

## FINANCIAL MARKETING OF CLUSTER RESOURCE SAVING STARTUP PROJECTS IN CHANGE MANAGEMENT

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### Abstract

The scientific article identifies key theoretical and applied aspects of financial marketing of startup projects on cluster resource conservation in conditions of change management and a dynamic environment. The attention is focused on the theoretical essence of startup projects in the system of an innovative environment in conditions of high dynamism and resource constraints. The main aspects of financial marketing in the direction of additional hybrid investment sources, hedging of financial risks, venture storytelling, etc. are substantiated. The object of practical research was Astra-Kyiv LLC, which is built into an agrocluster that is large-scale and integrated into the national economic system. The authors implemented a complex study of investment sustainability, resource potential, marketing activities, financial stability, liquidity, profitability, business activity, etc. Economic and mathematical modeling was carried out using a system of regression equations, which allowed for an in-depth analysis and assessment of the relationship between income and marketing costs using the autonomy coefficient toolkit. The results obtained showed a positive relationship between the effective development of the enterprise and an effective financial marketing system, which supports competitiveness, financial stability, liquidity and financial autonomy in the future, especially in conditions of uncertainty.

**Keywords:** *Financial Marketing, Startup Project, Cluster Resource Conservation, Change Management, Agro-Industrial Cluster, Financial Stability, Innovation, Economic And Mathematical Modeling.*

**JEL Codes:** *M31, O32, L26, Q55, R58.*

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### Introduction

The development of the domestic and world economy in the current conditions takes place in conditions of uncertainty, active competition, and the activation of innovations that are necessary for the effective development of society and each state. Globalization, digitalization, and the need to support the sustainable functioning of states reinforce the sewer aspects of startups and related projects in

various industries and service sectors. Innovative startups form a special innovative model of adaptation activities of enterprises, which is based on the high adaptability of the ability to quickly change and determine key guidelines in the conditions of instability of the external environment, which contributes to the creation of innovative value of a product or service. However, an unstable environment poses new and

very often unexpected risks associated with changing market conditions in the direction of positioning a product or service on the market and at the same time the desire for resource conservation. The mentioned events emphasize the deepening of the issues of research of strategic tools of financial marketing to strengthen investment attractiveness, effective regulation of financial flows and successful positioning in the market to increase consumer attractiveness and trust of necessary market stakeholders. Dynamic conditions of market changes indicate the need to use non-standard strategies that do not belong to traditional marketing, classical financial management or sustainable communication policy of business entities. The mentioned non-standard strategies are possible due to the use of the theory of cluster resource saving, which includes the logic of interaction of enterprises, state institutions or organizations, scientific institutions focused on achieving a mutually beneficial synergistic effect. Such an effect acquires special significance for clusters as an innovation driver, ensuring the introduction into production of innovative resource-saving technologies that ensure optimization of production and optimal use of resources. Cluster resource conservation is especially important for agro-industrial enterprises of Ukraine, which, in wartime conditions, have limited resource potential for development, operate in conditions of uncertainty and large-scale institutional challenges. The theory of change management in conditions of systematic transformations in the external environment of the agricultural sector and the internal environment of any agro-industrial entity is especially important in the process of cluster management. Numerous financial crises caused by military risks have led to a fundamental change in the market situation, which requires fundamentally new technological innovations. In conditions of uncertainty, it is financial marketing combined with the theory of cluster management that is able to provide an effective business model that combines successful risk hedging, powerful communication with cluster participants and effective marketing policy. Such cluster management is associated with the concept of resource-saving sustainable

development in conditions of a closed production cycle of enterprises.

