system reforms are aimed at reduction in expenditures, the main goal behind the reforms in healthcare system, education system and public administration is better efficiency. This means that better quality of these services is as important as reduction in expenditures.

It is still unclear to what extant is the government willing to carry out the reforms. Government structure remained almost unchanged after the reconstruction, so it is uncertain whether it will be possible to implement pension system reforms, change the Labor Law, improve efficiency of the bankruptcy proceedings, cut budget expenditures etc. Regarding system of education, it is uncertain whether the primary school network rationalization plan will be implemented, whether accreditation requirements for higher education institutions and programs will be tightened, or whether labor market will be liberalized to increase the quality of doctoral studies. Political parties that blocked these reforms and opposed the arrangement with IMF are still in the Government.

Highlight 2. Financial performance of companies owned by the Republic of Serbia

Milan Glisic

There is no doubt that state-owned enterprises, regardless of whether they are legally organized as public sector companies or joint stock companies, play an important role in the economic life of the Republic of Serbia. Those companies usually carry out activities of common interest, such as production, transmission and distribution of electricity; production and processing of coal; research, production, processing, transportation and distribution of oil and natural and liquid gas; railway, postal and air traffic; telecommunications; utilization, management and protection of the property of the public interest (such as water, roads, minerals, forests, etc.); production, marketing and transportation of arms and military equipment, and so on.[1]Many of these activities have a strategic importance for the development of the Serbian economy. Also, we have to mention the results of some studies indicating that public sector companies hired, on average, 10.7% of total employed workers, engaged even 17.7% of total assets and had 29.3% of the owners' equity in the domestic economy in the period from 2006 to 2011.[2]Despite all the above, a system of regular and comprehensive monitoring and control of their performance is still not established, although we are witnessing the fact that the significant resources, that they use, are being spent irrationally and inefficiently. The most valuable information about the state of public sector companies, their problems, and possible solutions to these problems are contained in the studies of international financial institutions, consulting companies and individual researchers. However, these in-depth and, by nature, one-off analyses cannot be a substitute for regular monitoring of the operations of these companies. The aim of this analysis is to examine the financial position and profitability of the key state-owned enterprises in an integral and comprehensive manner, which could result in useful guidelines for improving their performance in the future, both for their management and policy makers.

Basic financial information on the companies included in the analysis is given in Table 1. These are state-owned companies whose functioning is under the jurisdiction of the Republic. Local public enterprises were not the subjects of this analysis. It should be noted right at the beginning that these ten enterprises in 2012 recorded a cumulative net loss of 69.5 billion RSD. Only four of companies earned profits and two companies lost the entire owners' equity through previous operations and generated losses above their equity.

Without going further into the explanation of individual results we will briefly mention that the basis for assessing the performance of selected public sector companies and other state-owned enterprises were cumulative financial statements obtained by adding up the positions of separate and consolidated financial statements of these companies.[3]These are presented in Tables 2 and 3. For the purpose of assessing liquidity, solvency and profitability of these companies, standard financial analysis techniqueswere used: ratio analysis combined with an analysis of net working capital (NWC) and cash flows.[4]

1 See: Law on Public Companies,"Official Gazette of the Republic of Serbia", no. 119/2012.

2 Malinic, D. "Financial power (weakness) of public sector companies", Proceedings: Accounting regulatory environment: stimulus or restriction for economic growth, 44th Symposium of Accounting and Corporate Finance in modern business environment, Zlatibor, 2013, p. 131-154.

3 Separate and consolidated financial statements of companies included in the analysis were taken from the website of the Serbian Business Registers Agency.

4 For more see: Malinic, D., Milicevic, V., Stevanovic, N. (2012) *Management Accounting*, The Publishing Centre of the Faculty of Economics in Belgrade, p. 83-188, White, GI, Sondhi, AC, Fried, D. (2003) *The Analysis and Use of Financial Statements*, John Wiley & Sons, Inc., P. 110-163.

Table1. Basic financial indicators of analyzed companies owned by the Republic of Serbia, in 2012 (in thousands of RSD)

Company	Financial statements	Total assets 12/31/2012
Elektroprivreda Srbije	Consolidated	1,074,223,552
Putevi Srbije	Separate	462,502,726
Zeleznice Srbije	Consolidated	282,264,431
Telekom Srbija	Consolidated	255,525,154
Srbijagas	Consolidated	135,541,442
Elektromreza Srbije	Consolidated	68,652,536
Srbijasume	Separate	62,137,758
PTT Srbija	Separate	34,214,120
Galenika	Consolidated	21,338,997
JAT Airways	Separate	15,612,800
	Total	**2,412,013,516**

Company	Operating revenues 2012
Elektroprivreda Srbije	190,405,822
Telekom Srbija	119,422,935
Srbijagas	74,396,641
Putevi Srbije	28,714,657
Zeleznice Srbije	27,348,241
PTT Srbija	21,781,921
Elektromreza Srbije	16,096,599
JAT Airways	13,574,085
Srbijasume	6,049,486
Galenika	5,025,443
Total	**502,815,830**

Company	Owners' equity 12/31/2012
Elektroprivreda Srbije	780,953,152
Putevi Srbije	347,387,297
Zeleznice Srbije	210,964,887
Telekom Srbija	136,553,429
Srbijasume	58,760,531
Elektromreza Srbije	46,862,131
PTT Srbija	24,058,356
Srbijagas	2,956,388
Galenika	0
JAT Airways	0
Total	**1,608,496,171**

Company	Net earnings 2012
Telekom Srbija	10,710,275
Elektromreza Srbije	1,489,856
PTT Srbija	1,243,341
Srbijasume	51,326
JAT Airways	(3,680,760)
Galenika	(5,657,471)
Putevi Srbije	(7,851,362)
Elektroprivreda Srbije	(11,747,314)
Zeleznice Srbije	(16,656,917)
Srbijagas	(37,364,724)
Total	**(69,463,750)**

