Modeliranje poslovnih rizika, analiza slučaja: „Jasmin d.o.o.“

Ognjen M. Raketić¹, Irena M. Rašević²

¹INAT Summit, ognjen.raketjic@gmail.com

²Fakultet tehničkih nauka Čačak, irenarasevic@yahoo.com

Apstrakt: Rad ima za cilj da objasni analizu rizika poslovanja trgovinskog preduzeća „Jasmin d.o.o.“ uz pomoć leveridž metode. Takođe, rad ukazuje na značaj leveridž metode u otkrivanju i otklanjanju rizika u poslovanju preduzeća. Osim toga, rad daje uvid u poslovanje trgovinskog preduzeća „Jasmin d.o.o.“ tokom 2016. godine. Nakon uvodnog poglavlja u kom je objašnjen pojam i vrste leveridža, rad se fokusira na istraživanje sve tri vrste leveridža. Na kraju rada se nalaze zaključna razmatranja i literatura koja je korišćena u ovom radu. U radu su korišćeni relevantni podaci koji se nalaze na sajtu agencije za privredne registre. Svrha i značaj ovog rada jeste u prikazivanju bitnosti leveridž metode u analizi rizika poslovanja preduzeća. Takođe, cilj ovog rada jeste da se podigne svest o validnosti leveridž metode u analizi rizika poslovanja preduzeća, usled nedovoljne zastupljenosti u Srbiji. Ovaj rad je upotrebljiv finansijskim analitičarima, kao i stručnjacima koji se bave analizom rizika poslovanja, ali ovaj rad mogu koristiti i studenti koji žele da se usavšavaju u oblasti poslovnih finansija.

Ključne reči: leveridž, rizik, troškovi, poslovanje, dobit.

Engineering Risk Analysis, Case Study of "Jasmin d.o.o."

Abstract: The paper aims to explain the risk analysis of the "Jasmin d.o.o." company using the leverage method. Also, the paper points to the importance of the leverage method in detecting and eliminating risks in the company's business. In addition, the paper gives insight into the operations of the "Jasmin d.o.o." company during 2016. After the introductory chapter in which the term and types of leverage are explained, the work focuses on the research of all three types of leverage. At the end of the paper, the final premises and literature used in this paper are found. The relevant data are available on the website of the Business Registers Agency. The purpose and significance of this paper is to present the essence of the leverage method in the analysis of business risk. Also, the aim of this paper is to raise awareness of the validity of the leverage method in the analysis of business risk, due to insufficient representation in Serbia. This paper is used by financial analysts as well as by experts who deal with business risk analysis, but students who want to study in the field of business finance can also use this work.

Keywords: leverage, risk, costs, business, profit.

1. Leverage business analysis

The concept of risk refers to less or more uncertainty about the expected outcome of the business activities of the company. However, two basic types of risks should be distinguished (G. Knežević, 2009):

- Business risk is related to the activity of the company, and it determines the uncertainties related to the expected business profit. The key of this risk is fixed costs that remain rigid (inelastic) to short-term oscillations in the scope of business activity.
- Financial risk is related to the business of a company where potential cash losses can arise, which directly affect the uncertainty of the future net profit. The key of this risk consists of fixed costs of financing that can not be adjusted to short-term oscillations of business profits.

An enterprise that engages both types of fixed costs (business and financial) is exposed to double risk - business and financial, where their combined operation is called a combined risk. The exposure of the

company to these risks presupposes the existence of an adequate method for measuring and quantifying risk. One of these methods is leverage. Using the leverage method, they try to evaluate the effects of business in the presence of the so-called constant factors (fixed costs – expenditures). Analogously to the above, one can speak of the following: business, financial and combined leverage.

- Business leverage is measured by business risk factors that show changes in business profits in relation to changes in sales revenue, in the sense of the following: any increase in sales volumes causes an even greater increase in profits. In addition, this is true and vice versa.
- Financial leverage - measured by financial risk factors that show changes in net profit in relation to business profit, in the sense of the following: any increase in business profits causes an even higher increase in net profit. In addition, this is true and vice versa.
- Combined Leverage - measured by the combined leverage factor that shows the effect of total risk (business and financial), in the sense of the following: any increase in sales volume directly affects the increase in net profit and return on own funds. In addition, this is true and vice versa.

1.1. Business leverage

Business leverage reflects the degree of uncertainty associated with achieving business gains as a return on total business assets. (Terzić and Milojević, 2013).

