DOI: 10.31319/2709-2879.2021iss2(3).254823pp39-45
UDC 338.1

Karimov Hennadii, Candidate of Economic Sciences (Ph.D), Associate Professor, Associate Professor at Department of Management of organizations and Administration
Dniprovsky State Technical University, Kamianske
ORCID ID/0000-0002-0208-2607
e-mail: gkarimov@ukr.net
Nuzhna Svitlana, Candidate of Economic Sciences (Ph.D), Associate Professor, Associate Professor of Information Systems and Technologies
Department State Agrarian and Economic University, Dnipro
ORCID ID/0000-0002-6850-4016
e-mail: nuzhna.s.a@dsau.dp.ua
Zvonarova Kateryna, postgraduate student at Department of Management of organizations and Administration
Dniprovsky State Technical University, Kamianske
orcid.org/0000-0002-5344-636X
e-mail: t4908802@gmail.com

Карімов Г.І., кандидат економічних наук, доцент, доцент кафедри менеджменту організацій і адміністрування
Дніпровський державний технічний університет, м. Кам'янське
ORCID ID/0000-0002-0208-2607
e-mail: gkarimov@ukr.net
Нужна С.А., кандидат економічних наук, доцент, доцент кафедри інформаційних систем і технологій,
Дніпровський державний аграрно-економічний університет, м. Дніпро
ORCID ID/0000-0002-6850-4016
e-mail: nuzhna.s.a@dsau.dp.ua
Звонарьова К.А., аспірант кафедри менеджменту організацій і адміністрування
Дніпровський державний технічний університет, м. Кам'янське
ORCID ID/0000-0002-5344-636X
e-mail: t4908802@gmail.com

RESEARCH INTERNAL ENVIRONMENTAL OF THE FACTORY OF THE HEAT POWER INDUSTRY

ДОСЛІДЖЕННЯ ВНУТРІШНЬОГО СЕРЕДОВИЩА ПІДПРИЄМСТВА ТЕПЛОЕНЕРГЕТИЧНОЇ ГАЛУЗІ

To ensure economic independence, factories are forced to constantly monitor and increase the economic efficiency of their activities. Despite the control and support of the state, the efficiency activities of the factories heat industry, first of all, depends on the efficiency of the management of the internal environment of the factories' itself.

Research internal environmental it is possible to carry out at the expense of the analysis of results of financial activity of the factory. Indicators of financial activity have low values. The factory is completely dependent on external funds, which does not allow increasing its own profits and other financial indicators. For in-depth research internal environmental of the factory it is necessary to identify internal factors and research their impact on profitability activity of the factory.

***Key words**: heat power, factory, CHP, internal environmental, financial indicators, factors.*

В сучасних умовах для забезпечення економічної незалежності підприємства змушені постійно контролювати і підвищувати економічну ефективність своєї діяльності. Стратегія

підприємств електроенергетичної галузі має передбачати створення комплексної системи заходів, спрямованих на досягнення перспективних параметрів ефективності, реалізацію головної мети підприємства. Незважаючи на контроль та підтримку держави ефективність діяльності підприємств теплоенергетичної галузі (типовим представником якої є досліджуване підприємство ПАТ „ДТЕЦ"), в першу чергу залежить від ефективності управління внутрішнім середовищем самого підприємства. Виявлення внутрішніх чинників впливу для інтенсифікації позитивних та нівелювання негативних явищ значно підвищить рентабельність діяльності та конкурентоспроможність підприємства на сучасному ринку послуг. На поточний час, низька конкурентоспроможність підприємств комунальної теплоенергетики гальмує її самостійний розвиток та модернізацію,що визначає актуальність теми дослідження.

Дослідження внутрішнього середовища можливо провести за рахунок аналізу результатів фінансової діяльності підприємства. Отримані дані складуть основу для виявлення основних факторів впливу на результати діяльності підприємства. Детальний розгляд різних аспектів фінансової діяльності ПАТ „ДТЕЦ" вказує на присутність кризових явищ у його діяльності; підприємство не отримує прибутку та не є рентабельним протягом аналізованого періоду; в цілому фінансово-господарський стан товариства можна вважати незадовільним. Ефективність діяльності підприємства недостатня для одержання прибутку. Показники фінансової діяльності мають низькі значення. Підприємство повністю залежить від зовнішніх коштів, що не дозволяє збільшити власний прибуток та інші фінансові показники.

