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WAYS OF VALUE ACCUMULATION FOR DOMESTIC MACHINE-BUILDING ENTERPRISES IN THE CONTEXT OF ENVIRONMENTALLY ORIENTED DEVELOPMENT

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Abstract

Value-based approach to business management is the upcoming trend of financial management under current business conditions. This is the case, for example, of machine-building enterprises taking into account their specifics. The analyses of enterprise activities, allowing accumulate additional value in the context of environmentally oriented development, is completed in the article. It is proved that the significant increase in value reserves are formed while improving business portfolio, implementing efficient use of natural resources and pursuing the policy of effective risk management. It is grounded that value accumulation for machine-building enterprises considers coordination of value concept with business corporate social responsibility.

Keywords: *value; value-based approach; machine-building complex; return on invested capital; weighted average cost of capital; corporate social responsibility.*

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НАПРЯМИ ФОРМУВАННЯ РЕЗЕРВІВ ВАРТОСТІ ВІТЧИЗНЯНИНМИ МАШИНОБУДІВНИМИ ПІДПРИЄМСТВАМИ В УМОВАХ ЕКОЛОГООРІЄНТОВАНОГО РОЗВИТКУ

Анотація

В сучасних умовах господарювання вартісно-орієнтований підхід до управління виступає перспективним напрямом фінансового менеджменту, зокрема для підприємств машинобудівної галузі з урахуванням специфіки їх функціонування. В статті проведено аналіз напрямів діяльності підприємств, що дозволяють акумулювати додаткову вартість в умовах здійснення екологоорієнтованої діяльності. В роботі доведено, що суттєві резерви збільшення вартості формуються при коригуванні бізнес-портфелю, здійсненні ефективного використання природних ресурсів та проведенні політики ефективного ризик-менеджменту. Обґрунтовано, що акумулювання основних резервів зростання вартості машинобудівних підприємств передбачає узгодження вартісної концепції з корпоративною соціальною відповідальністю бізнесу.

Ключові слова: *вартість; вартісно-орієнтований підхід; машинобудівний комплекс; рентабельність інвестованого капіталу; середньозважена вартість капіталу; корпоративна соціальна відповідальність.*

JEL classification: D24, G32, Q32, Q01, G30

Introduction

Under current market conditions the role and importance of value based management (VBM) have increased rapidly. The latter is considered as far-sighted direction of financial management at enterprises in developed countries. With the aim of adjusting and further introducing the VBM-approach in Ukrainian machine-building enterprises, its methodical base requires corresponding improvement. Therefore, in order to determine enterprises' activities needed for added value creation or search for reserves of its growth, it is necessary to analyze current trends of machine-building enterprises' activities.

Theoretical and methodological aspects of the VBM-concept have been studied widely by researchers, in particular by: M. Bart [1], M. Brown [2], A. Carroll [3], J. Olson [4], A. Rappaport [5], J. Stewart [6]. The issues of introducing the concept of VBM at Ukrainian enterprises have been analyzed by T. Vasilyeva [7], T. Gorokhova [8], A. Denisyuk [9], V. Korotky [10], S. Tarasenko [11], O. Telizhenko [12]. However, the specifics of machine-building enterprises as the leading sector of modern industry in Ukraine require further analysis, especially in the process of determining main directions of value accumulation.

The purpose of the article

The purpose of the article is to study and define main ways of value accumulation for the machine-building enterprises in Ukraine in the context of environmentally oriented development.

Main material

Trends of the world economy development determine machine-building industry as the leading sector in the economy of any developed country. According to the Sectoral program of Energy Efficiency and Energy Saving for the period till 2017, "the achievement of innovative technical competitiveness of all types of economic activity, satisfaction of the target consumer needs, national and international image of country in general – all that depend on machine-building industry " [13, p. 37].

According to the State Statistics Service of Ukraine [14] the share of products of machine-building industry in total industrial output accounts for 13% in 2014, whereas at the beginning of the 1990s it was about one-third of industrial output. For comparison, the same share in developed countries, such as Japan, USA, Germany, Great Britain, Italy, China, accounts for about 40-50%.

Nowadays the machine-building industry in Ukraine comprises more than 50 subindustries, among which the most important are: transport, tractor, power, electric and technical machine building, machine tools, machinery building for the metal and mining industries [15]. The level of machine-building industry development defines not only domestic consumption, but also the level of other industries' development. Machine-building enterprises provide jobs for about 7% of population, employed in industry [16].

