ЕКОНОМІКА ТА УПРАВЛІННЯ ПІДПРИЄМСТВАМИ

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THE MECHANISM OF FINANCIAL CULTURE DEVELOPMENT WITHIN THE CORPORATE SUSTAINABLE CAPITAL MANAGEMENT

Marekha I.S. The mechanism of financial culture development within the corporate sustainable capital management. The definition of corporate financial culture is defined in the article. The development of the corporate financial culture with a strong focus of capital structure optimization is suggested. The financial capital structure is identified. An analysis of financial corporate culture is undertaken. Distance to default has been substantially extended as a result of financial capital structure optimization at the particular corporation.

Key words: culture, finance, capital, structure, sustainability, mechanism.

Мареха І.С. Механізм формування фінансової культури підприємства в системі сталого управління капіталом. У статті запропоновано визначення фінансової культури підприємства. Підкреслено необхідність формування фінансової культури підприємства на основі оптимізації структури капіталу. Виведено структуру фінансового капіталу. Здійснено аналіз фінансової культури підприємства. Суттєво віддалено відстань до банкротства в результаті оптимізації структури фінансового капіталу на конкретному підприємстві.

Ключові слова: культура, фінанси, капітал, структура, сталість, механізм.

Marekha I. S. The mechanism of financial culture development within the corporate sustainable capital management. В статье предложено определение финансовой культуры предприятия. Обоснована необходимость формирования финансовой культуры предприятия на основе оптимизации структуры капитала. Выведена структура финансового капитала. Проанализирована финансовая культура предприятия. В значительной мере увеличено расстояние до банкротства в результате оптимизации структуры финансового капитала на конкретном предприятии.

Ключевые слова: культура, финансы, капитал, структура, устойчивость, механизм.

Problem statement. The global financial crisis changed our lives in a very dramatic way. It developed rapidly and spread into a global shock, resulting in a number of bank failures, mass layoffs, declines in various stock indices, and large reductions in the market value of equities [1] and commodities [2]. With all these changes came a re-examination of many of the assumptions about priorities for the corporate activity. In today's business environment, companies encounter various challenges that require them to adapt effectively in order to remain competitive. In this relation, there is an increasing concern for the need to the sustainable development, which adequately responses to the demands of corporate economic growth.

Nowadays, one of the major present concerns is overcoming financial crisis what involves the development of financial culture at the corporate level. A well-balanced financial policy lies at the core of the efficient economic performance, particularly in the transition period. Thus, a problem of a corporate capital management becomes crucial for the academicians, practitioners, and industries. For this reason, it is extremely important to implement efficient economic and financial mechanisms of sustainable capital management. In this study, we suggest developing a corporate financial culture with a strong focus on capital structure optimization. It should be stressed that this cannot be done without the support of the science.

Analysis of the latest publications. Modern corporate finance theory was born with the publication of Modigliani and Miller's (M&M) theoretical model about corporate capital structure [3]. The rise of scientific scrutiny to the matters of financial capital structure optimization is reflected in a great amount of the theories and hypotheses, which were made by a wide range of the Ukrainian and foreign scientists. Such Ukrainian scholars like V. Andriiets [4], S. Dovbnia [5], M. Rupniak [6] paid a great attention to the problem mentioned above. The methods that they employed formed a battery of useful economic approaches for estimation the capital structure. All of the methods deserve continuing scientific scrutiny and have room for improvement.

Unsolved parts of the general problem. So, a recent capital structure theory asks more than it is ready to answer. For instance, a concept of "capital structure" is still open to question. The vast majority of the scientists agree in opinion that generally "capital structure" means the proportion of equity and debt. At the same time, there is no widely accepted answer to the question what a financial capital structure is. There are no publications which bind together optimal capital structure and corporate financial culture though this relation is obvious. This is because a clear notion of a financial culture is missed and out of in-depth research. At times the scientific research is not deep inside what makes its validity rather questionable. The discussion on the corporate financial culture brings us to the point where we may develop it.

The purpose of the article. In contrast to the above studies, which are based exceptionally on optimal capital structure explorations, this paper deals with the questions concerning corporate financial culture. The main purpose of this study is to develop theoretical and empirical approaches to the problem coping with the corporate financial culture which should be based on the sustainable development principles. The way we see this problem is derived from our intention to provide a sufficient financial support to the Ukrainian industrial companies in terms of the sustainable capital management.