Source: The Serbian Business Registers Agency

Before we move on to the aforementioned assessment of the most important aspects of performance of the observed state-owned enterprises, we will briefly comment on the key positions and trends in the cumulative balance sheet presented in Table 2 and cumulative income statement in Table 3. Based on the data in Table 2 we note that the total assets of all observed companies have increased significantly in the period from the end of 2009 until the end of 2012 (by even 48.79%). This growth was mostly caused by an increase in non-current assets of 52.20%, within which the value of property, plant and equipment rose by 60.97% mainly due to a conducted revaluation. The increase in current assets in the analyzed four-year period was 25.76%, which was largely result of the increase in other receivables of 69.08% and an increase in accounts receivable of 28.73%. On the financing side, equity rose by 52.87% in this period, while the long-term and short-term liabilities increased by 54.20% and 31.70%, respectively. Within equity, the biggest growth was registered by reserves, whose value was more than doubled. Revaluation reserves, which have increased due to the revaluation of property, plant and equipment, accounted for the most of the reserves in recent years. Due to the additional credit borrowing, a long-term and short-term financial liabilities increased by 34.46% and 14%, respectively. We note a significant increase in accounts payable of 40.06%. The data in Table 3 indicate a sales growth of 17.81% in the period from 2009 to 2012, but also a significant increase in operating expenses that caused a decrease in EBITDA and EBIT of 21.71% and 106.55%, respectively. A heavy net loss was observed in three of the four analyzed years and its amount increased 23 times from 2009 to 2012. Deeper investigation of all these trends will be conductedin the following analysis of liquidity, solvency and profitability of key state-owned enterprises.

1. Liquidity analysis

It is very often said that the liquidity crisis seriously shakes domestic economy and that many state-owned enterprises are part of the group of major illiquidity generators. The results of the performed analysis, which are presented in Table 4 and shown in Graph 1, indicate that there is a basis for such an opinion. Certain problems in the paying short-term liabilities and managing liquidity of these companies can be identified on a superficial examination of static liquidity ratio values. The current ratio, which compares the current assets and current liabilities, and a quick ratio, which is the quotient of the sum of accounts receivable, short-term financial investments, cash and cash equivalents, on the one hand and short-term liabilities, on the other hand, take values, in all analyzed years, significantly lower-than desirable for these indicators(2 for the current ratio and 1 for the quick ratio).At the end of 2012 the current ratio of the observed state-owned enterprises had a 64% lower value than 2, while the amount of quick ratio was 48% lower than 1.

The amounts of these indicators at the end of 2012 were far below their values recorded by the private sector companies in the real economy whose shares are constituents

Table 2. Cumulative Balance Sheet (in thousands of RSD)

Elements	12/31/2009	12/31/2010	12/31/2011	12/31/2012
Goodwill	30,528,110	33,587,447	33,827,395	36,717,363
Intangible assets, net	37,680,807	36,010,674	34,028,584	31,939,910
Property, plant and equipment, net	1,264,916,226	1,283,991,915	2,203,412,751	2,036,088,720
Long-term investments	77,749,434	15,283,972	38,429,213	41,393,891
Deferred income tax assets	1,145,917	1,389,348	1,625,772	2,956,381
Total noncurrent assets	**1,412,020,494**	**1,370,263,356**	**2,311,323,715**	**2,149,096,265**
Merchandise	10,356,571	11,641,520	8,517,577	8,454,100
Materials	32,660,625	36,500,501	38,278,305	36,020,444
Work-in-process	1,224,442	1,467,690	1,151,538	942,481
Finished goods	2,451,411	5,611,955	4,940,447	4,148,537
Other	4,642,262	4,741,174	5,105,030	5,380,623
Inventories	*51,335,311*	*59,962,840*	*57,992,897*	*54,946,185*
Accounts receivable, net	65,278,954	79,045,542	80,241,773	84,031,790
Other receivables, net	27,556,204	32,487,187	37,567,190	46,591,147
Short-term investments	24,384,506	35,134,218	38,034,668	23,854,611
Cash and equivalents	32,422,910	27,692,177	30,051,377	35,427,704
Other current assets	8,090,789	10,700,177	9,527,153	18,065,814
Total current assets	**209,068,674**	**245,022,141**	**253,415,058**	**262,917,251**
TOTAL ASSETS	**1,621,089,168**	**1,615,285,497**	**2,564,738,773**	**2,412,013,516**
Losses above owners' equity	**-**	**245,283**	**3,509,711**	**11,110,380**
Share capital	109,956,902	109,956,902	364,107,810	410,091,919
Treasury stock	-	-	-	(16,502,510)
State capital	885,733,370	844,742,626	596,613,204	596,414,991
Other paid-in capital	8,636,406	6,991,998	11,279,384	7,747,026
Reserves	298,851,306	300,837,392	1,129,245,658	928,434,349
Retained earnings (accumulated losses)	(268,917,016)	(294,678,741)	(249,996,131)	(336,818,289)
Accumulated other comprehensive income	(163,202)	(167,712)	(790,020)	(829,963)
Equity attributable to non-controlling interests	18,090,166	19,619,923	19,052,318	19,958,648
Owner's equity	**1,052,187,932**	**987,302,388**	**1,869,512,223**	**1,608,496,171**
Provisions	18,205,609	18,665,121	20,806,777	23,832,613
Long-term debt	225,115,514	269,115,145	226,695,743	302,699,734
Other noncurrent liabilities	17,006,520	14,339,386	10,839,974	11,684,912
Deferred income tax liabilities	30,317,489	29,591,499	94,019,709	109,949,611
Total noncurrent liabilities	**290,645,132**	**331,711,151**	**352,362,203**	**448,166,870**
Short-term debt	101,641,961	110,181,610	134,392,485	115,873,048
Accounts payable	69,037,055	61,177,107	73,665,482	96,695,624
Other current liabilities	107,577,088	125,158,524	138,316,091	153,892,183
Total current liabilities	**278,256,104**	**296,517,241**	**346,374,058**	**366,460,855**
OWNERS' EQUITY AND LIABILITIES	**1,621,089,168**	**1,615,530,780**	**2,568,248,484**	**2,423,123,896**

