

# Assurance of Business Viability through Equity Sufficiency

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## ABSTRACT

The aim of the research is to develop the approach to management of the level of equity sufficiency, which can be applied towards the solution of particular problems of business viability. The authors suggest the algorithm for improving the business viability through the equity sufficiency by means of adjusted financial leverage effect. Its applicability is proved by results of analysis of statistical data on Latvian companies. Suggested approach to management of the level of equity sufficiency can be considered as an effective tool for achieving company's viability.

**Keywords:** degree of adjusted financial leverage effect, business viability, costs allocation by assets centers, the level of equity sufficiency, fair value of return on assets.

## 1. INTRODUCTION

The viability of business is defined by its long-term survival – its ability to have sustainable profits over a period of time. The situation in the world economy stipulates the necessity for a strong management of business viability. Bankruptcies are an important issue for the European economy. Business entry and exit are natural processes that are inherent to European economies; actually 50% of enterprises do not survive the first five years of their life and of all business closures, bankruptcies account in average for 15%. Furthermore, bankruptcy has an important secondary effect on entrepreneurship as many entrepreneurs do not start a company because of their fear of the consequences of business failure [1].

According to the European Commission's Flash Eurobarometer 283 of May 2010, 49% of entrepreneurs mentioned that the major risk to start an activity is the possibility of going bankrupt [2].

It should be noted that each year the problem of increasing of losses, insufficient level of equity and bankruptcy of Latvian companies is getting more and

more serious. The statistical data shows that the average rate of the equity to total assets during the past 10 years has been fallen by half and amounted to 28% in 2010 [3].

In average 2% of active enterprises are facing the problem of legal insolvency - the most vital business issues of 21st century [4].

The sufficient level of equity is critical factor for company's viability and solvency. The authors of this paper suggest the approach to monitoring the level of equity sufficiency by means of:

- 1) degree of adjusted financial leverage effect;
- 2) fair value of return on assets.

The aim of the research presented in the paper is to develop the approach to managing the sufficiency level of equity, which can be applied towards the solution of particular problems of business viability.

## 2. THE INSIGHT INTO PRACTICAL ISSUES OF EQUITY SUFFICIENCY MANAGEMENT

In the course of scrutinizing the scientific literature, authors have considered that recently the issue related to equity and capital structure has been discussed in the scientific literature quite widely; however the methodological approach to defining the optimal value of equity for business viability, in authors' opinion, requires a more profound theoretical interpretation, formalization and economic substantiation.

The principles of equity management in the most of the scientific resources are limited or to multi-criteria optimization of capital structure [5, 6, 7] either to various measures of leverage [8, 9, 10, 11, 12, 13]. Suggested approaches to equity management suppose the evaluation of risks, profitability, inflation, taxes, structure of debts and impact of other factors on viability, but it was not found any literature where the level of equity sufficiency is taken into consideration.

The authors of the paper suggest defining of equity sufficiency as such level of company's equity, which allows it to achieve a condition of "self-sufficiency". Self-sufficiency is the state of independence

from any aid, support, or interaction, for survival (viability); it is therefore a type of autonomy [14].

Authors suggest theoretical methodology for assurance of business viability through the equity sufficiency based on financial leverage effect. The level of equity sufficiency is defined by the ration of current value of equity to permissible value of equity. The permissible value of equity is identified according to the equation (1) given below [15]:

$$E_{pv} = LA + IN - PR - LL, \quad (1)$$

where

- $E_{pv}$  – permissible value of equity, Ls;
- LA – long-term assets, Ls;
- IN – inventories, Ls;
- PR – provisions, Ls;
- LL – long-term liabilities, Ls.

The degree of financial leverage effect as in (2) can be adopted for achieving the sufficient level of equity:

$$DFL = (1 - TR) * (ROA - R) * \left(\frac{D}{E}\right), \quad (2)$$

where

- DFL - degree of financial leverage effect, %;
- TR - income tax rate, relative value;
- ROA – return on assets, %;
- R - interests average rate, %;
- D - debts, Ls;
- E - equity, Ls [16].

