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EFFECTS OF CHANGES IN FOREIGN EXCHANGE RATES ON PERFORMANCE IN SERBIA'S ECONOMY*

Efekti promene kursa na performanse srpske privrede

Abstract

The situation in Serbian economy is quite complex. Business environment is unfavorable, while measures of economic policy do not have good results. Macroeconomic fundamentals, such as inflation, unemployment rate, foreign exchange rate, interest rates, growth rates and so on, do not contribute to stable and safe business conditions. Besides, there are numerous internal weaknesses of companies that emerge from their inability to reach a satisfactory volume of activities, technical and technological backwardness, low competitiveness, unfavorable cost structure, unsatisfactory quality of corporate governance, etc. In such circumstances, we talk more often about losses and illiquidity of Serbian economy than about growth and shareholder returns.

In this paper, we make efforts to shed some light, at least in one segment, on the implications of macroeconomic fundamentals movements and economic policy measures for the performance of companies and the economy. In this respect, we first emphasize the importance of responsibility in the process of running macroeconomic policies and creating a stable business environment. Then we attempt to quantify the effects of RSD exchange rate policy, in terms of financial expenses movements, on the performance and growth of the national economy. Finally, we point to the potential risks of high financial expenses.

Key words: *competitiveness, foreign exchange rate, financial expenses, economy, performance, profitability, leverage, growth*

Sažetak

Situacija u srpskoj privredi je prilično kompleksna. Poslovni ambijent je nestimulativan, dok mere ekonomske politike ne daju dobre rezultate. Makroekonomski fundamenti, kao što su inflacija, stopa nezaposlenosti, devizni kurs, kamatne stope, stope rasta i sl. nisu u funkciji obezbeđenja stabilnih i sigurnih uslova poslovanja. Naravno, i u internoj zoni preduzeća postoje brojne slabosti vezane za nemogućnost dostizanja dovoljno visokog obima aktivnosti, tehničko-tehnološko zaostajanje, nisku konkurentnost, nepovoljnu strukturu troškova, nezadovoljavajući nivo kvaliteta korporativnog upravljanja i sl. U ovakvim okolnostima u srpskoj privredi se češće govori o gubicima i nelikvidnosti, nego o rastu i prinosima za vlasnike.

U ovom radu činimo napore da barem u jednom segmentu osvetlimo implikacije kretanja makroekonomskih fundamenata i mera ekonomske politike na performanse preduzeća i privrede. U tom smislu prvo nastojimo da potenciramo značaj odgovornosti u procesu vođenja makroekonomske politike i stvaranja stabilnog poslovnog ambijenta. Nakon toga, činimo napore da kvantificiramo efekte politike kursa dinara, preko kretanja finansijskih rashoda, na performanse i rast nacionalne ekonomije. Na kraju ukazujemo i na moguće rizike koje visoki finansijski rashodi donose.

Ključne reči: *konkurentnost, devizni kurs, finansijski rashodi, privreda, performanse, profitabilnost, leveridž, rast*

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Introduction

Economic situation in Serbia is extremely deteriorating. A large number of companies are loss makers. More than one-third, or precisely 34.2% of total number of companies reported losses in 2012, while the net income totaled zero in 7.9% companies. Cumulative losses reached the share of 44.8% in total equity, with 41.4 % of companies reporting in their balance sheets loss up to the value of equity, and 27.4 % loss above the value of equity. At the end of 2012, a total of 4,719 companies were faced with bankruptcy [14]. Many companies whose financial statements show that they generate income achieve low rates of return, and it is often the case that return on equity is lower than return on assets. There are a number of reasons that explain this situation: pronounced structural imbalance, adverse transitional heritage, low quality of corporate governance, unfavorable economic environment, technical and technological backwardness, adverse effects of the crisis and inherent decline in the volume of activities, exchange rate policy, high level of indebtedness, uncompetitive pricing, etc.

There is almost a general consensus in academic and professional communities that creating a favorable business environment is the key prerequisite for enabling the efficient functioning of private and state sectors. In this respect, it is very important to ensure price stability, exchange rate stability (this does not necessarily mean opting for a fixed exchange rate), legal certainty, including stability of regulations, systemic risk reduction and capital market development. Of course, it is not difficult to identify the elements that need to be improved in order to create a favorable business environment. Reality confirms that all of the above-mentioned elements are actually the areas in which the satisfactory results have not been achieved. In the last 12 years, consumer price index had a very high average of slightly over 12% per year, RSD exchange rate was increasing at somewhat slower pace of 6% in the same period, regulations, including systemic laws, were often subject to changes, while the capital market was almost nonexistent, especially in terms of activities related to issue of securities.

The relationship between macroeconomic stability and economic performance is indisputable. However,

apart from theoretical debates on the factors determining macroeconomic stability, there is no serious empirical research about the scope and manifestation of the effects that an unfavorable business environment has on companies' performance. This is one of the reasons why it is necessary to direct efforts toward quantifying the effects of foreign exchange rate and currency clauses on financial expenses and performance of companies and the economy as a whole. Therefore, our analysis will be based on data reported in summary financial statements for the overall economy as well as for the ten most important sectors.

Exchange rate, inflation and returns

Exchange rate regime is often seen in the literature as a crucial determinant of behavior in a market economy [2, p. 269]. In this paper, we do not intend to deal with the theoretical considerations regarding exchange rate policy, impact of exchange rate on macroeconomic stability, existing dilemmas over the choice between fixed and floating exchange rate regimes, implications of fixed and floating exchange rates for the disruptions in money supply or real demand. It seems that economic policy makers, which are frequently faced with dilemma whether to opt for fixed and floating exchange rate, perceive this issue as a choice between two extremes. Moreover, an uncritical reliance on the experience of other countries might create serious problems in the functioning of the national economy.

The fact is that both regimes of exchange rate may bring some benefits, but that, on the other hand, both may have some disadvantages as well. Thus, for example, with floating exchange rate the monetary authority reserves the right to keep on running independent monetary policy, but the economy will be vulnerable to exogenous disturbances in demand and innovations in the field of financial transactions which calls for more restrictive exchange rate regime, while opting for fixed exchange rate provides a greater protection from prospective disturbances in domestic and global financial markets, but it cannot neutralize the effects of financial crisis [2, pp. 269-270].

