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Capital Structure in Emerging Markets: The Case of Serbian Joint-Stock Companies

Arsov Sašo¹, University Sv. Cyril and Methodius, Faculty of Economics, Skopje

***ABSTRACT** – This paper is an attempt to extend the empirical research on the capital structure theory to a post-transition economy and to determine if there are any factors that could be linked to the behavior of the companies with respect to their selection of the sources of financing.*

The study is based on a sample of joint-stock companies, most frequently traded on the Belgrade Stock Exchange, and using their financial data for a period of 6 years, it applies a panel regression model. The regression results show that the leverage of the analyzed companies is positively related to their size and inversely related to the tangibility of their assets, profitability and the effective corporate tax rate. Surprisingly, no relation has been found between the level of fixed-asset investments and the use of debt.

These results do not give sufficient support for any of the capital structure theories, but the closest match is some form of a modified pecking order

KEY WORDS: *capital structure, leverage, financing, debt, equity, transition*

Introduction

The famous paper of Modigliani and Miller (1958) on the capital structure of the companies opened a new era in the science of corporate finance. The issue that has been overlooked in the decades before has grasped the attention of the researchers, with numerous papers written on the topic, but the outcome of this immense engagement of scholars' resources is still disappointing. Namely, even 60 years after the first scientific efforts in this field, the finance theorists are not yet able to answer the question on the optimal choice of sources for financing the operations of a company. Several theories have emerged, all of them with the ambition to provide the best possible solution for the open issue, but the most they have achieved is to add a piece or two in the capital structure puzzle.

The basic dilemma which occupies the attention of the scientists and practitioners in this field is the one regarding the optimal debt-equity mix the companies should use with the ultimate goal of maximization of shareholders' wealth. After the first several decades in which the search for the optimal capital structure was in the focus of the research, during the last twenty years we could observe a change in the researchers' attention which has shifted

¹ Full Professor

toward explaining the determinants that most likely influence the decisions the companies make in the selection of the sources of financing.

This paper follows the latter trend. We have made a selection of 51 Serbian joint-stock companies, for which we have manually compiled a 6-year data set containing the information from their annual financial statements. On the basis of these data, we have applied a panel regression analysis to determine if there are any factors that have a significant influence on their financing mix, and in addition, to determine if any of the capital structure theories could be found applicable in the case of the Serbian economy. The constraints we have faced in the analysis are related to the availability of data, so that we had to limit our research to the companies which have disclosed their financial statements on the Belgrade Stock Exchange. As a result, our sample misses some prominent Serbian companies, especially those privately owned, but the capital structure theory anyway deals with the companies able to issue securities, which reinforces our confidence in the validity of the sample used.

Our basic hypothesis is that the companies in Serbia apply some form of the pecking order theory, i.e. they do not set a specific target capital structure, but begin with reinvesting earnings, then reach for debt financing and issue securities only as a last resort. This hypothesis is based on our observation of similar research in the countries of Central and Eastern Europe (Bauer, 2004, Avarmaa et al., 2011, etc.).

The paper is structured as follows. First, we provide an overview of the existing research in the field of capital structure. In the second part, we develop our model by identifying the factors that have been most often used as probable determinants in similar papers. The third part presents the results of the calculation, while the fourth part contains the results of the robustness tests of the model. The paper ends with the conclusions and recommendations for future research.

Review of literature on capital structure

The basis of the theory on capital structure was set in 1958, when Modigliani and Miller (MM) asked the question if there was any structure of financing that could be considered optimal, so that the companies could use it as a target debt to equity ratio. Such a capital structure should correspond to the long-term goal of maximization of the value of the company. This further translates into a capital structure under which the weighted average cost of capital would be at the lowest level. MM have used a very restrictive set of assumptions and found out that the value of the firm is not dependent on the financing mix, i.e. the capital structure is irrelevant. In other words, regardless of the debt-equity mix applied, the value of the company would not be affected. In 1963, they relax the assumption on non-existence of corporate taxes, which results in the conclusion that 100% debt is the optimal level. Therefore, the optimal financing choice for the company would include only debt and no equity financing. In 1977, Miller revised their study again and included the personal income taxes for the first time. The conclusion of this revision is that the differential tax impact on debt and equity holders lowers the importance of the interest tax shield. Therefore, during a period of twenty years, the theory on capital structure has been enriched



with a number of contributions, but it has hardly made any advance from the beginning positions (Myers, 1984).

