Плафторма IV. Фінансово-кредитні важелі державної підтримки інноваційно-інвестиційної діяльності бізнесу

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Debt-Equity Determinants of Ukrainian Enterprises

Capital structure of enterprises is one of the most debated concepts in corporate finance theory since the publication by M. Miller and F. Modigliani their seminal work in 1958 [1]. A lot of different theories of capital structure have been developed since then, but the most influential are the trade-off theory and the pecking order theory. While the trade-off theory seeks for optimal capital structure by balancing between tax benefits of debt and increased probability of bankruptcy, the pecking order theory tries to explain the sequence of financing sources used by an enterprise.

Although, plenty of scientific researches was deducted to determinants of capital structure choices, the results of the studies and quite heterogeneous in terms of strength and direction of determinants' influence on leverage. Moreover, capital structure determinants of enterprises in developed countries are widely studied, but there are quite less empirical works dedicated to debt-equity choices of enterprises in developing countries like Ukraine. So, the objective of the study is toempirically identify the determinants of capital structure of Ukrainian enterprises.

After investigating literature concerning capital structure determinants, the author identified the main factors affecting leverage choice, which are profitability, size of an enterprise, growth opportunities, tangibility, age of an enterprise, cost of capital, risk, taxes, liquidity, ownership structure, industry, macroeconomic indicators and default probability. We used main and alternative proxies for the above-mentioned determinants to increase confidence of the results. The ratio of total debt to assets was used as a dependent measure of capital structure.

The analyzed sample consists of annual panel data of 11 573 Ukrainian firms of different industries excluding financial services for the period from 2009 to 2015. The author used balanced panel, i.e. enterprises with missing data for at least one period were excluded from the sample. The methods used in this study are descriptive statistics, correlation analysis and multivariate regression analysis.

The results of descriptive statistics reveal that average value of debt to assets ratio was 0.61, so analyzed Ukrainian enterprises finance their operations mainly from borrowings. In the structure of debt financing the short-term debt is prevailing comprising 79.2% of all borrowings. Such extremely low share of long-term financing is seems to be the peculiarity of Ukrainian firms, which differentiates them from European enterprises [3, p. 151]. Moreover, debt of US enterprises comprises of long-term borrowings at nearly 80% [2, p. 41].

Correlation analysis shows the presence of negative correlation between profitability, tangibility and leverage of analyzed enterprises. Analyzing correlation between explanatory variables, significant negative correlation was identified between tax and other independent variables. Therefore, tax proxy was excluded for regression analysis to prevent multicollinearity issues.

The author used three regression models, which are Pooled OLS model, Fixed Effects Model and Random Effects Model in order to identify model that better fits the data. In general, model looks like the following way:

$$Leverage_{it} = \alpha + \beta_1 Profit_{it} + \beta_2 Size_{it} + \beta_3 Growth + \beta_4 Tangibility_{it} + \beta_5 Age_{it} + \beta_6 Cost_{it} + \beta_7 Risk + \beta_8 Liquidity + \beta_9 Ownership_{it} + \beta_{10} Industry_{it} + \beta_{11} Macro_{it} + \beta_{12} Default_{it} + u_{it}$$

where α is an intercept, $\beta_{1\ldots12}$ – slope coefficients, u_{it}– error terms, i – enterprises, t – time periods.

After running 3 different regression models, the author identified that Fixed Effect Model best fits the sample, taking into account the nature of data and the maximum adjusted R^2value of 0.66. It was found the existence of strong negative relationship -0.63 between leverage and profitability, which supports the pecking order theory and results of the most empirical studies, showing that higher profits reduce the need for external sources of financing.

Also, it has been identified strong negative relationship between leverage and tangibility amounting to -0.28, which contradicts the trade-off theory and researches of firms in developed countries. But it should be admitted, that regression results are in line with empirical studies of capital structure determinants in developing countries.

The presence of strong negative relationship was detected between leverage and size, age of an enterprise, liquidity and default probability, but these determinants do not have significant impact of capital structure, as their slope coefficients are rather low amounting to -0.03, -0.02, -0.001 and -0.05 respectively.

The author also identified strong positive relationship between leverage and cost of debt and macroeconomic conditions amounting to 1.07 and 0.19 respectively. So, identified model of capital structure determinants looks like the following:

$$Leverage_{it} = 1.15 - 0.63\ Profit_{it} - 0.03\ Size_{it} - 0.28\ Tangibility_{it} - 0.02\ Age_{it} + 1.07\ Cost_{it} - 0.001\ Liquidity + 0.19\ Macro_{it} - 0.05\ Default_{it} + u_{it}$$

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