ECONOMY AND ENTERPRISE MANAGEMENT

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FACTORS AFFECTING ON COMPETITIVE POTENTIAL OF ENTERPRISE ENGINEERING

The paper analyzes the main factors influencing the competitive potential. Grouped by factors belonging to the local potential overall competitive potential. Proved to take into account the competitive potential of engineering Ukraine.

Keywords: potential, competitive potential, factors engineering industry.

Introduction. Formation of market relations in new ways poses the problem of enterprise performance, bringing to the fore not only efficiency, but the efficiency of businesses in a particular competitive environment. Because of the high competitiveness of the industry appears not an end in itself, but a means to strengthen the position of the national economy and social problems. Key positions in Ukraine's economy are industry, and what makes a dominant role in the structure of the national economy. Despite the deep recession, which has affected primarily large industrial enterprises, industrial production, still holds the largest share in the gross domestic product.

Analysis of recent research and publications. The development of enterprises associated with the presence not only of market, financial and other capacities, but also competitive. It should be noted that the issue of setting methodologies and assessment of the competitive potential seen in the works of local scholars such as A.G. Andreev, E.A. Gorbashko, I.V. Konstantinova, A. Fedonin, I. Repin, A. F. Parfenov, Y. Taranuhyn, A.D. Shadryn, S. Shevchenko, G. Shepelenko, N.S. Krasnokutskaya, I.P. Otenko, I.M. Kyrchata and others, and works by foreign scholars such as I. Ansoff, W. Demynh, J. Juran, Shewhart W., M. Robson and others.

The purpose of the article. Development and study of factors influencing the competitive potential of the machine based on statistical index the industry.

Of the content of the research. Development of engineering – the foundation of science and technology in all sectors of the economy, much support the country's competitiveness. The task of building complex – production machinery and high-tech equipment level, which should provide increased productivity, reduced material consumption and energy intensity, enhance the quality of products.

Mechanical engineering is a complex industry that is based on the use of achievements and accomplishments in almost all industries chemical, power, light, metal, etc.), it is the basis of industry and plays a crucial role in the implementation of scientific and technological progress in all areas of the economy. In Ukraine today, the industry is not sufficiently developed.

Competitive potential of the machine is formed and developed under the influence of numerous factors, given their sources, may be submitted as factors external and internal environment. In the most general terms, environmental factors are described as conditions and factors arising out of or dependent on its activities to the list of internal environment factors include those that are influenced by the same

entity [1]. By the uniqueness of differentiation factors by source of origin, during their group researchers have different approaches, due to the peculiarities of the simulation environment. Conceptually, the environment supplied by hierarchical and non-hierarchical model, subject to any release of the relevant factors. In particular, the environment serves as a set of defined forces (model M. Porter), a hierarchical system that consists of direct and indirect environmental effect (Model M. Meskon, K. Bowman), one-tier system in which all factors have the same influence on the development of a business subject (model J.D. Danielsa and Lee H. Radebe), system key factors (model A. Thompson and A. Strickland) and others [1-5]. Most environmental factors combined for the allocation factors macro-level, meso level, micro [6, p. 71], social, political, industrial and opportunities for companies [5, p. 89-90], international, national, sectoral [7, p. 202 -203], political, economic, legal, social and cultural [8] et al. In further studies, we adopted as a basic hierarchical model in which the environment is represented as macro and micro, the main difference between them – level of exposure and the degree of approximation to the entity. Macro creates the general conditions and microenvironment directly affects the decisions that are formed within a single entity.

During the study, the influence of the environment on the formation and use of competitive potential of mechanical engineering major groups of factors into account macro-and microenvironment, which highlighted the evaluation frequency of their use in the scientific literature. As a result, to assess the conditions of formation of the competitive potential of mechanical engineering studies economic, legal, technological and socio-cultural factors that reflect the macro factors. To evaluate the factors evaluated micro level of competition in the segment of engineering, the influence of suppliers and consumers for the development of engineering enterprises, especially cooperation with the local governance, contact the audience. Influence of environmental factors is reflected in terms of industry development. This provision is included in the study. Specifically defined not only the main trends in the macro- and micro-engineering enterprises, but also the main effects of such exposure to the industry.