Later, the trade-off theory makes an attempt to overcome one of the biggest weaknesses of the MM findings – ignoring of the costs of using too much debt. Its proponents contend that the benefits of the debt tax shield can be felt only up to a certain point, when they become offset by the direct and indirect costs of borrowing such as rising interest rates, risks of bankruptcy, agency costs, etc. The conclusion of the trade-off theory is that there should be an optimal level of debt, but its actual estimation remains vague, especially when indirect costs are involved. The most influential research in this regard is the one by Jensen and Meckling (1976), while other contributions include Baker and Wurgler (2002), Welch (2004), etc.

During the 1980s another line of research is initiated, which does not accept the existence of a target capital structure as a predetermined ratio and asserts that the capital structure is a consequence of a sequence of decisions made by the company managers. The most notable consequence of these studies is the so-called pecking order theory. According to Myers (1984) and Myers and Majluf (1984), the managers follow a sequence of steps trying to minimize the negative consequences of information asymmetries. Baker and Wurgler (2002) link the capital structure to the market timing theory and assert that the capital structure is mostly a result of the past decisions of the companies to issue equity in periods with the highest market valuations of their shares.

The work of Harris and Raviv (1991), in which they link the empirical research with the existing theories on capital structure has probably initiated the latest wave of research in this field. In the last two decades, most of the studies have focused on investigating the significance of particular determinants of the capital structure. The basic problem with these studies is that most of them have been associated with the developed economies and they could not be easily transferred to the developing countries. Therefore, they could not be used to explain the behavior of the managers in these countries, so that new efforts were needed to fill this gap. His became especially important during and after the transition of the former socialist economies in Europe in the 1990s. As a result, in the last 20 years we could observe an increased interest among researchers to extend the findings of the capital structure theory to the developing countries and the emerging economies. Examples of this trend include: Demirgüç-Kunt and Maksimovic (1999), Booth et al. (2001), Gonenc (2003), Benkato et al. (2005), Teker et al. (2009), etc.

The papers that we find most interesting are those related to the former transitional economies. These countries have begun to attract the scholars' attention recently. Most of these studies focus on exploring the determinants of capital structure in these countries in order to examine whether the existing capital structure theory could be applied in their context.

Nivorozhkin (2002) has studied the impact of various determinants on capital structure using a sample of companies from Hungary, and found out that in the early years of the development of the national capital market, the companies from the manufacturing sector use more debt financing and also do the companies with large state ownership. Wen et al. (2002) examine the impact of corporate governance on leverage in the case of the Chinese

listed companies and conclude that the use of debt as a source of financing is affected by the composition of the board of directors, but not its size.

In a study of Slovenian companies, Berk (2007) concludes that the private and public firms use similar financing patterns, which he attributes to the relatively undeveloped primary capital market. Bauer (2004) uses a sample of 74 Czech listed companies. He finds that the leverage of these companies is positively related to the size of the companies, but negatively related to the tangibility of assets and their profitability. Črnigoj and Mramor (2009) explore the importance of the ownership structure using a large sample of Slovenian public and private firms. They find that the domestic companies, which are mostly employee-governed, do not follow the objective of shareholder wealth maximization and that it affects their capital structure decisions. Avarmaa et al. (2011) explore the companies in the three Baltic states, and conclude that the use of debt is positively related to the size of the company, asset tangibility and profitability, but negatively related to the age of the companies, which is in line with the pecking order theory.

Basic features of the financial system of Serbia

In order to obtain a better understanding of the analyzed issue, we find it useful to present some background on the financial system of Serbia. Serbia emerged as an independent country in 2006, after the volatile breakup of former Socialist Federal Republic of Yugoslavia in 1990 and the subsequent war conflicts in the region in which Serbia had been directly or indirectly involved. As a result of that, the process of its real transition to a market economy started somewhat later than in most of the other Eastern European countries.