Despite the leading role and the importance of machine-building industry for the national economy, dynamic of its indicators of financial and economic activities is unstable. In particular, the decrease of total machine-building output is observed in 2010 following by gradual growth during next years (Table 1).

Table 1. Total of machine-building output for 2010-2014 [14; 17]

Indicator	2010		2011		2012		2013		2014	
	bln. UAH.	%	bln. UAH.	%	bln. UAH.	%	bln. UAH.	%	bln. UAH	%
Industry, including:	806,6	100	1065,9	100	1331,9	100	1400,7	100	1354,1	100
Machine-building	147,6	10,9	99,3	9,3	133,5	10	143,5	10,2	117,3	8,7
Manufacture of machinery and equipment	14,4	30,3	31,2	2,9	38,5	2,9	38,7	2,7	36,1	2,7
Manufacture of electric, electronic and optical equipment	9,4	19,7	16,2	11,5	17,3	1,3	22,8	1,6	22,3	1,6
Manufacture of vehicles and equipment	23,7	49,8	44,9	4,2	65,9	4,9	74,0	5,3	51,1	3,8

Export of Ukraine is not diversified and destined primarily for CIS countries. The share of machine-building products in its structure is 15,9% in 2012, whereas in developed countries – 32-40% [14; 16; 17].

Analysis of financial results of machine-building enterprises provides evidence of their unprofitability, which accounts for more than 1 million hryvnias comparing to the industry in general (Table 2) [14; 17].

Table 2. Financial results of machine-building enterprises in 2014 [based on (14; 17)]

Indicator		Industry	Machine-building	Manufacture of machinery and equipment	Manufacture of electric, electronic and optical equipment	Manufacture of vehicles and equipment
Net income (loss), thousand UAH.		5542,5	-1089,5	102,6	-190,8	-1001,3
Profit	% in total number of enterprises	59,6	62	61	64,2	56,8
	financial result, thousand UAH.	55180,4	5733,8	2375,3	1432,4	1926,1
Loss	% in total number of enterprises	40,4	38	39	35,8	43,2
	financial result, thousand UAH.	49637,9	6823,3	2272,7	1623,2	2927,4

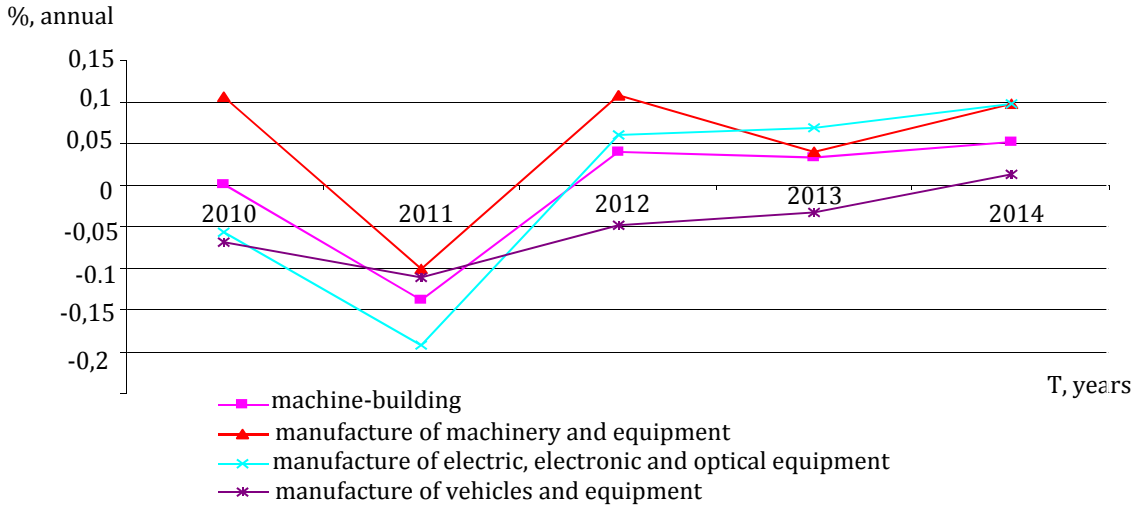
Key reasons for such financial and economic performance of machine-building enterprises, in our opinion, are: insufficient investing in research work; extensive growth factors of production; worn-out material- and energy-intensive equipment; inefficient management system. Besides, in the conditions of the considering socio-economic factors of development the situation is complicated by the immaturity of institutes of ecological and

social responsibility.