Under macro-level factors occupy a prominent position economic factors that are formalized through a set of indicators of economic development, the level of competitiveness, inflation, investment in fixed assets and more. All other things being equal, the favorable economic situation creates the basis for the development of competitive potential of mechanical engineering, especially its financial and market components.

Changes in the environment are reflected in terms of engineering enterprises. In particular, to assess the impact of economic factors used general indicators that reflect the economic aspects of the industry, such as performance and dynamics of production, profitability, liquidity of engineering. Research carried out in the context of the main areas of engineering and the whole industry.

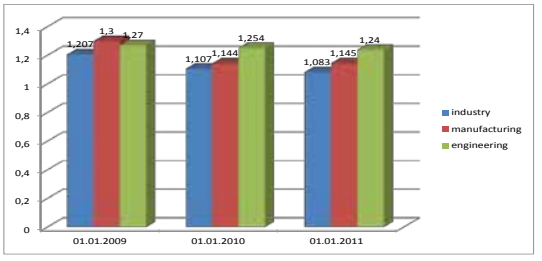
Mechanical engineering is one of the most important industries. It causes the development of higher productivity and cost- efficiency of all sectors of the economy, reflecting the level of scientific and technological potential of the country is an indicator of the level of economic development. Back in 1990 topped Engineering

Table 1

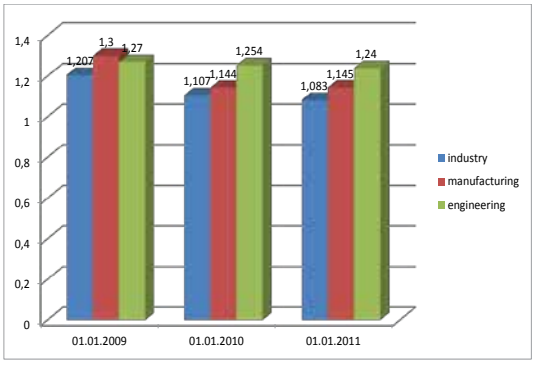
Indices of industrial production in Ukraine in 2007-2011, % to previous year

Types of industry	2007	2008	2009	2010	2011
industry	107,6	94,8	78,0	111,2	107,6
Manufacturing	109,9	94,0	73,5	113,9	108,2
engineering	119,0	100,3	55,1	136,1	117,2
including: production machinery and equipment	103,0	98,2	62,4	121,1	112,5
Manufacture of electrical, electronic and optical equipment	129,1	93,2	71,8	124,2	114,7
manufacture of transport equipment	130,0	105,7	42,1	161,9	122,6

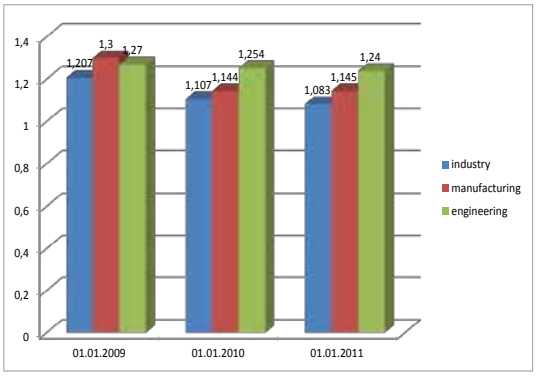
within the structure of industrial production (it accounted for more than half of the total), for twenty years, its share decreased significantly. The level of production during this period fell by more than two-thirds volume of production of important products (steam turbines, tractors, electric hoists, bearings) decreased in 3-21 times. For the past years, both in the industry as a whole and in the engineering segment dominated upward trend in the index of industrial production (Table 1).



Pic. 1. Absolute liquidity ratio for the engineering enterprises compared with enterprises of the industry as a whole



Pic. 2. Interim ratio for the engineering enterprises compared with enterprises of the industry as a whole



Pic. 3. Overall liquidity ratio for the engineering enterprises compared with enterprises of the industry as a whole

According to the 2011 index of industrial production in mechanical engineering was 117.2%, which is significantly higher than in industry (107.6%). In general, the engineering of the period 2007-2011 is allocated two periods, namely the period of decline of the index of industrial production (2007-2009) and growth (2009-2011). Despite the stability and positive dynamics of production quality characteristics Ukraine is second leading countries according to the criteria of the industry in general and engineering in particular. Global trends in industry structure focused on the development machine, whereas in the structure of industrial production in Ukraine accounted for the largest share in the manufacturing sector in general and mechanical engineering including. The share of machinery in the period 2001-2011 he was the total volume of industrial production (works, services) ranged from 10.2... 13.7% over the years. As a result in 2011 the figure is set at 11,6% [9].