The privatization in Serbia was overburdened by the political turmoil that the country was going through in the nineties and the early years of the last decade. The international sanctions, the NATO intervention and the assassination of the prime minister created a very unfavorable environment for economic reforms. After several waves of privatization, a large part of the economy is in private hands, although a number of companies could not survive the transition years and the role of the foreign investors in the privatization process was quite low. The privatization was done on a paid basis, through auctions and public tenders, resulting in a more concentrated ownership than a voucher scheme would have generated. However, the number of state-owned companies and companies in which the state owns considerable stakes is still significant and their privatization is seen as an opportunity to attract foreign investors and improve the fiscal position of the country.

Table 1 provides some basic information about the financial system of Serbia. It is obvious that the system is dominantly bank-centered, with the foreign banks gaining larger share in the overall banking sector throughout the years. The bank assets mostly consist of loans, while deposits from the non-financial sector are the dominant source of external funding. The bank operations are conservative, with little exposure to risky activities. The main problem for the banks is the increase in the percentage of non-performing loans to total loans which has reached 21,5% in 2014, compared to 16,9% in 2010.

Table 1. Basic information on the financial system of Serbia

EUR million	2010			2011			2012			2013			2014		
	No.	Assets	%												
FINANCIAL SECTOR	84	26.032	100,0	87	27.317	100,0	85	27.263	100,0	80	26.793	100,0	78	26.669	100,0
(in % of GDP)		90,0%			84,2%			86,7%			79,5%			83,2%	
Banking system	33	23.901	91,8	33	25.237	92,4	32	25.259	92,6	30	24.750	92,4	29	24.536	92,0
State-owned banks	8	4.281	16,4	8	4.497	16,5	8	4.576	16,8	6	4.641	17,3	6	4.717	17,7
Local private banks	4	2.047	7,9	4	2.028	7,4	3	1.705	6,3	3	1.704	6,4	2	1.549	5,8
Foreign-owned banks	21	17.572	67,5	21	18.712	68,5	21	18.977	69,6	21	18.405	68,7	21	18.271	68,5
Nonbank institutions	51	2.130	8,2	54	2.080	7,6	53	2.004	7,4	50	2.044	7,6	49	2.133	8,0
Insurance companies	26	1.105	4,2	28	1.197	4,4	28	1.232	4,5	28	1.286	4,8	27	1.397	5,2
Pension funds	8	93	0,4	9	119	0,4	9	140	0,5	6	171	0,6	6	195	0,7
Leasing companies	17	932	3,6	17	764	2,8	16	631	2,3	16	587	2,2	16	541	2,0
CAPITAL MARKET															
Brokerage companies	51			42			35			31			28		
Total turnover on Belgrade Stock Exchange (BSE):															
Shares (turnover)															
- Regulated market		177,0			239,3			179,9			252,2			133,2	
- OTC		25,3			89,4			64,7			42,5			78,6	
Corporate bonds		-			-			-			1,4			0,2	
Listed companies on BSE	7			8			8			7			8		
Value of BELEX stock index end-of-year		652			499			523			557			667	
Investment funds (number)															
- Open-end	16			15			16			11			12		
- Closed-end	2			3			1			1			1		
- Private	3			2			3			2			2		
Total NAV of open-end IF		10,2			15,4			20,4			46,1			75,7	

Sources: National bank of Serbia, Belgrade Stock Exchange, Securities and Exchange Commission of Serbia

The level of activity on the only stock exchange in the country has dropped significantly after the boom in 2007-2008. There have been no IPOs in Serbia so far, while the seasoned equity offerings are rare and mostly aimed at fulfilling certain capital adequacy requirements. Corporate bonds are rare and mostly sold on a private basis. The participation of foreign portfolio investors on the stock market is insignificant. The only encouraging trend is the rise in the total value of the assets controlled by the investment funds, which have managed to attract the attention of the Serbian investors, especially as the bank interest rates have dropped to multi-year lows and are expected to stay there for a considerable future period.