More or less convincing theoretical arguments in favor of certain exchange rate regime and economic policy are almost always given without analyzing the effects of

selected measures on economic performance and the costs of making bad choices. The importance of responsibility has never been seriously considered. Endless debates about exchange rate and other macroeconomic issues that directly, through effects on the performance of the economy, or indirectly, by creating favorable or unfavorable business conditions, encourage or discourage investors and stimulate the growth of the national economy, have left aside the consequences that the national economy may suffer. Although the problems related to this area are manifold, their essence can be summarized as follows: well-conceived macroeconomic measures contribute to the growth of the national economy under normal circumstances, but, if that is not the case, performance might turn out to be dramatically unsatisfactory. Inflation, key policy rate, cost of capital, money supply, budget deficit, indebtedness, growth rate, etc., should not be seen as isolated macroeconomic fundamentals which the analysts use in order to prove the legitimacy of certain views. The key question is how good or bad choices affect the national economy.

Having the above-mentioned facts in mind, in this paper we deal with the consequences of the choices made in the area of macroeconomic policy measures. In this regard, our aspirations are directed exclusively toward analyzing the effects of RSD exchange rate movements on the level of financial expenses and, consequently, on the performances of the main sectors and the economy as a whole. In addition, we will try to identify potential risks associated with these movements.

Of course, exchange rate change is not an independent phenomenon. There is a well-known relationship between inflation, exchange rate, interest rates and returns. Interest rates have very serious implications for the functioning of the economy and its ultimate performance. On the one hand, interest rates will stimulate (lower interest rates) or discourage (higher interest rates) investment activities of companies. Also, dramatic changes in interest rates, i.e. their pronounced volatility will increase credit risk, which will consequently lead to their further rise. On the other hand, higher financial expenses will, to a greater or lesser extent, cause a fall in the companies' operating incomes. This does not necessarily imply that borrowing

has negative consequences, for at least two reasons. First, financial expenses are treated as a deduction in the income statement, which reduces the tax base and, by means of tax savings, lowers the cost of debt. Second, borrowing is acceptable as long as returns on assets are exceeding financial expenses rates, as it then results in higher shareholder returns. Therefore, it is logical that the performance of financial institutions will also depend on interest rates changes.

The situation becomes even more complex if we include in the analysis the changes in foreign exchange rate, which represents the price of one country's currency expressed in another country's currency. It is indisputable that exchange rate policy affects economic trends. Appreciation of the national currency is not favorable to export because it leads to an increase in the prices of exported products, thereby reducing their competitiveness and demand. Weaker domestic currency, by contrast, tends to make imports more expensive, but it is of benefit to domestic producers who become more competitive. However, foreign exchange rate fluctuations will also impact on interest rates and total financial expenses of companies. Namely, in the conditions of foreign exchange rate fluctuations and especially when it shows a greater volatility, exchange rate risk increases so that financial institutions and holders of debt securities seek to protect themselves from such a risk. These efforts lead to the introduction of currency clauses, which increase total financial expenses at the time when the national currency depreciates. Also, borrowing in a foreign currency implies the emergence of mostly negative exchange differences that further increase financial expenses each time the value of RSD declines. Of course, looked from the perspective of companies' performance, the outcomes are falling net incomes and greater exposure to the risks of liquidity, solvency and bankruptcy.

In addition to the aforementioned, it should be pointed out that it is not possible to completely grasp the relationships between interest rates, foreign exchange rate, securities prices and rates of return in the economy if the analysis does not take into account inflation. Inflation, as a general rise in prices, undoubtedly affects interest rates movements. It is evident that higher inflation causes

an increase in interest rates simply because creditors or buyers of corporate bonds tend to achieve real returns. This suggests that, apart from the nominal interest rate, we should also consider the real interest rate, which represents the difference between the nominal interest rate and the rate of inflation (changes in price levels). Therefore, when real interest rates are lower, companies are more inclined to continue with borrowing, but at the same time capital providers are less motivated to lend [11, p. 58]. Also, it is also well-known fact that when the current inflation is rising, interest rates will rise due to the effects of the current inflation as well as the expected inflation.

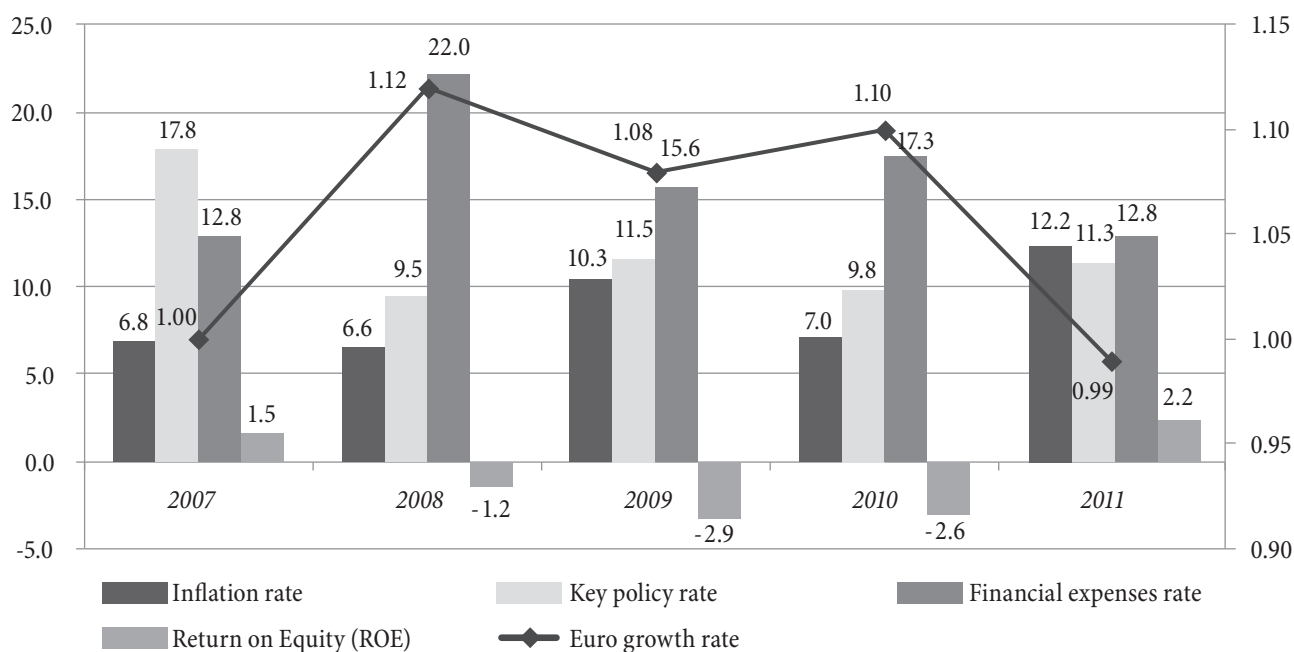
What is happening with returns? In an initial stage, it is possible to maintain stable incomes by increasing prices and thereby transferring the burden of higher costs to the customers. Return on equity will then follow the increase in inflation and interest rates, which may result in maintaining stability of share prices. Under a less favorable scenario, revenues continue to grow, but that growth is not sufficient to compensate for the growth of financial costs. The returns of companies decline because they can no longer increase prices to the extent to which costs are rising. Shareholders still expect that their real returns will exceed creditors' returns, which is impossible given that the reported incomes are not sufficient enough to provide for a dividend increase. In this situation, the companies'

