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The Cash Flow Concept in Modern Financial Analysis of Internal Sources of Companies' Investment Financing

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ABSTRACT

In recent theories of financial analysis, a financial approach has been adopted which is based on the dynamic (modern) coefficients established from cash flows - cash flow indicators. Some of the areas of their application are capital investments, which largely depend on internal sources of financing and the ability of companies to generate such sources of financing, especially in conditions of crisis and insolvency. In this regard, they have special importance for the Republic of Serbia, whose macroeconomic environment is further damaged by the current global world and energy crisis, insolvency, collapse and shutdown of domestic capacities, and the concentration of capital in the financial sector. In this study, the focus is on researching the difference between investment capacities based on internal sources of financing established on static and dynamic indicators, in order to prove the necessity of applying dynamic coefficients based on cash flow analysis, which are not very common in practice in Serbia. The advantages of using the mentioned parameters based on the cash flow concept as a modern tool in the research question on the example of energy as one of the most important branches of the Serbian economy were examined and proven.

Keywords: cash flow coefficients, dynamic analysis, internal sources, investments, financing.

JEL: G11, G17, G31, G32, M40

INTRODUCTION

Analysis of achieved business results and the efficiency of the use of available resources is a constant task of every business entity. Complex business processes require consideration of their various aspects, with the use of a greater number of methodological solutions. All this presupposes good management and knowledge of modern scientific and professional achievements, among other things in the field of financial analysis.

The current position of Serbian companies is dubious with numerous problems and requires additional efforts for adequate assessment and taking measures for recovery. The process of transition into which Serbia (at the time within Yugoslavia) entered at the turn of the last decade of the previous century proved to be very unsuccessful. The dramatic economic changes were taking place in the circumstances of surrounding wars and under international sanctions. As a result, the economy of Serbia in fact collapsed in

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the process. The industry is now devastated, many industry branches have practically ceased to exist, the equipment and technologies are depreciated and generally old and non-adequate, some external markets have been lost after the collapse of the former SFR Yugoslavia etc. See detailed analysis in [8]. The slow recovery of the economy and enterprises in the last circa fifteen years was interrupted primarily by the impact of the global financial crisis in 2008 and by the current pandemic. After many years, the GDP equals to two thirds of its value at the end of the 1980's, and the perspectives of its growth are not so bright. The actual positioning of Serbian enterprises in both old and new, emerging markets is difficult and slow. The companies do business in unsatisfactory macroeconomic environment, characterized by high degree of illiquidity, generally high inflation rate, a decrease in the level of capacity utilization, in the circumstances of globalization, market deregulation and liberalization with all their negative consequences for the growth and development of the country. In such conditions, the liquid assets of the financial capital have moved from the real to the financial sector, which has led companies to over-indebtedness and to the shutdown of their own capacities. This implies that the companies' capital investment capability depends mostly on internal sources, making irrelevant the consideration of disadvantages and benefits of internal and external financing, for this see e.g. [15]. This became a pressing issue very soon after the privatization of the companies, when the process of concentration of ownership began. This process led rapidly to a decreased number of listed (working) companies and lowered the possibility of accumulating external capitals [2]. Consequently, these circumstances forced companies to carefully evaluate their business and financial results, and find less obvious investment opportunities.

These problems are gaining importance in the conditions of the current global economic crisis, the war in Ukraine, the energy crisis, rapid price growth, inflow of foreign direct investments that practically extinguish local capacities as well as reduce the employment rate and purchasing power and finally internal tensions and conflicts between globalism and sovereignism. In such business conditions, permanent financial analysis is needed based on new concepts and models of financing and investing from our own sources. It should be created by managers, auditors and other stakeholders in order to survive and revitalize the Serbian economy so that we do not end up (if we have not already) in debt slavery. Current macroeconomic policies focus on the development of tertiary activities - techno economy, neglecting the primary and, above all, the secondary sector, which is the generator of economic development. This shift from the old to new economies and their paradigms led to a systemic crisis in which the state would have to resort to an adequate interventionist policy. Rapid growth in prices of energy sources and their alternative sources, shortage of certain types of energy sources both at the national and international level, high inflationary expectations combined with high inflation should be an alarm for the shift towards the development of domestic capacities primarily in primary and secondary activities. Dynamic analysis enables continuous monitoring of indicators based on cash flows, as well as an analysis of structure, sources and trends of inflow and outflow in order to timely take adequate measures, create macroeconomic policies, and thus ensure a reliable business environment for domestic companies without discrimination between public and private. The combination of micro, mezzo and macro levels by applying new concepts, using other economic postulates, could establish a long-awaited system of economic well-being. Therefore, it is necessary to provide conditions for internal cash generation and financing of capital investments as much as possible from internal sources, because "the least-cost form of finance is internal cash flow" [6].