The authors consider that the applying of standard financial leverage effect (2) for equity and capital structure optimization is very limited due to:

- 1) the impact of intangible assets on income and profitability of company is not taken into consideration;

- 2) interest rate is not distributed according to short term and long term liabilities;
- 3) applying of financial leverage effect for capital structure optimization doesn't assume the evaluation of level of equity sufficiency.

### 3. METHODOLOGICAL APPROACH TO ASSUARANCE OF BUSINESS VIABILITY THROUGH THE EUQITY SUFFICIENCY

The authors suggest the algorithm for improvement the business viability through the equity sufficiency by means of “degree of adjusted financial leverage effect” (see Fig.1).

#### A. Evaluation of level of equity sufficiency

Calculation of the level of equity sufficiency according to the formula 3 is a prerequisite for identifying the degree of self-sufficiency of company in order to further elaboration of the mechanism for managing business viability:

$$SLE = \frac{E_c}{E_{pv}}, \quad (3)$$

where

- $E_c$  – current value of equity, Ls
- $E_{pv}$  – permissible value of equity, Ls
- SLE – sufficiency level of equity, relative value.

If sufficiency level of equity is less than 1 ( $SLE < 1$ ), it means that company depends on external support and has high risk of bankruptcy. In order to achieve sufficient level of equity authors suggest the applying an adjusted approach to defining of degree of financial leverage effect.

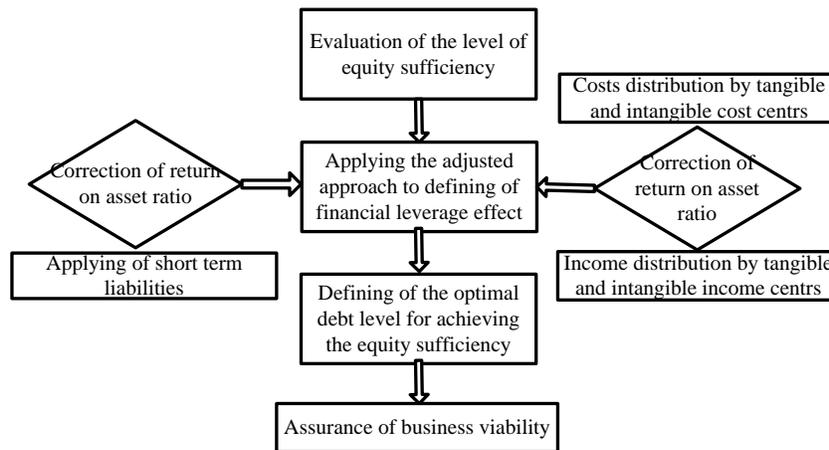


Figure 1 Algorithm for improvement of business viability through the equity sufficiency

*B. Applying the adjusted approach to defining of degree of financial leverage effect*

The degree of financial leverage effect is a financial ratio, which defines the level of additional equity in response to increasing of debts by 1% [17].

The traditional theoretical approaches to calculation of the degree of financial leverage effect (2) don't suppose the evaluation of impact of intangible assets on company's profitability. The content of intangible assets is under discussions between scientists and there are still not generally accepted definitions for intangible assets. From accountancy prospective they can be qualified as non-material assets accounted on balance sheets in accordance with some conditions [18]. From managerial and business prospective it is qualified as reputation, name recognition, intellectual property such as knowledge and know how [19].

Within this research authors consider that the intangible assets are all company's assets which are not presented in balance sheets, but which actually generate company's additional value, etc. intellectual capital - human capital, internal processes and others related assets.

Intellectual capital is an intangible asset that has supplanted industrial machinery and natural resources, and is today considered one of the most valuable factors for the creation of wealth being [20]. It is knowledge,

experience, organizational technology, relationships, and professional skills that provide for a competitive edge in the market [21].