Для поглибленого дослідження внутрішнього середовища підприємства потрібно виявити внутрішні чинники та дослідити їх вплив на рентабельність діяльності підприємства. Реалізація дослідження впливу чинників на рентабельність діяльності підприємства можлива на основі дефрагментації показника рентабельності та використанні відомих засобів факторного аналізу. Визначивши, які фактори більш за все впливають на рентабельність, розробляються засоби впливу на них.

***Ключові слова**: теплоенергетика, підприємство, ТЕЦ, внутрішнє середовище, фінансові показники, чинники.*

***JEL Classification**: D24; L25; L94; M11; O12*

Formulation of the problem. The strategy of the factory of the heat power industry should provide for the creation of a comprehensive system of measures aimed at achieving promising efficiency parameters, realization of the main goal of the factory [1].

The main task of research of the internal environment of the factory – find ways to achieve a long-term balance of interests of individual subjects of industrial relations and liquidation contradictions between them through the creative use of their own potential [2]. This leads to the need for research on general indicators activities that characterize the size, dynamics of sales, revenue, profit, image of the factory.

Analysis of the recent researches and publications. Some components factors of the problem of enterprise development, as "qualitative change of the internal aggregate of functionally interconnected elements, connections and dependencies of the object" [3, c. 453] studied by well-known domestic and foreign scientists N.V. Afanasjjev [4], M. Aljbert, M.Ju. Baskakova, O.L. Ghaponenko [5], S.M. Illjashenko [2], V.V. Iljjin [6], E.A. Jerokhyna [7], F. Khedoury, I.V. Kononenko [8], E.M. Korotkov [9], Ju.I. Kulaghin, M.O. Kyzym, Ju.S. Maslechenkov [10], M Meskon [11], A.P. Pakrukhyn, V.S. Ponomarenko [12], A.V. Prakhovnyk [13], O.V. Rajevnjeva [14], V.D. Roghozhyn, V.I. Rudyka, O.V. Shubravsjka [15], E.A. Smyrnov [16], S.V. Snizhko [17], O.M. Trydid, V.O. Vasylenko [18].

Along with significant scientific of achievements of theoretical and applied research of internal environmental of the factory as a qualitative positive change of the system, outside frontier of the research of remained some of its components, concerning features of research of the factory of certain industries.

Formulation of the goals of the article. Determining the areas of influence on the efficiency activities of the factories heat and power industry through research of the internal environment.

Presentation of the main research material. Factory JSC „DCHP" is a typical representative of the heat power industry. The main ways activities of the factories is the production, transmission and supply of heat and electricity energy are the housing-communal and industrial factories of the city.

Research internal environmental it is possible to carry out at the expense of the analysis of results of financial activity of the factory. The obtained data will form the basis for identifying the main factors influencing on results of activity of the factory. Calculation of basic financial-economic indicators activity of the factory is based on the data annual financial statements presented in [19].

To assess the property status of the factories use the analysis assets of the balance. Indicators that characterize the property status of the factories presented in the Tabl. 1.

Table 1. Indicators the property status of JSC „DCHP"

Indicator	last year	current year	Δ, +/-
Amount of economic monies which are at disposal of factories (ths. UAH)	498603	641982	143379
Insufficient asset (UAH)	106,9	107,9	1
Capital investments (UAH)	3,8	6,1	2,3
Capital output ratio (UAH)	0,26	0,16	-0,1
Growth rate floating assets (%)	143,7	134,9	-8,8
Ratio suitability of non-current assets	0,15	0,11	-0,04
Ratio suitability of fixed assets	0,17	0,17	0
Ratio depreciation of fixed assets	0,83	0,83	0

Calculated on the basis of data [19]

Amount of economic monies, which are at disposal of factories, has a tendency to increase. This is evidence that the property potential of the factory is growing. Usage analysis of the basic production assets on factory showed the effectiveness of their use, because capital investments in current year increased and amounted to 6.1 UAH per unit of products.

Increase in current year of insufficient asset on 1 UAH, per employee, may indicate an increase in the level of technical support of the factory. Increase of insufficient asset in the dynamics is accompanied increased of capital investments, so, on the factory is observed of the insufficient level of equipment. Growth rate floating assets has a negative character, as the volume of floating assets dropped by 8,8 %.

Average ratio suitability of non-current assets constantly decreasing, which characterizes the negative component in activity of the factory. Portion of fixed assets, which is suitable for operation in the course of economic activity, has a positive trend and is 17 % of the main volume, but this does not provide an effective level for the factories.

Very great values ratio depreciation of fixed assets negatively characterizes the financial condition of the factory. Over the past years, 83 % of the value fixed fond write-off of on production.