Source: The Serbian Business Registers Agency

Current ratio observed in a group of state-owned enterprises ranged from 0.02 (PuteviSrbije) to 2.98 (PTT Srbija). Besides PTT Srbija, the level over 2for this ratio was also achieved by Elektromreza Srbije (2.20). The values of the current ratio greater than its cumulative value (0.72), calculated on the basis of cumulative balance sheet, were also recorded by Elektroprivreda Srbije (0.94), Srbijagas (0.82) and Telekom Srbija (0.80). Similar to the aforementioned, the levels of quick ratio above its preferred value were achieved by PTT Srbija (2.73) and Elektromreza Srbije (1.67).The amounts of this ratio greater than its cumulative value also generated Elektroprivreda Srbije (0.72), Telekom Srbija (0.58) and Srbijagas (0.56). The lowest value of quick ratio at the end of 2012 was recorded by Putevi Srbija (0.02).

of the Belgrade Stock Exchange index BELEX 15 (amount of current ratio was 56% lower and the amount of quick ratio 44% lower).[5] The similar conclusions yield the values of cash ratio signalling that at the end of 2012 only 10% of the observed short-term liabilities of state-owned enterprises were covered by cash and cash equivalents, as the most liquid assets. This was again below the coverage that was recorded by the private sector companies, constituents of the BELEX15 index basket. Finally, the defensive interval ratio shows that

5 Private sector companies from the BELEX 15 basket included in this analysis are: Naftna industrija Srbije a.d. Novi Sad, Imlek a.d. Beograd, Energoprojekt holding a.d. Beograd, Sojaprotein a.d. Becej, Galenika Fitofarmacija a.d. Zemun, Metalac a.d. Gornji Milanovac, Jedinstvo a.d. Sevojno, Alfa plam a.d. Vranje, Gosa montaza a.d. Velika Plana, Veterinarski zavod a.d. Subotica and Tigar a.d. Pirot.

Table 3. Cumulative Income Statement (in thousands of RSD)

Elements	2009	2010	2011	2012
Sales, net	371,145,782	411,120,675	437,888,811	437,260,441
Own work capitalized	6,501,203	7,563,457	8,840,832	7,689,484
Changes in inventory of work-in-process and finished goods	(1,039,000)	1,780,122	(838,817)	(410,493)
Other operating revenues	56,694,725	58,850,265	66,506,508	58,276,398
Operating revenues	**433,302,710**	**479,314,519**	**512,397,334**	**502,815,830**
Cost of merchandise sold	45,472,759	67,115,934	74,101,089	73,653,099
Material costs	55,144,161	68,354,303	79,213,189	84,847,607
Labor costs	99,083,406	103,108,984	113,423,180	119,748,904
Other operating expenses	118,999,917	122,456,909	125,635,031	134,848,576
EBITDA	**114,602,467**	**118,278,389**	**120,024,845**	**89,717,644**
Depreciation and amortization	76,783,683	76,677,750	96,156,787	92,195,795
EBIT (Operating earnings)	**37,818,784**	**41,600,639**	**23,868,058**	**(2,478,151)**
Financial revenues	24,343,182	30,268,468	32,753,023	30,255,563
Interest expenses	14,512,103	15,018,043	15,520,227	21,502,583
Other financial expenses	28,375,284	45,171,471	13,222,997	35,365,873
Other revenues	27,619,738	22,651,624	90,706,256	24,600,755
Other expenses	47,473,445	43,898,322	68,112,749	90,547,638
Earnings from continuing operations	**(579,128)**	**(9,567,105)**	**50,471,364**	**(95,037,927)**
Earnings from discontinued operations	(136,260)	(260,660)	(573,982)	(2,258,592)
Earnings before provision for income taxes	**(715,388)**	**(9,827,765)**	**49,897,382**	**(97,296,519)**
Provision for income taxes	947,404	1,206,042	4,713,436	(29,408,094)
Earnings before non-controlling interests	**(1,662,792)**	**(11,033,807)**	**45,183,946**	**(67,888,425)**
Non-controlling interests	1,336,158	1,839,366	1,367,260	1,575,325
Net earnings	**(2,998,950)**	**(12,873,173)**	**43,816,686**	**(69,463,750)**
Foreign currency gains[1]	5,159,168	6,449,334	11,581,226	6,928,822
Foreign currency losses[2]	23,174,252	42,463,692	9,916,381	31,431,726
Net currency gains	**(18,015,084)**	**(36,014,358)**	**1,664,845**	**(24,502,904)**

[1] Element of item: Financial revenues
[2] Element of item: Other financial expenses

Source: The Serbian Business Registers Agency

state-owned enterprises were able to pay cash operating expenses with the existing monetary assets (quickly convertible into cash) at the end of 2012, for about half a year. We have to notice that the values of all static liquidity ratios for analyzed state-owned enterprises were fairly stable in the observed four-year period, which tells us that there were no signs of improvement in their already disturbed liquidity position from the end of 2009 until the end of 2012.

Similar results were obtained from the cash flow analysis. The fact that the cash flow from operating activities (CFO), which essentially determines the liquidity of companies, was positive in all of the observed years and recorded a growing trend, should be interpreted with reserve for at least two reasons. First, although the CFO was positive, some ratios tell us that it was not large enough. Thus, the values of coverage ratio of short-term liabilities with CFO, which compares CFO and average short-term liabilities during the year, were twice as lover than the desirable valueof this indicator from the standpoint of preserving the liquidity of 0.40. The ratio of CFO to average short-term financial liabilities shows that in 2012 state-owned enterprises on average needed two years to repay short-term loans and other short-term interest-bearing debt with the excess cash generated by operating activities.

The highest value of CFO to average short-term liabilities ratio in 2012 was achieved by Telekom Srbija (0.62) and the lowest by Galenika (-0.43). Besides Telekom Srbija, the level of this indicator above the desired value of 0.40 was generated by Elektromreza Srbije (0.42), while the ratio values above cumulative value of 0.17 were also recorded by PTT Srbija (0.35) and Elektroprivreda Srbije (0.25).