Scientists' recent studies present the importance of intangible assets (intellectual capital) of company [22, 23, 24, 25, 26]. They are still looking for methods for measurement of intellectual capital impact on profit and value, but still no any optimal tool is found – some authors suggest determining of it by means of identifying of the value of market value of company, the value of R&D expenditures, differential between profitability rates of industry and separate company [27].

Authors of this research consider that applying of suggested approaches to evaluation of impact of intellectual capital on profitability of company is limited from the prospective of achievement of equity sufficiency. It is impossible to apply these researches for calculation of financial leverage effect due to limitation of information availability.

It is suggested to identify the fair value of return on assets, which takes into account and excludes the impact of intangible (intellectual) assets on income. The fair value of return on assets is defined by means of costs and income distribution according to assets centers. Authors suggest classifying costs and income by 2 assets centers – tangible and intangible – as it shown on Fig.2:

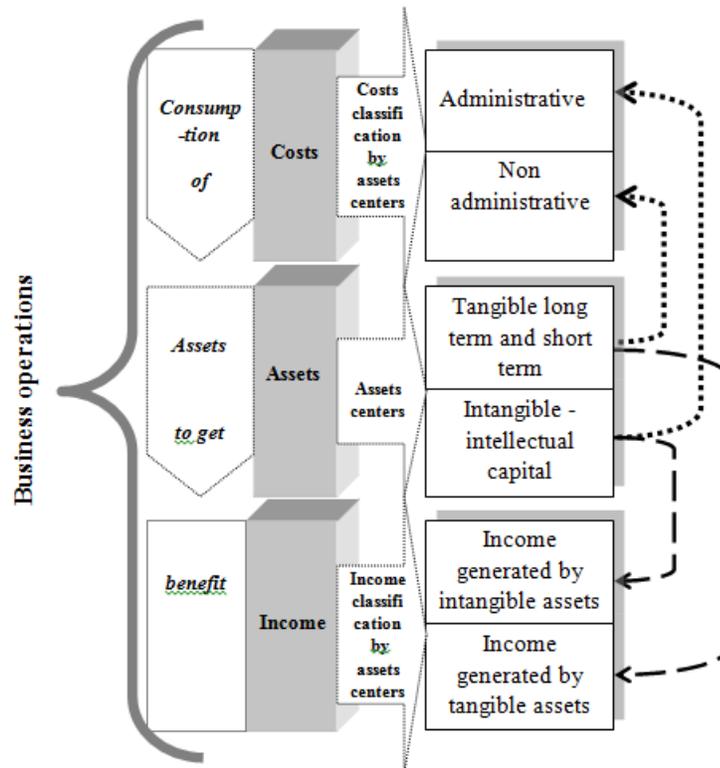


Figure 2 Distribution of income and costs by centers of tangible and intangible assets

The costs related to the intangible assets are determined as company's administrative costs. Income generated by tangible and intangible assets can be defined proportionally to administrative and non-administrative costs.

The fair value principle of return on assets is exposed in the principle like the consumption degree (costs) of intangible and tangible assets should be in proportion to the expected benefit from this consumption.

The fair value of return on assets profitability can be defined by means of formula (4):

$$FRA = 100 * \frac{PBT - I_{int}}{A} = 100 * \frac{PBT - \frac{C_a * I_t}{C_t}}{A}, \quad (4)$$

where

- FRA - fair value of return on assets, %;
- PBT - profit before taxes, Ls;
- $I_{int}$  – income generated by intangible assets, Ls;
- $I_t$  - income total, Ls
- $C_a$  – administrative costs, Ls;
- A - Assets, Ls;
- $C_t$  - total costs, Ls.

