporate Finance

INTERDEPENDENCE OF ENTERPRISE SIZE AND VITALITY IN SERBIAN ECONOMY*

Uslovljenost veličine i vitalnosti preduzeća u srpskoj privredi

Abstract

The structure of economy is very heterogeneous. It consists of enterprises doing business in various branches and, accordingly, belonging to various sectors and various industries within them. In order to do their businesses with as much quality as possible, enterprises opt for various legal forms and thus operate as partnerships, limited partnerships, limited liability companies, joint stock companies and state-owned enterprises. Finally, enterprises belonging to a national economy can be dramatically different in terms of their size, measured by the number of their employees, level of total assets, level of generated revenues or their contribution to the creation of value added.

This paper puts stress on the overview of enterprise performance from their size's point of view. In the first few parts of the paper, special attention is paid to the research regarding the importance of enterprise size to economic performance and, accordingly, positioning big, medium-sized and small enterprises in Serbian economy. Central part of the paper pays attention to the overview of return potential of Serbian economy in terms of enterprise size. Finally, at the end of the paper we emphasize the problems of volatility regarding the performances of big, medium-sized, and small enterprises, as well as the influence of operating and financial leverage on their performance.

Key words: *competitiveness, enterprise size, employment, vitality, profitability, volatility, risk, leverage*

Sažetak

Struktura privrede je veoma heterogena. Nju čine preduzeća koja posluju u različitim delatnostima i koja u skladu s tim pripadaju različitim sektorima i unutar njih različitim privrednim granama. Da bi što kvalitetnije obavljala svoju delatnost, preduzeća biraju različite pravne forme, te otuda posluju kao ortačka preduzeća, komanditna društva, društva sa ograničenom odgovornošću, akcionarska društva i državna preduzeća. Konačno, preduzeća koja pripadaju jednoj nacionalnoj ekonomiji mogu da budu drastično različita sa stanovišta njihove veličine, mereno brojem zaposlenih, visinom angažovane imovine, visinom ostvarenih prihoda ili njihovim doprinosom stvaranju dodate vrednosti.

U ovom radu akcenat je stavljen na sagledavanje performansi preduzeća sa stanovišta njihove veličine. U prvim delovima rada posebna pažnja posvećena je istraživanju značaja veličine preduzeća za privredna ostvarenja i u tom kontekstu pozicioniranju velikih, srednjih i malih preduzeća u srpskoj privredi. U središnjem delu rada, pažnja je usmerena na sagledavanje prinosnih potencijala srpske privrede iz perspektive veličine preduzeća. Konačno, na kraju rada naglašeni su problemi volatilnosti performansi velikih, malih i srednjih preduzeća, kao i uticaj poslovnog i finansijskog leveridža na njihova ostvarenja.

Ključne reči: *konkurentnost, veličina preduzeća, zaposlenost, vitalnost, profitabilnost, volatilnost, rizik, leveridž*

* This paper is part of the research on the project financed by the Ministry of Education, Science and Technological Development entitled "Strategic and tactical measures to overcome real sector competitiveness crisis in Serbia" (No. 179050, period 2011-2014)

Introduction

Solving serious problems regarding the inefficiency of Serbian economy requires the overview of its performance from various aspects. The analysis of performance by sectors can point to directions (strategy) of developing sectors which have competitive advantages and can have the greatest contribution to the growth of GDP. The analysis of companies' performance in terms of legal form reveals not only the attractiveness of certain legal forms but the problems burdening them, such as the issue of gathering cheaper funding sources, level of owners' responsibility, efficiency in managing stare-owned enterprises and so on. Perceiving the success of economy from the point of view of enterprise size should reveal the need to create economic policies encouraging the development of those company groups that enable raising performance of the economy as a whole.

In order to raise the efficiency of national economies, increase growth, employment and created value added, many serious discussions are made these days regarding the possibilities of companies depending on their size. Thereby, the biggest opportunity for improving the performance of national economies, especially in terms of increasing employment and growth, is seen in the group of small and medium-sized enterprises (SMEs). Hence the efforts of many countries to create more favourable climate for the functioning of these companies. In this regard, the efforts are directed to creating pervious legislation, decreasing administrative barriers for founding and functioning of these companies, adopting national strategy for the development of SMEs, providing favourable financing sources, creating support for export etc.

Having all this in mind, it seems very important to study the performance of big, medium-sized and small enterprises in Serbian economy. There are at least two reasons to justify the efforts aiming to perceive the performance from the aspect of competitiveness, return potential, resistance to crises, and contribution to raise growth, employment and created value added. Firstly, in order to create high-quality information basis for developing economic policies and national strategies in this field and, secondly, to avoid creating wrong image of the importance of certain company groups, depending on their size, for the development of national economy.

Enterprise size as the determinant of economic activity level

Economic mosaic is miscellaneous, with the space left for big, medium-sized and small enterprises. Each of these enterprises tries to find its place on the market and provide required returns for owners. Each one of them has its clientele of investors and specific operating problems. Using business opportunities often requires tight connection among big, medium-sized and small enterprises.

Understanding the problems of big, medium-sized and small enterprises, as well as their positioning in national economy, require defining company's size. There are two related problems that burden the classification of enterprises. The first one is related to unequal power of different economies. Big enterprises in market-developed economies, such as Germany and France, are not the same as big enterprises in smaller economies where Serbia belongs. If we used the same criteria, the structure of economy from the perspective of real, mutual enterprise power would be significantly distorted. The other problem is related to the first one and it refers to the need to reach comparability of enterprises operating in different economies world wide. Contraposition of these criteria, as well as powerful arguments supporting them, result in the fact that the problem of classifying enterprises has not been uniquely solved yet.

Nevertheless, there is a high level of congruency in terms of criteria that should be used in the process of company classification. Certain criteria are imposed as usable, such as the number of employees, the level of employed capital and generated revenues. For the sake of comparability, in Table 1 we give the review of used criteria and ceilings set in order to classify companies into micro, small, medium-sized and big enterprises in the EU and Serbia. Since the ceilings for classification in Serbia were changed after the adoption of new Law on Accounting in 2013, in the following review we give comparable data, before and after the adoption of new Law.

Table 1: Criteria and thresholds for classifying companies by size in the EU and Serbia

Company category	EU			Serbia (before 2013)			Serbia (after 2013)		
	Employees	Revenues	Total assets	Employees	Revenues	Total assets	Employees	Revenues	Total assets
Micro	< 10	< 2	< 2	< 10	< 0.7	< 0.35	< 10	< 0,7	< 0.35
Small	10-50	2-10	2-10	10-50	0.7-8.8	0.35-4.4	10- 50	0.7-8.8	0.35-4.4
Medium	50-250	10-50	10-43	50-250	8.8-35	4.4-17.5	50-250	8.8-35	4.4-17.5
Big	> 250	> 50	> 43	> 250	> 35	> 17.5	> 250	> 35	> 17.5

Note: Revenues and assets are shown in millions of EUR
Source: [2, p. 36], [15], [16]

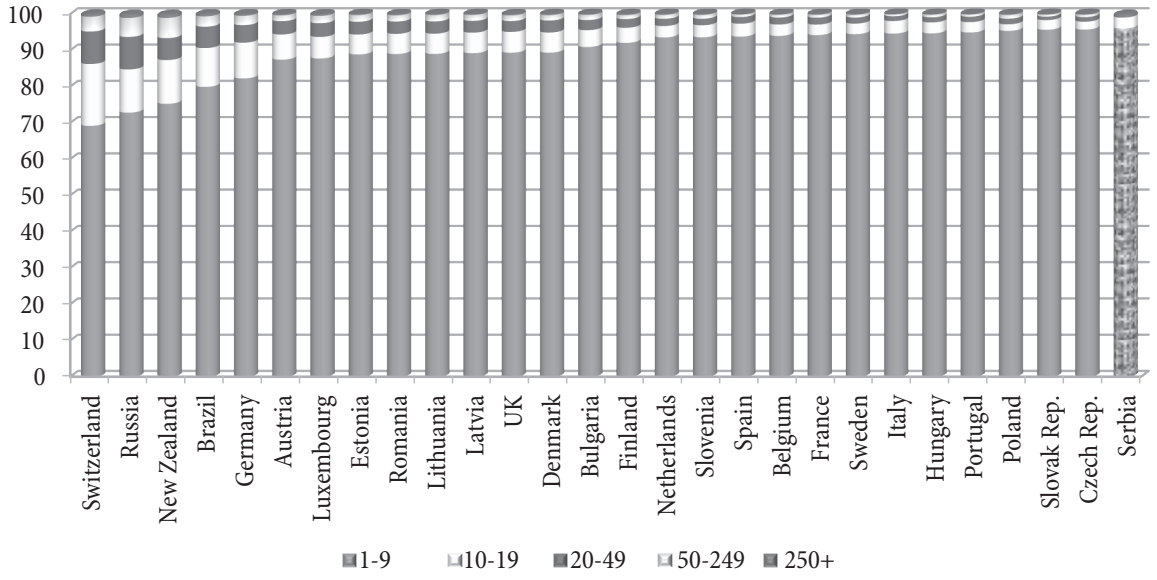
Major criterion for the classification of companies in Commissions Recommendations is the number of employees, while financial criteria are alternative and their application is aimed to provide as fair classification as possible. In Serbia, the condition for classification is to fulfil two out of three prescribed criteria.

The flaw of classifying companies in Serbia was reflected in lack of information on micro enterprises. This flaw limited comparability at the international level as well. However, raising the threshold for the classification of big, medium-sized and small enterprises has a few serious, negative implications: discontinuity was made in comparability within national frames, comparability at the international level has not been set since the criteria are below the recommended levels of EU and the circle of mandatory users of International Standards of Financial Reporting has been significantly narrowed.

The classification problem has not been universally solved even in the EU. European Commission brought The Recommendation on Classification which may or may not be adopted by national legislatures. Commissions Recommendations prescribed classification ceilings concerning the definition of micro and medium-sized enterprises, but, according to Article 2, these ceilings are considered to be maximum values. Each member state could set even lower ceilings. They could even choose to apply only the number of employees as a criterion (except in fields governed by various rules on State aid). There is no doubt that once set criteria should not be often changed. It changes the image of economic structure and contribution of certain company groups to performance of the economy, it ruins comparability and causes serious problems to analysts and other users of this information.

In general, nowadays the importance of small and medium-sized enterprises is widely discussed, primarily due to a fact that their development is seen as the opportunity to solve key problems that national economies face related to growth of economic activity, employment and GDP.

Figure 1: Enterprises by size classes



Source: [12], Serbia: own calculation
OECD publication excludes countries that have not updated their information, such as Canada, Israel, some EU members and countries with different methodology, such as Mexico, Japan, USA, Australia, Korea and Turkey.
For Serbia, all companies with up to 50 employees are displayed cumulatively.

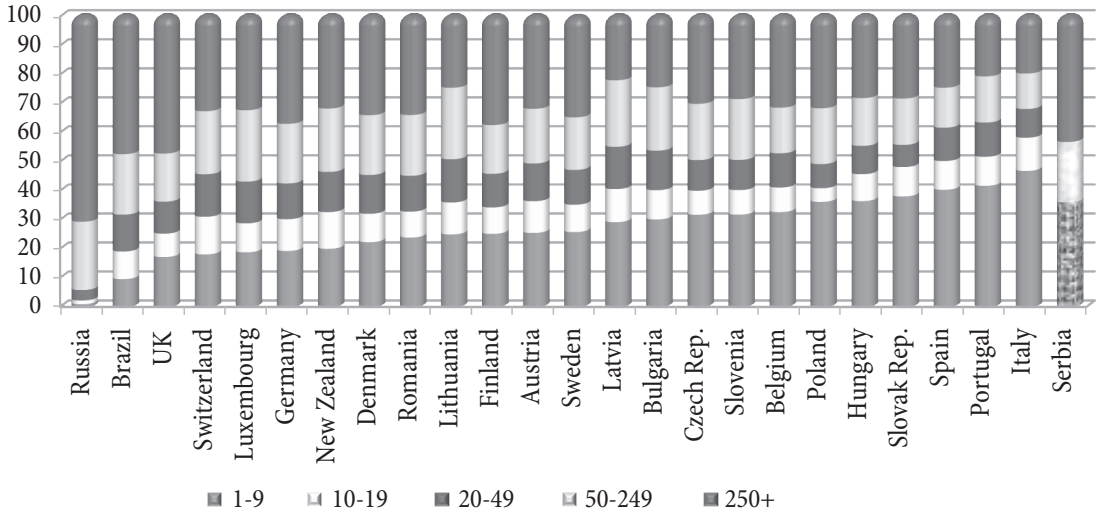
If the importance of SMEs is assessed from the perspective of their presence in economic structure of individual national economies, their dominance is undoubted. Again, within SMEs (micro, small and medium), micro enterprises are the most numerous. Coming from OECD data, the structure of national economies according to the number of enterprises classified by size (according to the number of employees) is shown in Figure 1 [12]. Following these data, we added information on small, medium-sized and big enterprises in Serbia, whereby entrepreneurs are not included in the analysis in this paper.