The internal financing is defined as a process where a company uses its profits or assets as a source of capital to fund a new project or investment. Internal financing refers to a business generating funds from activities and assets that already exist in the company, in contrast to external financing, which requires the involvement of a third party. The literature emphasizes many advantages of internal financing, see e.g. [32], which is generally thought to be less expensive for the firm than external financing. There are also many disadvantages of internal financing, especially for large investments. For example, this form of financing implies that the assets, particularly financial assets, cannot be invested into other alternative uses, which limits the company's business possibilities. Of course, the use of internal financing depends on financial performance of the company. In particular, the structure of investment sources normally depends

not only on the company's financial performance but also on many other factors. The current position of Serbian companies is characterized mainly by a shortage of liquid assets. There are also other issues on the macro level, including illiquidity and business losses (real and fictitious, just like gains). Therefore, the knowledge and the use of modern analytical approaches are essential to business improvement. Modern financial analysis is just one of the areas where one kind of those approaches based on the cash flow concept could be applied. In the following section, we outline brief historical remarks on the development of this approach.

CASH FLOW ANALYSIS: THE HISTORICAL REMARKS

In economic theory, particularly in financial analysis, two approaches to measuring financial results have so far been differentiated: the economic approach (static, traditional), which is based on the calculation approach to accounting profit, and the financial approach (dynamic, contemporary), which relies on cash flow in order to avoid the limitations of calculation based on the traditional accounting system. The use of traditional ratios began after the American Civil War in 1865, when US bank loan amounts increased. During this period, current and non-current items had been separated. This period also saw the development of the traditional ratios as short-term credit analysis devices, including ratios of current assets to current liabilities. According to official narrative, the real era of these ratios began in 1919, when Du Pont Company introduced its famous ratio analysis, the "Du Pont Identity" or "ratio triangle" (also known as "DuPont Analysis", "DuPont equation", "DuPont Model" or "DuPont method"), and started using these formula in the 1920's. The Du Pont Identity is a financial analysis tool that uses basic accounting relationships from balance sheet and income statement to illustrate the factors that drive the return on equity of the company. Of course, we cannot discuss these claims here, we can only say that the beginning was in fact in 1912, when DuPont explosives salesman Donaldson Brown invented this formula in an internal efficiency report, as we can read e.g. in [30].

The cash flow analysis is much more recent. It began with the introduction of cash flow statement, which officially happened in 1987. Then the Financial Accounting Standards Board (FASB) adopted the Statement of Financial Accounting Standard (SFAS) 95, which mandated the Statement of Cash Flows (SCF) as a required part of annual financial statements. The SCF was designed primarily to bridge the information gap between the traditional accrual accounting and understanding of the cash flow activities of a company, which is owed to the accrual accounting failing to provide relevant information to assess the amount, timing and uncertainty of future cash flows [38]. Of course, the concept had arisen much earlier. The term "cash flow" started appearing in the literature with increasing frequency during the decade of the 1950's, but had also been present prior to that period, although very seldom. Other similar terms were sometimes used, such as Net cash income, Net cash generation, Cash income, Cash funds generated from operations etc. Although the term is questionable, the concept has a valid factual background, and can be used effectively as one of the major factors in judging the company's ability to meet debt retirement requirements, to maintain regular dividends, to finance replacement and expansion costs, etc. [25]. The research problem that concerns the analysis of cash flows, as a new concept of management and evaluation of liquidity and financial performance, gains importance in the modern business environment when the possibilities for solvent and efficient operations in generally inflationary and insolvent economic environment are at a very unsatisfactory level. Analytical tools for the analysis of the cash flows were suggested in the late 1990's by (foreign) authors.

At the beginning of the 21st century, professional papers were starting to be published on the importance of cash flow statement as a supplement to the existing reports and on possible directions of its analysis, which were not fully systematized, uniformed, nor empirically validated for different purposes. The aim was to draw attention to the differences in possible ways of interpretation of a successful operation, which arise

depending on the application of performance indicators as opposed to the application of the indicators based on cash flow. This viewpoint determined a large number of companies that operated with profit, but went bankrupt due to the inability to settle their obligations over a longer period of time. That is when the role and importance of a cash flow analysis (dynamic analysis) as well as the deficiencies of an analysis based on the information from the balance sheet and income statement (static analysis) started to become obvious.