### **Literature review**

The scientific literary sources that we have analyzed in this article have allowed us to generalize scientific approaches to understanding financial marketing, cluster resource saving in the context of the activation of startup projects. For a logical presentation of the literary sources analyzed by us, we will group them into separate groups of researchers. Thus, the first group of authors Jiby et al. (2025), Sitnicki (2018), Yatsenko et al. (2017), Puppim de Oliveira and Jabbour (2017), Duginets et al. (2023), Sitnicki (2018) focuses in their research on a complex of financial-economic, resource-ecological, managerial-marketing approaches to supporting sustainable development and improving existing business models [1-6]. The next group of authors Nitsenko et al. (2017), Voznyuk et al. (2022), Fraj et al. (2013), Zhyvko et al. (2024), Yatsenko et al. (2018), Bilan et al. (2017) thoroughly analyze the accounting of enterprise costs, change management strategies in green production, global marketing challenges, financial risks and unstable economic systems [7-12]. The third group of authors Aranchiy et al. (2022), Lutkovska et al. (2025), Sitnicki et al. (2024), Ribeiro-Soriano and Piñeiro-Chousa (2021), Prokopenko et al. (2021), Nitsenko et al. (2019) offer innovative models of economic and mathematical forecasting, financial regulation, enterprise clustering, and also focus on effective management decision-making to support the economic sustainability of agricultural enterprises [13-18]. The next group of authors includes a powerful set of scientists, such as Ghezzi (2019), Shumilova et al. (2023), Hnatenko et al. (2024), Bakhmat et al. (2022), Vashchenko et al. (2023), Bosniuk et al. (2021), Baharun et al. (2019), which specify the foundations of the formation and development of startups, changes in processes in science, education and entrepreneurship, as well as effective management of innovations and improvement of product quality [19-25]. Among other things, the authors present key areas of development of business entities in the context of digitalization and powerful challenges of the global marketing market.

The fifth group of authors Purdenko et al. (2023), Sitnicki et al. (2024), Gryshchenko et al. (2023), Kubitskyi et al. (2023), Balanovska et al. (2021), Hnatenko et al. (2020) focus on specifying the financial management tools of the business environment during the post-war economic recovery and the formation of a fundamentally new infrastructure environment, where innovations and institutions work through the implementation of the concept of comprehensive encouragement of innovations and business ideas [26-31]. The authors of the sixth group Sitnicki et al. (2024), Prylipko et al. (2021), Sitnicki et al. (2021), Semenov et al. (2021), Mazur et al. (2021), Sitnicki, (2018), Mykhailichenko et al. (2021), Ferasso and Grenier (2021) focus on the management of innovations and labor resources, the accumulation of commercial potential, innovations in marketing strategies, which, in the authors' opinion, generally supported the competitiveness of enterprises [26-39].

Thus, the listed hypotheses and concepts of scientists indicate the interdisciplinary nature of the issues we have chosen, the deep debatability of individual theoretical positions and require further thorough consideration of the concept of financial marketing in cluster systems when managing startup projects.

### Research methodologies

The methodological concept of our article is the use and synergistic combination of a system of general scientific and specialized methods. The rather deep roots of our research are the use of methods of analysis, synthesis and generalization of financial marketing theories in the system of startup project management. For financial analysis, we used methods of mathematical economic analysis to assess the financial condition, profitability, liquidity, business activity and marketing activities. In addition, methods of mathematical economic analysis were used in the process of correlation-regression analysis regarding the analysis of factors and their dependence on the autonomy coefficient. To process statistical information, we used the software "Statistica 14", which allowed us to build forecasts and planned indicators necessary for effective management of financial marketing of startup projects with cluster resource saving in

conditions of change management. Important in our research is the use of the method of graphic visualization to reflect the main trends of socio-economic phenomena and the obtained model indicators in dynamics.

### Results

To study the selected topic, we use a number of theoretical and practical public information. First, let's characterize a startup project as an economic unit. A startup project is a young company or initiative that creates an innovative product or service in conditions of high uncertainty and is focused on ultra-fast growth.

The key characteristics of a startup project are:

- innovativeness: The presence of a unique idea or technology that has no direct analogues or radically improves existing solutions.

- scalability: The business model allows you to quickly increase the number of customers and income without a proportional increase in costs.

- high risk: Most startups fail due to the product not meeting market needs or lack of resources [40]

- . There are special platforms and funds for the implementation of startup projects:

- Ukrainian Startup Fund (USF) - a state initiative that provides grants and support at the early stages. <https://usf.com.ua/>

- Startup.ua - a platform for searching for investments and presenting projects. <https://startup.ua/ua/>

- InVenture — investment portal with a database of startups and current offers. <https://inventure.com.ua/uk/investments/projects>

Financial marketing for startups in the field of cluster resource conservation is a strategy for attracting capital and promoting the value of the project, which is based on the synergy of cluster participants and effective change management [40, 41].

The key aspects of this model are:

1. Specificity of the object (cluster resource conservation)

- Sharing of resources: Marketing focuses not only on one product, but on the network effect - how a startup helps the entire cluster (group of

enterprises) reduce costs for raw materials, energy or logistics.

- Circular Economy: The main “good” becomes environmental efficiency, which is critical for attracting ESG investments and grants.

## 2. Financial marketing tools

- Investment storytelling: Positioning a project through ROI (return on investment) not only for the investor, but also for the local community or industry [40-41].