The main economic indicators that reflect the performance of enterprises of any kind of economic activity is the sheer size and dynamics of their financial performance and profitability indicators of activity. As for machine building, for them as a whole during the years 2009-2011 is characterized by a positive financial result, which for the period grew at a considerable pace.

In addition to the main indicators reflecting the economic aspects of machine-building enterprises of Ukraine, studied liquidity, based on which the conclusion on the overall financial situation of the industry. Background and results of calculations of liquidity for companies building complex shown in Pic. 1-3.

As a result, concluded on a high level of liquidity for the engineering enterprises compared with the industry in general and manufacturing in particular. According to the estimates in 2010-2011 liquidity by segment Engineering 1.5... 2.0 times higher than the corresponding figures industries.

General Dynamics indicators in mechanical engineering segment is unstable and does not coincide with the trend in the whole industry. Against the background of relative stabiliza-

Table 2

The amount of income tax paid by a company, the industry in 2009-2011*, mln.

Types of industry	2009 p.	2010 p.	2011 p.	Diversion million UAH			Rate of growth,%		
				2010/2009 pp.	2001/2010 pp.	2011/2009 pp.	2010/2009 pp.	2001/2010 pp.	2011/2009 pp.
industry	9431,8	19690	26183,4	10258,2	6493,4	16751,6	208,8	133,0	277,6
Manufacturing	5155,4	8587,9	12916,0	3432,5	4328,1	7760,6	166,6	150,4	250,5
engineering	1937,5	2937,3	4241,9	999,8	1304,6	2304,4	151,6	144,4	218,9
including: production machinery and equipment	887,6	1045,7	829,0	158,1	-216,7	-58,6	117,8	79,3	93,4
Manufacture of electrical, electronic and optical equipment	603,4	523,5	752,2	-79,9	228,7	148,8	86,8	143,7	124,7
manufacture of transport equipment	446,5	1368,1	2660,7	921,6	1292,6	2214,2	306,4	194,5	595,9

** Calculated independently according to [9]*

Table 3

Trends in income tax for the years 2009-2011 by a group of industrial enterprises in Ukraine*,% of total sales

Types of industry	2009 p.	2010 p.	2011 p.	Deviation		
				2010/2009 pp.	2011/2010 pp.	2011/2009 pp.
industry	1,17	1,85	1,97	0,68	0,12	0,80
Manufacturing	0,92	1,18	1,47	0,25	0,29	0,54
engineering	2,26	2,52	2,75	0,27	0,23	0,49
including: production machinery and equipment	2,59	2,63	1,72	0,04	-0,91	-0,88
Manufacture of electrical, electronic and optical equipment	2,46	1,89	2,19	-0,57	0,30	-0,28
manufacture of transport equipment	1,65	2,80	3,72	1,15	0,92	2,07

tion of liquidity for the industry as a whole an increase in the absolute, reduction factors common and diverging dynamics in the interim ratio for enterprise engineering.