Cash flows can be defined as the amount of cash that a business entity owns and which ensures its efficiency, financial stability, solvency, liquidity, and image. Financial balance ensures that the entity has the optimal amount of cash flows. Excess cash can lead to the depreciation of the financial resources of the enterprise; on the other hand, its deficit may reduce the performance indicators, worsen the financial situation and, finally, result in bankruptcy [34]. In contrast, the existence of higher cash flows for small firms makes it less likely that they will face financial constraints [15]. Cash flow ratios are generally prepared from cash flow statement as per AS-03. It is helpful for financial users including shareholders, management, accountants, auditors and investors to get the relevant information regarding its financial resources for a certain period. Currently cash flow ratios are used randomly instead of traditional ratios due to their breadth and acceptability. In credit rating and forecasting the failure of an organization, cash flow ratios are very much relevant [12] and are especially surprising because they do not only play a significant role in the credit rating of evaluation, but also forecast the failure of a corporation [11].

The proponents of the ratio indicators based on cash flow [19], [18], [26] suggest that the indicators based on cash flows are more reliable and objective than the traditional ratio relations. According to [38], these ratios can provide a more complete picture of a company's ability to generate sufficient operating cash flow to service its debt and equity obligations and to fund asset acquisitions (in other words, its "ability to pay"). The data from the balance sheet are static since they measure a single point in time, while the income statement contains many arbitrary non-cash allocations. In contrast, a financial analysis based on the cash flow indicators does not have such a drawback [23]. The survey of most popular cash flow indicators can be seen e.g. in [26] and [21]. The survey suggests preference for internal funds over external ones. Development of a cash flow based approach or use of flow concept to determine financing pattern of investments is perhaps the first of its kind attempts. Given the advantage of having a unique solution from the use of cash flow information as opposed to a larger set of accounting information, these authors developed cash flow ratios and expected them to be of immense utility in serving as an alternate measure of assessing and financing decisions related to incremental investments undertaken by corporates [33]. Consequently, an increasing number of investors, creditors and other stakeholders to various business entities have come to appreciate cash flows and as a result, rely more on them instead of the traditional ratios. Therefore, it plays an important role among capital market, share market, investment performance, which ultimately strengthen the role of finance and economics [11].

The cash flow reporting became mandatory in Serbia in the middle of 1990's, although not for all companies (small enterprises were an exception). In general, neither businesses nor scholars used all the possibilities coming out of the cash flow report analysis. One of the first systematic overviews of these possibilities was a dissertation [28]. In the Serbian scientific literature there are still insufficient papers or studies on the analysis of cash flow reporting and the possibilities that it provides. The quantification of the difference (asymmetry of financial information) obtained from a cash flow analysis on one hand, and through the use of the traditional indicators on the other, is not sufficiently discussed either. In this chapter we will carry out a comparative analysis based on static and dynamic indicators, in order to examine an arising contrast in the obtained information, and possible unreliability of the static dimensions. Our analysis in this paper will focus on the evaluation of the investing capability of enterprises. This is to be considered as a continuation of our investigation, which began in our previous papers [9] with an assessment of the importance of the application of dynamic parameters in the analysis of the company solvency.

THE USED METHODOLOGY

The following research includes two variables, each of them corresponding to one approach. Namely, it is essential that the overall objective be deductively broken down into specific goals or tasks. In the following pages, we will compare these two variables in a visual presentation and carry out a variance analysis. We will use this methodology in setting up a hypothesis, while making certain that the general hypothesis is compliant with the overall aim of the research, and that the specific hypotheses, understood as the general hypothesis' projections are in line with the tasks of research.

In accordance with the object and purpose of the research, an empirical research is conducted using the statistical model of variance (dispersion) analysis, which enables us to consider variability between modern (dynamic) and traditional (static) indicators in the survey sample. The sample consisted of large companies that operate in electrical energy production, transmission and distribution; that is to say all the companies working in this Serbian branch, i.e. all the companies operating in this vital sector for the whole country's industry. The analyzed companies are state-owned enterprises and hold a monopoly position. In Serbia, energy production is based primarily on the use of thermal and water sources, and is nowadays one of the country's significant competitive advantages [3]. It belongs to the industrial sector, which is the carrier of technical progress, the driving force of economic growth and a creator of synergy effects in the overall economy [31].

Traditionally, we obtain the static ratio as the quotient of the last two columns in Table 2, i.e.

$$CRCI = \frac{TIS}{TI} \quad (1)$$

where

TIS = total internal sources and

TI = total investments.

A financially strong company should be able to finance its own development. The coefficient of capital investment (1) measures the internal capital available for internal investment and for the payment of the existing debts (ratio of the two last columns in Table 2). When this coefficient exceeds 1, we can say that the company has sufficient funds available to make an investment from its capital.