- Hybrid financing: A combination of crowdfunding, venture capital and government subsidies for energy efficiency.

## 3. Change Management

In the context of constant transformations, financial marketing must solve three tasks:

- Budget adaptability: Flexible redistribution of marketing funds depending on the phase of the startup's life cycle and market shocks.

- Overcoming resistance: Marketing communication should convince cluster stakeholders that implementing new resource-saving technologies is more profitable than maintaining old processes.

- Risk management: Transparency of financial flows as a tool for building trust within the cluster [40].

## 4. Strategic vectors

To be successful, a startup must translate value through:

- Reducing LCOE/LCOI (normalized cost of energy or investment)

- Scalability: The ability to quickly implement a resource-saving model to other cluster participants [41].

Among the 10 well-known agro-tech startups that are based on the application of new technologies and significantly simplify farming, KisanHub should be highlighted - a British startup founded in 2013 in Cambridge (UK) that helps agricultural enterprises and food companies transform their supply chain and increase margins through greater transparency and data-driven analysis [40-41]

KisanHub - software for building an online supply chain from agro-producer to consumer. This platform is a cloud-based solution for managing fresh agricultural supply chains, which helps agricultural producers, procurers and

processors coordinate processes from cultivation to sale [41].

On the domestic market, there are analogues of KisanHub that allow you to automate the supply chain (Supply Chain) - from planting planning to the sale of finished products to the end consumer or trader.

Key solutions for financial marketing of startup projects in cluster resource conservation under change management conditions are the modular AgriChain platform from the Astarta-Kyiv holding. The most comprehensive analogue offering a modular platform for agribusiness management. The AgriChain Logistics module is specially designed to manage the logistics of goods and finished products along the “Field – Elevator – Buyer” route. The platform integrates data on harvest, transport and warehouse balances into a single online system.

It is guided by the key aspects of financial marketing for startups in the field of cluster resource conservation that we choose the subject of the study: LLC Firma “Astarta-Kyiv”

LLC Firma “Astarta-Kyiv” is a public European company, a vertically integrated agro-industrial holding in Ukraine. The main business areas are crop production, sugar production, soybean processing, dairy and meat livestock, grain logistics, bioenergy.

The creation of the startup project LLC Firma “Astarta-Kyiv” dates back to 1993, which provided for agricultural activity. The land bank is over 212 thousand hectares. LLC Firma “Astarta-Kyiv” is included in the rating of 100 large landowners of Ukraine, that is, it is a key player in the agricultural market, owning significant resources.

The regions of activity of LLC Firma “Astarta-Kyiv” are Poltava, Vinnytsia, Ternopil, Khmelnytskyi, Kharkiv, Chernihiv and Zhytomyr regions [43].

LLC Firma “Astarta-Kyiv” has a significant presence in Poltava region, where its key production facilities for sugar, grain and agricultural production are concentrated: three large sugar factories, four high-tech route elevators, a number of subsidiaries.

LLC Firma “Astarta-Kyiv” owns the corporate rights of 134 companies [44].

We begin the practical study of the chosen topic with the assessment and analysis of the resource potential of LLC Firma “Astarta-Kyiv” for the recent period.

The composition of the property of LLC Firma “Astarta-Kyiv” for the recent period is presented in Table 1.

**Table 1. Property composition of LLC Firm “Astarta-Kyiv”, 2019-2024**

Indicator	2019	2020	2021	2022	2023	2024	Deviation, +,-	Deviation, %
Total assets, thousands of UAH	20 061 439	17 764 379	21 353 847	21 018 963	21 665 167	22 311 371	2 249 932	111,22
Fixed assets and non-current assets, thousand UAH	12 477 487	11 017 644	10 677 344	9 590 682	10 690 611	13 790 539	1 313 052	110,52
	7 540 669	65 898	10 676 503	9 230 191	10 798 108	11 366 025	3 825 356	150,73

\*Source: [44-45].

We observe an increase in the value of property during the study period by 2,249,932 thousand UAH or 11.22%

The dynamic series of sources of capital of LLC Firma “Astarta-Kyiv” for the last period is presented in Table 2.