Also, the relationship between the CFO and the average amount of total capital of public sector companies and other state-owned enterprises in 2012 was much worse than that achieved by private sector firms, members of the BELEX 15 index basket, which, among other things, indicates an inefficient use of this capital in the public sector. Finally, except in 2011 the CFO was not sufficient to cover capital expenditures. This has forced the state-owned enterprises to further increase their debt and thus expose themselves to both long-term and short-term financial risks, which will be thoroughly discussed later in the analysis of solvency.

Another reason for a caution in the interpretation of the growing trend of CFO lies in the fact that this growth was not the result of increasing business profitability or faster collection of receivables in the analyzed companies. In fact, it emerged as a consequence of the significant slowdown in payments of accounts payable and

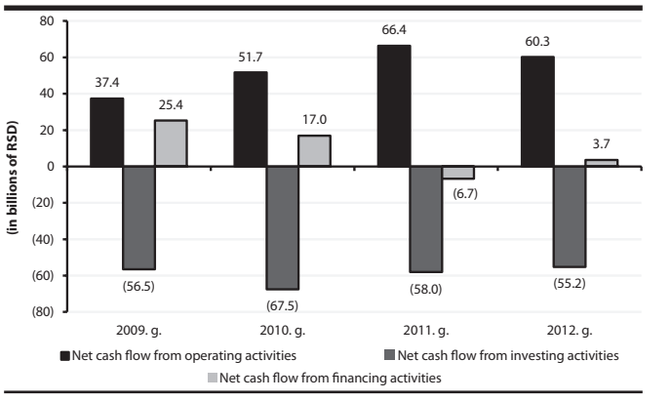
Table 4. Liquidity ratios of theobserved state-owned companies

Ratios	State-owned companies				BELEX 15[1]
	2009	2010	2011	2012	2012
Static liquidity analysis					
Current ratio	0.75	0.83	0.73	0.72	1.63
Quick ratio	0.54	0.59	0.54	0.52	0.93
Cash ratio	0.12	0.09	0.09	0.10	0.17
Defensive interval (days)	171	177	173	168	146
Cash flow analysis					
CFO[2] / Average current liabilities	n/a	0.18	0.21	0.17	0.46
CFO[2] / Average short-term debt	n/a	0.49	0.54	0.48	1.85
CFO[2] / Average value of total capital[3]	n/a	3.77%	3.69%	2.84%	19.15%
CFO[2] / Capital expenditures	0.65	0.75	1.08	0.85	0.86
Analysis of operating cycle and cash conversion cycle					
Days of inventory on hand	n/a	43	42	41	64
Days of sales outstanding	n/a	56	58	60	57
Operating cycle (days)	**n/a**	**99**	**100**	**101**	**122**
Days of payable outstanding	n/a	169	162	199	82
Cash conversion cycle (days)	**n/a**	**(70)**	**(62)**	**(98)**	**40**

[1] BELEX 15 excluding financial institutions and Aerodrom Nikola Tesla which is majority owned by the state
[2] Net cash flow from operating activities
[3] Total capital is the sum of owners' equity and debt (long-term and short-term debt)

other current liabilities, which cannot be characterized as positive trend, since this tendency is not financially sustainable in the long term and at the same time creates liquidity problems in the economy. This is clearly indicated by the cumulative financial statements shown in Table 2 and Table 3, as well as by the analysis of the operating cycle and cash conversion cycle in Table 4. The operating cycle of the observed state-owned companies, which represents the average time that elapses from the moment of purchase of materials from suppliers, through the production and sales of products, to the moment of collection of receivables from the buyers, was fairly stable in the period from 2010 to 2012 and slightly fluctuated around the level of 100 days. On the other hand, in the same period, the number of days of accounts payable was significantly longer and increased from 169 days in 2010 to 199 days in 2012. As a consequence a negative cash conversion cycle emerged indicating that the analyzed public sector companies and other state-owned enterprises did not rely on short-term debt in financing the operating cycle. In fact, the entire burden of financing the operating cycle was shifted onto suppliers. They were paid irregularly and because of that they were not able to regularly pay liabilities to their own suppliers, thereby laying the foundations for the chain expansion of the liquidity crisis in the economy.[6]

Graph 1. Cash flows of the observed state-owned companies



Souce: Author. Based on the data from Business Registers Agency

2. Solvency analysis

Liquidity crisis can be an introduction to a solvency crisis, especially in the case in which the liquidity problems are present for a long period of time.[7]Solvency indicators are set out in Table 5. We can already notice some signs signalling this crisis as well, whereby under no circumstances we should allow ourselves to be deceived by a superficial overview of the structure of the total capital and funding sources of the analyzed state-owned companies. Namely, although all debt ratios in Table 5 (total liabilities / equity, debt / equity, debt / total capital, debt / total assets and financial leverage[8]) clearly show that owner's equity dominates the total capital and funding sources of the observed companies,

6 See more: Malinic, D. "Financial power (weakness) of public sector companies", Proceedings: Accounting regulatory environment: stimulus or restriction for economic growth, 44th Symposium of Accounting and Corporate Finance in modern business environment, Zlatibor, 2013, p. 131-154.

7 Same.

8 Financial leverage ratio is the ratio of average assets to average owners' equity.

this information should be considered with caution in the evaluation of long-term financial stability of these company for at least two reasons. First, most of the assets of these companies are fixed assets (see the cumulative balance sheet in Table 2).Their share in total assets was as much as 94.74% at the end of 2012. It is well known that fixed assets present the most risky part of the company's assets, and hence, from the standpoint of preserving solvency, it is desirable that they are completely funded by the capital of highest quality, which is the owners' equity.[9]Despite the high values of equity of the analyzed state-owned companies, this requirement was not met, which is indicated by the values of fixed assets coverage ratio that were lower than 1, and negative values of own net working capital (ONWC) in all observed years (see indicators ONWC/ current assets and ONWC / inventories).[10]The solvency position of these companies was especially jeopardised by the fact that a portion of their fixed assets was financed by short-term liabilities indicating the maturity mismatch of assets and funding sources. This conclusion is derived from the negative net working capital values (NWC)[11] in the period from 2009 to 2012 (see the indicators NWC / current assets and NWC / inventories).