The next step is to assess the liquidity of the balance of the analyzed factory.

Problem of the research of the balance in the process of consideration internal environmental of factory arises in connection with the need to evaluate creditworthiness factory or its ability to timely and fully pay for all its own liabilities. Therefore, liquidity is defined as the ability of a factory to pay its short-term liabilities, selling their current assets [20].

During is to assess the liquidity calculated indicators are given in the tabl. 2.

The size of their own working capital has a negative trend and is characterized by negative values. That is, the factory does not have the necessary the size of their own assets for financial of their own working capital. This is evidence of the factory's dependence on external revenues. Maneuverability of their working capital has a tendency to increase, indicating a decrease the size of portion of working capital, which is in cash. Most portions of the assets are working capital and this share is growing every year.

Table 2. Indicators of liquidity of JSC „DCHP"

Indicator	last year	current year	Δ, +/-
The size of their own working capital (ths. UAH)	-100062	-148885	-48823
Maneuverability of their own working capital	-0,18	-0,09	0,09
Current liquidity ratio	0,81	0,79	-0,02
Quick ratio	0,8	0,78	-0,02
The cash ratio	0,03	0,02	-0,01
Portion of working capital in assets	0,84	0,88	0,04

Calculated on the basis of data [19]

Current indicator of liquidity the balance is below the normative value, which indicates illiquidity of the balance of the analyzed factory. Change current indicator of liquidity the balance (from 0,81 to 0,79) did not approach to normative value, this indicates a negative trend during the analyzed period. We can conclude, that assets factory is illiquidity, the factory is unable to meet its short-term liabilities of working assets.

Quick ratio exceeds the theoretical value, which indicates the sufficiency of liquid assets of the factories to cover its accounts payable. The dynamics quick ratio has a positive trend - during the analyzed period there are no values lower than recommended.

The cash ratio is above the normative value, which indicates the normal ability of the factories to repay current debt. That is, if all creditors of the factory at the same time would present their claims to him, then the factory could repay all debts.

The next step is to research of the financial stability factory. Calculation results are given in the tabl. 3.

Table 3. Indicators financial stability JSC „DCHP"

Indicator	last year	current year	Δ, +/-
Financial independence ratio (equity ratio)	-0,05	-0,12	-0,07
Own funds attraction ratio (financial dependency)	21,4	8,47	-12,93
Financial stability ratio	-0,04	-2,03	-1,99
Indicator financial strength	1	-2,07	-3,07
Financial risk ratio	20,7	-9,43	-30,13
Indicator financial leverage	0,07	-4,81	-4,88
Debt-to-equity ratios	21,4	-9,43	-30,83
Long-term borrowing ratio	1,04	1,12	0,08

Calculated on the basis of data [19]

Equity ratio per all analyzed period was is below the normative value, which indicates financial dependency factory from payable. Creditors will not be interested in investing in the analyzed factory, because it will not be able to repay its debts at the expense of own funds. Financial dependency ratio it has tends to decline, this is a sign of an increase in the quotient borrowing in financing of factory.

The factory is financially unstable, because financial stability ratio has not acquired a value higher than the norm. This indicator shows a negative trend reflected in minus values. It can be concluded, that the factory is not provided with its own funds to repay the debt.

The factory is financially unstrengthen, which indicates financial strength ratio. The factory depends from long-term liabilities, this conclusion can be drawn of indicator financial leverage, which was greater than the normative value, but fell sharply to – 4,81.

Debt-to-equity ratios during the analyzed period decreasing, this indicates an increase in the factory's dependence on external investors and creditors. This characterizes another indicator – long-term borrowing ratio, which it has tends to increase.

In the Tabl. 4 are given main indicators profitability of the factory.

Table 4. Indicators of profitability JSC „DCHP"

Indicator	last year	current year	Δ, +/-
The net profit (ths. UAH)	453	0	-453
Profitability of assets	-0,66	0	0,66
Profitability of equity	0,02	0	-0,02
Operating cost-effectiveness of sold products	7	0,1	-6,9
Net cost-effectiveness of sold products	0,26	0	-0,26
Gross value for sale	3,1	0,08	-3,02

Calculated on the basis of data [19]

The profit, which remains at the disposal of the factory after payment of taxes and deductions, small. In current year factory received a loss of 63123 ths. UAH.