From Figure 1, it is more than obvious that big companies have the lowest participation in the structure of all presented national economies (e.g. EU members 0.23% on average, Russia 1.05%, New Zealand 1.04%, Brazil 0.62%), then follow medium-sized enterprises (in EU countries 0.22% on average, in Russia 5.23% , New Zealand 5.58%, Brazil 2.85%), while small enterprises take the dominant place (in EU countries 98.55% on average, in Russia 93.72%, New Zealand 93.38%, Brazil 96.53%), and within them micro enterprises with up to 10 employees are dominant. The situation is similar in Serbia. Small enterprises with up to 50 employees are dominant, with 96.01% participation in total number of companies, followed by medium-sized enterprises with 3.02% and big enterprises with 0.97%. The dominance of small enterprises is obviously a common practice in the world, since their participation in total number of companies is more than 90% in each country individually.

However, it still does not speak enough of their importance. In order to get the precise image of the importance of certain companies in terms of their size it is necessary to extend the analysis to the employment in small, medium-sized and big enterprises and their contribution to the creation of value added. In Figures 2 and 3 we displayed the participation of enterprises by their size and total number of employees (Figure 2) and total value added (Figure 3).

Employment analysis shows significantly different economic structure compared to the one determined by enterprise number. Averagely, at the level of whole set of analysed countries (except Serbia) almost a third of employees works in big enterprises. Within SMEs, 19.3% of total number of employees works in medium-sized enterprises, 20.6% in small enterprises and 26.9% in micro enterprises. Thereby, there are significant variations among countries. Employees are most numerous in big enterprises in Brazil (70.7%), Russia (47.4%), and UK (47.2%). On the other hand, employees are most numerous in SMEs in Italy (80.4%), Portugal (79.4%), Latvia 78.0%), Bulgaria (75.6%), Spain (75.5%), and Lithuania (75.5%). One of the interpretations of the presented variations could be that some countries managed to seize an opportunity to reach higher employment due to SMEs. That could mean

Figure 2: Employment by enterprise size class

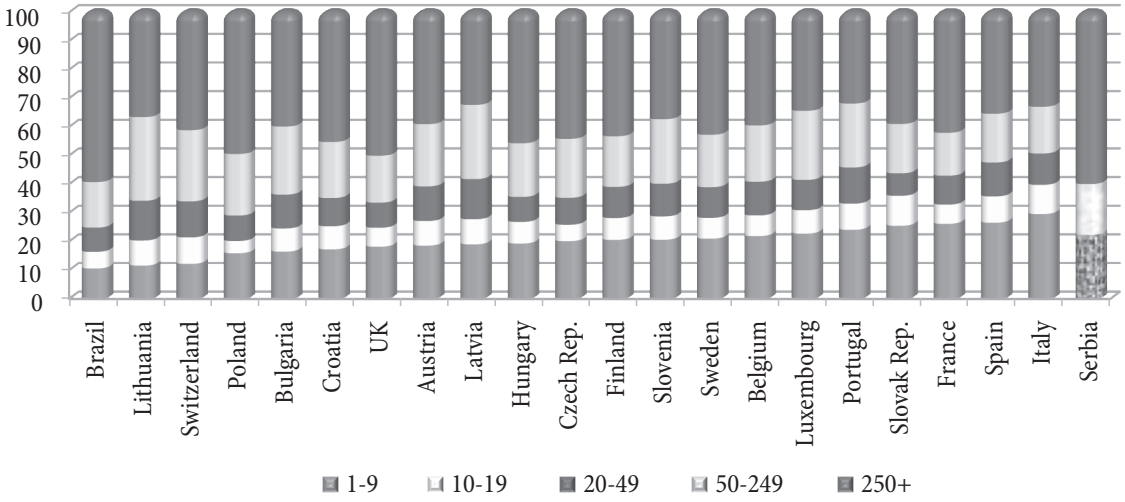


Source: [12], Serbia: own calculation

OECD publication excludes some EU members that have not updated their information and countries with different methodology, such as Israel, Mexico, Japan, USA, Australia and Turkey.

For Serbia, all companies with up to 50 employees are displayed cumulatively.

Figure 3: Value added by enterprise size class



Source: [12], Serbia: own calculation
OECD publication excludes Korea, USA, some EU members that have not updated their information and countries with different methodology, such as Mexico, Japan, Australia and Turkey.
For Serbia, all companies with up to 50 employees are displayed cumulatively

that the countries where the proportion of employees in SMEs is relatively small have better chances to raise total employment. Serbia could be included in such a group, since 43.2% of employees work in big enterprises, 20.8% in medium-sized enterprises and 36.0% in small enterprises.

Even larger deviations from earlier impressions of SME's importance based on the number of SMEs in total enterprise number are revealed in the field of their contribution to the creation of value added. Value added is one of the most important global performance indicators of companies, branches, sectors and national economies. It is defined as the difference between sales revenue and intermediary spending[1] valued at purchase prices. In terms of calculation, value added is obtained when labour costs, depreciation and amortization are added to operating income. In Figure 3, the analysis of presented countries shows that, averagely, big enterprises contribute to total value added with 41% (primarily Brazil – 59.2%, then UK – 50.0% and Poland – 49.4%), medium-sized enterprises with 24.4% (primarily Lithuania – 29.2%, Latvia – 25.9% and Switzerland – 24.9%), small enterprises with 18.7% (primarily Latvia – 22.8% Lithuania –22.6%, Switzerland – 21.8% and Portugal – 21.8%, while average participation of micro enterprises in total value added is 19.9% (primarily in Italy – 29.6%, Spain – 26.6%, France – 26.2% and Slovakia – 25.5%).

Greater participation of big enterprises in total value added is reasonable, having in mind that those companies often have huge capacities, great market share and high productivity level. Obviously, it is comparative analysis of key indicators that creates real image of the existing structure of each economy and reveals the directions of potential further growth of employment, value added and national economy.

Situation in Serbia is closer to those countries where the participation of big enterprises in the creation of value added is greater, such as Brazil and UK. Inherited economic structure and inefficient growth of small and medium enterprises could be main causes for that. At the same time, this also reveals potential opportunities for future growth of Serbian economy.

The attention paid to the importance of SMEs in the process of national economy functioning results from the fact that those enterprises are more flexible and relatively easy to adjust to surrounding changes. They also benefit from considerably expressed entrepreneurial initiative and successfully cover the attractive market niches beyond the reach of big enterprises. In this regard, SMEs were considered to be a serious rampart to devastation of national economies caused by global economic crisis. However, recovery of SMEs from crisis consequences has been slower

1 Intermediary spending implies spending on goods that are used in the production of certain product, coming from raw materials up to a final product.

than expected. Studies show that, from the perspective of employment and creation of value added in SMEs, only eight EU countries have recovered from the consequences of economic crisis, meaning that there was a growth of employment and value added in SMEs in 2013 compared to 2008. Fifteen countries still have a lower employment and lower value added in SMEs in 2013 compared to 2008. The remaining four countries (Slovak Republic was excluded due to discontinuity of data) have one parameter positive, while the other one is negative. The pace of recovery in SMEs has slowed down in the last three years and it nearly approximates the pace of recovery in big enterprises for the same period [3, pp. 6-7].

Despite the above mentioned, we cannot question the importance of SMEs for each national economy. In member states (EU28), 21.6 million SMEs in non-financial sector employ 88.8 million people and create EUR 3.666 trillion of value added. In other words, 99 out of 100 enterprises in this sector are SMEs, 2 out of 3 employees work in SMEs, while 58 cents of 1 euro of value added is created in these enterprises [3, p. 14]. In these circumstances, regardless of the disproportion between the number of these companies on one side and their contribution to employment and total value added on the other side, one must admit that they have very important role in growth of employment and GDP. Hence the considerable efforts, especially in the EU, to create a favourable climate for the development of these enterprises are understandable.

All previous statements should not cast a doubt on the importance of big enterprises. These are companies not existing completely independent of other, smaller companies by size. Many SMEs have tight business connections with big enterprises. Big companies often have a lot of small suppliers and they could not operate successfully without them. Also, there are many situations when big companies outsource the existing production of certain components to other business entities, thus enabling more successful cost management and risk reduction. Business connection among big, medium-sized and small enterprises can contribute considerably to the promotion of national economic growth.

Finally, we should have in mind that big enterprises, often organized as public (joint stock) companies, can attract big amounts of capital and do business ventures out of reach for SMEs. Their huge asset base in combination with great financial and market power enables them to perform big research projects, transfer capital to different business and geographical areas, differentiate risk and avoid sudden crisis situations. Owing to their power, they can implement new production and information technologies and be competitive on various markets. Although they are never dominant in number, they generate huge revenues, employ many staff and contribute considerably to the growth of GDP.

We should underline the importance of big enterprises in the development of capital markets. In general, financial resources are more accessible to big enterprises. When they are organized as public companies, they issue more easily shares and bonds. Their securities are often very liquid on developed markets, which makes them attractive to investors. In addition, securities of public companies represent important element of normal functioning of secondary capital market. In this regard, it seems logical to conclude that neither there are corporations without developed capital market, nor there is a developed capital market without developed corporations [5, pp. 78-82]. Therefore, it is necessary to take care of these companies' development (by creating the stimulating business environment), not for the sake of companies themselves, but for their importance for the functioning of capital market. It is hard to expect the fall in costs of expensive bank loans without the presence of alternative financing sources. We could even say that the importance of big public companies is crucial in the emerging economies, whose markets are by nature shallow and lack attractive and liquid securities. We should not forget that not only companies and individual investors, but the entire industries, such as pension and investment funds, depend on that.

Financial positioning of big, medium-sized and small enterprises in Serbia

Negative consequences of global economic crisis reflected more or less on all enterprises, regardless of their size. The accompanying problems are well known: the fall of business activity, competitiveness and unemployment, the

lack of favourable financing sources, chronic economic illiquidity, the fall of credit potential, growth of indebtedness, operating with losses etc. We have already implied that most EU countries have problems to reach the level of employment and value added from the period before the crisis. In 2007, employment in Serbia in small, medium-sized and big enterprises was higher by 1.12 times compared to 2013, while value added was considerably higher in 2013 by 1.64 times compared to 2007. These results seem very encouraging. However, slightly deeper analysis reveals interesting details. If we report value added in stable currency (EUR), we will see that value added is higher only for big companies, while it falls for medium-sized and small enterprises. Under such circumstances, value added is higher in 2013 only by 1.06 times compared to 2007 at the level of economy. If we divide value added reported in euros by the number of employees, the indicator is higher by 1.19 times, which is mostly the result of decreased employee number. Thereby, such growth appears firstly owing to big companies (28%) and then, owing to medium-sized enterprises (18%), while there is almost no growth of the indicator in the group of small enterprises for the period (0.01%).

In order to provide more detailed financial positioning of big, medium-sized and small enterprises, we chose several important items in financial statements, such as: operating assets, net owners' equity, accumulated losses, operating revenues, operating income, financial expenses, net income and net losses. Along with these data, Table 2 offers detailed information on fluctuations in enterprise number and number of employees by years. Furthermore, the last column of the given table shows changes in 2013 compared to 2007 for each financial indicator.

Table 2 provides a broad picture of the importance of big, medium-sized and small enterprises for the functioning of the entire Serbian economy. It brings several important conclusions.

Firstly, short inspection of financial indicators leads to a conclusion that big companies have the dominant position in the Serbian economy. Their participation is the highest in operating assets (averagely 59.5% for the whole analysed period), net equity (69.2%) and operating revenues (52.9%). They have slightly lower participation in operating income (49.0%) and net income (49.2%). Unfortunately, big companies also generate the predominant part of financial expenses (64.8%), accumulated losses (60.0%) and net losses (54.6%) of the economy.

Secondly, medium-sized enterprises significantly lag behind big companies by their financial strength. Calculations based on average values for the whole analysed period show that medium-sized enterprises have almost twice as less employees, 3 times lower total assets, 4 times lower net equity, about 2.7 times lower operating expenses and operating income and 2.5 times lower net income. However, they participate less in accumulated losses (3.3 times), financial expenses (3.33 times) and net losses (2.9 times). It is interesting to note that, according to almost all financial parameters, medium-sized enterprises lag behind small enterprises, except that they have higher participation in net equity (3.6 percentage points) and lower participation in accumulated losses (3.9 percentage points).