Main results. Generally, a corporate sustainability is defined essentially as its ability to the active performance when facing different challenges. Moreover, under the changeable circumstances, the corporate sustainability refers to the main factor of the profit making process.

A mechanism of the capital structure optimization, which is a cornerstone of financial culture creation, is viewed as one of the valuable means for sustainable capital management (Figure 1).

To get started, it is extremely important to identify a notion of "corporate financial culture". By corporate financial culture, we mean optimal capital structure, which allows a company to withstand different problems and challenges. Understanding a nature of the financial capital structure is also fundamental to understanding the mechanism of its optimization. Having analysed a set of concepts, we attempted to sum up them all in one chart. The proposed classification illustrates the struc-

Table 1

Cross-Branch Analysis of the Financial Capital Structure in Ukraine [the author's estimations]

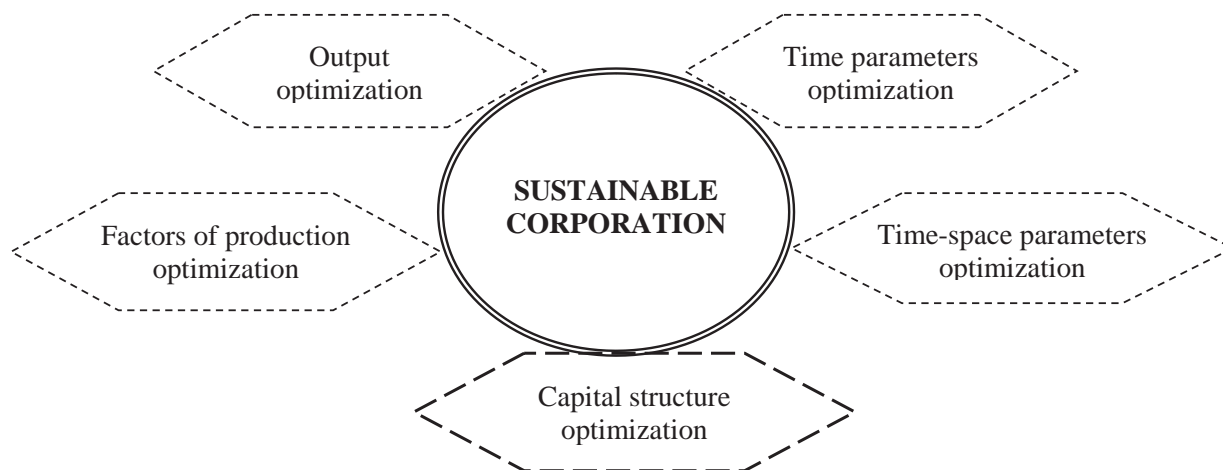| Indicators	Branches of economy						
	Information	Agriculture	Restaurants	Industry	Finances	Construction	Trade
Equity, %	62,9	54,2	54	52,4	52,3	31,5	12,9
Debt, %	37,1	45,8	46	47,6	47,7	68,5	87,1
Debt-to-equity ratio	0,59	0,85	0,85	0,91	0,91	2,17	6,75

Figure 1. The Mechanisms for Corporate Sustainable Development Management [7]

tural and logical relations among the different financial resources (Figure 2).

To develop a model that represents the current state in the practice of building the optimal capital structure, we conduct a cross-branch analysis. It is focused on the comparative assessment of the debt-to-equity ratios across the branches (table 1).

Taking the obtained results together, it should be underlined, that branch characteristics have a strong influence on the corporate capital structure. This is evident from the next investigation. Using software programs we estimated the correlation between the debt-to-equity ratio and the main characteristics of production

activity at the industrial level. As a result, strong correlations were revealed (table 2).