Development of the regression model

In order to develop the model which will be used to examine the possible impact of various determinants on the capital structure, we have first explored the existing literature in this field. Our intention was to find out which of these determinants are most often used in similar studies and structure our model accordingly. Herewith we elaborate the most important findings we have reached.

Size. The larger companies are expected to use more debt simply because it is easier for them to borrow more. This is a result of their perceived stability in the long run and that they are usually more diversified which makes them better able to deal with crisis during the business cycles. Larger companies are usually listed in the stock exchanges and thus more transparent, which provides them with bigger chances to issue bonds, for instance (Jensen and Meckling, 1976). However, this relationship is not so straightforward. Namely, smaller companies are also induced to use more bank debt, because issuing equity is costly and complicated.

Tangibility of assets. Tangible assets are those assets that are fixed and have a material form (as opposed from patents, receivables, etc.). The companies with more tangible assets are expected to have higher leverage because of the ability to use them as collateral when borrowing from banks. This is also related to the universal use of assets such as buildings, machinery, vehicles, compared to specific assets which are not appropriate for this purpose (Titman and Wessels, 1988).

Profitability. Although it might seem logical that the more profitable companies should use less debt because they have sufficient funds, which is also an argument of the pecking order theory (Donaldson, 1963; Higgins, 1977), this relationship is not so clear. Namely, the more profitable companies find it easier to borrow, as a result of the less uncertain cash flows. Also, according to the static trade-off theory the more profitable companies have an incentive to borrow more, because the debt and non-debt tax shields are functional only when the company makes profits.

Growth and growth opportunities. The general expectation is that the companies that grow faster need to borrow more. This is also in line with the pecking order theory. On the other hand, according to the theory on asymmetric information, companies with significant growth opportunities use more equity financing to avoid transferring wealth from shareholders to debtholders. Finally, the trade-off theory says that growing companies have higher risk of financial distress and the accompanying debt-related agency problems, so it



predicts a negative relation between growth and leverage (Myers, 1977; Rajan and Zingales, 1995).

Tax shields. It was mentioned that in one of the versions of their study Modigliani and Miller (1963) introduced the impact of the tax shield caused by the interest paid on debt. It means that if the corporate tax rates are higher, the companies would be motivated to use more debt. Later, the importance of this proposition has been reduced by the trade-off theory. On the other hand, the existence of the so-called non-debt tax shields (e.g. depreciation, loss carryforwards, etc.) reduces the attractiveness of borrowing (DeAngelo and Masulis, 1980). Also, the empirical studies in many cases far have failed to prove the utilization of tax shields by the companies in this respect (MacKie-Mason, 1990, p. 1471).

Risk. Normally one would expect that when the borrower is a company that belongs to a higher risk category, the lenders would be resistant to provide them with loans. The riskiness is assessed by the credit rating of a company, but in underdeveloped capital markets we rely on the volatility of the profit and their debt history.

Other determinants. The list of potential factors is far from exhaustive and numerous authors have investigated the possibility that other variables could have a significant influence on the capital structure. Frank and Goyal (2009) investigate the impact of stock and debt market conditions, as well as macroeconomic settings on leverage; Titman and Wessels (1988) and Bauer (2004) analyze the impact of the industry to which the company belongs, using a dummy variable; Jiraporn and Gleason (2007) analyze the impact of shareholder rights on leverage, etc.