- The essence of the business leverage is reflected in the following: if the enterprise has more fixed costs then it is more at risk of failing to cover sales in the event of a fall in sales and fixed costs, or there is a risk that the company will operate with a loss.
- Business leverage is measured and reported through a business risk factor (leverage), which shows changes in business profits in relation to changes in income from realization. The business leverage factor can be calculated using the following simple formula:

$$\text{Factor of business leverage} = \frac{\% (\text{percentage}) \text{ of business profit change}}{\% (\text{percentage}) \text{ of change in sales volume}}$$

This factor shows that changing the volume of sales for a certain percentage amount affects the percentage change in business profits.

Table 1: Business leverage of the trading company "Jasmin d.o.o" Belgrade.

S.n	Position name	Initial state (in RSD)	Increase in sales volume by 10% (in RSD)	Decrease in sales volume by 10% (in RSD)
1.	Sales revenue (in thousands)	1.584.813	1.743.294	1.426.331
2.	Variable costs (in thousands)	1.282.648	1.410.913	1.154.383
3.	Marginal gain (1 - 2)	302.165	332.381	271.948
4.	Fixed costs	138.130	138.130	138.130
5.	Business Profit (3 - 4)	164.035	194.251	133.818
	Factor of business leverage FBL = MG / FC	2.2	2.4	2

Source: ABR

Business leverage factor is 2.2, which means an increase (to decrease the) sales volume (in %) leading to a double increase (decrease) in operating profit margin (in %).

Increasing the volume of sales of about 10% (from 1,584,813 to 1,734,294 rsd) leads to an increase of business profit by 24% (from 164 035 to 194 251 RSD).

Reduced volume by 10% (from 1,584,813 to 1,426,331 rsd) leads to a reduction of business profit by 20% (from 164 035 to 133 818 rsd).

The explanation of this fact leverage factors of the business is in the fixed costs are costs weight „ solid "(elastic) to change the volume of business activities of the company.

Based on the so far mentioned, leads to the conclusion that the financial structure of the company directly determined by the intensity of effects of business leverage. Specifically, high leverage factor of business indicates a situation in which major fluctuations in business profit can be achieved on the basis of relatively small changes in the volume of sales, which also represents a proportionally high level of business risk. In such conditions, the financing of debt becomes very risky and that at least two reasons: (1) due to greater distrust of creditors in the earning power of the company, and (2) due to the increased uncertainty that adverse fluctuations in operating results lead the company into a state of insolvency.

1.2. Financial leverage

Financial leverage reflects the degree of uncertainty related to the realization of net income as a return on net operating assets.

The essence of financial leverage lies in the following: if the debt capital increased if they are fixed expenses that it requires high, then there is a greater risk that their regular company operations will not be able to cover fixed expenses and financing. Analogously, the size of financial risk (leverage) depends on the degree by which the fixed expenses for interest covered in the business of winning.

Financial leverage is measured through factors of financial risk (leverage) that shows the changes in net - profit in relation to changes in the business of winning. Business leverage factor can be calculated using the following simple formula:

$$\text{Financial leverage factor} = \frac{\% (\text{percentage}) \text{ increase in net yield}}{\% (\text{percentage}) \text{ increase in business profit}}$$

Table 2: Financial leverage of the trading company "Jasmin d.o.o"

S.n.	Position name	Initial state (in RSD)	Increase in business profit by 10% (RSD)	Decrease of business profit by 10% (in RSD)
1.	Business profit (in thousands)	109.305	120.236	98.375
2.	Interest (in thousands)	28.636	28.636	28.636
3.	Net profit (1 - 2) (in thousands)	80.669	91.600	69.739
4.	Return on total assets	11%	12%	10%
5.	Rate of return on own business assets	28%	32%	25%
	Factor of financial leverage: FFL = 1.35			

Source: ABR

Factor of financial leverage is 1.35, which means that an increase (decrease) in operating profit margin (in %) lead to a 1.35 times increase (decrease) in net - income (in %).

Increasing the business profit by 10% (from 109,305 to 120,236 RSD) results in an increase in net - the yield of 13.5% (80,669 to 91.600 RSD). Reduction of business profit by 10% (from 98,375 to 109,305 RSD) results in a decrease in net - the yield of 13.5% (from 80,669 to 69.739 RSD).