Based on the empirical findings, the following hypotheses are developed. Highly capital-intensive production constrains the firms' access to the bank loans. A renovation, as well as a modernization and reconstruction, is financed mainly through its own corporate capital. Under favourable production conditions (the increase in the production sales), additional needs in the financial capital can be met with the help of the high capitalization of the earnings received. A bankruptcy is determined by the overwhelming debt share in terms of the total capital, which is advanced to the corporate
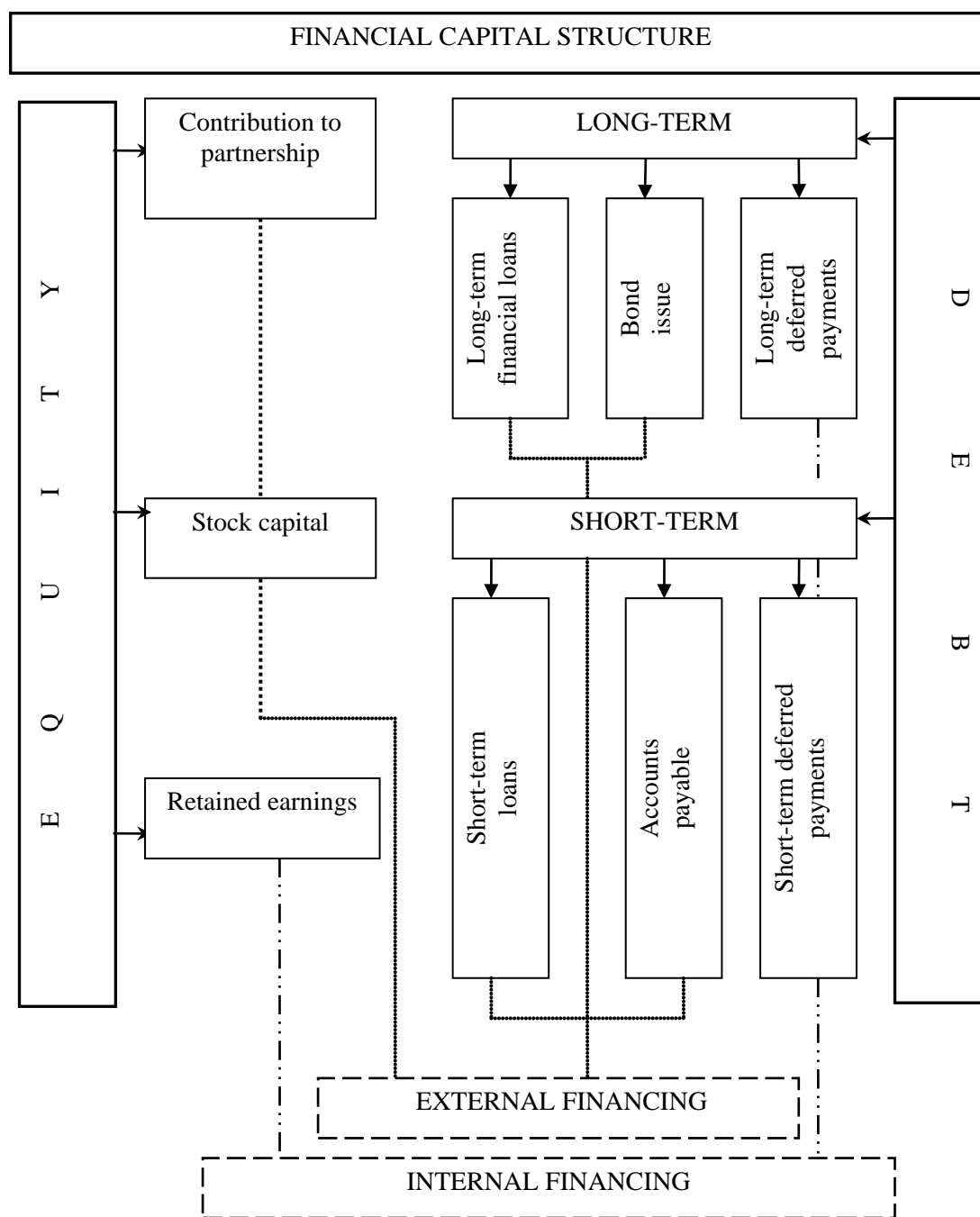

Figure 2. The Identification of the Financial Capital Structure [the author's approach]

economic activity. The revealed dependencies should be taken into account when the optimal financial strategy is adopted.

When building the mechanism of the capital structure optimization, let's look at the case of a particular industrial enterprise. The proposed mechanism is going to be applied at one of the Ukrainian industrial enterprises called CC "Cheksil". Its main activity is connected with the yarn production.

At the first stage, we identify the type of financial sustainability. For this purpose, we have to construct a balanced model [8] for the assessment of the corporate financial culture (table 3).

After the approach was implemented, we found out that the corporate culture is far from the sustainable area: there is a failure risk at a rate of 75–100 %. In order to avoid bankruptcy and obtain an optimal capital structure, we must put the financial risks to the minimum rate. In this relation, we recommend employing the risk minimization technique for building the optimal capital structure.