**Table 2. Analysis of the dynamics of sources of capital of LLC Firma “Astarta-Kyiv”, 2019-2024**

Indicator	2019	2020	2021	2022	2023	2024	Deviation, +,-	Deviation, %
Total amount of financial resources, thousand UAH	20 061 439	17 764 379	21 353 847	21 018 963	21 665 167	22 311 371	2 249 932	111,22
Equity, thousand UAH	11 592 812	11 718 655	15 311 108	16 592 488	18 451 636	20 310 784	8 717 972	175,20
Borrowed capital, thousand UAH	7 387 926	4 253 756	4 712 316	2 775 723	1 437 918	9 100 113	1 712 187	123,18
Long-term liabilities, thousand UAH	3 036 204	3 946 896	3 639 742	4 144 485	4 446 254	4 748 023	1 711 819	156,38
Short-term loans, thousand UAH	3 874 935	0	245 520	255 930	266 340	2 767 500	-1 107 435	71,42
Accounts payable, thousand UAH	476787	306860	827054	817167	762301	694088	217 301	145,58
Provision of future payments, thousand UAH	0	0	0	0	0	0	0	X

\*Source: [43-45].

According to the results of Table 2, we note the growth of capital sources of LLC Firma “Astarta-Kyiv” over the last period of

the study. The following is an analysis of the dynamic series of the equity of the selected startup project over the last six years (Table 3).

**Table 3. Dynamics of equity of LLC Firma “Astarta-Kyiv”, 2019-2024**

Type of capital	2019	2020	2021	2022	2023	2024	Deviation, +,-	Deviation, %
Registered (share) capital, UAH thousand	1 663	1 663	1 663	1 663	1 663	1 663	0	100,00

Capital in additional valuations, UAH thousand	2 482 363	192 664	1 521 501	437 981	442 450	446 920	-2 035 443	18,00
Additional capital, UAH thousand	369798	369798	369798	369798	369798	369798	0	100,00
Reserve capital, UAH thousand	508868	47436	459821	489661	465138	500614	-8 254	98,38
Retained earnings (uncovered losses), UAH thousand	8349380	9066354	1396200	682535	4159125	7635715	-713 665	91,45
Total, UAH thousand	1171207 2	9677915	3748983	1981638	5438175	8954711	-2 757 361	76,46

\*Source: [43-44].

We note a reduction in the cost of equity by 23.54%. The registered (share) capital for the last six years remains unchanged at 1663 thousand UAH. The efficiency of the use of fixed assets of

a business entity is measured by indicators and coefficients, their calculation is presented in Table 4.

**Table 4. Analysis of the efficiency of the use of fixed assets of LLC Firm “Astarta-Kyiv”, 2019-2024**

Indicator	2019	2020	2021	2022	2023	2024	Deviation, +/-
Fund leverage, thousand UAH / person	1482,5	1448,24	1341,33	1282,85	1312,27	1941,68	459,18
Fund return, thousand UAH/thousand UAH	0,429	0,501	0,681	0,689	0,715	0,741	1,17
Coefficient of real value of fixed assets in the property of the enterprise	0,624	0,615	0,576	0,557	0,563	0,639	1,26
Coefficient of depreciation of fixed assets	0,157	0,313	0,498	0,534	0,588	0,592	0,75
Coefficient of suitability of fixed assets	0,843	0,687	0,502	0,536	0,566	0,592	1,44
Coefficient of profitability of fixed assets	0,004	0,037	0,618	0,684	0,690	0,702	0,71

\*Source: [43-44].

From the specified indicators, we highlight the growth of capital equipment and capital return over the last period. The depreciation rate of fixed assets increased by 0.75 p.p., which may be a negative phenomenon, at the same time, the suitability ratio and the profitability ratio of fixed

assets increased by 1.44 p.p. and 0.71 p.p. respectively.

In table. 5. we present the indicators of the property status of the selected enterprise over the last period.