returns are declining as well as their share prices. The worst scenario occurs when there is a simultaneous increase in interest rates and prices of inputs, which means that companies are not able to increase revenues due to the lack of price competitiveness. In such circumstances profit margins are falling and, given that companies are burdened with financial expenses, this leads to a significant decline in net incomes and often a sharp fall in share prices [13, pp. 419-422].

The situation in Serbia roughly corresponds to the aforementioned conditions. In order to provide a better insight into the movements of the analyzed variables, on the left axis of the mixed graph we will present the trends in inflation rate, key policy rate, financial expenses rate and return on equity, while we will be able to track RSD exchange rate movements on the right axis. These movements are displayed in Figure 1.

The relationship between the analyzed macroeconomic variables and the returns achieved in the economy is perfectly obvious. In this respect, we would like to emphasize a few points. Inflation is an important determinant of interest rates, which is visible from the fact that almost every year (except in 2011) the key policy rate was higher than the inflation rate. Financial expenses rate was significantly above the key policy rate, which points to a high level of protection of banks against different types of risks and high

Figure 1: Inflation, key policy rate, financial expenses, exchange rate and returns



margin. Let us remind that in the same period the policy rates set by the European Central Bank were incomparably lower. The policy rate reached the highest level during 2008, amounting to 4.25%, while it dropped to 1% in 2011 and continued to drop in 2012 to 0.75%. Apart from the level of financial expenses as an important determinant of risk, a volatility of financial expenses is also a signal of high level of risk. In that sense, there is an evident correlation between the foreign exchange rate movements and level of financial expenses. Namely, financial expenses were the lowest when RSD exchange rate was stable, as is the case in 2007 and 2011. Finally, return on equity (ROE), as an important measure of shareholders' returns, reveals a deeply worrying situation in the Serbian economy. This rate of return was negative in three of five years encompassed by the analysis. Of course, there are many causes of this state, but it is very indicative to notice that only two years in which ROE was positive were exactly the years in which the exchange rate was stable and financial expenses were the lowest. In the next parts we will try to provide further clarification of the impact of exchange rate movements on the level of financial expenses and economic performance.

Analysis of income indicators and income structure in the economy

In the circumstances when virtually all the world's economies are facing the numerous consequences of the Great Recession, a new challenge for analysts is to assess to what extent the achieved performances of certain economies were affected by the crisis and to what extent they were influenced by other factors, such as structural disorders, adequate economic policy, competitiveness, operating efficiency, backwardness in technical and technological development, etc. By accepting this challenge in the following sections we will try to explain the movements

of the most important performance indicators of Serbian economy in the period 2006-2011. Even a cursory look at the figures reported for this period is sufficient to see that Serbian economy finally managed to achieve positive net income in 2011. Bearing in mind that the economy in the previous three years (i.e. from 2008 to 2010) experienced huge losses, the question arises as to whether 2011 may be perceived as a visible sign of recovery after many years of crisis. To answer this very important question, one has first to examine the extent to which the values of income indicators in 2011 resulted from actual increase in the efficiency of Serbian economy and to what extent they came as a consequence of the impact of some factors that are beyond control of economic entities.

In order to identify the real causes of positive income after three-year period of reported losses, we should first examine the structure of incomes. Thus, at the very beginning of this paper we will take a look at earning potential of the economy by analyzing values of operating income, financial revenues, net income, Earnings Before Interest and Tax (EBIT) and Earnings Before Interest, Tax and Amortization (EBITDA). It is important to note that the first three concepts are incorporated in financial statements, while the last two financial metrics are derived concepts of income, i.e. they are not recognized under International Financial Reporting Standards. We would also like to add that for a moment we have decided to leave out other indicators of net income (loss) primarily because they have a transient character and therefore do not make a good basis for the evaluation of actual profitability. Values of the most important income indicators are shown in Table 1.

Let us start by analyzing the performance that the economy achieves in the most important domain, i.e. operating activities or core business. It is best reflected in achieved operating income. As we can see the economy showed positive performance in this segment in all analyzed

Table 1: Income indicators and income structure in Serbian economy (in 000 RSD)

Income (loss) concepts	2006	2007	2008	2009	2010	2011
Operating income	111,222	162,852	193,461	187,737	282,503	296,502
Net financial revenues (expenses)	19,057	(44,126)	(232,427)	(220,384)	(286,464)	(141,235)
Net income (loss) after taxes	105,394	49,867	(43,507)	(102,204)	(89,698)	84,838
EBIT	450,725	476,906	674,520	568,591	672,693	799,064
EBITDA	277,930	241,222	412,611	295,959	404,459	498,353

years. In this context it should be noted that, with the exception of 2009 when a slight decline was recorded, Serbian economy was constantly achieving income growth in the core business. Operating revenues showed a similar trend. However, despite these optimistic signs, we could not help but notice that the operating income margins were very modest, given that they did not exceed 5% in any year. Moreover, another even more unpleasant surprise is that the increase in operating revenues in the last year relative to the previous year was not followed by more rapid growth in operating income, which would be logical in such conditions considering the degression of fixed costs. Instead, the increase in operating revenues of almost 12% was accompanied by an increase in operating income accounting for only 5%. On the basis of the previous observations, it is apparent that we could speak of the decline rather than the growth of the efficiency of our economy over the analyzed period.