In contrast, a dynamic ratio is developed on the basis of a different concept. Namely, it is believed that the greater the cash flow, the greater the investment. Theoretically, a company might invest more when its cash flow is high for three reasons: 1) internal funds may be less costly than external funds, 2) managers are able to overspend on internally available funds, and 3) cash flow may simply correlate with investment opportunities. Some studies really show that the current investment is positively correlated with not only the current and the expected cash flows, but also with the past cash flows and investments [14]. However, we must emphasize that this relationship is more complex, and is an object of debate [24].

Based on these considerations we can define the capital expenditure ratio as a quotient of the company's operations cash flow and its capital expenditures. This ratio also measures the capital available for internal reinvestment and for the payment of the existing debt. When the capital expenditure ratio exceeds 1, the company has enough funds to invest its available capital, and can also rely on some spare funds to meet debt requirements. A higher value of this ratio indicates that a company has surplus sources, which can be used to service and repay the debt [26]. Prudent investors use historical prices in forming their demands as well as to illustrate the sensitivity of the value of the technical analysis to changes in the values of exogenous parameters [5].

We obtain the capital expenditure ratio from Table 3 as

$$RCE = \frac{NCFO}{CECI} \quad (2)$$

where

NCFO = net cash flow from operating activities and

CECI = cash expenditure for capital investments

Next, we will examine the differences between two coefficients by using the visual method and the more appropriate statistical method – analysis of variance (for 2008). An analysis of the variance, which is based on an impartial assessment of the variability arising under the influence of controlled factors, reflects an asymmetry of the information gathered by using static on the one hand and dynamic instruments on the other hand. It is proven that the indicators of dynamic analysis based on cash flow are more reliable predictors of the financial position of the company, compared to the static indicators. By using the dynamic indicators, we are able to create a better informative foundation for more adequate planning, analysis and decision making in order to improve financial performance. This has been demonstrated at the reliability level of 90%, i.e. at the level of significance $\alpha = 0.1$ (or any other probability), based on the relations of:

- estimated values of the factorial and residual variances

$$S_A^2 = \frac{\sum_{i=1}^r (M_i - M)^2 n_i}{r - 1}, \quad (3)$$

$$S_R^2 = \frac{\sum_{i=1}^r \sum_{j=1}^{n_i} (X_{ij} - M_i)^2}{n - r}. \quad (4)$$

where

S^2A = factorial variance

S^2R = residual variance

X_{ij} = value of observations j in the sample i

M_i = the arithmetic mean of the sample i

M = common arithmetic mean

r = number of samples (here $r=2$), and

n = sample size (here $n_1=n_2=10$)

- and the test statistics for Fischer-Snedecor (F)

$$F = S^2A/S^2R \quad (5)$$

The degrees of freedom are respectively $v_1=r-1=1$ and $v_2=n_1+n_2-2=18$.

We will examine the hypothesis using the standard two-factor dispersion analysis. The factors are identified as static or dynamic coefficients used in our analysis. We will use one static (1) and one dynamic coefficient (2). Our purpose is not to apply these coefficients for the analysis of investment capability. On the contrary, we will examine possible differences between two approaches, static and dynamic, topic on which research is lacking.

ANALYSIS OF THE INVESTMENT CAPABILITY OF A COMPANY BASED ON STATIC AND DYNAMIC INDICATORS

The term self-financing should be understood in the broadest sense as the process of collecting and placing temporarily or permanently released funds, which are acquired through depreciation and by using the part of income intended for accumulation or allocation for specific purposes. It is believed that self-financing is a very convenient way to finance investment projects because the own resources are available to the investor at any time and they are also the cheapest way to finance investment projects [10]. This is particularly evident in conditions where external funding sources become very expensive and also when the demand for external sources makes a negative impact on the company's image, etc. [4] [7]. The share of self-financing in total investment amount differs greatly, not only by company, and subsequently by country, but also in time. According to Rimer and coauthors [32] more than two thirds of investments in big and middle-sized companies are financed internally. For instance, the Fed data, cited in [4], show that internal financing sources in American non-financial companies make up for about 90% of the total investment amount. As noted above, Serbian companies tend to shut down after they get privatized and this leads to fewer possibilities of external financing. According to official statistical data (Statistical Office of the Republic of Serbia) in Serbia in 2013, the share of internal financing sources in the whole economy was 77.2%, while their share in electricity, gas, steam and air conditioning supply made up for 88.9% of the total investment amount. In year 2020 these shares were somewhat lower: 73.1% and 81.4%. In our sample, which encompasses large companies, the share of internal sources in investment financing was also high in some cases, especially in 2008. See figure 1.