Thirdly, small enterprises are somewhere between big and medium-sized enterprises by their performance. We should particularly emphasize their considerable participation in operating revenues (averagely 27.8% for the whole period), operating income (averagely 32.9%, but with an alarming fall from 2009 to 2013) and net income (averagely 30.7%). Also, we should point out a very worrying growth of their participation in accumulated losses, which reached a third of total cumulated losses in the economy in 2013.

Fourthly, it is interesting to note the changes in the structure of financial performance of big, medium-sized and small enterprises. In order to get a better picture of not only financial strength, but the level of recovery from the crisis, in Figure 4 we show the changes in 2013 compared to 2008, for each indicator (number of companies – NC, number of employees – NE, total assets – TA, net equity – NEq, accumulated losses – AL, operating revenue – OP, operating income – OI, financial expenses – FE, net income – NI and net losses – NL) and for each enterprise group (big, medium-sized and small companies).

Very alarming trends are noticed with small enterprises as well, since their participation is substantially growing in accumulated losses (from 16.1% in 2007 to 33.3% in 2013), financial expenses (from 14.2 to 18.7%)

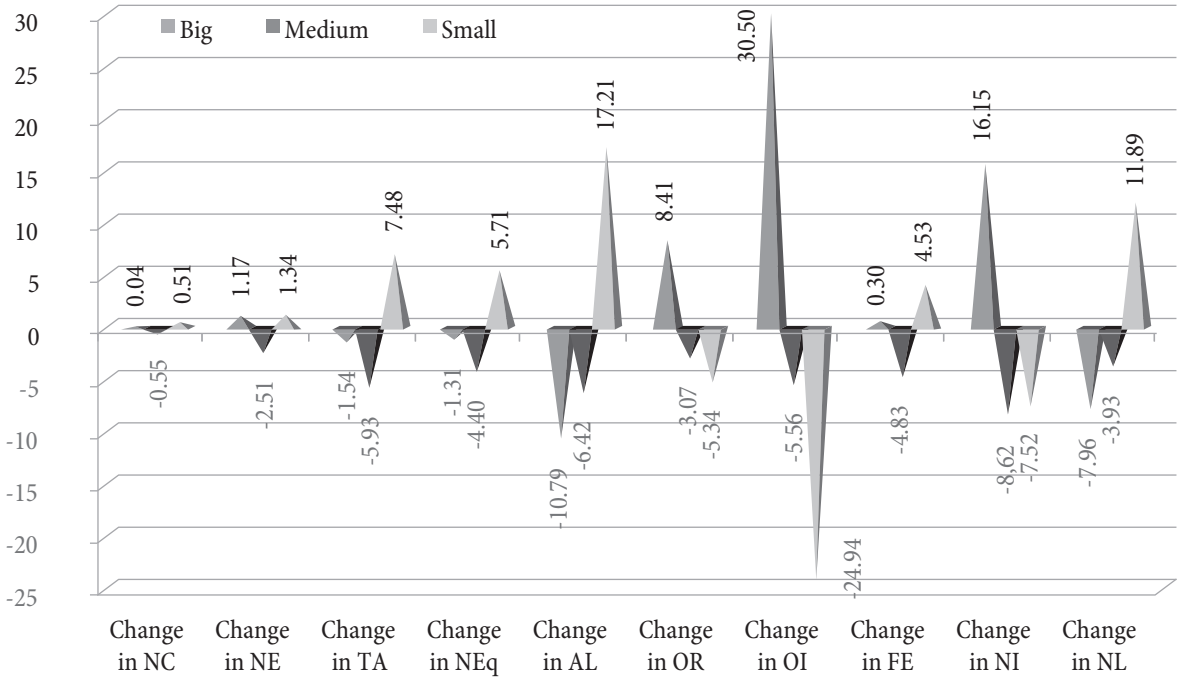
and net losses (from 15.7% to 27.6%) of the economy. At the same time, their participation is falling considerably in operating revenues (from 29.0% to 23.7%), operating income (from 42.3% to 17.4%) and net income (from 32.7% to 25.2%). This leads us to the problems related to financial structure and growth. Namely, it is well known that small enterprises have serious problems in terms of gathering necessary financing sources due to complicated approach

Table 2: Placement of big, medium-size and small companies by financial indicators

	2007	2008	2009	2010	2011	2012	2013	2013-2007
1. Participation in number of companies								
Big	0.93	1.00	1.02	0.91	0.92	1.01	0.97	0.04
Medium	3.57	3.82	3.79	3.15	2.99	3.09	3.02	(0.55)
Small	95.50	95.18	95.19	95.93	96.09	95.90	96.01	0.51
Economy	**87,550**	**92,577**	**94,573**	**90,985**	**91,901**	**93,369**	**94,362**	**6,812**
2. Participation in number of employees								
Big	42.06	42.02	41.98	41.93	42.05	43.09	43.23	1.17
Medium	23.28	23.27	22.93	21.90	21.12	20.71	20.78	(2.51)
Small	34.66	34.71	35.08	36.16	36.83	36.21	35.99	1.34
Economy	**1,113,659**	**1,124,036**	**1,072,605**	**1,001,913**	**1,011,531**	**1,010,000**	**991,030**	**(122,629)**
3. Participation in total assets								
Big	60.12	59.51	59.03	57.73	60.07	58.71	58.58	(1.54)
Medium	21.88	21.79	21.80	17.02	15.44	14.23	15.94	(5.93)
Small	18.01	18.70	19.17	25.25	24.49	27.06	25.48	7.48
Economy	**7,498.1**	**8,614.0**	**9,117.2**	**9,648.5**	**11,230.1**	**12,073.8**	**12,289.7**	**4,791.5**
4. Participation in net equity								
Big	70.29	68.96	68.63	65.89	71.94	68.02	68.98	(1.31)
Medium	18.73	19.27	18.99	16.22	13.63	13.00	14.33	(4.40)
Small	10.98	11.77	12.38	17.89	14.42	18.98	16.68	5.71
Economy	**3,531.0**	**3,562.9**	**3,501.9**	**3,385.6**	**4,452.4**	**4,486.1**	**4,485.0**	**954.0**
5. Participation in accumulated losses								
Big	63.92	62.01	59.86	57.01	55.31	52.37	53.13	(10.79)
Medium	20.00	20.06	22.23	15.08	14.72	14.84	13.58	(6.42)
Small	16.08	17.93	17.91	27.90	29.97	32.79	33.29	17.21
Economy	**1,100.9**	**1,374.3**	**1,649.9**	**1,947.9**	**2,233.1**	**2,507.1**	**2,856.7**	**1,755.8**
6. Participation in operating revenue								
Big	50.24	52.62	53.81	55.71	55.81	57.40	58.65	8.41
Medium	20.72	20.43	19.84	18.52	17.93	17.85	17.64	(3.07)
Small	29.04	26.94	26.35	25.77	26.26	24.75	23.71	(5.34)
Economy	**5,323.6**	**6,208.9**	**5,888.9**	**6,637.9**	**7,444.9**	**8,188.5**	**8,268.4**	**2,944.9**
7. Participation in operating income								
Big	36.54	40.46	59.82	62.41	59.14	62.41	67.04	30.50
Medium	21.16	22.15	17.13	16.89	18.19	18.06	15.60	(5.56)
Small	42.31	37.39	23.05	20.70	22.67	19.53	17.37	(24.94)
Economy	**162.9**	**193.5**	**187.7**	**282.5**	**296.5**	**361.1**	**354.3**	**191.5**
8. Participation in financial expenses								
Big	63.45	67.92	64.59	65.03	65.31	66.30	63.76	0.30
Medium	22.35	19.75	21.56	16.78	17.64	14.87	17.52	(4.83)
Small	14.19	12.32	13.86	18.20	17.05	18.83	18.72	4.53
Economy	**201.9**	**476.8**	**419.2**	**525.0**	**420.2**	**561.4**	**333.3**	**131,4**
9. Participation in net income								
Big	42.53	41.12	49.06	49.76	53.75	52.89	58.68	16.15
Medium	24.73	24.21	20.91	19.53	16.63	19.08	16.10	(8.62)
Small	32.74	34.67	30.03	30.70	29.62	28.03	25.22	(7.52)
Economy	**328.9**	**300.0**	**282.9**	**316.5**	**458.6**	**433.2**	**446.0**	**117.1**
10. Participation in net losses								
Big	66.57	57.63	55.46	48.97	45.98	53.05	58.61	(7.96)
Medium	17.76	22.24	23.44	17.65	17.79	14.51	13.84	(3.93)
Small	15.66	20.13	21.10	33.38	36.23	32.44	27.55	11.89
Economy	**279.0**	**343.5**	**385.1**	**406.2**	**373.7**	**520.2**	**469.2**	**190.1**

Note: All values are shown in billions of RSD

Figure 4: Change in participation structure



to financial markets, insufficient collateral, high mortality of these companies and consequent risks. If profitability is unsatisfactory as well, risks grow considerably, credit capacity falls, additional sources get more expensive, while sustainable growth is hard to reach.

Finally, it is important to emphasize that the recovery of Serbian economy from consequences of the crisis is rather delayed. Since small enterprises were considered to be more flexible and resistant to crisis situations than other companies in terms of their quick adjustment to changes, it was expected that they would push the economy forward and boost its recovery. Hence the surprise at the fact that their recovery in many ways lags behind the recovery of other, bigger enterprises. This clearly results in the need to seriously approach the problem of creating a favourable environment that would act as an incentive to financial performance and safety of such enterprises. Only in organized and stimulating environment could it be expected that these enterprises affect more seriously the employment growth.

Besides the above mentioned, we should not lose sight of the fact that Serbian companies created EUR 14,051 of value added by an employee in 2013, which is many times less than the same indicator in the EU. Thereby, the highest value added by an employee is in big enterprises (EUR 19,894), then in medium-sized enterprises (EUR 11,999) and, eventually, in small ones (EUR 8,710 by an employee). Obviously, a balanced approach is necessary in providing an environment for the functioning of all analysed company groups. It is true that big enterprises are burdened with great losses,[2] but this is also true for the small companies. Undoubtedly, there are huge opportunities to increase the employment and growth in SMEs sector. In this regard, our analysis can help in the identification of relevant problems and creation of directions for their resolving.

Methodological framework for the analysis

The discussion so far has shown that the analysed company groups are very heterogeneous in terms of their participation in total number of companies and employees and in terms of financial performance and changes in performance structure during the covered period. Our attention in this paper is directed towards more thorough analysis and evaluation of financial performance of small, medium-sized and big enterprises and their positioning in Serbian economy.

2 Special attention should be paid to big public companies. More on this in [6]

However, a thorough analysis of performance of big, medium-sized and small enterprises requires wider information basis that would enable more precise identification of problems all companies in Serbian economy face. Such analysis has to be based on official financial statements which, despite possible flaws, represent the best foundation for the global performance analysis. For this purpose, we used summary financial statements for Serbian economy that are grouped by enterprise size [13]. These summary financial statements for big, medium-sized and small enterprises are displayed in Table 3 and Table 4. Basic financial statements, balance sheet and income statement, are shown in the abridged form and somewhat differently structured compared to the official form. All latter statements, calculations, indicators and figures are derived by the authors.

Financial statement analysis provides a wide manoeuvring space for analysts to apply various techniques and draw important conclusions on financial risks, profitability, potential growth and other important phenomena. The need to estimate the level of profitability and indebtedness, volatility of return potential and level of exposure to business and financial risks cannot be successfully satisfied without financial statements.

Along with the above mentioned, we must bear in mind the limitations of the analysis based on summary financial statements. So, for example, net income (loss) is derived from offsetting net income with net losses. Income tax is obtained by cumulating all tax expenses of the period, so it exists even in those years when certain company group or economy as a whole operates with losses.

Cumulating all positions in balance sheets and income statements provides the insight into global position of the economy, sectors or otherwise defined company set. Furthermore, it means that, among big, medium-sized and small enterprises, there are companies operating with huge losses which distort the profitability of the analyzed group of companies. At the same time, there are also financially successful companies with the above-average performance which represent the healthy part of the economy. Burdening summary financial reports with huge losses is not as much the problem of accounting, as the problem of unacceptable maintaining the non-perspective and often already devastated companies in operations. Primarily, the problem is that insolvent and financially stumbled companies pull the healthy parts of an economy into illiquidity, insolvency and other financial problems. This fact alone warns enough those in charge to comply with relevant laws of market economies.