Minimization of financial risks is based on a conservative approach to assets financing. According to this approach [10], the optimal capital structure looks like:

$$\begin{cases} E + LTD = FA + F_p WA + 0.5 V_p WA; \\ STD = 0.5 V_p WA \end{cases}, \quad (1)$$

where E – is an equity,
LTD – is a long-term debt,
FA – are fixed assets,
$F_p WA$ – is a fixed part of working assets;
$V_p WA$ – is a variable part of working assets;
STD – is a short-term debt.

Let's take data from corporation's Balance Sheet [9] and put them into formula (1):

$$\begin{cases} E + LTD = 50318 + 8766 + 0.5 * 58335 = 82251.5; \\ STD = 0.5 * 58335 = 29167.5 \end{cases}. \quad (2)$$

Hence, optimal capital structure minimizing the risks comes to:

$$\begin{cases} E + LTD = \dfrac{88251.5}{(88251.5 + 29167.5)} *100\% = 75\%; \\ STD = \dfrac{29167.5}{(88251.5 + 29167.5)} *100\% = 25\% \end{cases}. \quad (3)$$

Analytical calculations at the enterprise inquired show that the optimal financial capital structure should be built in the following way: a short-term debt should come to 25%; both equity and a long-term debt should come to 75%.

Table 2

Branch Analysis of Corporate Capital Structure [the author's estimations]

Industrial Parameters	R² (correlation)	Interpretation
Value of the Production Fixed Assets	-0.9298	Capital-intensive production constrains firms' access to the bank loans.
Investments to the Production Fixed Assets	-0.9286	Corporate own capital is preferable to debt.
Production Sales	-0.9291	Under favourable conditions (the increase in sales), additional needs in capital can be met due to the higher level of capitalization.
Profit	-0.9694	
Bankruptcy Frequency	+0.9816	Debt is a huge contributor to corporate default.

Table 3

Financial Culture Analysis made for CC "Cheksil" [the author's estimations based on 9]

№	Parameters	Values
1	Equity	13838
2	Fixed Assets	50318
3	Net Working Assets (line 1-line 2)	-36480
4	Long-Term Liabilities	49839
5	Net Working Assets + Long-Term Liabilities (3+4)	13359
6	Short-Term Loans	25385
7	Sources Used to Finance Inventory (5+6)	38744
8	Inventory and Deferred Expenses	58335
9	Surplus (+) or Lack (-) of Net Working Assets (3-8)	-94815
10	Surplus (+) or Lack (-) of both Net Working Assets+ Long-Term Liabilities (5-8)	-44976
11	Surplus (+) or Lack (-) of Sources Used to Finance Inventory (7-8)	-19591
12	Financial Solvency Index[1] $\overline{S} = \{\underline{S} \, (line\,9), S \, (line\,10), S \, (line\,11)\}$	(0,0,0)
13	Type of Financial Solvency	Crisis Area
14	Risk Ratio	0,75-1,00
15	Financial Culture	Very weak

[1] If $(line_n)<0$, then S $(line_n) = 0$; if $(line_n) > 0$, then S $(line_n) =1$

Table 4

Current-to-Optimal Corporate Capital Structure Analysis [the author's calculations]

Capital Structure	Capital Structure, %		Deviation from the optimal parameter
	Optimal	Current	
Equity	60	12	-48
Debt	40	88	48

To find a final optimal capital structure, let's add the next limitation into a model, taken from [11]:

$$FL = \frac{LTD}{E} \leq 0,25,\qquad (4)$$

where FL – is a financial leverage ratio (financial risk ratio).

To make calculations easier, we assume that the financial leverage ratio (the financial risk ratio) comes to 0,25. In this setting, the corporation is given an opportunity to run its activity without serious financial losses. In other words, it provides its growth within the frames of the sustainable development. The model of capital structure optimization is depicted below (expressed in fractions, not percentages):

$$\begin{cases} STD + LTD + E = 1,00; \\ E + LTD = 0,75; \\ LTD : E = 0,25; \\ STD = 0,25 \end{cases}\qquad (5)$$

$$\begin{cases} 0,25 + LTD + E = 1,00; \\ E + LTD = 0,75; \\ LTD = 0,25E \end{cases}\qquad (6)$$

$$\begin{cases} 0,25 + 0,25E + E = 1,00; \\ E + LTD = 0,75 \end{cases}\qquad (7)$$

$$\begin{cases} 1,25E = 0,75; \\ E + LTD = 0,75 \end{cases}\qquad (8)$$

$$\begin{cases} E = 0,6; \\ LTD = 0,15; \\ STD = 0,25 \end{cases}\qquad (9)$$

$$\begin{cases} E = 0,6; \\ D = 0,25 + 0,15 = 0,4 \end{cases}\qquad (10)$$

In this relation, the optimal financial capital structure is recommended to be built in the following way: equity = 60%, total debt = 40%.