Profitability of assets has a depressive trend, which is evidence that demand for the factory's products is falling and observed a surplus of assets. Level profitability of equity very low and it has tends to decline. That is, the attractiveness of the enterprise for investment is low. In the average, on 1 UAH of equity, invested in assets, be related 0,036 UAH profit. Gross profits in revenues have tends to decrease, which negatively affects the overall profitability of factory.

After analyzing the main indicators activities of the factories you can formulate the following problems and ways to solve them: first, a significant problem of activity is the insufficient number of current assets, including cash; secondly, the main problem low efficiency of their activities has inefficient use of factories capacity. To solve this problem, the factories needs to increase production, which this will reduce the cost of production, i.e. the factories will receive more profit [1]. This and is the main opportunity to improve the financial condition of the factories.

Conclusions. Based on the analysis of the obtained indicators, we can conclude that the factory does not have a stable financial position and financial stability. The reliability of the CHP is suspicious, factory does not have a sufficient level ability to pay. The efficiency activity of the factory is insufficient to obtain maximum profit. Indicators of financial activity have low values, due to irrational methods allocation expenses. The factory is completely dependent on external funds, which does not allow increasing its own profits and other financial indicators.

For the purpose of in-depth research internal environmental of the factory it is necessary to identify internal factors and research their impact on profitability activity of the factory. Such research can be implemented, for example, according to the method [20]. Realizing, what factors most affect profitability, it is possible to determine the directions of influence on them.

References

[1] Karimov H., Zienina-Bilichenko A., Zvonarova K. (2021) Determination of ways of development of the enterprise of the heat power industry. *Economic Bulletin of the Dniprovsk State Technical University*, vol. № 1(2), pp. 30–36.

[2] Illjashenko S.M., Baskakova M.Ju. (2006) *Marketynghovi doslidzhennja* [Marketing research]. Kyjiv: CNL. (in Ukrainian)

[3] Konstantinov F.V. (ed.) (1967) *Filosofskaya entsiklopediya (T.4 «Nauka - logika»)* [Philosophical encyclopedia (Vol.4 «Science-Logic»)]. Moskva: «Sovetskaya entsiklopediya». (in Russian)

[4] Afanas'ev N.V, Rogozhin V.D., Rudyka V.I. (2003) *Upravlenie razvitiem predpriyatiya* [Enterprise development management]. Kharkiv: Izdatel'skiy Dom «INZhEK». (in Russian)

[5] Gaponenko A.L., Pankrukhin A.P. (2006) *Strategicheskoe upravlenie* [Strategic management]. Moskva: Izdatel'stvo OMEGA–L. (in Russian)

[6] Iljjin V.V., Kulaghin Ju.I. (2003) *Ljudyna i svit* [Human and world]. Kyjiv: Kyiv.nac.torgh.-ekon.un–t. (in Ukrainian)

[7] Krynskaya L.I. (2004) Sistemnyy podkhod k postroeniyu modeli razvitiya regionov [A systematic approach to building a model of regional development].. *Culture of Black Sea People*, vol. 3, no. 55, pp. 96–101.
[8] Kononenko I.V. (2001) *Upravlinnja rozvytkom pidpryjemstva* [Enterprise development management]. Kharkiv: NTU "KhPI". (in Ukrainian)
[9] Korotkov E.M. (1997) *Kontseptsiya menedzhmenta* [Management concept]. Moskva: Deka. (in Russian)
[10] Maslechenkov Yu.S. (1998) *Tekhnologiya i organizatsiya raboty banka: teoriya i praktika* [Bank technology and organization: theory and practice]. Moskva: Deka. (in Russian)
[11] Meskon M., Al'bert M., Khedouri F. (1994) *Osnovy menedzhmenta* [Fundamentals of management]. Moskva: Delo. (in Russian)
[12] Ponomarenko V.S., Trydid O.M., Kyzym M.O. (2003) *Strateghija rozvytku pidpryjemstva v umovakh kryzy* [Enterprise development strategy in a crisis]. Kharkiv: Vydavnychyj Dim "INZhEK". (in Ukrainian)
[13] Prakhovnik A.V., Solovey A.I., Prokopenko V.V. (2011) *Energeticheskiy menedzhment* [Energy management]. Kyiv: IEE NTU "KPI". (in Russian)
[14] Rajevnjeva O.V. (2006) *Upravlinnja rozvytkom pidpryjemstva: metodologhija, mekhanizmy, modeli* [Enterprise development management: methodology, mechanisms, models]. Kharkiv: Vydavnychyj Dim "INZhEK". (in Ukrainian)
[15] Shubravsjka O. (2005) Stalyj ekonomichnyj rozvytok: ponjattja i naprjamky doslidzhennja [Sustainable economic development: concepts and directions of research]. *Economy of Ukraine*, vol. 1, pp. 36−42.
[16] Smirnov E.A.(2000) *Osnovy teorii organizatsii* [Fundamentals of the theory of organization]. Moskva: YuNITI. (in Russian)
[17] Snizhko S.V., Velykykh K.O. (2009) *Menedzhment u palyvno-energhetychnomu kompleksi* [Management in the fuel and energy complex]. Kharkiv: KhNAMGh. (in Ukrainian)
[18] Vasilenko V.A. (2004) Organizatsionno–tsiklicheskaya i strukturno-funktsional'naya modeli razvitiya organizatsii [Organizational-cyclical and structural-functional models of organization development]. *Culture of Black Sea People,* vol. 1, no. 56, pp. 100-107.
[19] Joint-stock company "Dniprovs`ka combine heat power plant". Kamianske (2020). Available at: https://dtec.com.ua/documents/golovna (accessed 19 September 2021).
[20] Cal-Calko Y.S. (2008) *Finansoviy analiz* [Financial analyze]. Kyjiv: Centr uchbovoi literature. (in Ukrainian)