Problem of inefficiency and insufficient profit margins

Nowadays, the Serbian economy is burdened with numerous problems that do not result only from the economic crisis. Practically, long before the first hints of global crisis, our economy choked in the inherited, serious structural disorders, economic sanctions, insufficiently thoughtful economic policies, increasing lag in technical and technological development, slow and inefficient transition, lack of transparency in changing the ownership structure, undeveloped and very shallow capital market, lack of knowledge etc. Year by year, the consequences of these problems have been growing with more or less intensity. So, nowadays, we can say that Serbian economy is burdened with illiquidity, lack of working capital, high level of indebtedness, low efficiency, low employment rate, resulting high short-term and long-term operating and financial risks, and maybe the most serious problem – unacceptably low profit potential. If we would like to present the last problem in brief, we could say in advance that it was substantially initiated by inefficiency and insufficient profit margins on one hand and unsatisfactory return on equity on the other hand. Of course, the both aspects of decreased profit potential of Serbian economy are caused by numerous problems which we will try to identify hereinafter, discover their causes and measure the consequences.

A glance at the review of income statement reveals that Serbian economy operated mostly with losses in the analysed period. The exceptions to this observation are 2007 and 2011, when the economy was briefly on the territory of positive net income. However, as our analysis will show hereinafter, those short breaks from losses were much more the consequence of calming of the foreign exchange rate fluctuations than of any significant twist in

Table 3: Abridged Balance Sheet

in billions of RSD

	Big companies								Medium-sized companies								Small companies							
Positions	2006	2007	2008	2009	2010	2011	2012	2013	2006	2007	2008	2009	2010	2011	2012	2013	2006	2007	2008	2009	2010	2011	2012	2013
A Fixed Assets	2,678.4	3,247.3	3,487.3	3,591.1	3,550.6	4,633.8	4,692.1	4,799.3	625.4	972.2	1,097.0	1,159.2	868.0	886.3	855.6	1,104.9	631.7	541.7	659.8	731.8	1,149.0	1,329.5	1,528.9	1,380.0
I Subscribed capital unpaid	6.5	5.1	4.5	3.9	19.2	7.6	1.4	2.4	9.2	8.5	34.4	21.9	1.3	1.4	2.4	1.1	8.5	7.5	9.2	35.9	43.8	44.1	29.8	22.8
II Goodwill	1.4	3.6	5.9	5.1	5.3	10.3	10.7	31.4	0.3	0.3	0.5	2.5	0.8	0.5	0.8	1.1	0.3	0.3	0.2	0.6	3.1	1.1	1.6	1.9
III Intangible assets	72.2	88.4	128.4	123.5	132.6	135.2	147.4	147.1	12.7	48.9	25.3	30.7	16.1	22.7	18.0	20.1	13.6	10.8	32.1	28.1	46.7	41.3	45.9	45.0
III Property, plant and equipment	1,986.0	2,382.0	2,567.9	2,639.4	2,654.1	3,694.4	3,744.9	3,849.5	512.2	741.5	848.7	900.4	732.1	746.0	727.9	835.7	499.1	453.2	534.1	565.8	840.5	967.1	1,053.8	1,073.9
IV Long-term investments	612.3	768.1	780.6	819.1	739.4	786.3	787.7	768.9	91.0	173.1	188.2	203.7	117.6	115.7	106.5	246.9	110.2	69.8	84.1	101.4	214.9	276.0	397.8	236.4
B Current assets	1,013.5	1,204.6	1,550.0	1,677.7	1,875.8	1,976.4	2,228.7	2,231.8	405.4	642.1	726.5	771.1	715.9	794.3	810.4	809.4	717.2	779.5	909.0	974.1	1,228.9	1,357.3	1,651.6	1,671.8
I Inventories	336.2	420.3	519.0	526.5	578.7	612.8	743.5	663.2	150.6	250.2	270.4	267.1	252.8	267.6	263.3	262.6	275.4	298.3	357.4	367.2	434.5	506.9	528.8	538.2
II Account receivable	522.6	568.6	746.0	806.3	902.0	932.3	1,050.7	1,100.7	197.9	276.7	333.1	353.3	340.5	378.1	363.5	382.1	347.4	365.3	432.0	476.1	587.8	619.9	672.9	682.4
III Short-term investments	80.5	115.5	179.8	218.2	258.3	255.0	255.0	274.3	25.6	61.2	76.8	98.7	80.4	100.2	126.7	101.1	28.9	39.2	46.7	60.2	117.4	127.6	156.4	152.9
IV Cash and cash equivalents	74.2	100.2	105.1	126.6	136.8	176.3	179.5	193.5	31.3	54.0	46.3	52.1	42.3	48.3	57.0	63.5	65.5	76.8	72.9	70.6	89.2	102.9	293.5	298.3
C Value Added Tax and Accruals	42.9	45.1	78.0	101.6	127.4	114.4	140.8	139.1	12.5	19.8	46.6	49.5	50.8	45.7	40.7	35.0	28.2	27.0	39.5	38.9	53.4	58.1	81.7	74.1
D Deferred tax assets	8.3	10.9	10.8	11.6	16.6	21.0	27.0	28.9	2.9	6.1	6.7	7.8	7.1	7.9	11.1	9.8	2.5	1.9	2.8	3.0	4.9	5.2	5.1	5.7
E Total assets	3,743.2	4,507.8	5,126.0	5,381.9	5,570.4	6,745.7	7,088.7	7,199.1	1,046.2	1,640.2	1,876.9	1,987.5	1,641.9	1,734.2	1,717.8	1,959.0	1,379.6	1,350.1	1,611.1	1,747.8	2,436.2	2,750.2	3,267.3	3,131.6
F Loss over capital	101.1	118.8	152.9	204.8	264.8	337.0	387.9	475.8	37.2	75.7	90.3	138.4	110.4	105.6	140.0	145.3	94.6	85.5	127.0	161.7	279.3	363.6	460.7	531.5
G Total assets and loss over capital	3,844.3	4,626.7	5,279.0	5,586.8	5,835.2	7,082.6	7,476.6	7,674.9	1,083.4	1,715.9	1,967.1	2,125.9	1,752.3	1,839.8	1,857.8	2,104.3	1,474.3	1,435.6	1,738.0	1,909.5	2,715.5	3,113.9	3,728.0	3,663.0
Positions																								
A Equity	2,194.5	2,606.0	2,614.5	2,612.2	2,514.7	3,547.7	3,440.6	3,572.2	543.5	745.5	811.3	825.4	661.0	714.0	725.6	789.1	526.9	480.6	555.4	630.9	928.7	1,049.9	1,342.2	1,302.6
B Long-term provisions	22.6	32.2	42.9	54.4	58.4	59.6	73.8	83.0	4.2	6.7	8.8	8.9	9.8	9.9	13.4	13.8	4.2	4.3	4.4	8.9	13.6	18.9	14.2	19.6
C Long-term liabilities	530.4	665.0	882.9	1,042.9	1,145.1	1,185.2	1,278.6	1,171.8	127.5	328.6	361.8	398.1	304.8	310.3	284.4	373.4	192.5	168.7	226.9	239.1	399.0	437.6	605.9	511.8
D Short-term financial liabilities	243.0	334.0	564.8	628.3	720.0	722.1	828.0	905.0	82.1	156.2	227.6	286.3	234.1	229.7	242.1	294.2	142.4	176.6	236.3	265.6	410.6	470.7	515.1	547.8
E Current operating liabilities	800.0	910.5	985.6	1,033.9	1,161.8	1,233.8	1,430.6	1,518.4	310.8	461.4	510.9	556.1	491.0	509.8	521.4	547.0	588.5	586.1	660.2	726.3	895.9	1,058.6	1,144.2	1,176.7
F Accrual and deferred income	31.3	35.9	141.1	170.7	191.0	225.2	285.4	277.1	13.5	14.5	41.6	46.0	46.5	60.5	63.5	77.4	18.9	18.2	53.4	36.9	64.8	74.6	100.0	97.4
G Deferred tax liabilities	22.5	43.0	47.3	44.3	44.1	108.9	139.6	147.4	1.8	3.1	5.0	5.1	5.2	5.5	7.3	9.3	0.8	1.0	1.4	1.7	2.9	3.5	6.5	7.0
H Total capital and liabilities	3,844.3	4,626.7	5,279.0	5,586.8	5,835.2	7,082.6	7,476.6	7,674.9	1,083.4	1,715.9	1,967.1	2,125.9	1,752.3	1,839.8	1,857.8	2,104.3	1,474.3	1,435.6	1,738.0	1,909.5	2,715.5	3,113.9	3,728.0	3,663.0

Table 4: Abridged Income Statement

in billions of RSD

	Big companies								Medium-sized companies								Small companies							
Positions	2006	2007	2008	2009	2010	2011	2012	2013	2006	2007	2008	2009	2010	2011	2012	2013	2006	2007	2008	2009	2010	2011	2012	2013
A Operating revenues and expenses																								
I Operating revenues	2,156.9	2,674.6	3,267.3	3,169.0	3,697.7	4,154.8	4,700.0	4,849.4	791.3	1,102.8	1,268.7	1,168.3	1,229.4	1,334.7	1,461.7	1,458.9	1,461.3	1,546.2	1,672.9	1,551.5	1,710.8	1,955.4	2,026.8	1,960.1
II Operating expenses	2,117.1	2,615.1	3,189.0	3,056.7	3,521.4	3,979.5	4,474.6	4,611.9	776.7	1,068.3	1,225.9	1,136.2	1,181.7	1,280.7	1,396.5	1,403.6	1,404.4	1,477.3	1,600.6	1,508.2	1,652.3	1,888.2	1,956.3	1,898.6
III Operating income (loss)	39.8	59.5	78.3	112.3	176.3	175.3	225.4	237.5	14.6	34.5	42.8	32.2	47.7	53.9	65.2	55.3	56.8	68.9	72.3	43.3	58.5	67.2	70.5	61.5
B Financial revenues and expenses																								
I Financial revenues	141.9	107.1	176.3	144.2	170.7	197.8	216.4	152.3	22.8	31.5	40.5	32.1	37.0	42.0	42.6	33.2	32.2	19.2	27.6	22.5	30.9	39.1	46.3	30.4
II Financial expenses	111.4	128.1	323.8	270.7	341.4	274.4	372.2	212.5	33.0	45.1	94.2	90.4	88.1	74.1	83.5	58.4	33.4	28.7	58.8	58.1	95.5	71.6	105.7	62.4
III Net financial revenues (expenses)	30.5	(21.0)	(147.5)	(126.5)	(170.7)	(76.6)	(155.8)	(60.2)	(10.2)	(13.6)	(53.7)	(58.3)	(51.1)	(32.1)	(40.8)	(25.2)	(1.2)	(9.5)	(31.2)	(35.6)	(64.7)	(32.5)	(59.4)	(32.1)
C Net other gains and expenses	(23.6)	(86.5)	9.4	(49.6)	(37.9)	(6.9)	(127.0)	(162.5)	9.8	14.6	12.0	(1.3)	(1.8)	(7.1)	(10.3)	(14.0)	1.4	12.7	1.1	2.2	(24.4)	(21.1)	(46.4)	(33.3)
D Income (loss) before taxes	46.7	(48.1)	(59.9)	(63.8)	(32.2)	91.8	(57.4)	14.8	14.2	35.5	1.2	(27.4)	(5.2)	14.8	14.1	16.0	57.0	72.1	42.3	9.9	(30.6)	13.6	(35.2)	(3.8)
E Income taxes	8.4	20.6	8.9	13.9	18.8	22.8	44.7	35.3	4.3	6.6	5.6	5.2	5.0	6.2	5.5	7.7	6.8	6.8	6.8	5.6	6.9	9.8	7.7	10.6
F Paid to owners	0.3	1.0	6.9	5.3	5.4	5.7	4.3	2.5	0.3	1.2	1.6	1.2	1.6	1.4	2.1	1.5	1.2	2.4	2.0	1.6	2.3	3.5	4.4	1.9
G Net income (loss) after taxes	41.1	(45.9)	(74.6)	(74.8)	(41.4)	74.6	(46.8)	(13.3)	12.9	31.8	(3.8)	(31.1)	(9.9)	9.8	7.1	6.9	51.3	64.0	34.9	3.7	(38.4)	0.4	(47.3)	(16.8)
EBITDA	261.9	234.9	418.9	370.3	459.6	547.3	499.8	431.3	71.3	113.5	126.8	95.6	114.5	122.9	133.7	112.1	117.6	128.5	128.8	102.7	98.5	128.8	108.2	102.2
EBIT	147.0	67.2	231.6	179.9	275.0	338.8	277.6	206.0	43.9	76.1	85.9	53.9	74.1	81.5	89.2	68.6	87.0	97.9	95.1	62.2	55.4	78.1	59.9	52.3

the efficiency of the economy. The losses in all remaining years mostly come from a group of big companies which, even in 2007, reported loss higher than profit that this group achieved in 2006. Unlike them, medium-sized companies were obviously more successful, since they managed to earn profits in the last three years, which makes them the most successful part of the economy, at least according to this preliminary analysis. Small companies managed to defy the first strikes of crisis, obviously due to higher flexibility, and, until 2009, maintained the profitability of their operations. After that, these companies also ended up with losses.