Using the above experiences, we have decided to explore the following regression model:

$$\text{LEVER}_{i,t} = \alpha + \alpha_1 \text{TANG}_{i,t} + \alpha_2 \text{SIZE}_{i,t} + \alpha_3 \text{PROF}_{i,t} + \alpha_4 \text{GROW}_{i,t} + \alpha_5 \text{RISK}_{i,t3y} + \alpha_6 \text{TAX}_{i,t2y} + \varepsilon_{i,t}$$

The meaning of the regressors is as follows:

- $\text{LEVER}_{i,t}$ – leverage of the i^{th} company in period t
- $\text{TANG}_{i,t}$ – tangibility of assets of the i^{th} company in period t
- $\text{SIZE}_{i,t}$ – size of the i^{th} company in period t
- $\text{PROF}_{i,t}$ – profitability of the i^{th} company in period t
- $\text{GROW}_{i,t}$ – growth potential of i^{th} company
- $\text{RISK}_{i,t3y}$ – standard deviation of ROA of company i for the past three-year period
- $\text{TAX}_{i,t2y}$ – effective tax rate of company i for the past two years (average)
- $\varepsilon_{i,t}$ – error term for firm i in period t

For the purposes of the regression, we had to select appropriate proxies for the variables included.

Size. The size of the company is usually represented by its total assets or the sales revenues. In regressions, they are usually represented by the natural log of these items and these values are usually highly correlated. We are using the log of sales in this paper and we expect a positive relationship of this variable with leverage.

Tangibility of assets. The most usual proxy for assets tangibility is the ratio of tangible fixed assets to total assets, while other possibilities involve the amount of R&D expenditures

(more R&D indicating higher share of intangible assets, Durnev and Kim, 2005), while the uniqueness of assets is usually proxied by a dummy variable. We expect a positive sign.

Profitability. The profitability of the company is measured relatively by the ratio between the company earnings and its assets or equity. In this case we apply the ratio of operating income to total assets (ROA). We expect an inverse relationship between profitability and leverage.

The growth opportunities are usually proxied by the market-to-book ratios (M/B or P/B), on the basis of the widely accepted interpretation of a higher M/B ratio as a sign that the company with a growth potential is worth more than the book value of its assets. However, in the less developed capital markets where share valuations are doubtful, a more appropriate proxy would be the one representing the company's total capital investments, such as capital expenditures to total assets or a change in the log of assets. We have decided to use the amount of fixed asset investments made in the last three years relative to the assets of the company and we expect that investments will be positively related to the amount of debt used.

The most obvious candidate to proxy the importance of tax shields is the effective tax rate, which is usually calculated as a ratio of the difference between pre-tax and after-tax earnings and the pre-tax earnings. The non-debt tax shields are proxied by ratios between the respective expenditures items and the total assets of the company. We don't have specific expectations about this variable.

The operational risk of a company is a result of the volatility of its earnings. However, if we look at the company from an investor's point of view, its riskiness would be expressed by the volatility of its stock price. This would increase the cost of equity and reduce the appeal of issuing shares. For the first type of volatility, the standard deviation of the return on assets (ROA) based on the operating income is used. We expect that higher volatility will lead to lower leverage.

Regression results

For the analysis, we have collected financial data about 51 companies. We have included all the listed companies on the Belgrade Stock Exchange and additional 45 companies with the highest turnover on the stock exchange in 2014. The companies from the financial sector (banks and insurance companies) are normally excluded in analysis of this kind, because of their specific sources of financing. The data we have gathered are for the period 2008-2013 and are taken from the audited financial statements. This has enabled us to make a panel regression using fixed and random effects. The differentiation between fixed and random effects is made using the Hausman test. In addition, as a dependent variable we have used the total leverage (ratio between the total liabilities and total assets), but also the total debt (only bank loans) and long-term debt.

First, we present the correlation matrix to ensure that there is no multicollinearity problem.

Table 2. Correlation matrix

	TANG.	SIZE	ROA	INVEST.	RISK	TAX
TANGIBILITY	1,000					
SIZE	-0,273	1,000				
Profitability (ROA)	-0,203	0,148	1,000			
INVESTMENTS	-0,095	0,255	0,366	1,000		
RISK	-0,285	0,017	0,102	0,043	1,000	
TAX	0,017	0,048	-0,146	0,061	0,045	1,000

We can see that there are no high correlations between any of the variables. The highest correlation is 0,366 between the investments and the profitability, which is not a high correlation, so we conclude that the multicollinearity problem does not exist in the sample.

The regression results are given in table 3.