Список використаної літератури

1. Karimov H., Zienina-Bilichenko A., Zvonarova K. Determination of ways of development of the enterprise of the heat power industry. *Економічний вісник Дніпровського державного технічного університету*. 2021. № 1(2). С. 30–36.
2. Ілляшенко С.М. Баскакова М.Ю. Маркетингові дослідження: навчальний посібник. Київ: ЦНЛ, 2006. 192 с.
3. Философская энциклопедия: в 10 т. / гл. ред. Ф.В. Константинов. Москва: «Советская энциклопедия», 1967. Т.4 «Наука – логика». 592 с.
4. Афанасьев Н.В, Рогожин В.Д., Рудыка В.И. Управление развитием предприятия: монография. Харків: Издательский Дом «ИНЖЭК», 2003. 184 с.
5. Гапоненко А.Л., Панкрухин А.П. Стратегическое управление: учеб. Москва: Издательство ОМЕГА–Л, 2006. 464 с.
6. Ільїн В.В., Кулагін Ю.І. Людина і світ: навчальний посібник. Київ: Київ.нац.торг.-екон.ун–т, 2003. 283 с.
7. Крынская Л.И. Системный подход к построению модели развития регионов. *Культура народов Причерноморья*. 2004. №55, Т.3. С. 96–101.
8. Кононенко І.В. Управління розвитком підприємства: навч. посібник. Харків: НТУ "ХПІ", 2001. 134 с.

9. Коротков Э.М. Концепция менеджмента. Москва: Дека, 1997. 304 с.
10. Маслеченков Ю.С. Технология и организация работы банка: теория и практика. Москва: Дека, 1998. 432 с.
11. Мескон М., Альберт М., Хедоури Ф. Основы менеджмента. Москва:Дело,1994. 680 с.
12. Пономаренко В.С., Тридід О.М., Кизим М.О. Стратегія розвитку підприємства в умовах кризи: монографія. Харків: Видавничий Дім «ІНЖЕК», 2003. 328 с.
13. Праховник А.В., Соловей А.И., Прокопенко В.В. Энергетический менеджмент. Київ: ІЕЕ НТУ "КПІ", 2011. 472 с.
14. Раєвнєва О.В. Управління розвитком підприємства: методологія, механізми, моделі: монографія. Харків: ВД «ІНЖЕК», 2006. 496 с.
15. Шубравська О. Сталий економічний розвиток: поняття і напрямки дослідження. *Економіка України*. 2005. №1. С. 36–42.
16. Смирнов Э.А. Основы теории организации: учебное пособие. Москва: ЮНИТИ, 2000. 375 с.
17. Сніжко С.В., Великих К.О. Менеджмент у паливно-енергетичному комплексі: навч. посібник. Харків: ХНАМГ, 2009. 344 с.
18. Василенко В.А. Организационно-циклическая и структурно-функциональная модели развития организации. *Культура народов Причерноморья*. 2004. №56. Т.1. С. 100–107.
19. Публічне акціонерне товариство «Дніпровська теплоелектроцентраль». Кам'янське, 2020. URL: https://dtec.com.ua/documents/golovna (дата звернення: 19.09.2021).
20. Цал-Цалко Ю.С. Фінансовий аналіз: підручник. Київ: Центр учбової літератури, 2008. 566 с.