We will gather more details for our story if we deal with the structure of reported earnings. The most important component of earnings, operating income, is not only positive at the economy level, but it also rises in all analysed years. Similar trend is present in certain company groups as well. Such achievements naturally impress, but only at first glance. We could easily realize that this is the truth if we ask ourselves whether positive achievements in the field of so-called core business are enough to provide final profitability of the economy and its companies. Based on our preliminary impressions, they are obviously not, and we are now interested why.

There is no doubt that perceiving absolute, rather than relative amount of reported operating income and all other kinds of earnings cannot help us answer this question. We will find the answer if we link certain components of earnings with generated sales revenues, which are crucial to cover total expenses. The resulting indicators are shown in Table 5.

If we consider only the operating income margin, we could easily identify the first and maybe the most important cause of the infertility of our economy. Our analysis reveals that operating income margins are very modest and that they do not reach the level of 5% in any year, whereby this observation is equally true for the economy as a whole and for certain enterprise groups. Such results are clearly insufficient to cover accumulated financial expenses, primarily interest costs and foreign exchange losses. Consequently, profit margins are mostly negative or marginally positive. To be precise, in terms of achieved profit margins, small companies have better position at the beginning, and medium-sized companies at the end of analysed period. However, as we will see later, these positive profit margins, along with a bit faster turnover of equity and assets compared to other company groups and economy as a whole, will provide profits to the

Table 5: Indicators of profit margin

	2007	2008	2009	2010	2011	2012	2013
Big companies							
Operating income margin	2.24	2.41	3.55	4.79	4.25	4.82	4.90
EBITDA margin	8.84	12.92	11.72	12.48	13.26	10.69	8.89
EBIT margin	2.53	7.14	5.69	7.47	8.21	5.94	4.25
Profit margin	(1.73)	(2.30)	(2.37)	(1.12)	1.81	(1.00)	(0.27)
Medium-sized companies							
Operating income margin	3.16	3.42	2.77	3.89	4.05	4.48	3.78
EBITDA margin	10.41	10.13	8.23	9.33	9.24	9.18	7.68
EBIT margin	6.98	6.86	4.64	6.03	6.12	6.13	4.70
Profit margin	2.91	(0.30)	(2.68)	(0.80)	0.74	0.49	0.47
Small companies							
Operating income margin	4.49	4.38	2.81	3.44	3.45	3.50	3.15
EBITDA margin	8.37	7.80	6.67	5.79	6.62	5.36	5.23
EBIT margin	6.38	5.76	4.04	3.26	4.01	2.97	2.68
Profit margin	4.17	2.11	0.24	(2.26)	0.02	(2.34)	(0.86)
Economy							
Operating income margin	3.08	3.15	3.20	4.27	4.00	4.43	4.29
EBITDA margin	9.03	10.97	9.70	10.17	10.79	9.10	7.81
EBIT margin	4.57	6.71	5.05	6.12	6.73	5.24	3.96
Profit margin	0.94	(0.71)	(1.74)	(1.36)	1.15	(1.07)	(0.28)

group of small enterprises but only in the first two years of the analysed period.

Unlike the positive profit margins that small and medium-sized enterprises managed to generate in the first three and last three years, positive profit margins at the level of economy and big enterprises appeared only sporadically. To be precise, such results were achieved in 2007 and 2011 at the economy level, and in 2011 in the case of big enterprises. Where do these deviations come from and is there any rational explanation for them? Firstly, mind that during the whole period the economy, big, medium-sized and small enterprises reported serious losses in the sub-section of income statement that summarizes financial revenues and expenses. Those losses annulled practically all efforts to generate profit by conducting operating activities, and they resulted from fluctuations in two basic components of financial expenses. Firstly, interest costs have been growing year by year due to increasing level of indebtedness. Secondly, foreign exchange losses also had a negative impact on net income of companies due to commonly inserted currency clause in loan contracts, especially in years when the dinar depreciated against the euro. Only in 2007 and 2011 foreign exchange rate was relatively stable in comparison to previous reporting year (see Table 8), and as a result, in those years the adverse influence of foreign exchange losses on the bottom line was reduced compared to years when the value of the dinar was falling. So, for these reasons the generated net income and profit margin of economy and big enterprises in stated years should be taken cautiously since they are obviously achieved neither as the result of higher efficiency, nor as the result of better cost management.

In these situations, analysts very often complement the analysis of margins by the concepts of Earnings Before Interest and Tax – EBIT and Earnings Before Interest, Tax, Depreciation and Amortization – EBITDA. When it comes to EBITDA, it is a valuable analytical instrument because at the same time it indicates the profitability and represents a rough approximation of cash flows from operating activities (CFO). Furthermore, since EBITDA is acquitted from depreciation, amortization, interest expenses and taxes, it represents a measure of earned profit, which is additionally acquitted from the chosen capital structure of a company. Presented EBITDA (previously in cumulative income statements) and its participation in sales revenues (Table 1) confirm the validity of profitability analysis from this perspective. Namely, in the whole analysed period, EBITDA is a few times (in some years even dozens of times) higher then net income/losses, whereby medium-sized enterprises are dominant in this sense, especially in the last three analysed years. As big and small companies on one hand, and the entire economy on the other hand accumulate serious losses, especially in the second part of the analysed period, we may draw a conclusion that their somewhat normal functioning persists owing to high EBITDA values.

Speaking of EBIT and its participation in revenues from sales, let us firstly point out that this earnings concept approximates total earnings which would be achieved if companies and economy could somehow afford themselves financing only from internal owners' sources. In spite of accumulated operating losses, positive values of this indicator (given in earlier income statements of entire economy and relevant company groups) are result of high interest expenses. That is why total earnings, in this case marked as EBIT, are not enough to cover interest costs in most analysed years, decreasing the equity of our economy and forcing it, year by year, to additionally borrow. Both factors weaken dramatically the return potential of the economy and many companies as well.

Besides the fact that only a small part of revenues from sales hardly ever finds its way to bottom line, additional problem of our economy comes in the form of insufficient efficiency in assets and capital management. This inefficiency results from unacceptably low level of activity, low employment and unsatisfactory level of utilization of capacities which are thereby very outdated and deprived of any possibility to be restored. Indicators given in Table 6 speak convincingly enough in favour of all these claims.

We can easily notice that total assets turnover and operating assets turnover didn't exceed 1in the covered period which abridged the effect of multiplication. This effect can be observed when gains in asset efficiency result in the multiple increase in profitability of companies and economy. To make things worse, the values of certain

Table 6: Key efficiency indicators

	2007	2008	2009	2010	2011	2012	2013
Big companies							
Assets turnover	0.64	0.67	0.60	0.67	0.67	0.68	0.68
Operating assets turnover	0.80	0.83	0.74	0.83	0.81	0.80	0.80
Equity turnover	1.16	1.31	1.30	1.59	1.52	1.50	1.58
Medium-size companies							
Assets turnover	0.82	0.72	0.61	0.68	0.79	0.84	0.80
Operating assets turnover	0.94	0.84	0.72	0.79	0.90	0.97	0.94
Equity turnover	1.88	1.86	1.72	2.02	2.30	2.45	2.38
Small companies							
Assets turnover	1.13	1.12	0.93	0.83	0.76	0.68	0.62
Operating assets turnover	1.25	1.22	1.02	0.94	0.89	0.81	0.72
Equity turnover	3.78	4.10	3.61	3.27	3.12	2.70	2.44
Economy							
Assets turnover	0.78	0.77	0.67	0.71	0.71	0.70	0.68
Operating assets turnover	0.92	0.91	0.79	0.85	0.84	0.83	0.80
Equity turnover	1.62	1.73	1.66	1.92	1.89	1.82	1.84

indicators from the shown table have decreased year by year. We may notice that this is not the case with equity turnover. However, the increase in the values of that indicator is unfortunately more the consequence of decreasing owners' equity caused by accumulated losses than the consequence of increasing revenue generating capabilities of the economy and its parts. In order to support this claim, let us note that, averagely, every year, losses swallow more than a third of owners' equity at the economy level [7]. Big companies precede here, which is not much of a surprise, but surprising are losses of small companies, which are soaring in second part of the analysed period.

Problem of unsatisfactory return on equity

Based on previous analysis, it is obvious that profit margins and the efficiency of economy are unacceptably low. Evidently, such performance cannot satisfy the interests of current investors or be appealing enough to attract new investors. We can support this conclusion by using widespread measures of profitability in the further analysis, which link reported earnings to capital and/or assets involved in creation of earnings. Of course, we speak of various measures of return on investment whose fluctuations in the covered 7-year period are shown in Table 7.

For the purpose of this research we chose Return on Operating Assets – ROOA, Return on Assets – ROA and Return on Equty – ROE. Opting for chosen return measures is totally reasonable. The first one of them, ROOA, measures the profitability of so-called core business. ROA should be used to estimate return acquitted from the influence of chosen capital structure, while ROE represents both the test for fulfilling owners' interests and indicator of investment attractiveness.

Generally speaking, the profitability of Serbian economy, measured by any of these indicators, is far from satisfactory. ROOA values should be high enough to provide satisfactory return to investors after covering the costs of borrowed capital, other expenses and tax costs. In this regard, it is enough to compare reported ROOA values (e.g. at the economy level the highest value was 3.66% in 2012) to calculated costs of borrowed capital displayed in Table 8 (at the economy level they rise from 8.82% up to 22.03%).[3] to make clear how modest operating earnings are and to what extent ROOA values are far from acceptable. Obviously, there is a problem on both sides, i.e. profitability of core business is unacceptably low, and the costs of borrowed capital are intolerably high for current profit potential of the economy and companies. At this point, it is evident that there is a strong correlation

3 Since we had only financial statements at our disposal, average costs of borrowed capital were calculated from the relation between total financial expenses and average liabilities understood as the sum of long-term loans and short-term financial liabilities. The obtained results can be considered an acceptable approximation for the purpose of perceiving profit potential of the economy and its parts.

Table 7: Key profitability indicators

	2007	2008	2009	2010	2011	2012	2013
Big companies							
ROOA	1.79	2.01	2.64	3.96	3.42	3.84	3.89
ROA	1.63	4.81	3.43	5.03	5.51	4.02	2.88
ROE	(2.01)	(3.02)	(3.08)	(1.79)	2.75	(1.50)	(0.43)
Effects of financial leverage	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Medium-size companies							
ROOA	2.97	2.88	1.98	3.07	3.65	4.35	3.57
ROA	5.70	4.95	2.83	4.11	4.83	5.18	3.73
ROE	5.48	(0.56)	(4.60)	(1.63)	1.69	1.20	1.13
Effects of financial leverage	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Small companies							
ROOA	5.59	5.35	2.86	3.24	3.08	2.83	2.28
ROA	7.22	6.46	3.75	2.70	3.06	2.02	1.65
ROE	15.77	8.65	0.87	(7.39)	0.07	(6.33)	(2.10)
Effects of financial leverage	Positive	Positive	Negative	Negative	Negative	Negative	Negative
Economy							
ROOA	2.85	2.87	2.54	3.62	3.37	3.66	3.42
ROA	3.54	5.14	3.36	4.34	4.80	3.68	2.69
ROE	1.53	(1.23)	(2.89)	(2.60)	2.16	(1.95)	(0.52)
Effects of financial leverage	Negative	Negative	Negative	Negative	Negative	Negative	Negative

between costs of debt and changes in the exchange rate between the dinar and the euro.[4]

Similar evaluation holds true for ROA values as well. Namely, if we see ROA as the indicator of capability to pay back debts, then its evident lag behind the costs of borrowed capital indicates the negative effect of financial leverage and unenviable position of the economy. Such a conclusion has another confirmation in fluctuations of ROE. Under normal circumstances, when the economy is profitable, it is logical that ROA is above the costs of debt and that the excess return goes to owners. This results in the fact that profitable business is characterized by ROE higher than ROA. As seen from the displayed results of our analysis, in the last 7 years, that has not been the case in our economy. In other words, in the analysed period, cost of debt was always higher than ROA, so, due to this fact, negative effects overflowed into ROE which fell below ROA. This is a typical example of negative effect of financial leverage. To make things even worse, in 5 out of 7 analysed years ROE values were negative. Let us point out once again that those values remained positive only in the years when exchange rate between the dinar and the euro was stable and did not derogate the generated operating earnings by great amounts of foreign exchange losses.