Table 3. Regression Results

Dependent variable	Model 1	Model 2	Model 3
	Total Liabilities	Total Debt	Long-Term Debt
Constant	0,229 (0,187)	-0,101 (0,149)	0,641 (0,241) ***
Tangibility	-0,368 (0,056) ***	0,011 (0,048)	-0,073 (0,047)
Size	0,0412 (0,017) **	0,029 (0,013) **	-0,050 (0,022) **
Profitability	-0,401 (0,091) ***	-0,148 (0,079) *	0,060 (0,070)
Investments	0,031 (0,066)	0,030 (0,058)	0,041 (0,052)
Risk	-0,196 (0,193)	0,035 (0,169)	0,311 (0,149) **
Tax	-0,154 (0,049) ***	-0,054 (0,023)	-0,076 (0,038) **
No. of observations	273	273	273
Adjusted R ²	0,237	0,23	0,69
Prob (F-Statistics)	0,000	0,04	0,000
Model used	Random effects	Random effects	Fixed effects
Hausman test for random effects (prob. Chi-Sq.)	0.41	0.353	0.048

Standard errors in parenthesis.

*-significant at 10%, **-significant at 5%, ***-significant at 1%

The results show that the larger companies use more debt financing. This is an expected sign because the larger companies are usually older, well-known companies and they find it easier to borrow from the banks. In these markets, the informal relations between the companies and banks also play a significant role in the process of approving loans to the clients, so this could also be another reason for the positive sign. However, we see a negative sign of the size variable when long-term debt is used as a dependent variable. This leads us to a conclusion that the larger companies use more short-term financing or even accounts payable to cover their financing needs, which is a result of their better market position

Somewhat surprising is the sign of the tangibility variable. We expected a positive sign, but the inverse relationship between the tangibility of assets and the total liabilities can be explained on the grounds that the companies with more tangible assets have already established their capacities, so that they do not need extensive additional financing. This is also in line with the negative relationship between the size and long-term debt. Other papers exploring the capital structure in developing countries have also found a negative relationship (Booth et al., 2001; Bauer, 2004; Črnigoj and Mramor, 2009).

As expected, the more profitable companies do not need to borrow, which is in line with the pecking order theory. The tax rates are negatively related to leverage, which is contrary to the trade-off theory, which stipulates that the companies use more debt to take advantage of the tax shield. This is expected, because the tax rates prevailing in Serbia today are considerably lower than in many other countries and also they are much lower than those that were in place when MM had worked out the tax shield proposition.

Interestingly, risk is not related to leverage, except in the long-term debt model, when we see an unexpected positive sign. We explain this by the fact that the companies with more volatile earnings had to borrow more on the long-term, to cover deficiencies of cash, while at the same time, the banks do not take past volatility into account when granting credits. It is also surprising that no significant relationship has been found between leverage and the amount of past investments.

Robustness check

To ensure that the regression results are not biased due to the sample used, we have performed a robustness check applying three modifications of the model and the sample. First, having in mind that the data set is not complete for all the companies, we have created a subsample consisting only of the companies with complete data set. There are 34 such companies. Second, researchers have also found differences in the capital structure among the companies, depending on the industrial sector (Bauer, 2004). Namely, it has been found that the manufacturing companies use less debt than those from trade and the services sectors. For that purpose, we have made a subsample consisting of manufacturing companies and reworked the regression on that subsample containing 41 companies. Finally, we have separated the companies by their size, by simply cutting the whole sample by half using the log of assets criterion and applied the regression to these subsamples. The results from the robustness tests are given in table 4.