In our opinion, solution to problems – mentioned above – depends on the formation of an effective system of corporate governance, which will improve financial results of enterprises and ensure stability of their results in the future. In the earlier papers, the VBM-approach to financial and economic activities has been defined as such management direction [18; 19].

In order to identify perspectives of added value accumulation under the current economic conditions it is necessary to analyze tendencies of economic profit, made by enterprises of machine-building industry. To illustrate accumulation of enterprise's value such indicator as a value spread has been used. Value spread is defined as the difference between return on invested capital (ROIC) and weighted average cost of capital (WACC).

Positive spread characterizes the ability of companies to cover the cost of financial resources by means of the ROIC and shows the possibility of the industry to accumulate value, hence to fund financial needs of further development. Negative spread, on the contrary, shows the "value destruction" by the enterprises, otherwise speaking it indicates inability of an enterprise to cover the cost of financial resources. Dynamic of the spread, typical for machine-building enterprises in general and separately is shown in Pic. 1.



Pic. 1. Dynamic of the spread of machine-building enterprises

Volumes of spread (see Pic. 1.) demonstrate a sharp decrease in economic profit of every subindustry in 2011. One of possible reasons for this decline is the lack of financial resources in 2011-2012, which is a result of the financial crisis.

Furthermore, the dynamic of weighted average cost of capital as one of the key factors of enterprises' value shows a gradual increase through during the same period (see Pic. 2.).

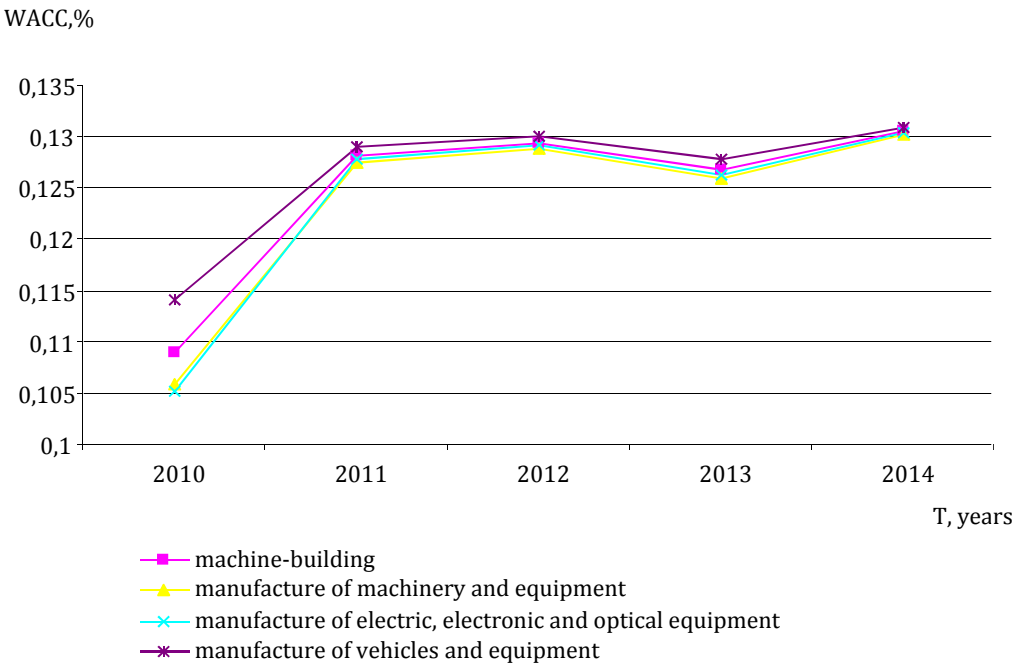
One of the ways to reduce the cost of financial resources in prospect is to consider social and ecological factors when managing an enterprise, in particular in the context of corporate social responsibility. It will enhance the credibility of enterprises for socially oriented investors and eventually may lead to the reduction of investment resources cost, which means a reduction of the weighted average cost of capital.

Thus, negative trends in financial and economic indicators of the machine-building industry as well as considerable fluctuations in economic profit, created by enterprises, in particular, inconsistent nature of its dynamic, force management of enterprises to search for directions of improvement of an enterprise VBM.