In the group of observed state-owned enterprises the highest value of NWC to inventory ratio, at the end of 2012, was recorded by PTT Srbija (13.14). This figure shows that the company had positive NWC, which was about 13 times higher than the value of the inventory, indicating the existence of a good matching between the asset structure and the structure of funding sources, and consequently the good preconditions for maintaining a liquidity and solvency. High value of NWC to inventory ratio at the end of 2012 also generated Elektromreza Srbije (9.79). In other observed state-owned enterprises the value of this indicator was negative.The amounts above the cumulative value of the ratio (-1.88) also recorded Elektroprivreda Srbije (-0.27), Srbijagas (-1.11), Galenika (-1.11), Srbijasume (-1.70) and Telekom Srbija (-1.76). The lowest value of NWC to inventory ratio at the end of 2012 was achieved by Putevi Srbije (-184.38).

Contrary to the previously stated, it is evident that private sector companies, constituents of the BELEX 15 index basket, funded total fixed assets, total inventory and part of the receivables by the long-term financing sources at the end of 2012. The second reason why we should not give special importance to the high values of equity in the solvency assessment of the observed state-owned companies is the significant level of revaluation reserves that increased the value of equity, although there was no actual cash inflow of owners' capital into these companies in the previous period. Namely, in 2011, Elektroprivreda Srbije, Putevi Srbije and Zeleznice Srbije conducted a comprehensive revaluation of their property, plant and equipment and as a result of that noticeably raised the value of revaluation reserves and equity in their books. This led to a significant increase in the share of equity in the financing sources of state-owned companies included in the analysis, and consequently to a substantial reduction of the value of all debt ratios. Having all said in mind, it is clear why the decline in the values of debt ratios of the analyzed companies in the four year period, from the end of 2009 to the end of 2012, shouldn't be interpreted as a sign of their indebtedness reduction. In fact, during this period indebtedness increased, since the financial and total liabilities of these companies increased, which is clearly indicated by the figures in the cumulative balance sheet in Table 2.

What caused aforementioned increase in financial and total liabilities of the observed companies? The contours of the answer to this question have already been drawn in the previously performed liquidity analysis. It showed that increase in financial liabilities was not caused by the need to finance the operating cycle. In fact, this need has caused the growth of operating liabilities, specifically accounts payable. Debt was primarily used to finance capital expenditures. We have already indicated that in the previous period the CFO was not sufficient to cover the capital expenditures. If we also consider the fact that in this period the paid-in capital was not significantly changed, which can be clearly seen from the cumulative balance sheet in Table 2, we quickly come to the conclusion that the missing funds to finance the investments into intangible assets and property, plant and equipment were provided from the debt sources.[12] Understandably, this has increased the exposure of state-owned enterprises to both the short-term and long-term financial risks.

Additional reasons for the concern regarding the ability of the observed companies to smoothly pay their long-term obligations, without the help of state, are found

9 The financial accounting theory states that total assets of a company are convertible into cash.Some assets need lesstime for this conversion, and some need more time. Of course, as the time required for the cash conversion of assets increases, the uncertainty whether such a conversion will fullyoccur also increases, and assets are seen as riskier. Since fixed assets need more than one year for conversion into cash, they are considered riskier than the current assets whose period of cash conversion lasts less than one year. Hence, it is desirable to finance the fixed assets by the corporate capital of highest quality, which is the equity, due to the fact that it matures at the time of company liquidation.
10 Fixed assets coverage ratio is the ratio of equity to fixed assets, while own net working capital represents the difference between equity and fixed assets.
11 Net working capital is the difference between long term funding sources (sum of equity and long term liabilities) and fixed assets.
12 Paid-in capital consists of share capital, state capital and other paid-in capital in the cumulative balance sheet in Table 2.

Table 5. Solvency ratios of the observed state-owned companies

Ratios	State-owned companies				BELEX 15[1]
	2009	2010	2011	2012	2012
Equity / Noncurrent assets	0.75	0.72	0.81	0.74	0.82
ONWC[2] / Current assets	(1.72)	(1.56)	(1.76)	(2.10)	(0.24)
ONWC[2] / Invetories	(7.01)	(6.39)	(7.68)	(10.04)	(0.66)
NWC[3] / Current assets	(0.33)	(0.21)	(0.37)	(0.39)	0.39
NWC[3] / Invetories	(1.35)	(0.86)	(1.60)	(1.88)	1.07
Liabilities / Owners' equity	0.54	0.64	0.37	0.51	1.14
Debt[4] / Owners' equity	0.31	0.38	0.19	0.26	0.37
Debt[4] / Total capital[5]	0.24	0.28	0.16	0.21	0.27
Debt[4] / Assets	0.20	0.23	0.14	0.17	0.17
Financial leverage	n/a	1.59	1.47	1.44	2.23
Interest coverage	2.61	2.77	1.54	(0.12)	19.54
CFO[6] / Average liabilities	n/a	0.09	0.10	0.08	0.22
CFO[6] / Average debt[4]	n/a	0.15	0.18	0.15	0.69
Average debt[4] / CFO[6] (years)	n/a	6.83	5.58	6.47	1.44
Debt[4] / EBITDA (years)	2.85	3.21	3.01	4.67	0.86

[1] BELEX 15 excluding financial institutions and Aerodrom Nikola Tesla which is majority owned by the state
[2] Own net working capital
[3] Net working capital
[4] Debt is the sum of long-term and short-term debt
[5] Total capital is the sum of owners' equity and debt (long-term and short-term debt)
[6] Net cash flow from operating activities

in low values of CFO to average liabilities ratio in the previous period. In 2012, the value of this indicator was only 0.08, which was significantly lower than its desired value from the standpoint of preserving the long-term financial stability of the company in the amount of 0.20 and also significantly lower than its value for private sector companies, members of the BELEX 15 index basket, of 0.22. We should also add, not so encouraging, information that the state-owned enterprises in 2012 needed about 6.5 years to pay all their debts from internally generated cash, as indicated by CFO to average financial liabilities ratio and its reciprocal value. The values of these indicators for private sector companies, constituents of the BELEX 15 index basket, in 2012 were more favourable. Finally, at the end of 2012 debt of public sector companies and other state-owned enterprises was 4.67 times higher than the EBITDA, an approximation of the CFO, which was above the desirable range of values for this indictor (from 0 to 4).[13]