If we now refocus our attention to net income, we can see from the presented results of the analysis that in the middle of the period, i.e. from 2008 to 2010, the economy recorded very high net losses. In this regard, 2008 seems particularly indicative since in that year our economy, hit by the first waves of the crisis, recorded net loss of almost a twice as much as net income achieved at the end of 2007. Over the next two years, the economy continued to slide deeper into recession. However, as we have already pointed out, at the end of 2011 the economy managed to bridge the gap between total revenues and total expenses, recording a net income of almost RSD 85 billion. In other words, at the end of 2011 the economy experienced an outstanding growth in net income of almost 100%. Nevertheless, it is obvious that the increase in net income in 2011 in relation to 2010 by as much as RSD 174.5 billion did not result from higher operating income which would normally be expected. Instead, operating income increased by only RSD 14 billion in this period. Our research has shown that real reasons for this state

are to be sought by exploring the relationships between revenues and expenses arising from the financial activities in the economy. Considering their importance, we have decided to single out their values in Table 2.

On the basis of the presented data we can point out several important facts. First, with the exception of 2006, the financial revenues in our economy are far from being big enough to cover the financial expenses. Second, in the years when the economy recorded huge losses (i.e. in the period 2008-2010), it was simultaneously burdened with extremely high financial expenses that continued to grow during the whole period. Only in 2008 they were almost 2.4 times higher relative to 2007. Third, apparently there were large fluctuations in both financial revenues and financial expenses, though amplitudes were much more pronounced in financial expenses. Forth, after many years financial expenses were for the first time significantly reduced in 2011 by almost RSD 100 billion. It is even more interesting to note that this reduction was not followed by an expected decrease in debt – on the contrary, the indebtedness of our economy actually increased in real terms [7, pp. 132-136]. At the same time, the losses incurring as a result of financial transactions were halved at the end of 2011, i.e. they were reduced from RSD 286.4 billion to RSD 141.2 billion. Considering all the previous facts, we have to conclude that reported net income of the overall economy in 2011 emerged mostly due to the reduction of financial expenses, rather than being the result of the growth in income in the core business. Fifth, as expected, the sectors of the economy were differently burdened with financial expenses. It is interesting to look how these expenses are distributed, at least in 2010 and 2011. This is illustrated in Table 3 which provides information on the most important sectors of Serbian economy.

Presented structure clearly demonstrates that the majority of total financial expenses at the end of 2011 were absorbed by the processing industry (32.23%) and the trade sector (22.07%). The situation looks even more alarming

Table 2: Financial revenues and financial expenses in Serbian economy (in 000 RSD)

Revenues and expenses	2006	2007	2008	2009	2010	2011
Financial revenues	196,841	157,750	244,361	198,800	238,517	278,934
Financial expenses	177,783	201,876	476,788	419,184	524,981	420,169
Net financial revenues (expenses)	19,058	(44,126)	(232,427)	(220,384)	(286,464)	(141,235)

when it comes to the shares of these two sectors in total losses incurred as a result of financial transactions in the economy. It is easy to see that as much as two-thirds of the total financial losses of Serbian economy are attributed to the processing industry and the trade sector. However, our research has shown that it is necessary to make a clear distinction between these sectors. In fact, while the processing industry is not able to carry the burden of these expenses due an insufficient level of activities, which consequently leads to very high net losses, the trade sector even with this level of financial expenses has a high share in net incomes of the economy (about 24% in 2012). Besides, our analysis has shown that all sectors of the economy recorded financial losses in 2010. We would like to outline that the level of these losses in some sectors, like in the processing industry, is so high that it significantly reduce the overall profitability. On the other hand, only two sectors, i.e. the energy sector and telecommunications, managed to achieve a surplus of financial revenues over financial expenses in 2011, thereby preserving the profitability achieved in the core business [6, pp. 7-42].

Bearing in mind the problems that have been discussed thus far, we advocate more extensive use of the concept of EBITA in assessing the performance of our economy. The reasons behind this view lie in the fact that EBITA is not affected by interest expenses (in our case it means all financial expenses), taxes, depreciation of fixed assets, or financing sources. The values of EBITA presented in Table 1 further justify usefulness of this concept. In

fact, over the whole analyzed period EBITA was many times higher than achieved net incomes (losses), which leads us to a conclusion that precisely these differences must be considered in order to gain more insights about the functioning of the economy and the ability of local companies to settle their liabilities and pay off debts. However, when interpreting the values of EBITA one should always be aware that the financial expenses and taxes actually represent real costs to each company and that EBITA therefore provides only a rough approximation of cash flow from operations [5, pp. 345-349].

As far as our economy is concerned, advocating the concept of EBITA is well-grounded in reality because of the existence of high financial expenses that show dramatic fluctuations. Presumably, the majority of fluctuations arise from changes or, more precisely, from growing indebtedness of the economy. However, there are also some other factors that stimulate or reduce financial expenses. In order to identify them, it is necessary to start with looking at the very structure of financial expenses. Namely, it is well known that the position of financial expenses, apart from interest expenses, includes negative exchange differences and expenses incurred as a result of the effects of the so-called currency clause. Therefore, we may only conclude that the fluctuations in RSD exchange rate to which our economy has, to a greater or lesser extent, been exposed over a long period of time, have significantly contributed to the level of negative exchange differences and consequently, to the level of financial expenses, financial results and, finally, to the cost of capital that ultimately determines acceptable

Table 3: Financial expenses as sector burden

Sectors	Participation in financial expenses		Participation in financial losses	
	2010	2011	2010	2011
Agriculture	2.82	3.02	3.78	5.98
Mining	5.36	3.69	7.27	4.53
Processing industry	27.86	32.23	29.83	43.09
Energy	4.66	2.86	0.68	(3.94)
Water supply	0.57	0.58	0.45	0.37
Construction	10.50	9.28	13.67	14.74
Trade	21.90	22.07	21.39	23.35
Transportation	6.95	6.52	6.42	2.65
Tourism	0.95	0.96	1.48	1.87
Telecommunications	5.67	3.50	5.86	(1.30)
Other sectors	12.77	15.28	9.18	8.67
Economy	100	100	100	100

level of profitability from the perspective of both existing and potential investors. In our opinion this very important phenomenon deserves a greater attention, so in the next part of this paper we will observe the consequences that endless “playing” with RSD exchange rate has for the performance of Serbian economy.