Table 4. Robustness Check

Dependent variable	Manufacturing	Full data set	Large companies	Small companies
Constant	0,438** (0,214)	-0,031 (0,204)	-0,221 (0,426)	0,168 (0,250)
Tangibility	-0,490*** (0,064)	-0,366*** (0,060)	-0,506*** (0,091)	-0,218*** (0,072)
Size	0,026 (0,019)	0,059*** (0,018)	0,084** (0,035)	0,043* (0,026)
Profitability	-0,443*** (0,090)	-0,322*** (0,100)	-0,559*** (0,136)	-0,347*** (0,113)
Investments	0,123* (0,073)	0,004 (0,071)	0,086 (0,085)	-0,065 (0,102)
Risk	-0,223 (0,189)	-0,158 (0,206)	0,204 (0,288)	-0,694*** (0,247)
Tax	-0,223*** (0,190)	-0,080*** (0,026)	-0,209*** (0,064)	-0,084 (0,074)
No. of observations	220	202	135	138
Adjusted R ²	0,304	0,283	0,350	0,199
Prob (F-Statistics)	0,000	0,00	0,000	0,000
Model used	Random effects	Random effects	Random effects	Random effects
Hausman test (prob. Chi-Sq.)	0,113	0,34	0,404	0,062

Standard errors in parenthesis.

*-significant at 10%, **-significant at 5%, ***-significant at 1%

The robustness tests results are more than satisfactory. The signs of the tangibility, size, profitability and tax variables are confirmed in almost all the model applications. It is especially important that the model applied to the subsample of companies with full data confirms the initial findings with extremely high significance levels.

Conclusions

The paper tries to make a contribution toward explaining the behaviour of the managers and companies in the former socialist economies regarding their capital structure. Having this in mind, we have analyzed the Serbian economy, using a sample of 51 joint-stock companies and their financial data for a 6 year period.

The panel regression model provided us with results that were to some extent unexpected. As expected, we have concluded that the larger companies are more leveraged, which is explained by their assumed longevity and stability and also the more profitable companies have less debt, which should be a result of the availability of internal funds. However, the companies with higher share of tangible assets seem to use less debt, which is

an unexpected outcome, since most of the banks require high-value collateral to be pledged when extending loans. In addition, the insignificant sign of the amount of investments in the previous several years is a little surprising, but the only possible explanation for this is that the companies have been using debt for purposes other than fixed-asset investments and/or the investments have been financed mostly from internal funds. The insignificance of the risk variable can be understood as a lack of reliance on the past earnings that the banks exhibit in the lending procedures. The robustness check has to a great extent confirmed the regression results.

All of this induces us to think that the Serbian companies follow some kind of modified pecking order in the design of their capital structures, although the support from the regression results is not very strong. They first rely on their internal funds, borrow when needed and issue securities only as a last resort. Additionally, the low corporate tax rates and the negative sign of this regressor, fail to support the trade-off theory.

At the end, we must make some notes regarding the study. The sample is quite small and its size could have affected the results of the study. However, the sample consists of the 50 companies with the highest stock market turnover on the Belgrade Stock Exchange for 2014. As such, they should be quite representative for the Serbian economy, but we suggest an extension of the study with other companies, as soon as the data constraint is overcome.

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Struktura kapitala na tržištima u nastajanju: slučaj akcionarskih društava u Srbiji

REZIME – Ovaj rad predstavlja pokušaj da se empirijska istraživanja teorije strukture kapitala prošire na post-tranzicijske ekonomije i da se njime utvrdi dali postoje određeni faktori koji bi mogli da se sistematski povežu sa izborom izvora finansiranja kod akcionarskih društava u ovim zemljama.

Ova studija koristi primerak kompanija čijim se akcijama najviše trguje na Beogradskoj berzi i koristeći njihove finansijske podatke iz zadnjih 6 godina, primenjuje model panel regresije. Rezultati regresije pokazuju da je leveridž analiziranih kompanija pozitivno povezan sa njihovom veličinom, a negativno sa materijalnošću njihovih sredstava, profitabilnošću i efektivne stope poreza na dobit. Iznenađuje rezultat da nije otkrivena povezanost između iznosa investicija u prethodnim godinama i nivoa zaduženosti. Ovi rezultati ne daju dovoljno potpore ni za jednu od teorija strukture kapitala, međutim, najbliži su nekom obliku teorije redosleda finansiranja.

KLJUČNE REČI: struktura kapitala, leveridž, finansiranje, vlastiti kapital, tranzicija

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