Of course, our previous marks are general in nature and concern the economy as a whole. We should not lose sight of the fact that there is a number of rather profitable companies in our economy. However, their profits are substantially lower than losses of unsuccessful companies, which decreases the profit potential of our economy.[5]

Table 8: Cost of debt and exchange rate between RSD and EUR

	Big companies	Medium-size companies	Small companies	Economy	Foreign exchange rate	Increase in exchange rate
2007	14.45%	13.00%	8.43%	12.83%	79.24	1.00
2008	26.47%	17.54%	14.53%	22.03%	88.60	1.12
2009	17.36%	14.19%	12.00%	15.64%	95.89	1.08
2010	19.31%	14.40%	14.54%	17.29%	105.50	1.10
2011	14.55%	13.74%	8.34%	12.79%	104.64	0.99
2012	18.55%	15.65%	10.42%	15.79%	113.72	1.09
2013	10.16%	9.78%	5.72%	8.82%	114.64	1.01

4 More details on this in [8]

5 For example, a sector whose profitability deviates from the profitability of the general economy is tellecomunications sector. More on this in [9]

Since in this paper we also dealt with the performance of companies grouped by their size, it is interesting to point out that only small companies deviated from previous conclusions, managing, as a group, to achieve positive effect of financial leverage in the first two years of the analysed period. However, positive effect of financial leverage was out of reach for the group of big companies during the whole analysed period, while medium-sized companies, despite profits in the last three years, didn't manage to bring closer the values of ROE and ROA.

After previous discussion, it is logical to ask ourselves where such low ROE values in our economy come from. We can complete the picture of unsatisfactory profitability if we disaggregate ROE even more and involve, besides ROA, solvency and interest burden. One of the ways to do that is to use four-component disaggregation of ROE, displayed in Table 9.

In order to understand better the conclusions hereinafter, firstly let us clarify the displayed components of ROE. Solvency represents the ratio of average assets to average equity. Assets turnover is calculated by dividing sales revenues by average assets. EBIT margin is the participation of this earnings concept in sales revenues, while interest burden represents the ratio of net income to EBIT. Also, it is obvious that the product of two medium components of the above formula represents ROA. Regarding ROA, mind that it is a return that depends on companies' operating abilities, since EBIT is an earnings concept acquitted from the influence of financing effects. So, the medium parts of ROE four-component formula are, among other things, determined by operating abilities, i.e. business risk. On the other hand, the first and the fourth component of ROE are directly related to borrowing. Theoretically speaking, if there were no borrowing, the first and fourth component of ROE would equal one, meaning that there would be neither financial risk nor the effect of financial leverage. Evidently, ROE and ROA would be equal in that case. However, since borrowing is more realistic option, in practice, the first component will be more than one (because the assets will be higher than equity), and the last component will be less than one (since interest costs will absorb a part of net income). Based on this, the conclusion is that indebtedness growth may result in the increase or decrease of profitability. The increase

Table 9: Four-component disaggregation of ROE

	2007	2008	2009	2010	2011	2012	2013
Big companies							
1. Solvency (leverage)	1.80	1.95	2.16	2.36	2.26	2.21	2.32
2. Assets turnover	0.64	0.67	0.60	0.67	0.67	0.68	0.68
3. EBIT margin	2.53	7.14	5.69	7.47	8.21	5.94	4.25
4. Interest burden	(0.68)	(0.32)	(0.42)	(0.15)	0.22	(0.17)	(0.06)
5. ROE (1x2x3x4)	(2.01)	(3.02)	(3.08)	(1.79)	2.75	(1.50)	(0.43)
Medium-size companies							
1. Solvency (leverage)	2.30	2.58	2.82	2.97	2.92	2.90	3.00
2. Assets turnover	0.82	0.72	0.61	0.68	0.79	0.84	0.80
3. EBIT margin	6.98	6.86	4.64	6.03	6.12	6.13	4.70
4. Interest burden	0.42	(0.04)	(0.58)	(0.13)	0.12	0.08	0.10
5. ROE (1x2x3x4)	5.48	(0.56)	(4.60)	(1.63)	1.69	1.20	1.13
Small companies							
1. Solvency (leverage)	3.34	3.65	3.89	3.95	4.09	3.98	3.97
2. Assets turnover	1.13	1.12	0.93	0.83	0.76	0.68	0.62
3. EBIT margin	6.38	5.76	4.04	3.26	4.01	2.97	2.68
4. Interest burden	0.65	0.37	0.06	(0.69)	0.01	(0.79)	(0.32)
5. ROE (1x2x3x4)	15.77	8.65	0.87	(7.39)	0.07	(6.33)	(2.10)
Economy							
1. Solvency (leverage)	2.08	2.26	2.49	2.71	2.65	2.60	2.71
2. Assets turnover	0.78	0.77	0.67	0.71	0.71	0.70	0.68
3. EBIT margin	4.57	6.71	5.05	6.12	6.73	5.24	3.96
4. Interest burden	0.21	(0.11)	(0.35)	(0.22)	0.17	(0.20)	(0.07)
5. ROE (1x2x3x4)	1.53	(1.23)	(2.89)	(2.60)	2.16	(1.95)	(0.52)

of profitability arises if the product of multiplication between the indicators of solvency and interest burden is more than one.[6] Then there will be a positive effect of financial leverage, manifested through the increase in owners' return, i.e. ROE above ROA. Of course, in the opposite case, borrowing inevitably leads towards the fall of profitability and negative effect of financial leverage. Thereby, borrowing limit is obtained by the equation of ROA with the costs of borrowed capital. Then ROA equals ROE, which, again, means that borrowing brings positive effects up to that limit, and negative effects upon exceeding that limit.

Following these notes, it is obvious that the first and fourth component of disaggregated version of ROE deserve our special attention. Speaking of solvency, firstly mind that it grows at all levels. At the economy level, debts amount to more than 60% of total capital in the whole analysed period. This puts a strong pressure on financial expenses (that effect is multiplied by the depreciation of dinar) and net income. Let us notice that solvency of medium-sized enterprises is higher then the solvency of big enterprises and the entire economy. A particularly alarming is the solvency of small enterprises, which isn't in line with rational, expectations only at first sight. When we consider all the difficulties that these companies have in gathering the capital, it should not be surprising that they are highly indebted and that they have to bear much higher interest expenses than big and medium-sized companies.

Nevertheless, we can get a more complete picture of the effects of borrowing only if we include the indicator of interest burden in the analysis. There are visible sharp fluctuations in this segment. Interest burden mostly records negative values at the level of economy and big companies, while, in some years, it reaches marginally positive values for medium-sized and small companies. In order to understand the real meaning of the given values of interest burden, mind that, e.g. at the economy level, out of 100 EBIT dinars generated in 2011, owners get only RSD 17, and creditors even RSD 83. Accordingly, in the years when interest burden recorded negative values, the generated EBIT was not high enough to cover interest expenses, so creditors had to settle themselves with the decrease in equity. In other words, in those years companies continued to "eat" their substance and hence another confirmation why the use of borrowed capital under these circumstances is very expensive for Serbian economy and why modest profit potential is its greatest problem. Since the economy, in our opinion, must continue to borrow, we can only hope that in the near future these loans will negotiated under different circumstances. We believe that there are enough arguments in this and similar research, in favour of systemic creation of safe and stable business environment on one hand, and raising the quality of corporate management (at much higher level than the current one) on the other hand.

The relation between risk and enterprise size

The analysis of profit potential of companies is usually followed by the assessment of their risks, since profits and risks are two related aspects of companies' performance. It is well-known that higher return on investment often requires higher exposure to risk. Therefore, the following pages of this paper will be dedicated to problems of measuring and evaluating risks of big, medium-sized and small companies.

In modern economic conditions, risks are widespread and result from operating and financing activities of companies. So, it is understandable that the relevant literature mostly divides risks into two categories: business and financial risk [1, p. 91]. The first category of risk manifests itself in the increased volatility of operating income and consists of two components: sales and operating risk. Sales risk includes numerous uncertainties arising from sales process, i.e. the process of sales revenue generation. Those uncertainties partly refer to sales prices, and partly to potential sales volume that could be achieved in the near or far future. Fluctuations in sales revenues definitely contribute to fluctuations in operating income. Operating risk, on the other hand, is a direct result of fixed operating costs (such as depreciation and amortization, lease expenses, administrative labour costs and so on), which cause high and intense oscillations of operating income, even in conditions of mild shifts in operating revenues.

6 For more details see [10, pp. 116-121]

Of course, a higher participation of fixed costs in total operating cost structure generates a higher volatility of companies' operating income. Similar to operating risk, financial risk arises from certain fixed costs. However, in this case relevant are fixed financing costs (i.e. expenses), whose level is directly determined by companies' capital structure. Due to interest expenses and other financial expenses that do not adjust to the sales volume, variations in sales volume, as well as in operating income, inevitably lead to significant variations in net earnings before and after taxes. It is logical that a considerable participation of debt in the capital structure causes high fixed interest expenses and high volatility of the above mentioned net earnings. Note that, unlike the operating cost structure, which is more or less determined by the nature of company's business activities, capital structure is primarily shaped by managerial decisions. Therefore, the exposure to financial risk represents a somewhat controllable variable.

Evidently, the volatility of sales and earnings represents the basis of our usual perception of enterprise risk. Having this in mind, we will firstly pay attention to the problems that arise in measuring that volatility. Of course, we will present the results of those measurements and discuss them in terms of enterprise size.

Volatility of sales and earnings of big, medium-sized and small enterprises

Measuring the volatility of companies' sales and earnings is hardly conceivable without using the standard apparatus of descriptive statistical analysis. Dispersion measures, such as variance, standard deviation, range and interquartile range, are very useful for this purpose. Each of them has its own advantages and disadvantages. However, they will not be discussed here. Almost every statistical analysis handbook lists the pros and cons of these measures [11, pp. 82-146]. Instead, we will focus on standard deviation and range, which are chosen in this paper to measure the volatility of sales and earnings. Why did we choose these two measures? Opting for standard deviation is somewhat expected. It is one of the most commonly used dispersion measures in practice, which reflects the very essence of variability, as the fluctuation around some mean. Furthermore, its advantage over variance is that it is represented in the same measurement units as a variable whose volatility is measured. Of course, we should also mention that in modern finance literature standard deviation is used for measuring total risk of stocks and other financial instruments [14, p. 140]. The reasons to choose range, as the difference between maximum and minimum value of some variable, are also understandable. Range could be used as a corrective measure of volatility that sometimes presents more convincingly the risks and possible amplitudes in fluctuations of company performance than standard deviation.

Which indicators of companies' performance should we use in the forthcoming volatility measurements? Should we concentrate on operating revenues and net earnings, as the absolute performance indicators, or on certain relative performance measures, such as assets turnover and return on equity? Bear in mind that assets turnover is the ratio of operating revenues to average assets, and that return on equity represents quotient of net earnings and average equity. The answer to these questions lies in the purpose of volatility measurements conducted in this paper. Note that this purpose is in estimating and evaluating the volatility of sales and earnings capabilities of big, medium-sized and small enterprises, with the aim to compare those companies by the level of their risk. It is reasonable expect that under normal circumstances big companies will generate higher sales revenues and net profits or losses than medium-sized and small companies. Therefore, we can confidently assume that standard deviation and range of those revenues and earnings will be higher for big companies than for medium-sized and small companies. However, this assertion does not necessarily imply higher risk of big companies. Simply, the difference in the amount of chosen dispersion measures could be entirely the consequence of the difference in the level of operating revenues and net earnings of the analysed companies, mostly determined by the very size of those companies. For this reason, the advantage in this paper was given to relative performance indicators, whose amounts are not primarily determined by the enterprise size. The measurement results shown in Table 10 vividly illustrate described problem. A completely different impression of risks of big, medium-sized and small enterprises stems

from the analysis of variability of relative performance indicators compared to the distorted picture created by absolute performance measures. Note that, besides dispersion measures, measures of central tendency are also given in the table in order to complete the descriptive statistical analysis of the chosen enterprise performance indicators.

We will deal only briefly with the explanation of results presented in Table 10. The focus will be exclusively on the values of dispersion measures of relative performance indicators, since they provide a reasonable comparison of enterprise risk. These measures suggest that the risk rises as we move from big companies towards the smaller ones. The small companies record the highest standard deviation and range of assets turnover and return on equity. On the other hand, the measures of dispersion are the lowest for the big companies, which evidently have the lowest exposure to risks. There is no doubt that these results are in line with the intuitive idea that most economists have regarding the relation between enterprise size and risk. Simply, the size brings certain stability and safety. Numerous studies imply higher rate of bankruptcy in the group of small companies compared to the group of big companies, a huge "mortality" of small companies short after their establishment, and their distinct vulnerability under the crisis circumstances.

The recorded volatility of ROE deserves a special attention because it reflects the true risks borne by the owners of big, medium-sized and small enterprises. In order to investigate the sources of that volatility, we used again the DuPont methodology of ROE disaggregation presented on the previous pages of this paper. Table 11 contains data regarding standard deviation and range of solvency, EBIT margin and interest burden. Note that the data on variability of assets turnover ratio are already given in Table 10.