Analysis of the effects of RSD exchange rate fluctuations on the cost of debt

We came up with the idea to analyze RSD exchange rate fluctuations due to the fact that most of approved loans to our companies have been denominated in hard currency and/or with currency clause. In most cases, approved loans have been tied to the euro. In this respect, it was particularly interesting to track the changes of RSD exchange rate against the euro on the one hand, and the cost of debt calculated based on average amount of debt, on the other. Before we present the main findings, let us explain that for the purpose of this analysis we calculated the cost of debt by dividing financial expenses by average long-term and short-term financial liabilities.¹

The results shown in Table 4 reveal some very interesting facts. First, the cost of debt was the lowest in the years when RSD exchange rate was stable, as is the case in 2007 and 2011 (remind that in 2006 EUR exchange rate stood at RSD 79.00), standing at slightly below 13%. In all other years the dinar depreciated against the euro, which resulted in higher cost of debt. The cost of debt reached its peak in 2008 when it exceeded 22%. Of course, the causes of high cost of debt are to be found in a consequent increase in financial expenses, which was initiated by increased

negative exchange differences in companies' balance sheets. Given the aforementioned, we can conclude that there is a strong correlation between the devaluation of dinar, on the one hand, and the increase in the cost of debt, on the other. In order to clarify this point, let us take a look at the costs of debt in 2008, 2009 and 2010 which were so high that even much more developed economies would hardly deal with them. The reason is that the cost of debt serves as the basis for determining the minimum rate of return on investment acceptable to shareholders and investors. More precisely, shareholders and investors actually require a rate of return on investment that is higher than the cost of debt. Given that in some years the cost of debt skyrocketed to over 15%, 17% and even over 22%, achieving returns that would go beyond those levels proved to be a mission impossible even for the most profitable sectors of our economy like, for instance, the telecommunications [8, pp. 43-50].

In 2011 the dinar slightly appreciated against the euro, which represents an exception to all previous trends. As a result, the cost of debt dropped by almost 5%. However, later in the paper we will show that, even at this level, the cost of debt is too high and may pose very serious financial risks to our economy. Therefore, now we can finally conclude that the previously observed phenomenon of more than doubled net income in 2011 does look really impressive only until one realizes that the growth was predominantly the result of RSD exchange rate fluctuations rather than dynamic business activities and increased efficiency which would certainly be better for the economy's health. We hope that the above presented arguments are strong enough to stress the utmost importance of stable and safe business environment for the success of the national economy.

At the end of this important story about the effects of RSD exchange rate changes on the cost of debt, we should not lose sight of another significant detail. It relates to

1 Note that in the formula for calculating the cost of debt the numerator does not include only the interest costs, but the entire financial expenses. In this way, we intended to show how the devaluation of the dinar against the euro, through negative exchange differences, raises the cost of debt.

Table 4: Analysis of the relationship between cost of debt and RSD exchange rate

	2007	2008	2009	2010	2011
Euro exchange rate in RSD	79.24	88.60	95.89	105.50	104.64
Growth euro exchange rate	1.00	1.12	1.08	1.10	0.99
Average debt (in million RSD)	1,574	2,165	2,680	3,037	3,285
Financial expenses (in million RSD)	202	477	419	525	420
Cost of debt	12.83	22.03	15.64	17.29	12.79

the possibility of postponing the recognition of exchange differences, which is allowed by the Rules on the Chart of Accounts [12]. These rules envisage the possibility (i.e. not the obligation) that legal entities in the preparation of financial statements may decide not to recognize the effects of calculated exchange differences and currency clause within financial revenues or financial expenses, but to transfer them to accruals. Since such solutions do not comply with the International Financial Reporting Standards, whose application in our country is prescribed by the law, one cannot say that such financial statements are prepared in accordance with good practice that is typical of the countries where the accounting culture is very important. We would also like to add that in conducting this analysis we were fully aware of the fact that the use of this opportunity in some companies led to underestimated financing costs and, as a result, their financial statements were burdened with hidden losses. Unfortunately, we were not able to quantify these effects due to the lack of relevant data.

Analysis of the impact of RSD exchange rate fluctuations on the profitability of Serbian economy

The analysis has thus far brought to light at least three very important conclusions. First, Serbian economy, even under conditions of a severe economic crisis, recorded an increase in net incomes generated by the core business. Second, that increase did not bring about the expected improvement in profitability because, among other things, the economy in almost all years covered by our

analysis was burdened with high financial expenses and losses in the area of financing. Third, in the years in which the dinar depreciated the companies that relied on borrowing (and most of them did so) were faced with an enormous increase in the cost of debt, which almost linearly corresponded with the weakening of the domestic currency. The epilogue of such a state can be perceived through the analysis of key profitability indicators and this part of the paper will be dedicated exactly to that topic. For the purpose of the analysis we use standardized, globally accepted measures of profitability, such as Return on Operating Assets (ROOA), Return on Assets (ROA) and Return on Equity (ROE). Changes in these rates of returns in their disaggregated forms (as products of appropriate income rates and turnover ratios) are displayed in Table 5.

The selection of these rates of return is perfectly understandable. The first of them, i.e. ROOA, is necessary for assessing the profitability of the core business, ROA is used for determining the return which is not influenced by the sources of finance, while ROE measures the fulfillment of shareholders' interests as well as the attractiveness of investments. But, in order to get a comprehensive insight into the profitability of the economy it is necessary to compare the above-mentioned rates with previously calculated cost of debt, thereby assessing the effect of financial leverage. The results of this comparison for the Serbian economy are presented in Table 6.