We assume that considering ecological factors is the perspective way to improve methodical base of VBM of machine-building enterprises. Additional benefits and risks resulting from ecological factor impact on enterprises' activity within operating, investment and financial activities are described in [19].

Results of the global research, conducted by the international consulting company McKinsey, are demonstrative in the context of determining the directions of value growth by the management of machine-building enterprises [21]. The analysis of the activity of economic agents gives the evidence that adhering to the principles of sustainable development, while making strategic plan, is important at the moment, taking into account long-term effects of their actions.

According to McKinsey agency' experts, the most prepared enterprises to transfer their functioning in the direction of environmentally sustainable development are enterprises, which take into account modern transformational processes in financial management and strategic satisfaction of consumer needs, in particular interests of all stakeholders in general.



Pic. 2. Dynamic of weighted average cost of capital of machine-building enterprises (based on data from [14; 17; 20])

According to the results of the conducted research, accumulation of the added value of a company or ensuring its future growth in the framework of environmentally sustainable activity is possible within three directions:

– orientation to growth;
– risk management of the enterprise;
– rate of return correction.

Introducing an enterprise policy, oriented to growth, the following ways to create added value can be utilized:

1. Periodic correction of business portfolio. Periodic analysis of a business portfolio is carried out in order to take into account advantages and disadvantages, caused both in economic and natural environment (in particular by climatic changes). Thus, waste management can be transformed into additional service for enterprises, which will bring additional income.

2. Implementation of innovations, which involves constant monitoring of unfulfilled environmental needs of consumers for further consideration in the work. As a result new innovative products might appear. They will attract consumers' attention, increase their number and the amount of enterprise sales correspondingly.

3. Entry into new sales markets, which might be possible due to the implementation of flexible pricing policy (for example, price-cutting on medicines for disadvantaged populations or in developing countries).

Risk management in an enterprise involves an analysis of a range of risks related to operating activities (risks of interruptions in production due to climate change, limitation of resources or dissatisfaction on the part of society, etc.), their timely identification and the prevention of emergence.

Correction of the rate of return assumes accelerating efforts of the enterprise in the context of reducing operating costs: through improvement management of the natural resources use (decrease of production energy intensity, waste management, etc.); while producing and modernizing technological process that satisfy quality standards according to requirements of sustainable development (by costs decreasing, staff motivation, etc.).

Opportunities for an increase in value of different subindustries, defined by McKinsey experts and systematized in table 3, can be used by domestic enterprises in Ukraine.

According to the analysis, essential reserves for the value increase of machine-building enterprises are formed within a correction of a business portfolio, implementation of effective natural resources use and carrying out a policy of an effective risk management.

Taking into account specifics of machine-building enterprises, we consider that formation of business portfolio, effective natural resources use and carrying out an effective risk management are interrelated. So, forming the set of measures to provide the mentioned directions lies in the same plane. Thus, the main resource base of functioning of machine-building enterprises is the fuel and energy resources (FER). Effective use of FER, accompanied with actions in the field of energy- and resource-saving, promotes decrease in expenses, growth of financial and economic results of activity. The potential of growth of indicators of energy efficiency owing to organizational and low-cost energy saving measures is 30%. Main directions of energy saving of machine-building industry are: implementation of new and improvement of existing technologies and equipment,

reduction of energy loss, improvement of production quality, improvement and reduction of raw materials losses, substitution and selection of the most efficient energy supplies, etc [13].

Analysis of FER use in machine-building enterprises in dynamic characterizes a gradual positive reduction in energy intensity of gross sectoral product: from 0,48 - in 2007 to 0,084 in 2012 [13].

Table 3. Opportunities for value increase as a result of the compliance a policy of sustainable enterprise development (built according to [21])

№	Directions of receiving additional value or increasing current value	Energetics	Extractive industry and machine-building	High technology, telecommunication	Trade Enterprises
1	The policy of the enterprise development	High	Middle	High	Middle
1.1	Formation of the business portfolio	High	High	High	Insufficient
1.2	Implementation of innovations and new product line	High	Middle	High	Middle
1.3	Entry into new markets	Middle	Middle	Middle	Middle
2	Correction of the rate of return (decreasing of costs)	Middle	Middle	Middle	High
2.1	Production and sale of qualitative production	Middle	Insufficient	Middle	Insufficient
2.2	Improvement of the value chain	Middle	Middle	Middle	High
2.3	The effective use of resources	Middle	High	Middle	High
3	Risk management	Middle	High	Middle	Middle
3.1	State regulation	Insufficient	Insufficient	Insufficient	Insufficient
3.2	Management of business reputation	High	High	High	High
3.3	Operational risk management	High	High	Middle	Insufficient