The explanation of this fact financial leverage factor is the presence of fixed financing expenses (interest on debt).

Table 3: Positive and negative effects of the financial leverage of the trading company "Jasmin doo"

Positive fact	Negative fact
The company is responsible for using borrowed sources of financing in cases where the interest paid on loans is lower (10%) than the rate of return on the total business assets of the enterprise (11%). The consequence of the positive effect of the financial leverage on the profitability of own capital (the so-called positive effects of financing), since the return on own business assets (32%) is higher than the rate of return on total business assets (12%).	The company is not entitled to use borrowed funds in cases where the interest paid on loans is equal (10%) to the rate of return on the total business assets of the enterprise (10%). The consequence of the negative effect of the financial leverage on the profitability of own capital (so-called negative effects of financing), although the return on own business assets (25%) is higher than the rate of return on total business assets (10%).

Source: ABR

1.3. Compound leverage

Compound leverage resulting from the fact business and financial leverage. Therefore, compound leverage represents the overall risk facing a company.

Effect of a complex leverage is expressed in terms of the corresponding coefficient or factor, which is called the factor of the combined or composite of leverage, and which is equal to the product by a business leverage and financial leverage, which is expressed by the following formula:

$$\text{Factor of compound leverage} = \text{Factor of Business leverage} * \text{Factor of Financial Leverage.}$$

Factor complex leverage reflects the enterprise's overall (total) risk, with considering that the realization of future net income and return on net assets brought into direct interdependence with possible changes in the scope sales changes in sales revenue.

Table 4: Compound leverage of the trading company "Jasmin doo"

S.n	Position name	Initial state (in RSD)	Increase in sales volume by 10% (in RSD)	Decrease in sales volume by 10% (in RSD)
1.	Sales revenue (in thousands)	1.584.813	1.743.294	1.426.332
2.	Variable costs (in thousands)	1.282.648	1.410.913	1.154.383
3.	Marginal gain (1 - 2) (in thousands)	302.165	332.381	271.949
4.	Fixed costs (In thousands)	138.130	138.130	138.130
5.	Business Profit (3 - 4) (in thousands)	164.035	194.251	133.819
6.	Interest (In thousands)	28.636	28.636	28.636
7.	Net Profit (5 - 6) (in thousands)	135.399	165.615	105.183
8.	Rate of return on own funds	40%	48%	31%
9.	% increase (decrease) net profit and return on own funds		22.3%	(22.3%)

Source: ABR

Based on the data from the table and the results of the combined factor (composite) is 1.8 leverage.

The percentage increase in sales volume caused 1.8-fold increase in net profit and the rate of return on net assets.

The percentage decrease in sales volume caused 1.8 times reduction of net profit and the rate of return on net assets.

When it comes to increasing sales volume by 10% (from 1,584,813 to 1,743,294 RSD) this has the effect of increasing net income by 22.3% (from 135,399 to 165,615 RSD). At the same time, the rate of return on equity increased from 40% to 48%.

When it comes to reducing the volume of sales by 10% (from 1,584,813 to 1,426,332 RSD) this has the effect of reducing net income by 22.3% (from 135,399 to 105,183 RSD). At the same time, the rate of return on net assets decreased from 40% to 31%.

2. Conclusion

Based on the analysis of business leverage, the conclusion is that the financial structure of the company directly determined by the intensity of effects of business leverage. High leverage factor of business indicates a situation in which major fluctuations in business profit can be achieved on the basis of relatively small changes in the volume of sales, which also represents a reasonably high degree of business risk (operating leverage companies' Jasmin doo "is 2.2).

In such conditions, the financing of debt becomes very risky for two reasons:

1. Because of the growing distrust of creditors in the earning power of the company, and
2. Because of the increased uncertainty that the adverse fluctuations business results lead the company into a state of insolvency.

The interest of the company "Jasmin doo" is the factor of financial risk as low as possible, ie, company must constantly encourages all factors that act to reduce financial risk and at the same time suppress all factors that increase it, to financial leverage factor was as low as possible, and weighed unit (financial leverage factor in the company "Jasmin doo" is 1.35).

The company "Jasmin d.o.o." has a low factor of a complex leverage (1.8) which means that the property is moved to the supra-tumbler assets, and the depreciation expense and lower. Company "Jasmin doo" can afford large expenditures for financing, capital structure moving toward the capital borrowed, and then the company will have an acceptable factor of business leverage.

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