Previous remarks on jeopardised solvency position of state-owned companies are reinforced by low values of interest coverage ratio and declining profitability of these companies in the observed four-year period.[14]Interest coverage ratio, expressed as a ratio of earnings before interest and taxes (EBIT) to interest expenses, recorded significantly lower values than those desirable, which are in the range between 5 and 7, during the covered period. In 2012, the value of this ratio wasnegative,becausethe analysed state-owned companies generated cumulative operating loss in the amount of almost 2.5 billion RSD.

In 2012, in the group of analyzed state-owned companies interest coverage ratio ranged from -8.46 (JAT Airways) to 5.90 (PTT Srbija). Besides PTT Srbija, an acceptable value of this ratio was achieved also by Elektromreza Srbije (5.12). Values of interest coverage ratio greater than its cumulative value (-0.12) were recorded also by Srbijasume (0.62) and Putevi Srbije (0.28).

At the same time, operating earnings of private sector companies, members of the BELEX 15 index basket,were 19.54 times higher than their interest expenses. Reductionof the interest coverage ratio in the period from 2009 to 2012was the result of two very unfavourable trendsregarding a long-term financial stability of the observed companies: the increase in theinterest expensesas a consequence of growing debts of these companies and the decline in their profitability. Acrisis of profitabilityofstate-owned enterprises will bediscussed in more detailin the following section.

13 Acceptable values of this indicator were recorded by Srbijasume (0.61), Telekom Srbija (1.63), Elektroprivreda Srbije (2.34), PTT Srbija (2.51) and Elektomreze Srbije (3.12).
14 According to modern concepts of solvency, profitability is its primary determinant.

3. Profitability analysis

Profitability is not the only measure of a success of public sector companies and their managers. However, it is also known that the accumulation of losses over an extended period is financially unsustainable and leads to huge distortions of the total capital structure, which seriously impedes the ability of companies to sustain their liquidity and solvency. Bearing in mind the size and importance of the state-owned companies and their business connections with other entities in the economy, it is clear what implications such a financially irresponsible way of doing business has for the rest of the economy.

Profitability indicators of the analysed state-owned companies are presented in Table 6. Their values signal several alarming occurrences and trends. First, the EBITDA margin, as the ratio of EBITDA to operating revenues,[15] had a downward trend during the observed four-year period, despite the growth of the operating revenues. This indicates that the costs of merchandise sold, material costs, labour costs and other operating expenses in total grew faster than operating revenues during this period. We can see that the EBITDA in 2012 was insufficient to cover the high costs of depreciation and amortization, whose level was dictated by the significant tangible and intangible fixed assets of state-owned companies. As a result negative operating earnings (EBIT) margin was recorded in this year. Our judgment that the EBITDA margin of the observed companies in 2012 was unsatisfactory is also supported by the fact that it was considerably lower than the EBITDA margin of private sector companies (members of the BELEX 15 index basket), although the depreciation and amortization costs of these private entities were significantly lower in the previous period. What are the causes of unsatisfactory level of the EBITDA margin? Inadequate pricing policy of state-owned companies that has elements of social policy is certainly one of them. We must add the problem of insufficient cost control. Costs must be carefully managed. This primarily refers to the individually largest components of operating expenses, as well as to the components that had the fastest growth in the previous period, because within them exists the greatest potential for savings. These are the labour costs, material costs and costs of merchandise sold.

The decline in the EBIT margin caused by the drop in the EBITDA margin and growth of depreciation and amortization costs in 2011, due to the revaluation of property, plant and equipment in somestate-owned companies, is also alarming. Negative value of EBIT margin in 2012 fully reflects the crisis of operating result with which some of the observed companies were faced. Mitigating factors were high quality of operating earnings in the period between 2009 and 2012, as well as the fact that in 2012, despite the operating loss, a net cash inflow from operating activities was recorded, which is indicated by a negative value of quality of (operating) earnings (CFO /EBIT). However, as we already mentioned, this relationship is not financially sustainable in the long term.

The downward trend of net earnings margin is also disturbing and it completes the picture of declining revenue profitability of the analyzed state-owned companies.[16]It is noticeable that the net earnings margin was positive only in 2011 thanks to the significant foreign currency gains and other revenues, which were dominated by the transitory items, such as revenues from valuation adjustments of property, plant and equipment of Elektroprivreda Srbije and revenues from reduction of liabilities of Zeleznica Srbije. In other years massive foreign currency losses and even higher other expenses (much greater than the other revenues) were recorded, which is clearly indicated by the figures in the cumulative income statement in Table 3. As a result negative net earnings margin was generated. The structure of other expenses confirmed again the fact that public sector companies served as a convenient instrument to relevant political structures for pursuing the social policy goals in the previous period. Thus within these expenses a significant part were write-offs of accounts receivable, wages paid to employees in public sector companies on the territory of Kosovo and Metohija and expenses of sponsorships and donations.

A particularly alarming signal, in addition to all aforementioned signals, is the decline in the efficiency of the asset management in the analyzed state-owned companies. This tendency, combined with a decrease in a revenue profitability, contributed to a considerable lowering of the pre-tax return on total capital, after-tax return on assets and after-tax return on equity (attributable to owners of the parent company) in the previous period. All three rates of return ended the year 2012 with negative values. Deeper analysis shows that the deterioration of the efficiency of asset management, indicated by the downtrend of asset turnover ratio, was the result of a decrease in turnover of property, plant and equipment (PPE), as well as a decrease in working capital turnover. The reduction of the level of PPE turnover in 2011 compared to 2010 was partly caused by

15 More precisely, we refer to the amount of operating revenues excluding the changes in inventory of work-in-process and finished goods.