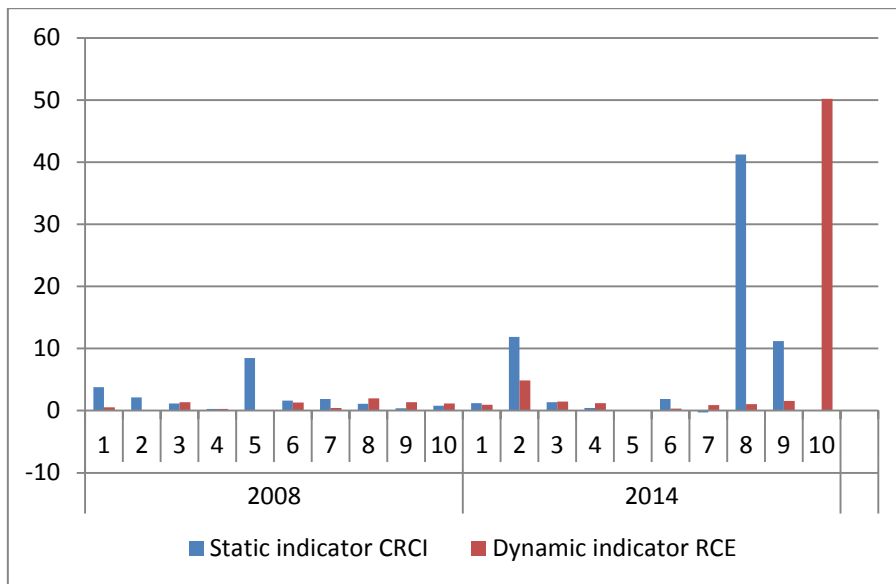


Figure 1. Internal sources of investment financing and total investments

We present firstly the data necessary for our analysis: capital investments and internal sources for the companies that make up our sample. Table 1 presents capital investments in 2008. (The names of companies are given in Table 3.) The total investment in land, buildings, plant and equipment, intangible

assets and investment property amounted to 21,514,050 thousand dinars with real investments making up for 99.34%, while financial investments amounted to 0.66%.

Since the mentioned companies operate in a branch that requires massive investments in tangible assets, it is necessary to examine and assess the level of the company's investment capabilities and their implications for business performance. In order to make adequate conclusions, the mentioned assessment will be made in terms of static (traditional) and dynamic (modern) indicators of the investment capacity of the enterprises.

Table 1. Capital investments in 2008 (000 dinars)

Company	Capital investments							Total
	Land	Construction facilities	Plant, equipment and fixed assets	Assets in preparation	Intangible investments	Investments at own engagement	Investment real estate	
1.	-	62,066	317,627	601,132	331	-	-	981,156
2.	279	21	32,872	614,442	1,637	-	3,892	653,143
3.	15,076	17,857	166,965	5,840,659	24,705	-	-	6,065,262
4.	203,596	305,996	180,025	734,3277		-	-	8,032,894
5.	-	-	-	46,643	6,291	-	-	52,934
6.	-	9,246	364,842	642,890	38,251	944,468		1,999,697
7.	-	24,740	482,981	733,647	28,983	-	-	1,270,351
8.	121	36,411	167,960	1,732,501	9,704	119	-	1,946,816
9.	2,588	-	234,552	204,912	20,491	164,767	-	627,310
10.	782	2,636	116,925	314,550	14,173	-	-	449,066
Total	222,442	436,707	1,913,585	17,212,957	144,566	1,109,354	3,892	21,514,050

Source: The financial statements of companies and PC EPS.

Table 2. Internal sources of investment financing and total investments in 2008 (000 dinars)

Company	Net result	Amortization	Long-term provisions	Total internal sources	Investments
1.	-332,413	3,673,454	368,619	3,709,660	981,156
2.	-656,003	1,935,767	106,718	1,386,482	653,143
3.	-8,695,287	14,936,872	828,345	7,069,930	6,065,262
4.	-2,746,911	4,336,07	678,332	2,267,491	8,032,894
5.	148,453	210,584	88,119	447,156	52,934
6.	-689,640	3,457,747	451,297	3,219,404	1,999,697
7.	-1,272,786	3,381,611	252,402	2,361,227	1,270,351
8.	-2,449,969	3,909,913	643,781	2,103,725	1,946,816
9.	-2,324,223	2,103,477	454,877	234,131	627,310
10.	-1,082,245	1,276,504	150,907	345,166	449,066
Total	-19,480,348	35,319,536	4,023,397	23,144,372	21,514,050

Source: The authors' calculation based on the financial statements of the companies and PC EPS

In table 3 the data from Cash flow statement are presented.