It is evident that solvency and interest burden, which reflect the exposure of companies to financial risk, exhibit higher volatility in the group of small companies

Table 10: Descriptive statistics of companies' performance measures

Performance measure	Measure of central tendency or dispersion	Big companies	Medium-sized companies	Small companies
Operating revenues (in billions of RSD)*	Mean	3,583.7	1,227.0	1,735.6
	Median	3,482.5	1,249.1	1,691.8
	Standard deviation	**950.3**	**217.4**	**218.1**
	range	**2,692.5**	**670.4**	**565.5**
Net income after taxes (in billions of RSD)*	Mean	-22.6	3.0	6.5
	Median	-43.6	7.0	2.0
	Standard deviation	**54.1**	**18.4**	**40.7**
	range	**149.4**	**62.9**	**111.3**
Assets turnover**	Mean	0.66	0.75	0.87
	Median	0.67	0.79	0.83
	Standard deviation	**0.03**	**0.08**	**0.20**
	range	**0.08**	**0.23**	**0.51**
Return on equity (ROE)**	Mean	-1.30%	0.39%	1.36%
	Median	-1.79%	1.13%	0.07%
	Standard deviation	**2.00%**	**3.13%**	**8.27%**
	range	**5.83%**	**10.08%**	**23.16%**

* Covered period: 2006-2013.
** Covered period: 2007-2013. Averaging of assets and equity in calculations of relative performance measures results in one year data loss.

Table 11: Volatility of ROE components (2007-2013)

Component	Measure of dispersion	Big companies	Medium-sized companies	Small companies
Solvency (leverage)	Standard deviation	0.20	0.26	0.26
	range	0.56	0.70	0.75
EBIT margin	Standard deviation	1.98	0.93	1.41
	range	5.68	2.34	3.70
Interest burden	Standard deviation	0.29	0.31	0.53
	range	0.90	1.00	1.44

compared to the group of big companies. This leads us to a preliminary conclusion that small companies face higher financial risk than big companies. It seems that financial risk, along with evident sales risk reflected in higher volatility of assets turnover ratio, raises the level of total risk of small companies above the level of total risk of big companies. This conclusion also steams from the data on the variability of EBIT margin whose variations reflect the exposure of companies to operating risk. Standard deviation and range of EBIT margin are lower for small companies, implying lower level of operating risk of these companies compared to big companies. So, the sources of higher ROE volatility of small companies are assets turnover ratio, solvency and debt burden, but not the EBIT margin. Having this in mind, it is clear that the causes for high total risk of small companies can be found in the nature of their sales process, which generates extremely unstable revenues, and in their highly leveraged capital structure. Evidently, the structure of operating costs is not among those causes. These conclusions are also confirmed by the forthcoming analysis of operating and financial leverage.

The relation between leverage and enterprise size

In corporate finance literature, leverage is related to the use of fixed costs in operating and financing activities of companies in order to raise their potential profitability [1, p. 88]. As known, there are fixed operating and financing costs, so the literature differentiates between operating and financial leverage. Fixed operating costs produce operating leverage, whereas fixed financing costs produce financial leverage. The higher the fixed costs, i.e. the higher the operating or financial leverage, the higher is the potential net income of a company. However, the higher is the volatility of that net income as well. Namely, leverage can increase both earnings and losses of companies. Highly leveraged companies can record a considerable increase in profitability even in conditions of negligibly small rise of operating revenues, but at the same time, negligible deterioration of sales can produce enormous losses. This only shows that leverage raises significantly the volatility of profits and cash flows, i.e. the exposure of companies to operating and financial risk. Having this in mind, it is clear that the degree of leverage can serve as a useful instrument for measuring risks. In fact, the degree of operating leverage measures operating risk, indicating the sensitivity of operating earnings to the changes in operating revenues. On the other hand, the degree of financial leverage expresses the sensitivity of net earnings before taxes to the variations in operating earnings, so it represents a reliable measure of financial risk of a company.

For the purpose of leverage analysis, cumulative income statements of big and medium-sized companies are rearranged as the enclosed cumulative income statement of small companies, given in Table 12. We emphasize that the difference between reported operating revenues and expenses is defined as a sustainable operating income in this paper. It is the income produced by the regular operating activities of companies, such as the sales of goods, products or services and the consumption of various resources in the operating process, so it has permanent character and shows a certain tendency to be repeated from period to period. The difference between reported other revenues and expenses is defined as a transitory operating income. Other revenues and expenses are also generated in the operating process, only in a less usual or common way: by the sales of property, plant and equipment, sales of material inventories, write-offs of inventories or accounts receivable and so on. Operating income generated by these occasional operating activities has a transitory character and it does not depend so much on companies' sales, as it is the case with sustainable operating income. However, it affects considerably companies' net income before taxes. The sum of two previously mentioned types of operating income (i.e. sustainable and transitory operating income) forms total operating income which serves to cover net financial expenses. The difference between total operating income and net financial expenses represents the net income before taxes. Considering all the above, it is evident that one can get an idea of the degree of operating leverage by regressing the sustainable operating earnings on operating revenues. Also, the degree of financial leverage can be estimated by regressing the net income before taxes on total operating income of a company. We believe that previous discussion unequivocally answers the question why sustainable, and

not total, operating income is related to operating revenues when measuring the degree of operating leverage, as well as why net income before taxes is correlated with total, not sustainable, operating income in the estimation of the degree of financial leverage. The fact is that transitory operating earnings are rather independent of the sales volume. However, they have an important influence on the net income before taxes.

The results of regression analysis of operating and financial leverage of big, medium-sized and small companies are presented in Table 13. They will be discussed briefly hereinafter. We used the linear regression analysis based on the ordinary least squares method in the paper. Detailed explanation of this method can be found in the relevant econometrics literature [4, pp. 223-236].

For each of the three company groups (big, medium-sized and small companies) we ran three regressions: regression of sustainable operating income on operating revenues, regression of total operating income on sustainable operating income, and regression of net income before taxes on total operating income. As we have already explained, based on the first and third regression, one can get the idea of companies' degree of operating and financial leverage. In fact, the degree of leverage steams from the estimated slope coefficient (b) of the appropriate regression. Along with slope coefficients, Table 13 provides information on coefficients of determination (R^2), which suggest the explanatory power of conducted regressions.

We will consider firstly slope coefficients indicating the sensitivity of sustainable operating earnings to the changes in operating revenues, i.e. the degree of operating leverage of big, medium-sized and small companies. Big companies recorded the highest slope coefficient among these coefficients. On the other hand, small companies obtained the lowest coefficient, which brings us to a conclusion that the degree of operating leverage rises along with the enterprise size. The value of the above mentioned coefficient for big (small) companies of 0.0775 (0.0196) suggests that cumulative sustainable operating income of these companies increases averagely by 77.5

Table 12: Abridged Income Statement, tailored to leverage analysis

Position	2006	2007	2008	2009	2010	2011	2012	2013
Operating revenues	**1,461.3**	**1,546.2**	**1,672.9**	**1,551.5**	**1,710.8**	**1,955.4**	**2,026.8**	**1,960.1**
Operating expenses	1,404.4	1,477.3	1,600.6	1,508.2	1,652.3	1,888.2	1,956.3	1,898.6
Sustainable operating income (loss)	**56.8**	**68.9**	**72.3**	**43.3**	**58.5**	**67.2**	**70.5**	**61.5**
Transitory operating income (loss)	1.4	12.7	1.1	2.2	(24.4)	(21.1)	(46.4)	(33.3)
Total operating income (loss)	**58.2**	**81.6**	**73.4**	**45.5**	**34.1**	**46.1**	**24.2**	**28.2**
Financial revenues	32.2	19.2	27.6	22.5	30.9	39.1	46.3	30.4
Financial expenses	33.4	28.7	58.8	58.1	95.5	71.6	105.7	62.4
Net financial revenues (expenses)	(1.2)	(9.5)	(31.2)	(35.6)	(64.7)	(32.5)	(59.4)	(32.1)
Net income (loss) before taxes	**57.0**	**72.1**	**42.3**	**9.9**	**(30.6)**	**13.6**	**(35.2)**	**(3.8)**

Note: All values are shown in billions of RSD

Table 13: Regression analysis of companies' leverage (2006-2013)

Coefficient	Big companies	Medium-sized companies	Small companies
	Operating leverage:		
	Sustainable operating income$_t$ = b × Operating revenues$_t$ + e$_t$, t = 2006, 2007,..., 2013		
b	0.0775	0.0705	0.0196
R^2	0.9402	0.9215	0.1988
	Total operating income$_t$ = b × Sustainable operating income$_t$ + e$_t$, t = 2006, 2007,..., 2013		
b	0.5270	0.5079	0.5124
R^2	0.4093	0.5477	0.0556
	Financial leverage:		
	Net income before taxes$_t$ = b × Total operating income$_t$ + e$_t$, t = 2006, 2007,..., 2013		
b	0.2788	0.5352	1.7312
R^2	0.0901	0.0994	0.8466

(19.6) thousand dinars with each 1 million dinars of their additional cumulative operating revenues.[7] So, the sustainable operating earnings are far more sensitive to the changes in operating revenues in the group of big companies than in the group of small companies. Of course, this conclusion raises an important question. What are the reasons for such a high degree of operating leverage of big companies? The obtained result comes as no surprise. The possible reasons are the large capacities and high fixed operating costs caused by them. Also, the use of these capacities is rather poor and highly volatile, which altogether exposes big companies to considerable operating risk.

The slope coefficients reflecting the companies' financial leverage also deserve a special attention. These coefficients indicate the sensitivity of net income before taxes to variations in total operating income of big, medium-sized and small companies. Table 13 shows that small companies had definitely the greatest slope coefficient among these coefficients in the analysed period, while big companies recorded the lowest coefficient. The coefficient's value of 1.7312 for small companies suggests that cumulative net income before taxes of these companies grows by 1.7312 million dinars with each 1 million dinars of their additional cumulative total operating income.[8] The fact that this value is 6 times higher than the value of the same coefficient for big companies leads us to very important conclusion that the degree of financial leverage falls as the enterprise size rises. So, the net income before taxes is far more sensitive to the changes in total operating income in the group of small companies than in the group of big companies. There are at least two reasons for this kind of relationship between enterprise size and degree of financial leverage. One reason definitely arises from the previous analysis of companies' return potential and it refers to their solvency. It has been already shown in this paper that the equity of small companies bears much more debt burden than the equity of other companies. Such highly leveraged capital structure of small companies inevitably imposes high financing costs, which expose these companies to considerable financial risk. The other reason is closely related to the first reason, just described here. It is refers to the variations in exchange rate which, by means of indebtedness and foreign exchange gains or losses generated by currency clause effects, produce the increased volatility of net financial revenues (expense) and net income before taxes. The results summarized in Table 14 imply the presence of negative correlation between exchange rate and net financial revenues (expenses) of big, medium-sized and small companies, leading to a conclusion that the rise in exchange rate decreases (increases) net financial revenues (expenses) of these companies. Thereby, the strongest correlation of all companies, according to the Pearson's coefficient, is recorded by small companies. This indicates that the instability of exchange rate strikes exactly these companies most of all. The relationship between exchange rate and net financial revenues (expenses) of small companies is presented in Figure 5, which shows that the variations in exchange rate explain 61.09% of variations in net financial revenues (expenses) of these companies.

Table 14: Correlation between exchange rate and net financial revenues (expenses) of companies (2006-2013)

Coefficient	Big companies	Medium-sized companies	Small companies
Pearson correlation coefficients	-0.5624	-0.3702	-0.7816

The key results of the regression analysis of leverage are presented graphically as well. Figure 6 illustrates the operating leverage of big companies, which have the greatest exposure to operating risk of all companies according to results given in Table 13. Figure 7 sketches the financial leverage of small companies. It has been already

7 The coefficient of determination in the regression of sustainable operating income on operating revenues of big companies is extremely high and amounts to 0.9402, showing that 94.02% of variations in sustainable operating income of these companies is explained by the variations in their operating revenues. The coefficient of determination in a similar regression for small companies is considerably lower (0.1988). This leads us to a conclusion that some other factors as well have an important influence on sustainable operating income of these companies, apart from the above mentioned operating revenues.

8 The coefficient of determination in the regression of net income before taxes on total operating income of small companies in the amount of 0.8466 shows that 84.66% of variations in net income before taxes of these companies is explained by the variations in their total operating income. The coefficients of determination in similar regressions for big and medium-sized companies are considerably lower and equal 0.0901 and 0.0994, respectively.

