

# FINANCE AND MONEY TURNOVER

UDC 005.591.6:005.591.3:330

<https://doi.org/10.26661/2414-0287-2020-3-47-18>

## PROFITABILITY AS THE BASIS OF LIFE SUPPORT OF MACHINE BUILDING ENTERPRISES

**Lepiokhin O.V.***Zaporizhzhia National University  
Ukraine, 69600, Zaporizhzhia, Zhukovsky str., 66*

lepekhn@ukr.net

ORCID 0000-0003-4817-5742

**Key words:**

virobnitstvo, analiz, competitivens, quiz.

The current state of activity of machine-building enterprises is investigated. It is established that the leading place among industries is occupied by mechanical engineering, as it is closely connected with other types of economic activity. It has been noted that mechanical engineering is engaged in the production of machinery and equipment that ensure the production of goods and services by enterprises of other industries, thereby stimulating their development and the development of the state economy. The main problems of development of machine-building enterprises, formation of their sales basket and, accordingly, financial results are singled out. The analysis of volumes of production of industrial products and production of the enterprises of machine-building branch has been executed. The structure of production of machine-building enterprises has been estimated. The share of profitable and unprofitable enterprises has been analyzed, the problems of distortion of the actual state of efficiency of industrial enterprises and enterprises of machine - building branch have been revealed. It has been noted that taking into account the identified problems, the most important tasks of managers of machine-building enterprises are to change the strategy, bring the enterprise to a qualitatively new level, and introduce a policy of diversification of products and areas of activity, expanding the range and nomenclature of products. Proposals have been made on the ways of development of machine-building enterprises in order to increase the efficiency of their activities, livelihood and development and their competitiveness.

## РЕНТАБЕЛЬНІСТЬ ЯК ОСНОВА ЖИТТЄВОЇ ПІДТРИМКИ МАШИНОБУДІВНИХ ПІДПРИЄМСТВ

**Лепьохін О.В.***Запорізький національний університет  
Україна, 69600, м. Запоріжжя, вул. Жуковського, 66***Ключові слова:**виробництво, аналіз,  
конкурентоспроможність, збитки.

Досліджено сучасний стан діяльності машинобудівних підприємств. Встановлено, що провідне місце серед галузей промисловості займає машинобудування, оскільки воно тісно пов'язане з іншими видами економічної діяльності. Зазначалося, що машинобудування займається виробництвом машин та обладнання, що забезпечують виробництво товарів та послуг підприємствами інших галузей, стимулюючи тим самим їх розвиток та розвиток економіки держави. Виокремлено основні проблеми розвитку машинобудівних підприємств, формування їх кошика збуту та, відповідно, фінансових результатів. Виконано аналіз обсягів виробництва промислової продукції та продукції підприємств машинобудівної галузі. Оцінено структуру виробництва машинобудівних підприємств. Проаналізовано частку прибуткових та збиткових підприємств, розкрито проблеми спотворення фактичного стану ефективності роботи промислових підприємств та підприємств машинобудівної галузі. Зазначалося, що з урахуванням виявлених проблем найважливішими завданнями керівників машинобудівних підприємств є зміна стратегії, виведення підприємства на якісно новий рівень та запровадження політики диверсифікації продукції та сфер діяльності, розширення асортименту та номенклатури продукції. Внесені пропозиції щодо шляхів розвитку машинобудівних підприємств з метою підвищення ефективності їх діяльності, засобів до існування та розвитку та конкурентоспроможності.

### Analysis of recent research and publications.

Profitability of the enterprise is one of the most important indicators that reflect the financial condition of the enterprise. It determines the purpose of entrepreneurial activity, ensuring their competitiveness and financial and economic security of enterprises.

Many scientists have tried to explain the essence of profit, namely: Boreiko V.E. [1], Vasylytsiv T.G. [2], Voinarenko M.P. [3], Duda T.T. [3], Lukianova V.V. [3], Maliuta L.I. [4], Nyzhnyk V.M. [5], Turylo A.A. [6], Turylo A.M. [6], Iaremenko O.F. [3]. An extremely important issue for business entities is the assessment of the effectiveness, efficiency, productivity and unprofitability of the enterprise, which were studied by Turylo A.A. and Turylo A.M. [6]. Domestic scientists have made a great contribution to the history of profit formation and evaluation of financial results and efficiency of enterprises in order to ensure their financial and economic security.

### The objective of the article

Is to analyze the current state of the machine-building enterprises, their financial results, and to identify problematic issues and ways of development of machine-building enterprises.

### Results

Today, the state of the entire economy of the country directly depends on the industrial complex. Therefore, for the further intensive development of the entire industry, it is necessary to ensure a sufficiently high level of activity of enterprises in the machine-building industry.