Less optimistic forecasts are shown in the analysis of a share of industrial enterprises, introducing low-waste, resource-saving and waste-free methods of production in total of industrial enterprises, which implement innovations: 195 enterprises in 2012 in comparison to 247 in 2009. Besides, implementation of low-waste resource-saving and waste-free technological processes by industrial enterprises is has inconsistent character. So, a gradual growth of a number of these processes from 634 in 2009 to 753 in 2011 changed with sharp decrease in resource-saving processes in 2012 [17].

We consider absence of institutes of the corporate social responsibility (CSR) in Ukraine, in particular for industrial enterprises, as one of the reasons for inconsistent implementation of low-waste, resource-saving, waste-free innovations' methods of processing and technological processes in industry.

To analyze issues mentioned above for Ukrainian machine-building industry, features of CSR at enterprises of respective industry should be studied. Thus, on the initiative of the United Nations organization in Ukraine the research (in the form of survey) on introduction of CSR in practice of Ukrainian enterprises was conducted. The research was aimed at identifying the major barriers and incentives, faced by financial management of enterprises [22].

Results of the survey of domestic enterprises on understanding the essence of CSR have shown that there is a shift in emphasis towards internal social programs aimed at employees (65.5% of enterprises). Less than a third (29.8%) of companies that participated in the survey, considered implementation of environmental projects as the form of social responsibility, which indicates that the majority of companies do not feel responsible for solving ecological problems.

Three-quarters of domestic companies ("practicians") reported about implementation of CSR activities in practice. Thus, through sectors of economy the highest percentage of "practicians" is observed in trade, the

lowest (51%) – in the production of industrial goods.

Activities of over a half of companies (53.3%) are regulated directly by standards of environmental legislation, while production of industrial goods (70.5%) through sectors of economy is on the second place after agriculture (78.8%). According to the survey, companies governed by environmental legislation are more responsible for the environment (the advantage of regulatory approach).

According to the survey, more than a half of enterprises implement environmental socially responsible activities. The majority of these activities include an introduction of energy saving technologies (42,8%). Energy saving technologies are implemented mostly by enterprises that produce industrial goods (81,2%).

In the context of social responsibility reporting more than 74% of companies, participated in the survey, do not publish information about social and environmental activity neither in the form of separate document, nor as the part of general reports. The exception is the large companies employing over 500 people, 78% of which report about the actions of social and environmental responsibility. This allows to make a conclusion that a large business in Ukraine is a leader and conductor of ideas and practices of implementing the principles of social responsibility [22].

Results of the survey demonstrate that environmental problems as components of CSR are not realized by managers of the domestic enterprises. It explains insufficient understanding of responsibility for the accounting of an ecological factor in their activity. Besides, industrial enterprises don't belong to the "practicians" realizing the principles of CSR in their activity. According to the view of managers of industrial enterprises, an introduction of energy saving technologies can have subjective character that will give artificial overvaluation of the real level of responsibility. This is confirmed by the mentioned above analysis of inconsistent implementation of resource saving actions by the industrial enterprises.

So, SRB (CSR) is implemented in domestic industrial enterprises in order to:

- disguise their business (for example, when a tobacco company implements environmental project for utilization of waste paper in order to produce cigarettes);
- divert attention from the negative effects of business (for example, when a harmful chemical production is accompanied by a CSR project to help children who are poisoned by this production)
- advertise and promote their brand, product or services.

Moreover, in practice there is a tendency of rejection of an ecological factor by the machine-building enterprises as factor of obtaining the additional incomes and advantages for the enterprise (especially in the long term).

Mistrust from investors to introduce CSR by the domestic enterprises demotivates Ukrainian business to implement it.

Conclusions and directions for further researches

To sum up, accumulation of main reserves of value growth for machine-building enterprises requires harmonization of the value concept with CSR business. Nowadays, the competitiveness of manufactured goods in the national and international markets is determined by the environmental parameters of production technologies. Considering an ecological factor in the improving of methodical basis of value management for machine-building enterprises will allow generate mechanisms that will respond to the requirements and tasks of the concept of environmentally sustainable development and will provide growth of efficiency of enterprises' activities.

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