Figure 5: Relationship between exchange rate and net financial revenues (expenses) of small companies (2006-2013)

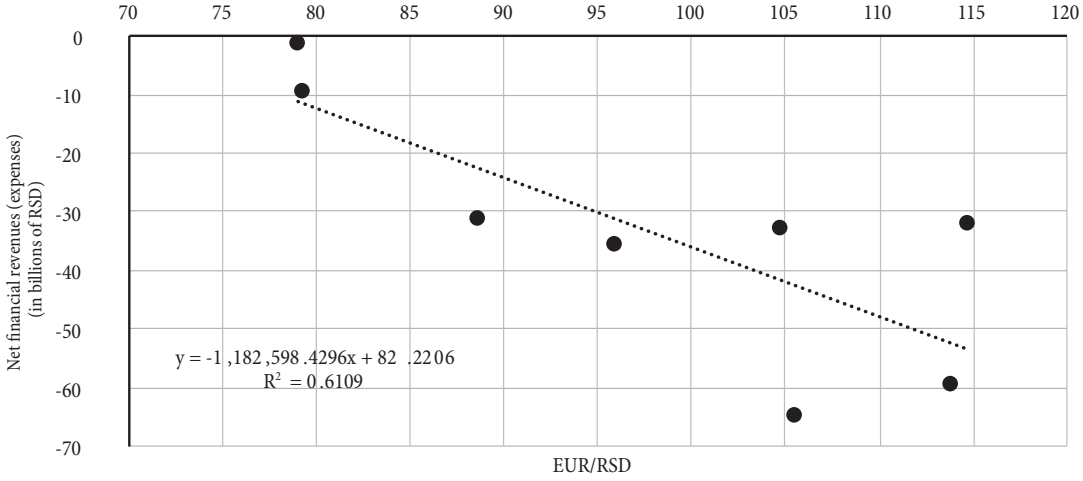


Figure 6: Operating leverage of big companies (2006-2013)

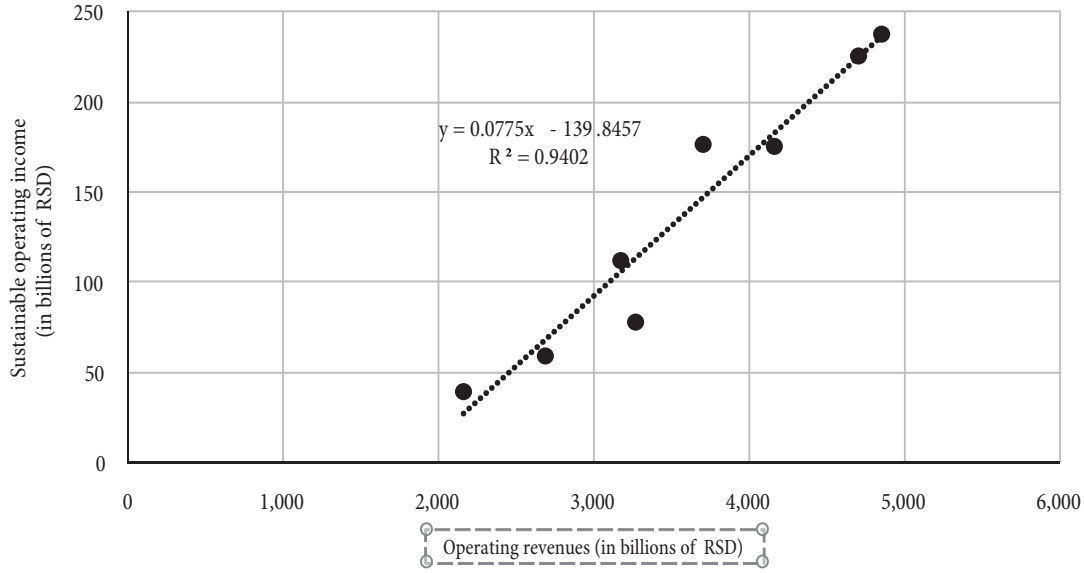
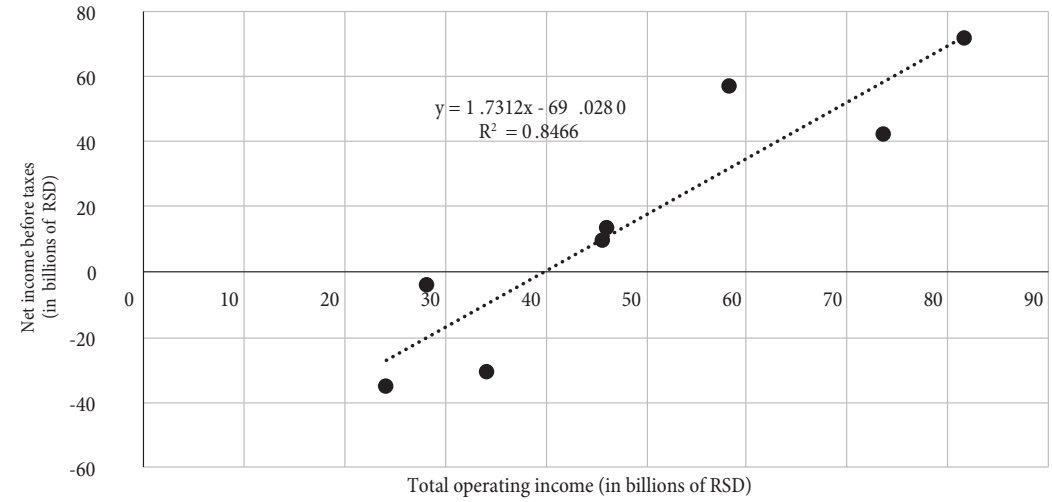


Figure 7: Financial leverage of small companies (2006-2013)



explained that financial risk of these companies is higher than financial risk of medium-sized or big companies.

Finally, we would like to underline a very important observation. Reported findings of leverage analysis are in accordance with the previously presented findings of volatility analysis of ROE. This additionally enhances our conclusions regarding the level and nature of risks of big, medium-sized and small enterprises.

Conclusion

Unsatisfactory profitability represents the greatest limitation which ramshackles Serbian economy in its attempts to grow and prosper. Low profitability is characterized by decreased efficiency, insufficient profit margins, high borrowing costs, low return on equity and negative effect of financial leverage, recorded for almost all company groups. Such economic circumstances are unattractive for new investments and they cannot provide desirable economic growth. At the same time, economic situation seems destimulating for present investors as well, since under such circumstances, companies cannot generate sufficient operating income to cover high borrowing costs. All this creates an unfavourable image of the overall economic environment in Serbia.

Profitability and the related risks in Serbian economy vary from one company to another, among other things, depending on their size. The analysis has shown that the volatility of ROE is the highest in the group of small companies, making them appear riskier than medium-sized and big companies. The increased volatility of solvency and interest burden suggests that small companies are exposed primarily to financial risks, arising from their highly leveraged capital structure. On the other hand, low participation of fixed costs in total operating expenses of small companies lowers their operating risks below the operating risks of medium-sized and big companies. The comparison of EBIT margin volatility of small, medium-sized and big companies supports this conclusion. Consequently, the highest degree of financial leverage is recorded by small companies, while the highest degree of operating leverage is recorded by big companies.

The dominant participation of SMEs in terms of their number, as well as their extremely important contribution to employment growth and creation of value added, show that the development of such enterprises provides the great potential for overcoming the key economic problems. The experience of developed countries suggests that a considerable influence of SMEs on the growth of economy and employment can be expected only in an organized and stimulating environment. Nevertheless, we must emphasize that SME performance in the period of crisis shows that their recovery in the EU and Serbia was unexpectedly slow. One of the reasons for this slow recovery of SMEs is that their business is closely linked to business of big companies. Nowadays, the business of big companies is hardly conceivable without the chain of small suppliers, who are more and more involved in the production process and left to produce certain components. The main benefits of mentioned outsourcing are higher competitiveness, significant cost savings and risk dispersion.

Economic policy regulators must pay equal attention to the creation of favourable business environment for both SMEs and big enterprises. We must not forget that, although big companies have very low participation in total company number, their participation in total assets, total number of employees and creation of value added is very high. The possibility of attracting high amounts of capital enables them to undertake the activities which cannot be conducted by small companies, due to their insufficient financial strength. We should particularly stress the importance of big joint-stock companies for the development of primary and secondary capital markets. If there are no alternative financing sources, as is the case for Serbia, external (banking) financing sources become too expensive. Thereby, it is well known that expensive financing sources jeopardize the economic recovery.

References

1. Clayman, M. R., Fridson, M. S., & Troughton, G. H. (2009). Capital structure and leverage. In CFA Institute, *Corporate finance*. Boston: Pearson Custom Publishing.
2. European Commission. (2003, May 6). Commission Recommendation: Concerning the definition of micro, small, and medium-sized enterprises (2003/361/EC), *Official Journal of the European Union*. Brussels: EC.

3. European Commission. (2014). *Annual report on European SMEs 2013-2014: A partial and fragile recovery*. Brussels: EC Publication Office.
4. Greene, W. H. (2000). *Econometric analysis*. Upper Saddle River, New Jersey: Prentice-Hall Inc.
5. Malinić, D. (2007). *Politka dobiti korporativnog preduzeća*. Beograd: Ekonomski fakultet.
6. Malinić, D. (2013). Finansijska (ne)moć javnih preduzeća. U *Zbornik radova: Računovodstveno regulatorno okruženje: podsticaj ili ograničenje privrednog rasta,* Savez računovođa i revizora Srbije, Zlatibor, 2013.
7. Malinić, D., & Milićević, V. (2012). The financial and structural capabilities of key infrastructure sectors in Serbia. *Economic Annals, LVII*(195), 7-42.
8. Malinić, D., & Milićević, V. (2013). Effects of changes in foreign exchange rates on performance in Serbia's economy. *Ekonomika preduzeća 61*(7-8), 401-416.
9. Malinić, D., & Milićević, V. (2013). *The financial performance measurement in telecommunications: The case of Serbia*. Saarbrücken: LAP Lambert Academic Publishing
10. Malinić, D., Milićević, V., & Stevanović, N. (2013). *Upravljačko računovodstvo*. Beograd: Ekonomski fakultet.
11. Mann, P. S. (2009). *Introductory statistics*. Hoboken, NJ, USA: John Wiley & Sons, Inc.
12. OECD. (2013). *Entrepreneurship at a Glance*, OECD. Paris: OECD Publishing.
13. Serbian Business Registers Agency [database]. Retrieved from http://www.apr.gov.rs
14. Sharpe, W. F., Alexander, G. J., & Bailey, J. V. (1999). *Investments*. Upper Saddle River, New Jersey: Prentice-Hall Inc.
15. Zakon o računovodstvu, *Službeni glasnik Republike Srbije*, br. 46/06.
16. Zakon o računovodstvu, *Službeni glasnik Republike Srbije*, br. 62/13.

Dejan Malinić

is a Full Professor at the Faculty of Economics, University of Belgrade. He teaches courses in Management Accounting and Analysis of Financial Statements (undergraduate studies) as well as Policy of Income and Strategic Controlling (master studies), and Advanced Management Accounting and Strategic Management Accounting (doctoral studies). He also teaches Management Accounting in international master courses Management and Business Economy. So far he has published two books: Policy of Company's Income and Divisional Accounting. He is co-author of university textbook Management Accounting. Moreover, he has published numerous scientific and research papers in the fields of management accounting, corporate finance and financial reporting. As a manager, team member or consultant he took part in great number of studies and projects in the fields of accounting, firm's value evaluation, business and financial consolidation companies, management control, privatization and corporate governance. He is a member of Accounting Board in the Association of Accountants and Auditors of Serbia, Executive Board of the Serbian Association of Economists, Editorial Board of the SAE Journal of Business Economics and Management. He is a certified public accountant. In the period 2004-2011 he was a member of Securities Commission, Republic of Serbia.

Vlade Milićević

is a Full Professor at the Faculty of Economics, University of Belgrade. He has been teaching Management Accounting on undergraduate studies. Furthermore, he is the lecturer of Strategic Controlling and Profit Policy on master studies and Management Accounting II and Strategic Management Accounting on PhD studies. Additionally, professor Milicevic has been engaged as the vice-dean for finance and organization at the Faculty since May 2006. Professor Milicevic is known as the author of books Cost Accounting and Business Decision Making and Strategic Management Accounting, and as the co-author of books Management Accounting and Financial Markets. Furthermore, he has written numerous articles related to accounting, financial management and auditing, as well as some outstanding papers for several conferences in that field.

Milan Glišić

is a Teaching Assistant at the Faculty of Economics, University of Belgrade, where he teaches Management Accounting. He received his master's degree in Accounting, Audit and Corporate Finance in 2010 from the Faculty of Economics, University of Belgrade. Currently, he is a doctoral student at the same faculty. Areas of his interest are performance measurement, cost accounting, financial statements analysis and valuation. He is a CFA Charterholder and a member of CFA Institute. He worked as a financial analyst in the investment fund management companies Delta Investments and Focus Invest. He is married and has two daughters, Nina and Maša.