The main problems of development of machine-building enterprises include: underdeveloped infrastructure of the domestic market; insufficient level of solvency of producers, which negatively affects the financial and economic condition of enterprises in the industry; obsolescence of fixed assets of basic enterprises of the industry, which have not been updated during the last 15 years, that negatively affects the competitiveness, quality and cost of production; lack of working capital, imperfection of the mechanism of medium- and long-term lending; low domestic demand for domestic products; lack of real sources of funding, which makes it impossible to reconstruct and technically re-equip enterprises in the industry; lack of financial mechanisms and tools that create interest in innovation, as well as stimulate research and development work, as a result there is the low level of innovation activity of domestic enterprises; dependence of domestic enterprises on the supply of parts and components from other countries, primarily from the CIS countries; a significant outflow of the most qualified engineers and workers; insufficient control by the state over the activities of monopolists and intermediaries, which leads to a significant increase in the cost of materials, energy resources and components [7, p. 67].

All these problems significantly affect the current state of operation of machine-building enterprises. The priority is

to analyze the state of machine-building enterprises, and as a result - to identify possible ways to improve the situation.

Mechanical engineering is a complex industry that combines automotive, agricultural, road construction, tractor engineering, and shipbuilding, chemical, electrical and energy engineering, etc. It is designed to provide the economic system with quality and efficient equipment [8, p. 46].

According to the State Statistics Service, the volume of industrial production in 2017 increased significantly compared to 2016-2014, respectively by 21.68%; 47.8%; 83.78%. At the same time at the enterprises of the machine-building complex the volumes of production of the main types of products in 2017 significantly increased in comparison with 2016 by 28.11%, in comparison with 2015 - by 46.0% and, in comparison with 2014, by 65.1%. At the same time, if in 2017 the growth rate of production of major products in the engineering industry exceeded the growth rate of industrial production compared to 2016 by 6.43%, then compared to 2015 the growth rate of production of major products in the engineering industry were smaller compared to the growth rate of industrial production by 1.8%, and compared to 2014 - the lag was even more significant and amounted to 18.68% (Table 1) [9].

In the period 2006-2007 production volumes of the machine-building industry increased. This is evidenced by production indices: in 2006 11.8%, in 2007 19%. We observe this positive dynamic in the subsectors of the industry. However, since 2008, the growth of machine-building production was only 0.3%, due to a reduction in machinery and equipment by 1.8%, production of electrical, electronic and optical equipment by 6.8%. Despite the general decline in industrial production, there was an increase in production of vehicles and equipment by 5.7% compared to the previous year. In 2009 we observe a difficult situation in the engineering industry, as production volumes decreased almost twice, or by 44.9%, namely by subsectors: production of machinery and equipment decreased by 37.6%, production of electrical, electronic and optical equipment - by 28.2%, production of vehicles and equipment - by as much as 57.9%.

During the 2006-2009 periods, the maximum volume of sold industrial products reached in 2008 and amounted to UAH 917035.5 million. The largest volume of sold products of the machine-building industry in 2008 was UAH 121,780.4 million (13.3% of total industrial output), the growth rate was 23.8% compared to the previous year [10].

As can be seen from Table 1 for eight years, the volume of sold industrial products increased in 2007 compared to 2008 by UAH 1708827.2 million or 1.86 times, and the volume of sold products of the machine-building industry increased by UAH 46,501.5 million or by 38.18%. This situation is evidence that over the past eight years, other industries have developed faster than machine-building enterprises, which have significantly reduced their development positions.

Table. 1. The volume of sold industrial products of machine-building enterprises in 2014-2017. (at current prices of the respective year), UAH million

Type of industrial activity	2014		2015		2016		2017	
	UAH million	% to the total	UAH million	% to the total	UAH million	% to the total	UAH million	% to the total
Industry	1428839,	100,0	1776603,	100,0	2158030	100,0	2625862,7	100,0
Mechanical engineering:	101924,7	7,1	115261,7	6,5	131351,8	6,1	168281,9	6,4
-- production of computers, electronic and optical products	8133,4	8,0	8772,9	7,6	12366,1	9,4	13783,3	8,2
-- production of electric equipment	21005,7	20,6	24038,5	20,9	26594,6	20,2	32986,9	19,6
-- production of machines and equipment	33524,8	32,9	41998,0	36,4	50105,3	38,1	9767,7	35,5
-- production of vehicles, trailers and semi-trailers and other transport means	39260,8	38,5	40452,3	35,1	2285,8	32,2	1744,0	36,7

However, the largest share of sales of mechanical engineering products in 2016-2019 was achieved in 2017 and is 13.7% of the total industry. The growth rate until 2006 was 43.1%. The lowest share of the industry (10.6%) and the lowest in 2006-2009 indicators of sales (85833.0 million UAH) were observed in 2009. The growth rate in 2009 decreased by 29.52%. The industry reached its development in the period 2006-2007, when sales figures ranged from UAH 68,730.6 million. in 2006 to UAH 98,339.9 million. in 2007. This is due to the difficult economic situation in the country and the difficult state of development of machine-building enterprises [10].