Table 3. Cash flows from operating activities and expenditures for capital investments in 2008 and 2014

Company	Net cash flow from operating activities	Cash expenditure for capital investments	Net cash flow from operating activities	Cash expenditure for capital investments
	2008		2014	
Derdap	516,451	935,365	1,706,998	1,816,030
Drinsko-Limske HE	-19,764	236,313	394,772	81,089
TENT	5,094,412	3,762,498	8,826,791	6,087,311
TE and mines Kostolac	563,737	2,100,117	4,232,422	3,487,695
Panonske TE	-472,147	43,868	-27,145	138,163
Elektrovojvodina	1,585,977	1,228,985	3,326,879	9,415,935
Elektrodistribucija BG	450,824	1,035,290	2,368,396	2,688,738
Elektrosrbija	2,045,499	1,035,699	4,624,188	4,401,480
Jugoistok	631,666	462,543	671,145	427,670
ED Centar	167,152	145,698	1,408,292	28,071
EPS Snabdevanje	-	-	716,957	1,121

Source: Financial statements of the companies

On the basis of these data we calculated needed coefficients (1) and (2). We show the calculated values in Table 4 and Figure 2 (for 2008). The results for 2014 are obviously irregular, and we do not made a statistical analysis. As we can see, the coefficients differ greatly, not only among different companies, but also from each other within the same company.

We then calculate simple coefficients of investment capabilities, from Table 2 (last two columns) and Table 3 (see Table 4 and Figure 2). We obtain the coverage ratio of capital investment from company's own resources (CRCI) by dividing the internal sources of financing with capital investment value. Both CRCI and RCE coefficients are shown in Table 4. As seen in Table 3, in case of a number of companies, the net cash flows from operating activities are insufficient to cover expenditures arising from capital investments. Therefore, the dynamic coefficients in half of the cases are lower than 1 (one). Evidently, this is a bad result for this branch as a whole and a bad result in general.

Table 4. Coefficients of investment capability based on internal sources of funding in 2008 and 2014

Company	Indicators of investment capability			
	Static indicator CRCI	Dynamic indicator RCE	Static indicator CRCI	Dynamic indicator RCE
	2008		2014	
1.	3.781	0.552	1.222	0.940
2.	2.123	-0.084*	11.846	4.868
3.	1.166	1.354	1.371	1.450
4.	0.283	0.268	0.455	1.214
5.	8.447	-10.763*	-1,426.402	-0.196
6.	1.610	1.290	1.883	0.353
7.	1.859	0.435	-0.274	0.881
8.	1.081	1.975	41.248	1.051
9.	0.373	1.366	11.194	1.569
10.	0.769	1.147		50.169
11.	-	-	-9,087.592	639.569

* Negative values were replaced by zero in the statistical analysis.

The data presented in the tables highlight a significant difference in terms of the companies' investment capability based on internal sources of capital investment financing. The static indicators point to a high level of internal financing sources while the dynamic indicators suggest that the internal capability to cover

capital expenditures is not satisfactory. In that regard, it is necessary to examine whether this difference varies significantly statistically depending on the application of different coefficients to calculate the capability for internal investment financing. In other words, we examine the following two hypotheses:

H0: $M1 = M2$, the capability of internal investment financing measured on the basis of both criteria is equal.

H1: $M1 \neq M2$, the capability of internal investment financing measured on the basis of both criteria is different.

For this purpose we will use the dispersion analysis (analysis of variance). For the procedure see some standard book of statistical analysis, for example [22], or more extensive [1].

Statistical analysis for 2008 shows the following. As the critical value $F_{1,18; 0.1} = 3.007$ is lower than the statistic values of the test $F = 3.5829$, respectively $F > F_{v1,v2;\alpha}$, it follows that we do not accept the null hypothesis, which states that the capability of investment financing using internal sources measured on the basis of both criteria is equal with 10% error risk. This indicates that the information obtained by using dynamic indicators is more reliable when assessing the investment capacity of enterprises. The reason for this is the fact that static indicators take into account the calculating categories of the net results, depreciation and long-term provisions. These categories are subject to the influence of accounting policies. Provided that they illustrate a real internal ability to finance investments, there is also the problem of their effective use, i.e. the question remains of whether internally generated funds are directed towards investment activities or the available funds are allocated to other purposes. An example of irrational spending of long-term provisions is shown in Table 5.