16 The net earnings margin reflects the profitability of revenues solely from the perspective of the owners of the parent company and is calculated by dividing net earnings and operating revenues excluding changes in inventory of work-in-process and finished goods.

Table 6. Profitability ratios of the observed state-owned companies

Ratios		State-owned companies				BELEX 15[1]
		2009	2010	2011	2012	2012
EBITDA margin		26.39%	24.77%	23.39%	17.83%	24.70%
EBIT margin	(Operating earnings margin)	8.71%	8.71%	4.65%	-0.49%	21.73%
Net cash flow from operating activities / EBIT		0.99	1.24	2.78	(24.31)	0.61
Earnings attributable to equity and debt holders margin		7.38%	1.22%	11.54%	-10.51%	16.41%
Net earnings margin		-0.69%	-2.70%	8.54%	-13.80%	15.25%
$ROTC_{pre\text{-}tax}$	(Pre-tax return on total capital[2])	n/a	3.03%	1.33%	-0.12%	31.62%
$ROA_{after\text{-}tax}$	(After-tax return on assets)	n/a	0.36%	2.83%	-2.13%	14.81%
$ROE1_{after\text{-}tax}$	(After-tax return on equity attributable to owners of parent)	n/a	-1.29%	3.11%	-4.06%	32.07%
DU PONT analysis	Net earnings margin	n/a	-2.70%	8.54%	-13.80%	15.25%
	Asset turnover	n/a	0.30	0.25	0.20	0.90
	Property, plant and equipment turnover	n/a	0.37	0.29	0.24	1.80
	Working capital turnover	n/a	2.10	2.06	1.95	2.09
	Financial leverage	n/a	1.59	1.47	1.44	2.23
	Average equity / Average equity attributable to owners of parent	n/a	1.02	1.01	1.01	1.05

[1] BELEX 15 excluding financial institutions and Aerodrom Nikola Tesla which is majority owned by the state
[2] Total capital is the sum of owners' equity and debt (long-term and short-term debt)

the performed revaluations of PPE, which were already discussed in the previous paragraphs. This fact has to be taken into account as a mitigating factor. However, it does not change our conclusion that the efficiency of employing these assets in state-owned companies was extremely low in the previous period, as evidenced by four and a half times lower value of PPE turnover in 2012 for state-owned companies than for private sector companies, constituents of the BELEX 15 index basket.[17]Decline in the working capital turnover ratio, on the other hand, was primarily caused by the decrease in the tempo of collection of accounts receivables, which is implied by a gradual increase in the number of days of sales outstanding in Table 4, in the liquidity analysis. All of this clearly indicates the need for professionalization of the management of public sector companies and other state-owned enterprises and rightly raises the question of appropriateness of criteria used for electing managers and recruiting staff in these firms.

In 2012, the after-tax return on assets of observed state-owned companies recorded values in the range between -22.35% (Srbijagas) and 23.98% (PTT Srbija). In addition to PTT Srbija, positive values of this indicator were generated by Telekom Srbija (6.61%), Elektromreza Srbije (2.73%) and Srbijasume (0.13%). Negative values of this ratio, which were, however, greater than its cumulative value (-2.13%), have been achieved by Elektroprivreda Srbije (-0.92%) and Putevi Srbije (-1.31%).Significant losses of assets, and therefore extremely negative values of this indicator, in addition to Srbijagas, were recorded by JAT Airways (-20.59%), Galenika (-19.41%) and Zeleznice Srbije (-5.32%). On the other hand, the highest value of the after-tax return on equity (attributable to owners of the parent company) in the group of observed state-owned companies was achieved by PTT Srbija (35.08%) and the lowest value by Galenika (-506.95%). In addition to PTT Srbija, positive values of this indicator achieved Telekom Srbija (8.28%), Elektromreza Srbije (3.16%) and Srbijasume (0.09%).Negative values of this rate generated Elektroprivreda Srbije (-1.31%), Putevi Srbije (-2.32%), Zeleznice Srbije (-8.11%), and especially Galenika, Srbijagas (-229.93%) and JAT Airways (indicator was not defined because of the zero value of the average equity in 2012), which recorded a loss above equity. Distribution of the values of the pre-tax return on total capital in 2012 closely corresponded to the presented distributions of the after-tax return on assets and the after-tax return on equity.

Presented stances are best illustrated using Du Pont analysis of the after-tax return on equity, which undoubtedly implies that the decline in the value of this rate in the previous period was the result of a decrease in net earnings margin, a slowdown in turnover and a slight lowering of financial leverage.[18] Net earnings margin and turnover have been thoroughly examined in the previous paragraphs, so we will take a closer look at the financial leverage now. Mentioned lowering of

17 Stated conclusion remains valid despite the fact that the observed state-owned companies operate in capital-intensive industries. This factnaturally lowers the value of PPE turnover ratio. However, supporting evidence for our judgment provides the value of PPE turnover ratio of Naftna industrija Srbije (NIS) in 2012, which was 6.8 times greater than the value of the same indicatorforthe analyzed state-owned companies and amounted to 1.61. We must note that NIS also operates ina capital intensive industry and until recently it was in state hands.

18 There are different versions of the Du Pont analysis of profitability in the literature. However, the most common one defines the return on equity (ROE) as the product of three components: net earnings margin, asset turnover and financial leverage. This idea forms the basis for the Du Pont analysis presented in Table 6, except in it, the forth component was also taken into account: the ratio of the average equity attributable to all owners and average equity attributable to owners of the parent company. This component was included in the analysis due to a specificity of definition of the after-tax return on equity (attributable to owners of the parent company), according to which this rate is defined as the ratio of net earnings to average equity attributable to owners of the parent company.