Based on the presented results, we conclude that the profitability of Serbian economy, according to any of the above rates of return, is far from being satisfactory. The reason for this is that ROOA and ROA were several

Table 5: Overview of key profitability indicators

Indicators	2007	2008	2009	2010	2011
1. Operating Income Margin	3.08	3.15	3.20	4.27	4.00
2. Operating Assets Turnover	0.92	0.91	0.79	0.85	0.84
3. Return on Operating Assets - ROOA (1x2)	2.85	2.87	2.54	3.62	3.37
1. EBIT Margin	4.57	6.71	5.05	6.12	6.73
2. Assets Turnover	0.78	0.77	0.67	0.71	0.71
3. Return on Assets - ROA (1x2)	3.54	5.14	3.36	4.34	4.80
1. Profit Margin	0.94	(0.71)	(1.74)	(1.36)	1.15
2. Capital Turnover	1.62	1.73	1.66	1.92	1.89
3. Return on Equity - ROE (1x2)	1.53	(1.23)	(2.89)	(2.60)	2.16

times lower than the cost of debt. This fact is colorfully illustrated by the results that are singled out in Table 6, which served as a basis for calculation of the effects of financial leverage [10, pp. 117-121]. We can see that ROA, as a test of success in the core business and measure of solvency, ranged between 3.36% and 5.14%. On the other hand, the cost of debt ranged from 12.79 up to 22.03%. The final outcome of the comparison of these two rates is the negative effect of financial leverage which is present in all analyzed years. This fact speaks volumes about the failure of Serbian economy to achieve the returns that would compensate for the cost of debt in any of given years. This conclusion confirms the previously expressed concerns that the current cost of debt is unattainable by our economy. Financial expenses have been continuously growing due to the constant devaluation of the dinar and the consequent accumulation of negative exchange differences, thereby destroying most of the efforts the companies make in order to achieve profitability in the core business. The final consequence of all this is the decline in values of ROOA and ROA, while ROE recorded negative values in three years (continuously from 2008 to 2011) of the five-year period covered by the analysis, though it was positive in the years when RSD exchange rate was stable, standing at barely above zero. Thanks to our extensive experience with this type of research, we have a right to underscore here that unsatisfactory profitability is the key problem of Serbian economy. This is especially true because this problem is not new, as it has been growing and deepening for years. Dealing with it requires undertaking an extensive analysis and the right steps, first at the state level and then at company level.

If we decide to look further into the causes of the poor performances of rates of returns, we can easily notice (see Table 5) that they are consequences not only of low profitability of the core business, but also of the lack of efficiency in the economy. Namely, achieved levels of

operating income margin and EBIT margin, which did not exceed 5% and 7% respectively, are far from being high enough to, after covering the cost of debt, other expenses and taxes, provide investors with satisfactory returns. At the same time, the multiplier effect that an increase in the volume of activities and operating efficiency has on the performances of ROE, ROA and ROOA was hampered due to low rates of capital turnover, operating assets turnover and total assets turnover. Let us note, for example, that assets turnover was practically in each year below 0.8, while operating assets turnover managed to exceed a limit of 0.9 only in the first years. As a consequence, in all analyzed years assets turnover decreased EBIT margin in the calculation of ROA (Table 5). Imagine to what extent the result of ROA would have improved (and thereby the effect of financial leverage) if during the analyzed period the assets turnover had been greater than one. It is easy to identify the main causes of low levels of turnover ratios, including technical and technological obsolescence of economic capacities, their underutilization, low productivity, low cost-effectiveness, uncompetitive products and services, lack of customers, low exports, etc. To put it simply, the assets of our economy have not been deployed in the manner that would lead to high enough incomes, which would give rise not only to turnover but also to income margins and, consequently, to the rates of return. Nevertheless, we have gained the impression that the major opportunities for improving the performance of Serbian economy and its attractiveness for new investments lie precisely in this area.

We can get a complete picture of the causes of low profitability of Serbian economy if we further disaggregate ROE and, in addition to ROA, take a look at solvency (leverage) and debt burden. One of the ways to do this consists of using four-component rate on equity, which we present in Table 7.

Table 6: Effects of financial leverage

Indicators	2007	2008	2009	2010	2011
Cost of debt	12.83	22.03	15.64	17.29	12.79
ROA	3.54	5.14	3.36	4.34	4.80
ROE	1.53	(1.23)	(2.89)	(2.60)	2.16
Effects of financial leverage	Negative	Negative	Negative	Negative	Negative

In order to enable better understanding of the conclusions that will be exposed below, let us first clarify the presented components of ROE. Leverage is defined as average assets to average equity. Assets turnover presents the relationship between sales and total assets. EBIT margin is a ratio of this concept of income to sales, while the debt burden is the ratio of net income to EBIT. Also, it is easily noticeable that the two central components of the formula make ROA. As to ROA, let us remind that this return depends on operating efficiency of companies, since the concept of EBIT excludes the effects of financing. Hence, the value of the central part of four-component formula of ROE is, among other things, determined by the efficiency of business operations, i.e. by operational risk. On the other hand, the first and the fourth components of ROE are closely associated with debt. Theoretically speaking, in the absence of debt, the first and the fourth components would be equal to one, which means that there would be no financial risk, nor the effect of financial leverage. It is obvious that then ROE would be equal to ROA. However, as the existence of debt seems like more realistic scenario, the value of the first component would actually be greater than one (assets are greater than capital), just as the last component will be less than one (interest expenses will absorb a portion of income). On the basis of the aforementioned, it can be concluded that an increase in debt could lead to the growth of profitability as well as to its decline. The increase in profitability occurs if the product of leverage and debt burden is greater than one. In this case, financial leverage will have a positive effect which is reflected in rising shareholders' returns, i.e. ROE is then greater than ROA. Of course, in the opposite case, further borrowing inevitably triggers a decline in profitability and negative effects of financial leverage. Hence, borrowing limit is established when ROA becomes

equal to the cost of debt. In that case, ROA is equal to ROE, which implies that borrowing up to this limit has positive effects, whereas exceeding this limit triggers the negative effects of financial leverage.

The data presented in Table 7 provide some relevant details which help getting the big picture of the extent to which RSD exchange rate fluctuations hinder the performance of our economy. It is obvious that increasing indebtedness of the economy (debt today accounts for more than 60% of total capital) was putting a strong pressure on financial expenses throughout the analyzed period. However, a complete understanding of the effects of borrowing could be obtained once we include debt burden ratio in the analysis. There were sharp fluctuations in this segment, ranging from negative values (from 2008 to 2010) to modest performances (in 2007 and 2010). Finally, in order to illustrate the real meaning of the displayed values of debt burden, let us say, for example, that of RSD 100 in EBIT recorded in 2011, only RSD 17 would belong to shareholders, while the creditors would gain as much as RSD 83. Furthermore, since in the period 2008-2010 the achieved EBIT did not suffice to satisfy creditors' claims, they had to be settled by reducing equity. In other words, in that period companies once again began to "eat" their own substance, which additionally backs up the view that relying on borrowed capital in such conditions proves to be very costly for Serbian economy. Since our economy will certainly have to continue with borrowing, we may only hope that in the near future that will be happening under significantly different circumstances. We believe that this type of research and similar analyses provide enough arguments stressing the importance of creating stable and positive economic environment, on the one hand, and considerably improving the quality of corporate governance, on the other.