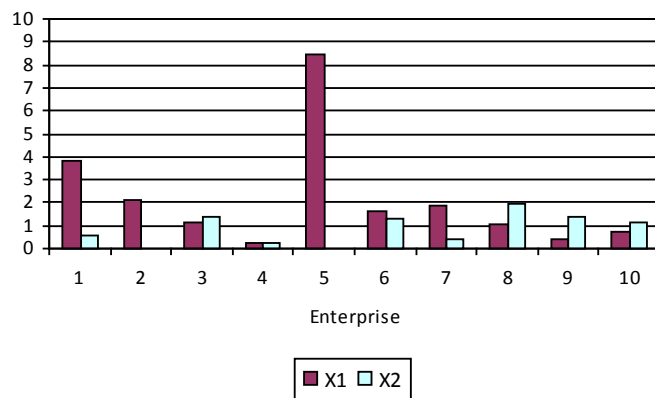


Figure 2. The indicators of internal investment capabilities in sample enterprises in 2008

Of course, the 10% error risk is high, and we need to consider lower values, as well. If we take the 5% error risk, the critical value will be $F=4.41$, and now we can accept the hypothesis. It is obvious that results can significantly differ with varying the degree of risk. This result means also that we need more samples to examine this relationship.

We approach the calculation of the elements necessary for the analysis by using the one-way test with the area of rejection on the right side of the theoretical Snedecor F arrangement. The calculated values of the variance are:

$$S^2A=11.4394$$

$$S^2R=3.1928$$

By putting the first variance (S^2A) and the second variance (S^2R) into ratio, according to (5), we obtain the value of the test statistics: $F=3.5829$. We use the Critical value approach. We adopt the significance level $\alpha = 0.10$. The value of test statistics F is greater than the critical value (3.007). Therefore, we should not accept the null hypothesis (Figure 3).

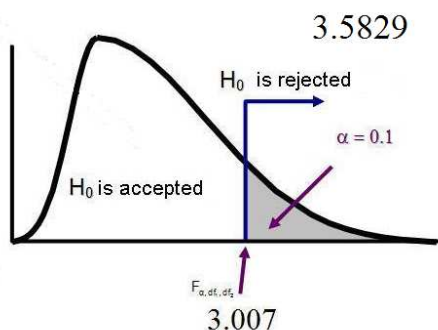


Figure 3. Rejection of the hypothesis with risk of $\alpha=0.1$

The total amount of long-term reserves accounted for 18% of total investments in the observed year, 13.5% of which were employee benefits. Taking into account the fact that the analyzed companies operated with a loss, the issue of a justification for such a high amount spent on employee benefits arises. In this sense, it is also necessary to examine the relationship of expenses on the basis of provisions and the total provisions. The costs of employee benefits make up for 89.5% of long-term provisions for benefits and 66.2% of total long-term provisions, while the expenses on legal disputes make up for 55% of provisions for legal disputes and 14.2% of total long-term provisions.

Table 5. Provision costs of the companies in 2008 and 2014

Company	The costs of benefits	% in total provisions	2008		2014		Legal disputes costs	% in total provisions
			Legal disputes costs	% in total provisions	The costs of benefits	% in total provisions		
1.	180,705	49.02	81,836	22.20	304,108	49.65	307,168	50.15
2.	83,634	78.37	4,386	4.11	138,230	38.47	42,429	11.81
3.	174,884	21.11	255,781	30.88	779,384	61.62	485,486	38.38
4.	598,573	88.24	10,364	1.53	937,404	49.24	865,547	45.46
5.	88,119	100.00	0	0.00	140,241	77.23	41,354	22.77
6.	366,400	81.19	61,127	13.54	664,940	55.28	537,842	44.72
7.	252,402	100.00	0	0.00	440,417	100.00	0	0.00
8.	470,362	73.06	112,900	17.54	797,284	79.92	200,329	20.08
9.	302,332	66.46	48,575	10.68	554,615	74.30	191,799	25.70
10.	147,557	97.78	0	0	259,633	85.61	43,651	14.39
11.	-	-	-	-	-	-	-	-
Total	2,664,968	66.24	574,969	14.29	5,016,256	62.61	2,715,605	33.89

Source: The authors' calculation based on the financial statements of the companies.

The amount and share of long-term provisions allocated to employee benefit expenses are very high. This raises the question of a lack of provisions for restructuring costs, especially considering that “many

facilities have not been repaired for years and 53% of energy plants are older than 30 years; the relevance of the issue is notable and the problem can be overcome through restructuring” [3]. Also, the professional and scientific literature considers that benefits, as a variable part of the salary, are paid to the employee for their work, and that their purpose is to reward outstanding work performance [37] [13].