**Table 5. Indicators of the property status of LLC Firm “Astarta-Kyiv”, 2019-2024**

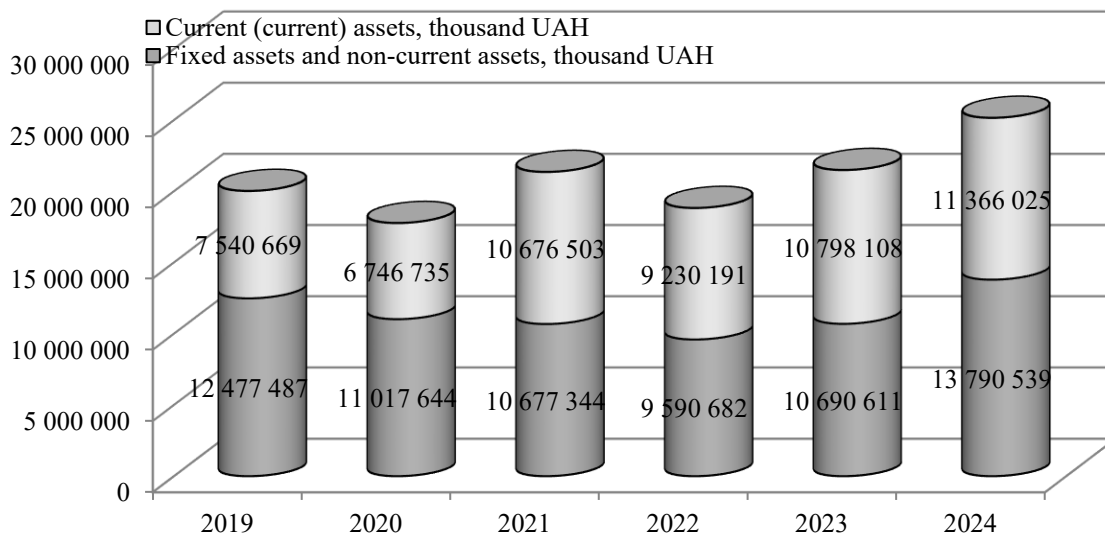
Indicator	2019	2020	2021	2022	2023	2024	Deviation, +/-
Fixed assets depreciation rate	0,157	0,313	0,498	0,534	0,588	0,592	0,435
Fixed assets renewal rate	0,04	0,052	0,053	0,058	0,061	0,074	0,034
Fixed assets disposal rate	0,279	0,363	0,020	0,030	0,020	0,017	-0,262

\*Source: [43-44].

We observe fluctuations in the property status indicators of LLC Firm “Astarta-Kyiv” during the research period.

As a result of the block of research, assessment and analysis of the resource potential

of LLC Firm “Astarta-Kyiv”, we present a visualization of the components of the enterprise's property (Fig. 1).



**Figure 1. Property composition of LLC Firma “Astarta-Kyiv”, 2019-2024**

\*Source: [43-44].

The next block of the study of financial marketing of startup projects on cluster resource saving in the conditions of change

management LLC Firma “Astarta-Kyiv” – calculation of liquidity and solvency indicators (Table 6).

**Table 6. Liquidity and solvency indicators of LLC Firma “Astarta-Kyiv”, 2019-2024**

Indicator	2019	2020	2021	2022	2023	2024	Deviation, +/-
Absolute liquidity ratio	0,063	0,387	0,151	0,148	0,153	0,158	0,095
Quick liquidity ratio	0,370	1,052	0,990	0,994	0,734	0,792	0,422
General liquidity ratio	1,388	3,270	4,443	4,088	5,616	6,144	4,756
Maneuverability ratio	0,182	0,390	0,540	0,538	0,542	0,604	0,422
Net working capital, thousand UAH	2108246,0	4574180,0	8273506,0	8050570,6	8233200,67	7315830,67	5207584,67
Solvency ratio	3,818	2,969	4,207	4,054	4,248	4,443	0,625
Autonomy ratio	0,60	0,62	0,45	0,42	0,54	0,58	-0,020

\*Source: [43-45].

We note the growth of liquidity and solvency indicators of the selected business entity over the last period. Only the autonomy coefficient, which indicates financial

independence and stability, slightly decreases by 0.020 pp.

Indicators for determining the type of financial stability of LLC Firm “Astarta-Kyiv” over the last period are presented in Table 7.

**Table 7. Indicators for determining the type of financial stability of LLC Firm “Astarta-Kyiv”, 2019-2024**

Indicator	2019	2020	2021	2022	2023	2024	Deviation, +,-	Deviation, %
Availability of own working capital (Kvo), thousand UAH	-884 675	701 011	4 633 764	4 566 517	5 499 270	6 432 023	7 316 698	-727,05
Availability of permanent capital (Kp), thousand UAH	-609 276	2 097 119	5 404 298	5 711 477	6 018 656	6 325 835	6 935 111	-1038,25
Total amount of capital for the formation of inventories and costs (Ksum), thousand UAH	3 265 659	2 097 119	5 649 818	5 202 517	5 755 216	6 307 915	3 042 256	193,16

\*Source: [43-45].

According to the results of Table 7, we determine the type of financial stability as absolute, since the analyzed indicators of the total amount of capital for the formation of reserves and costs have a positive value and a positive dynamics of absolute change, which indicates an

excess of own working capital over the amount of attracted capital and increased financial independence.