The analysis of a current capital structure demonstrates that the company is highly indebted (table 4).

Let's check whether optimal capital structure improved financial culture. For this purpose we account distance to default:

$$DD = \frac{\ln(A) - \ln(DPT)}{\sigma_A}\qquad (11)$$

where DD – is a distance to default,
A – are assets,
σ_A – annual asset volatility,
DPT – is a default point:

$$DPT = STD + 0,5LTD.\qquad (12)$$

The obtained results are placed into table 5.

Table 5

Distance to Default [the author's calculations]

Accounting Parameter	Capital Structure, %		Improvements
	Optimal	Current	
Distance to default	29,9	13,6	Extended 2,2 times

Drastic measures should be undertaken to correct the capital structure. In particular, such actions are recommended to be performed: the indexation of fixed assets; the increase in sales; the rise of profit; the increase in the reserve fund and retained earnings.

Conclusions. The clear conclusion is that there is the obvious need to move towards the sustainable development in today's unstable business environment. From the author's point of view, such a transformation should be based on the financial culture development with a strong focus on capital structure optimization. Therefore, the mechanism of the capital structure optimization requires a thorough survey and must be implemented cautiously and with a critical eye.

Perspectives of future research. Hopefully, the obtained findings will significantly facilitate the industrial sector in attaining its financial sustainability due to the building of the optimal capital structure, which is going to maintain its sustainable development as a whole. We believe that our recommendations can be used in practical capital structure decisions although the specific calculations must be fulfilled for each firm that needs such a decision.

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ТЕНДЕНЦІЇ РОЗВИТКУ МАШИНОБУДІВНИХ ПІДПРИЄМСТВ УКРАЇНИ В РОЗРІЗІ ФОРМУВАННЯ ЇХ ІНТЕЛЕКТУАЛЬНОГО КАПІТАЛУ

Прокопенко І.В. Тенденції розвитку машинобудівних підприємств України в розрізі формування їх інтелектуального капіталу. У статті висвітлено тенденції розвитку промисловості України та підприємств машинобудування в її складі. Сформовано зв'язки статистичних показників на макрорівні з характеристиками розвитку інтелектуального капіталу машинобудівних підприємств та їх фінансовими результатами. Виявлено сучасні тенденції розвитку машинобудівних підприємств у розрізі формування їх інтелектуального капіталу. На основі аналізу статистичних даних розроблено схему взаємозв'язку забезпечувальних характеристик інтелектуального капіталу, показників його економічного оцінювання та результатів роботи підприємств машинобудування.

Ключові слова: інтелектуальний капітал, інтелектуальний потенціал, машинобудівні підприємства, показники оцінювання, фактори виробництва.

Прокопенко И.В. Тенденции развития машиностроительных предприятий Украины в разрезе формирования их интеллектуального капитала. В статье освещены тенденции развития промышленности Украины и предприятий машиностроения в ее составе. Сформированы связи статистических показателей на макроуровне с характеристиками развития интеллектуального капитала машиностроительных предприятий и их финансовыми результатами. Выявлены современные тенденции развития машиностроительных предприятий в разрезе формирования их интеллектуального капитала. На основе анализа статистических данных разработана схема взаимосвязи обеспечительных характеристик интеллектуального капитала, показателей его экономической оценки и результатов работы предприятий машиностроения.

Ключевые слова: интеллектуальный капитал, интеллектуальный потенциал, машиностроительные предприятия, показатели оценки, факторы производства.

Prokopenko I.V. Tendencies of the machine-building enterprises development in the aspect of formation of their intellectual capital. This article enlightens the Ukrainian industry development tendencies, particularly machine-building enterprises. Formed ties statistical indicators at the macro level with the characteristics of intellectual capital machine-building enterprises and their financial results. Revealed current trends in engineering enterprises in terms of the formation of their intellectual capital. Based on the analysis of statistical data scheme of the relationship of security features of intellectual capital, its economic performance evaluation and performance machine-building enterprises.

Keywords: intellectual capital, intellectual potential, machine-building enterprises, performance evaluation, factors of production.