Table 7: Four-component disaggregation of ROE

ROE	=	Solvency (leverage)	x	Assets Turnover	x	EBIT Margin	x	Interest Burden	=	ROE
ROE 2007	=	2.08	x	0.78	x	4.57	x	0.21	=	1.53
ROE 2008	=	2.26	x	0.77	x	6.71	x	(0.11)	=	(1.23)
ROE 2009	=	2.49	x	0.67	x	5.05	x	(0.35)	=	(2.89)
ROE 2010	=	2.71	x	0.71	x	6.12	x	(0.22)	=	(2.60)
ROE 2011	=	2.65	x	0.71	x	6.73	x	0.17	=	2.16

The risks of high financial expenses

The fact that in this paper we put the accent on the analysis of financial expenses does not mean we have forgotten that it is just one of the problems that keep burdening the economy. The build-up of a stimulating business environment involves achieving macroeconomic stability, developing capital markets in order to gain access to differentiated and less expensive sources of finance, ensuring legal certainty and stable regulatory framework. Also, we should not overlook the need for improving corporate governance and business management, attracting export-oriented investments, funding sustainable growth, enhancing profitability, overcoming the problems of illiquidity and insolvency and so on [9].

Bearing in mind the scope and gravity of the problem of high financial expenses that have been discussed in the previous sections of the paper, we must point to multiple dangers arising in this regard. At this point, we will not explicitly refer to apparent risks to profitability, liquidity and solvency. We will mainly focus on other direct and indirect adverse effects that might be large, leading to long-term negative consequences.

Financial expenses and price competitiveness. The factors that affect levels and frequency of changes in selling prices are numerous. Different research studies that have addressed the issue of setting and changing selling prices in a number of European countries (Belgium, France, Germany, Italy, Spain and Portugal) particularly emphasize the importance of factors such as cost structure, inflation, competition, seasonality, (non)existence of price regulations and so on [15, pp. 17-28]. As far as cost structure is concerned, these studies were primarily focused on analyzing the structure of operating expenses,

while the impact of financial expenses to price levels has rarely been tackled. Research studies conducted in Spain [1, pp. 27-29] and Portugal [4, pp. 34-36] that encompass the analysis of financial expenses are exceptions to this practice. However, research findings show that even in these countries, financial expenses had the lowest impact on setting and changes of prices in comparison to other costs. In countries with developed capital markets the sources of finance are differentiated, which significantly lowers the cost of debt and the strain on the performance of companies and the economy as a whole.

Indeed, the results of the previous studies are giving cause for concern, as the situation in Serbian economy is quite different. The share of financial expenses in total operating and financial expenses is not marginal. Analysis of the structure of operating and financial expenses (in %) in the analyzed period for the economy as a whole is presented in Table 8.

At the current level of performance of Serbian economy, the share of financial expenses in total operating and financial expenses accounting for slightly more than 10% on average is placing a heavy burden on economic activities. This is obvious given the fact that in the analyzed period financial expenses were 1.5 times greater than depreciation costs. In such circumstances, companies are faced with a difficult choice regarding pricing strategies. If they opt for cost-based pricing to ensure the minimum condition for survival, then financial expenses should definitely be included in the calculation of selling price (not in the costs of production). This approach is not good for at least two reasons. First, the market is not willing to pay the price that is higher than the prices of same or similar products and thereby to finance inefficient companies. Second, the introduction of these considerable

Table 8: Cost structure in percentages

	2007	2008	2009	2010	2011
1. Costs of materials	41.18	38.87	36.30	39.03	41.76
2. Labor costs	20.15	18.68	20.11	18.32	18.53
3. Depreciation costs	7.42	6.62	7.31	6.49	6.72
4. Other operating expenses	24.90	23.78	25.05	23.44	23.60
5. Total operating expenses	93.65	87.95	88.77	87.29	90.61
6. Financial expenses	6.35	12.05	11.23	12.71	9.39
7. Operating and financial expenses (5+6)	100.0	100.0	100.0	100.0	100.0

financial expenses into calculation of selling price makes companies uncompetitive. All of this leads to decline in volume of business activities as well as to greater share of fixed costs, taking the company near to the zone of losses. Eventually, this increases the risk of bankruptcy. Another possibility entails setting selling prices on the basis of market prices. In that case, the prices would be acceptable to the market, but due to tight profit margins, financial expenses would again lead the companies into losses. Therefore, it seems that high financial expenses are one of the main reasons (but not a sole) why many companies fail to achieve price competitiveness.

Financial expenses and sustainable growth. Taking into account the relationship between the problem of financing (including financial expenses) and company's growth, we must point out two things. First, we could hardly speak of growth as long as we are struggling for survival. Second, the exit from the crisis is possible only if we provide cheaper sources of finance, not the expensive ones.

The truth is that not all growth is good. There are numerous examples of companies worldwide that have gone bankrupt due to inadequate growth. Achieving healthy and sustainable long-term growth involves, among other things, providing for such a combination of sources of finance that would enable the company to maintain the target capital structure. A growth that is slowed down due to insufficient internal sources or expensive loans implies risks for both shareholders and creditors. The ones are faced with risk of not achieving expected returns, while the others are exposed to default risk.

On the other hand, insistence on rapid growth in situations where internal sources of finance are not available means that it should be financed by further borrowing. In present conditions, this option is generally considered as a bad strategy. High financial expenses would continue to decrease net income, thereby contracting internal sources of finance and preventing growth. This reduces borrowing capacity because a reckless accumulation of new debt distorts the capital structure and increases the risk. Default risk goes up, which increases the cost of debt, income and internal sources of finance are melting away

as a result of higher financial expenses, which again leads to additional borrowing, etc.

High financial expenses discourage both existing and potential shareholders. Namely, creditors bear less risk and receive higher returns than shareholders who are faced with the greatest risks. This fact is contrary to the very logic behind the functioning of corporations [9, pp. 49-52]. The question then arises as to why anyone would invest in such conditions. On the other hand, financing from own sources is necessary. From the perspective of company they are considered the best sources of finance. Also, equity issuance is prerequisite for the development of capital markets because the demand and supply of these securities form the core of the secondary market.