Table 7. Financial leverage effect analysis in the observed stare-owned companies

Ratios	State-owned companies				BELEX 15[1]
	2009	2010	2011	2012	2012
$ROTC_{after\text{-}tax}$ (After-tax return on total capital[2])	n/a	0.42%	3.30%	-2.49%	23.87%
- After-tax cost of debt	n/a	4.78%	3.80%	3.85%	5.59%
equals	**n/a**	**-4.35%**	**-0.50%**	**-6.34%**	**18.29%**
x Average debt[3] / Average equity	n/a	0.35	0.26	0.23	0.38
equals	**n/a**	**-1.51%**	**-0.13%**	**-1.43%**	**6.97%**
+ $ROTC_{after\text{-}tax}$ (After-tax return on total capital[2])	n/a	0.42%	3.30%	-2.49%	23.87%
equals	**n/a**	**-1.08%**	**3.17%**	**-3.92%**	**30.84%**
$ROE2_{after\text{-}tax}$ (After-tax return on equity attributable to all owners)	n/a	-1.08%	3.17%	-3.92%	30.84%
Effect of financial leverage	**n/a**	**Negative**	**Negative**	**Negative**	**Positive**

[1] BELEX 15 excluding financial institutions and Aerodrom Nikola Tesla which is majority owned by the state
[2] Total capital is the sum of owners' equity and debt (long-term and short-term debt)
[3] Debt is the sum of long-term and short-term debt

financial leverage ratio for the covered companies, however, should not be interpreted as a sign of decrease in their financial risk exposure, as we already indicated in the solvency analysis. The analysis of the financial leverage effect shown in Table 7 also confirms this finding.

The negative effect of financial leverage, which has been recorded by state-owned companies in 2010, 2011 and 2012, complements our earlier impressions of seriously violated profitability and solvency position of these companies.[19]Rates of return earned on invested capital, obtained from debt sources, were not high enough to cover the costs of that capital in the analyzed period. This conclusion is derived from the difference between the after-tax return on total capital and the after-tax interest expense.[20]Specifically, the after-tax return on total capital was lower than the after-tax interest expense in all observed years (e.g. in 2012: -2.49% < 3.85%), which had a negative impact on the after-tax return on equity (attributable to all owners), lowering the return on equity below the level of the return on total capital (e.g. in 2012: -3.92% <-2.49%).[21]Completely opposite relations between these two rates and the positive effect of financial leverage were recorded in 2012 by private sector companies, members of the BELEX 15 index basket. These companies profitably invested the capital acquired by lending and as a result they managed to raise the profitability of equity above the profitability of total capital (30.84% > 23.87%).

Conclusion

The main conclusions of our analysis are the following. The financial position and performance of the most important public sector firms and other state-owned companies are seriously wounded, and these companies, collectively speaking, are faced with the liquidity crisis, solvency crisis and profitability crisis. Of course, liquidity, solvency and profitability differ from one company to another, but the general assessment is that the overall financial shape of all companies together is weak. Taking into account the aforementioned specific financial position and profitability of individual companies, in the near future, it is necessary to conduct a detailed screening of their operations, so that in each case the appropriate measures to improve performance are determined. However, it is already possible to identify some general measures that would ensure stabilization of the financial position and improvement of profitability of the state-owned companies: the professionalization of management, limitation of the abuse of political influence on the business activities, correction of pricing policy in the cases where this strategy is feasible, tightening control of operating costs (especially labour and material costs), insisting on public procurement, raising the efficiency of collection of receivables, etc. In addition to all of this, it is legitimate to raise one important question: Does the state still needs to be (the only) owner of the companies it currently possess? Many other equally complex questions can be derived from this question. They all require a response from the reconstructed government in the near future.

19 Observed individually, positive effect of financial leverage in 2012 generated only PTT Srbija, Elektromreza Srbije and Telekom Srbija.

20 The after-tax return on total capital is the quotient of the sum of earnings before non-controlling interests and after-tax interest expense, on the one hand, and the average value of the total capital, on the other hand, while the after-tax interest expense is defined as the ratio of after-tax interest expense to average debt. Again, we emphasize that the total capital consists of equity and debt (i.e. short-term and long-term financial obligations).

21 The after-tax return on equity (attributable to all owners) is the quotient of earnings before non-controlling interests and the average equity.

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Highlights 3. Extreme youth unemployment in Serbia and the EU: consequences and possible solutions

Jelena Žarković Rakić

In Serbia, the unemployment rate for young people (aged 15-24) reached 50% two years ago. Since the start of the recession, the deterioration of the circumstances on the labour market for this particular age group has also been noted in EU countries, where one out of five people under the age of 25 is unemployed, the situation being even graver in southern Europe. The graph below shows the European countries in which the situation is particularly worrying.

When economies face difficult periods, such as the current recession, young people are the first to lose their jobs, due to insufficient working experience and skills that are irreplaceable to their employers. So, for an example, in 2008, the youth unemployment rate in EU-27 was twice the unemployment rate for the whole population, as the recession affected the youth more than any other age group. Since early 2009, the gap between the youth unemployment rate and the rate for the whole population has been constantly increasing, reaching the 2,6 ratio by the end of 2012.

Substantial youth unemployment creates significant expenses on both the individual and social level. For the state, this means decreased revenues from income tax, higher budget expenditures for benefits, such as unemployment benefits, but above all, unused labour potential. So, for example, a study[1] in the UK assesses that productivity losses attributed to youth unemployment could be measured in ten million pounds on a daily level.

Studies carried out mostly in developed countries indicate that, on the individual plan, long periods of unemployment have a negative effect on the individual's future income (the so-called "wage scar"). A widely cited study in the UK[2] points out that young people enduring long periods of uneployment at the start of their careers, receive income decreased by 9 - 21% for as long as twenty years. For the USA, Mroz and Savage (2006)[3] find that the effect of decreased income may linger for about ten years. On the other hand, the results of measuring the magnitude of the "scar" in poorer countries vary significantly from case to case. A large-scale study carried out for China, indicates that any effect of unemployment on future income for young people dissapears after merely three years[4]. However, a research conducted for Argentina and Brazil[5] shows that the effect the scar has on young people who have not only been unemployed for a long time, but have worked in the informal economy, lasts up to ten years, and is especially prominent with underqualified individuals.

Apart from being unemployed, a large number of young people is excluded from education and training programmes. It is estimated that there are nearly 8 million

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