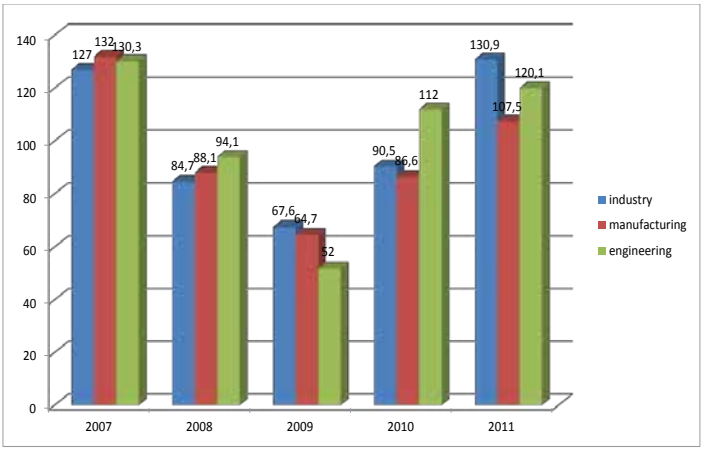
Among the macro factors significant for the development of the real sector of the economy in general and engineering enterprises in particular are the legal factors that presented a system of legislation and regulations on the rights and ownership, organizational and legal forms of enterprises, the conditions of their operation and so on. The work of the enterprise guided by the Constitution of Ukraine, as well as breaking civil law, legislative support for investments and investment, labor legislation, financial and tax legislation. Experts functioning of the legal environment are complex, which affects the business activities in the country in general and in particular the engineering segment. According Doing Business in 2012 for ease of doing business in Ukraine occupies position 152 out of 183 countries. Compared to 2011 the country lost three positions. The worst situation is assessed to taxation (position 181), the registration of construction (position 180), registering property (position 166), resolving the issue of insolvency (position 156), registration and protection of investors (respectively 112 and 111 positions). Successful on this background are the arrangements for lending (24 position) and contract enforcement (position 44) [10]. In furtherance of the overall assessment of business conditions in Ukraine will present data on the income tax industry enterprises in general and engineering in particular (Table 2).

How are the calculations (Table 2) for the period amount of income tax paid as the whole business industry and mechanical engineering by segment growing. In 2009-2011 he was the figure for the industry increased by 2.8 times, in the mechanical engineering sector – by 2.2 times.

Given that the amount paid depends on income tax and the taxable value to determine general trends calculated level of tax per unit of sales (Table 3).

Technological factors affect the productive capacity of enterprises in different industries. At the level of business entities this question is as follows as the level of use of new technology and innovative technologies, the level of depreciation, capital investment, and the amount of scientific and technical work. Given these figures, the following conclusions. In the overall assessment of Ukraine is a leader in advanced areas of engineering. As stated in the document [11] current state machine characterized by low levels of technological processes, which are more than twice, lower than the European one.

Depreciation of assets in the engineering segment is 65-75%, and the average age of technological equipment and facilities – [11, p. 30]. The high level of depreciation of fixed assets and low level processes in engineering due to lack of funding in sufficient quantities. According to the 2007-2011 bienniums observed unstable



Pic. 4. Index of investment in fixed assets in enterprises of Ukraine,% over the previous year

trend in the development of capital investment in the field of mechanical engineering, namely – decline in investments during the crisis (2007-2009) and their growth in the post-crisis period (2009-2011) (Pic. 4).

Compared with 2010 the volume of investments in fixed assets amounted to 130.9% and 120.1 % respectively in the sphere of industry in general and engineering in particular.

Despite significant investments dynamic parameters is insufficient for updating Technical Park of mechanical engineering.

According to the State Statistics Committee of Ukraine investment in the industry in 2011 totaled 86,313 million., which provided 7% of fixed assets. For investments directly in engineering, then this value was only 6.8% of total investment industry, in absolute amount was 5888 million.

Lack of investment affects the level of innovative activity of industrial enterprises. The issue of innovation enterprises considers many academic economists [12, 13, 14]. It is estimated that the share of industrial enterprises that introduce innovations into production has declined over the past 10 years. In particular, if in 2000 the figure was 14.8%, while according to the 2011 – 12,8%. Note that despite the low value is the best indicator for the last three years. In 2009 and 2010 the proportion of such enterprises accounted for only 10.7 and 11.5%, respectively [9]. The dynamics is observed decline in the development of innovative products for industrial enterprises, and reducing the share of sales in total sales.

The formation of the competitive potential of mechanical engineering affect socio-cultural factors, such as such as supply and demand in the labor market, the level of workforce skills, system of training and retraining in the country and so on. Regarding the relationship between the main characteristics of the labor market, in general in Ukraine throughout the study period (2000-2011 years) observed excess labor supply over demand, which is consistent with market fundamentals of the economy and some of its markets. Number of unemployed persons according to 2011 amounted to 505.3 thousand for the total supply of up to 59.3 thousand people. In total excess labor supply over demand load unemployed per vacancy for the period ranged considerably. During the crisis, the decline in production has led to reduction proposals on the labor market, resulting in increased load on one workstation with 4 to 10 people. In the post-crisis situation has stabilized, but the ratio of supply and demand for jobs are high. At the end of 2011 the figure was 8 person/place, which is twice higher than the same period in 2007 [9]. Despite the increase in the overall burden of unemployed people per job in the economy as a whole, and in industrial enterprises during the period studied there is a growing need for workers. According to the 2011 in the segment of the industry as a whole and the need for manufacturing workers was 16.6 and 13.0 thousand respectively.