The risks to financial system stability. We have seen that the level of financial expenses has a direct impact on the performance of the economy. Naturally, their amount is an important determinant of banking sector performance, since from the perspective of banks they represent revenues. Increase in interest rates is simultaneously accompanied not only by growing revenues of banks, but also by higher cost of debt. In that respect, the efforts of banks aimed at achieving better results seem logical as well as measures of protection from different types of risks. Bearing in mind the previous findings on the relationships between interest rates, inflation, return on equity and trends in prices of securities, it is not difficult to conclude that the changes in these factors will also affect the market portfolio of other financial institutions, such as for example, investment and pension funds.

However, if all risks are transferred to companies and if the cost of debt is determined by adding the effects of risks to the initial interest rates, then those risks do not pose a threat only to borrowers. Creditors are exposed to serious risks as well. At the first glance, the recourse to collateralization of loans seems to protect banks against risks. Huge accumulated losses of companies, partly incurred as a result of large financial expenses, have an adverse impact on the balances of the economy. In such circumstances, the supply of loans declines due to increase in illiquidity and insolvency. Exhausted companies, burdened with numerous problems, often have no choice but to borrow again and each time under

less favorable terms, which increases the cost of capital and the risk of bankruptcy. Inability to pay out interests and repay principal results in the contamination of the banks' balance sheets [9, pp. 54-57].

In the previously described circumstances, the quality of collateral becomes an issue of major importance. In fact, balance sheets of companies are burdened with collateral. The marketability of certain types of assets which serve as collateral may significantly differ depending on whether the company is operating normally or it is near bankruptcy. In the latter case, the value of collateral might drop significantly, thus increasing the potential losses of creditors. If bankruptcy proceedings made a greater progress, that could result in the race between banks which would be the first one to seize its collateral, which would cause further decline in its value. All this would inevitably lead to the destabilization of financial system. At this point, despite being realistically estimated, collateral assets cease acting as powerful instruments in protecting creditors from risks.

Anyway, the stability of the banking sector should remain in the foreground. However, banks should take more interest in the future of the real sector. They must recognize their benefits from financing companies. A potential bankruptcy of numerous companies is likely to have repercussions for the banks. Banks' management must have a greater responsibility. They are accountable for wrong assessments of investment risk and inadequate decision-making. In this regard, it is unacceptable that the risks coming from low quality of management are transferred to clients in the form of higher costs of financing.

Financing from the so-called trade credits. In a situation where bank loans are too expensive and in the absence of alternative sources of finance, many companies allocate financing of their liquidity and even their growth to their suppliers. At first glance, it seems like a short-term policy whose lifetime depends on the willingness of suppliers to tolerate such behavior. However, in times of crisis in an economy that generally suffers from illiquidity, suppliers are inclined to accept such terms more than one might initially think. As companies resort to alternative sources in the conditions of a restrictive monetary policy when necessary sources of finance are not easy to provide at

affordable terms [3], they do the same in the crisis when banks tighten up the criteria for loan approval. In this context, trade credits as interest-free sources of finance become attractive. The main motive of suppliers (trade creditors) is desire to preserve good business relationships and retain existing customers [16].

However, this way of alternative financing also has its price. Since in times of crisis suppliers face their own problems with maintaining liquidity, they often have no other choice but to transfer their financial problems to their suppliers by deferring payment of liabilities [6, pp. 19-24]. As a result, the liquidity problem creates the effect of a spiral, transferring from contaminated to healthy parts of the economy. In fact, the increase in liabilities is closely followed by the rise in receivables, which confirms the fact that in the conditions of crisis suppliers provide finance to companies, but at the same time these companies, to a greater or lesser extent, finance their buyers. The consequences are the inability to achieve a solid growth, general illiquidity as well as insolvency, given that the companies often cannot service interests, or payback the principal. In this way, the effects of the crisis are further deepened.

Capitalizing on the above-mentioned effects is fair as long as both buyers and suppliers have the same problems related to the financing of liquidity and growth. But, there are naturally some exceptions to such generalized approach to the problem. This kind of behavior brings the major benefits primarily to state-owned companies and large private companies which, by abusing their power, maintain liquidity and grow at the expense of smaller companies. These companies primarily tend to prolong payments of their liabilities to suppliers rather than to act as lenders to their buyers. Abuse of monopoly position with all negative consequences of such behavior is obvious in this case.

Conclusion

The relationship between macroeconomic stability and performance of the economy is indisputable. It has long been known that there is an interdependence of inflation, exchange rates, interest rates, return on equity and stock

prices. The problem is that there was not enough readiness to quantify the effects of implemented economic measures and thus to assess the costs of bad choices. We suppose that the reason for this is quite simple. In this way, the responsibility of economic policy makers would have been subject to greater scrutiny. We have to outline that in this paper we consider not only interest rates, but also the total financial expenses which burden the economy. Therefore, the analysis should focus on the assessment of the effects of currency clauses as well as exchange differences, as they significantly increase the level of financial expenses.

The research that we conducted for the purpose of this paper clearly showed a strong relationship between RSD exchange rate and the cost of debt. In the years when RSD exchange rate was stable, the Serbian economy was faced with the lowest costs of debt. Unfortunately, even these minimum rates of return turned out to be unattainable for our companies, characterized by extremely low profitability and operational inefficiency in the core business. In the years when the dinar depreciated against the euro, the rate of debt experienced an almost linear trend as national currency due to immense negative exchange differences, thereby posing an unimaginable challenge to the economy of achieving the hurdle rates which in some years exceeded 20%. The epilogue of the previous processes was a negative effect of financial leverage in all analyzed years. The values of ROA were not nearly enough to cover financial costs. As expected, shareholders had to pay the highest price not only in terms of reduced ROA, but also for the erosion of their equity as achieved EBIT in many years was insufficient to fulfill creditors' interests.

Risks arising from high financial expenses do not affect only current performance of the economy. They are more serious and have long-term consequences. These risks lead to jeopardizing price competitiveness, hindering the possibility of achieving long-term sustainable growth, shifting the burden of financing to suppliers, which along with ignoring the problems of the economy by the banking sector could endanger the financial system stability. Hence it is necessary to differentiate the sources of finance. Relying on the issues of shares and long-term debt securities should be of particular importance in this

regard. The key prerequisite for this is the development of primary and secondary capital markets.

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