Authors consider that the interest rate – the average price for external financing (interest payments to liabilities) within the financial leverage effect should be calculated as interests to short-term liabilities, as company during the current year is paying only for short-term liabilities, which generate the profit. Long-term liabilities are transforming into the short term by stages – year after year. The suggested calculation approach to the adjusted financial leverage effect is presented below (5):

$$DFL_a = (1 - TR) * (FRA - \frac{IP}{L_{st}} * 100) * \frac{D}{E}, \quad (5)$$

where

- $DFL_a$  – degree of adjusted financial leverage effect, %;
- IP - interests payments, Ls;
- $L_{st}$  - short-term liabilities, Ls.

The adjusted degree of financial leverage effect presents the effect of additional debts involving into tangible assets, which will generate additional profit.

### C. Defining the optimal amount of debts for achieving equity sufficiency

In cases when the level of equity is insufficient ( $SLE < 1$ ), authors suggest defining of the necessary changes in the amount of debts to improve the level of equity sufficiency (6):

$$\Delta D = 100 * \frac{\Delta E}{\Delta DFL_a}, \quad (6)$$

where

$\Delta D$  - necessary changes in debts, %;

$\Delta E$  – necessary changes in equity to achieve its sufficiency, %; where  $\Delta E$  is calculated according to the formula 7:

$$\Delta E = 100 * \frac{E_{pv} - E_c}{E_c}, \quad (7)$$

The suggested algorithm for improvement of the business viability through the equity sufficiency can be applied within making the decision, planning process and monitoring the financial condition of a company.

## 4. THE APPLICABILITY OF DEGREE OF ADJUSTED FINANCIAL LEVERAGE EFFECT: CASE FROM LATVIA

The authors of the research have tested the suggested approach to calculation of adjusted financial leverage effect. The Latvian medium and small size enterprises of Riga region, which operates in the service industry, were chosen as an object of the testing. Testing period – 2008-2009 years, when the impact of financial crises on business viability of companies could be the most significant.

The enterprises as objects of testing were selected on the basis of the largest business activity in the mentioned region of Latvia (67%) and their contribution to the gross domestic product (42%).

The results of testing of the adjusted degree of financial leverage effect are presented in the Table 1:

Table 1 The results of testing the adjusted degree of financial leverage effect of Latvian companies

| Parameters   | According to the formula |          |
|--|--------------------------|----------|
|  | standard                 | adjusted |
| <i>2008 year</i>   |                          |          |
| Return on assets   | 0.58%                    | -0.04%   |
| Degree of financial leverage effect  | -5.30%                   | -0.32%   |
| Profit before taxes, Ls  | 74156                    | 657107   |
| <i>2009 year,<br/>values taking into account the tendencies of changes of debts in 2009, degree of financial leverage effect of 2008</i> |                          |          |
| Expected changes in equity   | -6.60%                   | -0.40%   |
| Actual changes in equity   | 5.60%                    |          |

## 7. REFERENCES

The results of testing present the differences between return on assets (ratio of PBT to Assets, that equals 0.58%) and fair value of return on assets. The fair value of return on assets of Latvian companies show that their assets are not profitable. That means that company has generated profit from consumption of non-tangible assets 9 times more than from assets presented on the balance sheet. This fact is also proved by specific of companies' business as they are operating within service industry.

During the testing it was found that expected changes in equity calculated based on adjusted approach to defining the degree of financial leverage are much closer to actual changes in equity within 2008-2009 year than expected changes in equity calculated applying the standard formula of degree of financial leverage.

## 5. CONCLUSIONS

During developing the approach to assurance of business viability through the equity sufficiency the following conclusions were made:

- 1) The applicability of suggested approach to assurance of business viability was proved by results of testing of Latvian companies from service industry. Anyway it still requires more investigations within perspective analysis.
- 2) For the further implementation of the approach to assurance of business viability into practice it should be tested on companies from different industries, as it is closely related to the intellectual capital of company the significance of which is strictly defined by business specific.

The efficiency of using of suggested approach to assurance of business viability through the equity sufficiency increases significantly if company has detailed accountancy system, when the costs, assets and income can be classified by tangible and intangible centers.

Suggested approach to management of the equity sufficiency level can be considered as an effective tool for achieving company's viability.

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