One of the factors influencing the formation of labor potential businesses of any type of industry and engineering enterprises is particularly financial incentives work. To evaluate this factor studied the absolute amount and dynamics of the average wage in the industry. As a result, determined that in the mechanical engineering sector average wage is less than the corresponding figure for the industry as a whole. According to 2011 industry average wage set at 3120 USD./month. For engineering enterprises, in this segment the highest average wage does not exceed the value of 2926 € / month, which was recorded in manufacture of transport equipment. On the dynamics, in the mechanical engineering sector average wage increases more rapidly than the industry as a whole (Table 4). Compared with 2010, in 2011 the growth rate of the industry determined to rivni120, 9% versus 122.9%, 121.0% and 121.4%, which was observed in segments of machinery, electrical, electronic and optical equipment and transport equipment, respectively.

The higher growth rate of average wages in selected segments indicate the potential for attracting qualified data fields and increase production at this major employment potential of the industry.

Microenvironment engineering enterprises is determined by such basic forces as suppliers, customers and competitors. Identify key trends in the business environment machine-building enterprises.

Machine-building, among other industrial activities are highly capital intensity of produc-

tion and a significantly higher level processing of raw materials, which indicates a significant dependence of mechanical engineering from forming their procurement policies and performance of transactions within the inventory of production. Establishing and maintaining supplier relationships affect the transaction costs of the enterprise that is the basis of decision-

Table 4

Dynamics of average salary for Industrial Activities* % previous year

Types of industry	2005	2006	2007	2008	2009	2010	2011
industry	100	125,3	128,2	129,8	105,0	121,9	120,9
Manufacturing	100	125,6	128,1	127,0	100,4	122,9	121,0
engineering							
including: production machinery and equipment	100	128,4	129,2	129,8	97,4	129,2	122,9
Manufacture of electrical, electronic and optical equipment	100	129,2	132,8	129,2	101,5	126,5	121,0
manufacture of transport equipment	100	1307,6	13,2	127,4	89,6	141,5	121,4

** Calculated independently according to [9]*

Table 5

Dynamics of shares payable in current liabilities industrial enterprises, %

Types of industry	01.01.2009	01.01.2010	01.01.2011	Deviation		
				2010/ 2009	2011/ 2010	2011/ 2009
industry	78,9	83,0	81,8	78,9	-1,3	2,8
Manufacturing	79,3	81,2	80,0	79,3	-1,2	0,7
engineering	73,3	74,9	80,9	73,3	6,0	7,6
including: production machinery and equipment	77,9	80,1	81,6	77,9	1,5	3,7
Manufacture of electrical, electronic and optical equipment	77,2	73,1	80,0	77,2	6,8	2,8
manufacture of transport equipment	68,6	71,6	80,8	68,6	9,2	12,2

Table 6

Dynamics of particles receivables in current assets of industrial enterprises, %

Types of industry	01.01.2009	01.01.2010	01.01.2011	Deviation		
				2010/ 2009	2011/ 2010	2011/ 2009
industry	62,5	65,3	64,9	2,8	-0,5	2,4
Manufacturing	59,6	62,8	63,8	3,2	1,0	4,2
engineering	52,5	53,1	52,1	0,6	-1,1	-0,5
including: production machinery and equipment	50,4	49,7	49,3	-0,7	-0,4	-1,0
Manufacture of electrical, electronic and optical equipment	51,7	54,5	52,2	2,7	-2,3	0,4
manufacture of transport equipment	54,8	55,6	54,4	0,8	-1,2	-0,4

making to support/resource reduction potential of the entity. To assess the impact of suppliers in the investigated volume and dynamics payable by industrial enterprises in general and engineering in particular. As a result, the absolute size of the increase in diagnosed payable for the industry as a whole and for engineering companies in particular. During 2009-2011 years the amount payable by industrial enterprises increased by 1.4 times, in the mechanical engineering sector – 1.2 times and amounted on 01.01.2011 and accordingly 439,920.9 58,684.7 million. Defined as that payable has a significant share in total current liabilities as the industry in general and engineering enterprises (Table 5).