Based on the data in Table 1, it is seen that the largest share among the subsectors of mechanical engineering in 2017 belonged to the production of motor vehicles, trailers and semi-trailers and other vehicles: from 32.2% in 2016 to 38.5% in 2014, but the share of production of motor vehicles, trailers and semi-trailers and other vehicles in 2017 is less than in 2014 by 1.8% with an increase in cost indicators by UAH 22,483.2 million. or 57.27%.

Also, from the table it is seen that the share of production of vehicles, and other vehicles is not the highest constantly, but fluctuates with the change in the share of production of machinery and equipment, which varies in the range from 32.9% in 2014 to 38.1% in 2016.

To compare the conclusions about the general state of mechanical engineering, it is necessary to study the financial results of machine-building enterprises [5].

Since the financial result from ordinary activities before taxation of machine-building enterprises up to and including 2007 was twice as high as in 2006 with a not so significant increase in the financial result from ordinary activities before taxation of the entire industry, it can be concluded that these enterprises improved their activity. However, since 2008 there has been a sharp decline in financial results from ordinary activities before

taxation, if for the whole industry this decrease was observed by almost 2 times, then in mechanical engineering we see even worse results. There was also a decrease in financial performance in mechanical engineering in 2008 by almost 7 times, this was due to a sharp deterioration in financial performance in all subsectors of mechanical engineering, especially in the manufacture of vehicles and equipment, where this indicator reached negative results and was - 438.7 million UAH in 2009. There was a further decline in financial results from ordinary activities before taxation, both in general in industry and in particular in the engineering industry, the worst results were in the production of vehicles and equipment. Thus, following the results, in 2018 the pre-tax financial result of large and medium-sized enterprises amounted to UAH 353.0 billion in profit (in 2017 - UAH 285.6 billion). Profit amounted to UAH 580.0 billion, or 104.1% compared to 2017, losses amounted to UAH 227.0 billion (or 83.6%). The share of unprofitable enterprises in 2018 was 22.9% (in 2017 - 23.5%).

The percentage of profitable enterprises in this sector of the economy is interesting for the analysis [11].

Since 2006, approximately 66.7% of machine-building enterprises have been profitable. Almost the same result of profitability is observed in the general result to the industry, that is the condition of mechanical engineering reflects the general condition of all industry. The negative is the fact that about 33.3% of enterprises have been unprofitable in recent years. This situation in the field of mechanical engineering arose because with the transition to market relations, machine-building enterprises worked using the methods and scientific knowledge of previous years, instead of accumulating foreign experience and introducing new achievements of science and technology [12, p. 167]. However, starting in 2008, the share of profitable enterprises gradually began to decline. Compared to 2006, in 2007, the number of enterprises that received a positive financial result

gradually increased both in industry and in mechanical engineering in general. The largest number of enterprises (71.4%) that made a profit falls on the subsector production of electrical, electronic and optical equipment, but they received the least profit of all subsectors in the amount of UAH 1792.9 million. The smallest number of enterprises that received a positive financial result falls on the production of vehicles and equipment, but they received the largest financial result in the industry (profit) in the amount of 3016.3 million UAH. In 2008, the situation changed somewhat. The number of enterprises that made a profit in the machine-

building industry decreased significantly - by 5.6%. In January-October 2009, only 48.2% of enterprises for the production of vehicles and equipment received a positive result in the amount of UAH 2,561.6 million.

The data in Table 2 show that the share of unprofitable enterprises in 2018 decreased compared to 2017 by 0.1%, and compared to 2006-2009 by 6.1%, respectively. In 2017, the share of unprofitable enterprises was 20.0%, while in 2018 the share of such enterprises was 23.0%, i.e. growth was 3.0%.

Table 2. Financial results before taxation of enterprises by type of economic activity of industry in 2018

Indicators	Financial result before taxation	Profitable enterprises		Enterprises that suffered losses	
		in% to the total enterprises	Finance result	in% to the total enterprises	Finance result
<b>Industry</b>	<b>154138,2</b>	<b>72,8</b>	<b>277850,4</b>	<b>27,2</b>	<b>123712,2</b>
Engineering including	11411,2	77,0	22885,6	23,0	11474,4
manufacture of computers, electronic and optical products	2567,1	77,1	2773,5	22,9	206,4
production of electrical equipment	4790,9	77,2	5519,6	22,8	728,7
manufacture of machinery and equipment	2022,3	77,9	6466,9	22,1	4444,6
Including production of motor vehicles, trailers and semi-trailers and other vehicles	2030,9	72,9	8125,6	27,1	609

The largest share of unprofitable enterprises in 2018 was observed in enterprises for the production of motor vehicles, trailers and semi-trailers and other vehicles and amounted to 27.1%, which is more than in the field of mechanical engineering by 4.1% and less than in industrial enterprises by 0.1%.