Benefits are also believed to positively correlate with the amount of realized accounting income within certain implicit or explicit wage limits [20]. In terms of accounting, employees’ education, salary, bonuses, and other forms of financial compensation represent a company’s costs, which are shown in the income statement and are reflected in a reduction in liquid assets on the basis of payments, as recorded in the Statement of Cash Flows [27]. Therefore, the restructuring of a company organization needs to focus on reducing the number of management levels, and consequently the number of general manager positions. This implies that large enterprises must change their personnel policies, remuneration policies and advancement policies [16], as so far, the companies’ capabilities have not increased, but instead, the state has been expected to find solutions [36].

It should be emphasized that the inflow of funds depends on the debt collection policy, i.e. the credit policy of the company (credit standards and credit conditions). In the energy sector of Serbia, in the last few years, restrictive collection of claims has been introduced through the introduction of numerous levies, such as paying excise taxes on electricity, costs that do not depend on electricity consumption, fees for encouraging privileged producers, for increasing energy efficiency (which this branch should do by improving and rational use of funds). Thus, with the increase in prices, accounts grew rapidly at the expense of other legal and natural persons. Namely, other entities have reduced disposable income – liquid assets, which greatly reduces consumption in other industries and they are forced to reduce their business activities and used labor force, which further reduces purchasing and purchasing power. Thus one can remain in a vicious cycle of illiquidity that, in the long run, can lead to the collapse of the economy. So, now there is a problem of fairness and justice, the question is whether the privilege given to large public companies is more important than morality, ethics and business based on applying basic economic laws and paradigms? Therefore, a number of pressing problems could still be stated in order to violate the “law without borders”, greed and megalomania on the principle of “Never Enough” at the expense of the national economy, legal entities and natural persons (except for exceptions). The problem is getting even bigger since it is a branch that is one of the most important in our country and especially now in the present crisis conditions.

CONCLUSION

Although in Serbian companies it is mandatory to make annual cash-flow reports, in reality this was done as a mere fulfillment of Law requirements. A cash flow report analysis is often lacking, and the wide range of possibilities for analysis it could provide remain unused, as well as a potential application of the indicators based on them. According to a brief survey conducted by one of the authors while compiling data for his dissertation [28], there is only a handful of educated experts working in financial field who are familiar with these indicators (they are even familiar mostly with the liquidity indicators only). Additionally, a rather significant number of the surveyed experts do not even consider that the application of these indicators would benefit them in any way.

An adequate education of financial experts and the incorporation of modern financial analysis into the Serbian education system and corporate practice are very important, otherwise business and performance improvement will be impossible. That also implies that improvements in general business environment will be hindered, as well as the benefits for all the participants of the business relationships and processes. Clearly, this not only concerns the owners, i.e. the stockholders, but also other stakeholders and in the last instance, the society as a whole, in whose best interest is to nurture successful businesses, especially if they

are exposed to fierce competition. The support to this cause received from the Serbian economic science so far cannot be assessed in a positive manner.

The above description refers to the general situation, more precisely related to the use of the modern financial analysis, particularly the cash flow analysis. One of its important aspects is the analysis of companies' investment capacities, which is the subject of our paper.

The urgent need for a thorough examination of the quality and importance of companies' internal sources of financing is an outcome of the investigation of the current business conditions in the Republic of Serbia. These conditions are characterized by environmental turbulence, dynamics of change, discontinuity of economic and business activities, unfavorable macroeconomic environment and illiquidity of the economy with far-reaching consequences for the business and market valuation of business entities, as well as a particularly high risk and uncertainty paired with unfavorable external financing conditions. The investment capability of companies when measured by using static (coverage ratio of companies' own sources capital investment CRCI) and dynamic indicators (ratio of capital expenditure based on cash flows RCE) differs. With a great deal of certainty, we can say that this is not a result of sample variability. This difference is systematic, and demonstrates the possibilities of the two approaches in the analysis.

The analysis of two groups of indicators, based on the dispersion analysis, showed that we should not accept the null hypothesis, which states that the capability of investment financing using internal sources measured on the basis of both criteria is equal (with a 10% error risk). Based on the example of the analyzed industry, we can conclude that the approach based on the cash flow coefficients is better, and that in future analyses this approach is to be preferred. Our study does not offer, by any means, a definitive answer to the question "Can the use of one set or group of ratios exclude the use of another?", as Kamal and Quader [23] study did. They gave a positive answer, however we consider this study as one of the contributions to solving the problem.

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