According to the 2011 this figure was 81.8 % for industrial enterprises in general and 80,9% – for businesses including engineering. In the dynamics of this indicator tends to grow large share of payables and its growth over time periods indicates greater dependence of machine-building enterprises of suppliers.

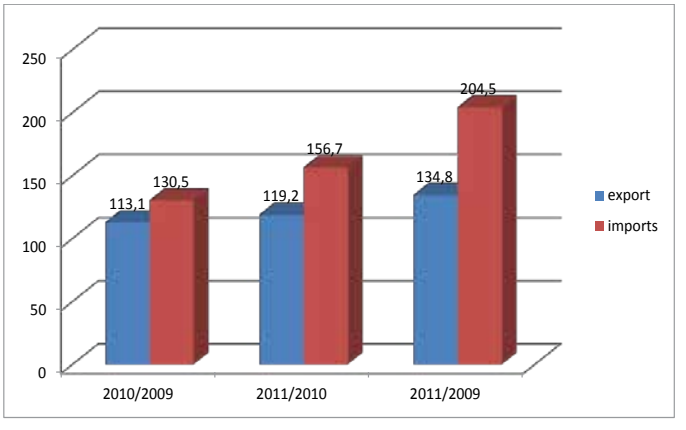
With market conditions no less important factor in shaping the competitive potential consumers is affecting the production and sale of industrial potential of enterprises through the development of the product range, pricing entity, its volume of production and sales. To assess the influence of consumers on the enterprise engineering investigated the proportion of receivables in the current assets of enterprises and defined its change over time. The analysis identified a positive trend in the development of accounts receivable. However, the pace of growth in engineering is much lower than the industry as a whole. Given that the industry volume of receivables 2009-2011 bienniums increased by 1.3 times for engineering companies increase was only 3.5 %. There were also stabilizing the share of receivables in current assets of mechanical engineering (Table 6).

This figure for the mechanical engineering sector is essential in particular for more than ½ of current assets, but varies slightly 52,1... 53,5 % of the total value of current assets over time.

High proportion of receivables in current assets of mechanical engineering indicates the significance of buyers in the formation of productive capacity, and the immutability of the indicator in the dynamics of resistance – marketing communications engineering enterprises.

A key factor is the influence of the microenvironment competitors. Features of competition in the market and activity of competitors considered a separate economic entity during the development of corporate strategy and inform decisions about functional strategies of the company. In various fields of industrial competition differ. In particular for electricity and food industry is characterized by monopolistic competition. For engineering enterprises – oligopolistic competition.

As competition in the segment of mechanical engineering, then estimated that domestic enterprises have low competitiveness due to inefficient technological structure of production, high energy costs. As a result, the pres-



Pic. 5. Dynamics of export and import of machinery in 2009-2011

Table 7

Value of exports and imports of machinery in Ukraine in 2009-2011, th. USA

Years	Import	Export	Value for import / export
2009 p.	5014319,1	6257044,8	1,25
2010 p.	5670416,3	8166974,9	1,44
2011 p.	6758995,2	12795104,9	1,89

ence of strong demand for machinery Ukraine is a large dependence on imports of machinery (Pic. 5).

Compared with 2009, the volume of imports engineering industry increased more than 2.0 times the volume of exports during the same period increased by only 1/3, the growth rate amounted to 204.5 and 134.8%, respectively. It is estimated over 2009-2011 biennium advance ratio of imports over exports of machinery increased and made according to the 2011 1.89 (Table 7).

Higher growth rates of imports of machinery compared to the volume of its exports, and increasing the ratio of imports and exports of engineering products indicates a low level of competitiveness of domestic enterprises and weak competitive position of businesses both foreign and domestic markets.

Conclusion. Thus, the article was considered the main impacts on the competitive potential. Found that macroeconomic factors directly affect a particular local potential, which is part of the competitive potential. The study was conducted in the mechanical engineering. Further proposed to measure the impact of these factors on the competitive potential.

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