The problems of development of machine-building enterprises defined within the limits of this research are:

- reducing the volume of innovative products;
- very slow development of mechanical engineering subsectors;
- deterioration of performance indicators of enterprises in this industry;
- increase in the number of business entities that receive a negative financial result;
- increasing the depreciation of fixed assets and the lack of a mechanism for their renewal.

### Conclusions

At the present stage of development of Ukraine's economy, the majority of machine-building enterprises are characterized by weak market positions, obsolete production technology and technical composition, irrational use of available production capacity, unstable

financial condition (the majority of machine-building enterprises are unprofitable). Preservation of unprofitable economic activity of the industry indicates the presence of signs of crisis, imbalance of the internal mechanism of self-regulation of enterprises and the need for their financial recovery.

In the current crisis of the world economy, the new strategy of machine-building enterprises should be the formation of corporations in the classical sense of the word, i.e. the merger of several enterprises into a single company under certain conditions to avoid bankruptcy and collapse.

As a source of industrial and social development, profit is a leading factor in ensuring self-financing of enterprises, the capabilities of which are largely determined by the extent to which revenues exceed costs.

The problem of profitability of enterprises covers the issue of profit in the production process, its formation in the field of service and distribution and use for capitalization. These problematic issues are of particular importance for the enterprises of the machine-building industry of Ukraine, where for a long-time profitability remains insufficient for their stable position on the international market.

### References

1. Boreiko V. The threat of unprofitable enterprises for the economy of Ukraine / V. Boreiko // Development of the national economy: methodology and practice: Proceedings of the international scientific-practical conference on April 15-16, 2014, held on the basis of Precarpathian National University named after Vasyl Stefanyk ", Ivano-Frankivsk. - Ternopil: Krok, 2014. - 285 p. - P. 55-57. [in Ukrainian].
2. Vasylytsiv T.G. Economic security of entrepreneurship of Ukraine: strategy and mechanisms of strengthening. - Lviv: Apal, 2008. - 386 c. [in Ukrainian].
3. Voinarenko M.P. Economic security of the enterprise in a competitive environment: a monograph / [Voinarenko M.P., Duda T.T., Lukianova V.V., Iaremenko O.F.] for science. ed. M.P. Voinarenko. - Khmelnytsky: KhNU, 2008. - 382 p. [in Ukrainian].
4. Maliuta L. I. LOSS OF ENTERPRISES - A THREAT TO THE ECONOMIC SECURITY OF THE STATE (Post-conflict reasons for slowing down the development of machine-building enterprises). Theoretical and Practical Aspects of Economics and Intellectual Property, 2015, Issue 2 (12), Volume 1. - P. 140- 146. [in Ukrainian].
5. Nyzhnyk V.M. Ukraine on the way to European integration: economic security, the benefits of choice: a monograph / For general. ed. V.M. Nyzhnyk. - Khmelnytsky: KhNU, 2008. - 307 p. [in Ukrainian].
6. Turylo A.A. Evaluation of efficiency, effectiveness, productivity and loss of the enterprise: a monograph / A.A. Turylo, A.M. Turylo. - Kryvyi Rih: "Etude-Service", 2009. - 196 p. [in Ukrainian].
7. Nemtsova L.N., Kozliuk V.O., Shypyllo E.I. Analysis of trends in the development of mechanical engineering in Ukraine for 2008-2009 - D. : DNUET, 2010.- 204 p. [in Ukrainian].
8. Metz V.O. Economic analysis of financial results and financial condition of the enterprise : Textbook. - K. : High School, 2003. - 132c. [in Ukrainian].
9. Export Strategy of Ukraine. Ministry of Economic Development and Trade of Ukraine. Access mode: [www / Presentation\\_on\\_Machinery\\_2019](http://www.Presentation_on_Machinery_2019). [in Ukrainian].
10. Statistics of the Ministry of Economic Development and Trade of Ukraine: Main indicators of economic and social development of Ukraine, 2011. (<http://www.me.gov.ua>). [in Ukrainian].
11. Economic analysis: Textbook./ M.A. Boliukh, V.Z. Buchevskii, M.I. Gorbatok and others. ; under ed. M.G. Chumachenko. - K. : KNEU, 2003. -556 c. [in Ukrainian].
12. Financial results of large and medium enterprises in 2018. State Statistics Service of Ukraine. Access mode: [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua)[in Ukrainian].