Business activity indicators of LLC Firm “Astarta-Kyiv” are presented in Table 8.

**Table 8. Business activity indicators of LLC Firm “Astarta-Kyiv”, 2019-2024**

Indicator	2019	2020	2021	2022	2023	2024	Deviation, +,-
Asset turnover ratio	0,65	0,77	1,04	1,02	1,14	1,26	0,61
Current assets turnover ratio	1,55	2,07	2,35	2,79	3,19	3,59	2,041
Inventory turnover ratio	2,105	2,912	3,174	2,799	3,334	3,868	1,763
Inventory turnover, days	173	125	115	80	92	102	-71
Accounts receivable turnover ratio	6,941	9,71	12,097	12,739	12,317	12,895	5,954
Accounts receivable turnover, days	53	38	30	28	28	32	-21
Accounts payable turnover ratio	1,961	3,919	9,184	9,244	9,856	10,467	8,506
Accounts payable turnover, days	186	93	40	40	44	46	-140
Equity turnover ratio	1,225	1,252	1,501	1,602	1,624	1,678	0,453

\*Source: [43-45].

In general, we can speak of a fairly high level of business activity of LLC Firma “Astarta-Kyiv” for the last studied period.

The summarized financial indicators of activity for the study period and the forecast for 2026 are presented in Table. 9.

**Table 9. Financial indicators of LLC Firma “Astarta-Kyiv”, 2020-2025, 2026**

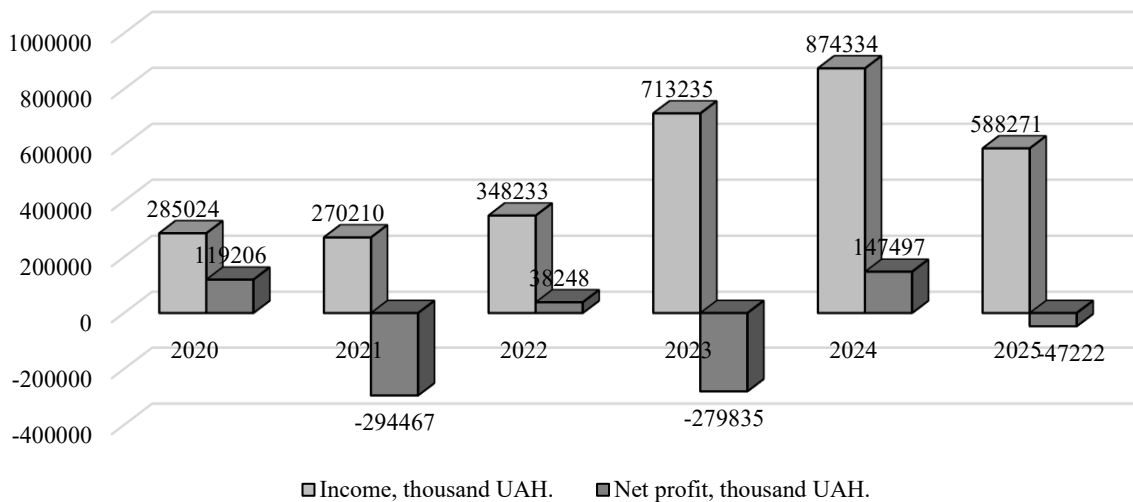
Indicators	2020	2021	2022	2023	2024	2025	Forecast for 2026 p.	Deviation , +,-	Deviati on, %
Revenue, thousand UAH	285024	270210	348233	713235	874334	588271	594748, 942	303247	206,39
		-5.20%	+28.87 %	+104.82%	+22.59 %	-32.72%	+1.10%		

Net profit, thousand UAH	119206	-294467	38248	-279835	147497	-47222		-166428	-39,61
Profitability	41,82%	-108,98%	10,98%	-39,23%	16,87%	-8,03%		-0,4985	-19,20
Assets	2608653	2091672	2468762	2659489	4626701	5234263		2625610	200,65
Liabilities	1391798	862413	655595	1139958	3329131	3782619		2390821	271,78
Average salary before tax, thousand UAH	н/д	106765	71626	116781	78313	90278		-16487	84,56
Number of employees, persons	н/д	195	199	190	330	383		188	196,41
Revenue per employee,	н/д	1385,69 2	1749,91 5	3753,868	2649,49 7	1535,95 6		150,264	110,84

\*Source: [43-45].

We observe some fluctuations in the indicators of resourcefulness and activity of the business entity, but we note an optimistic forecast of the amount of income for 2026.

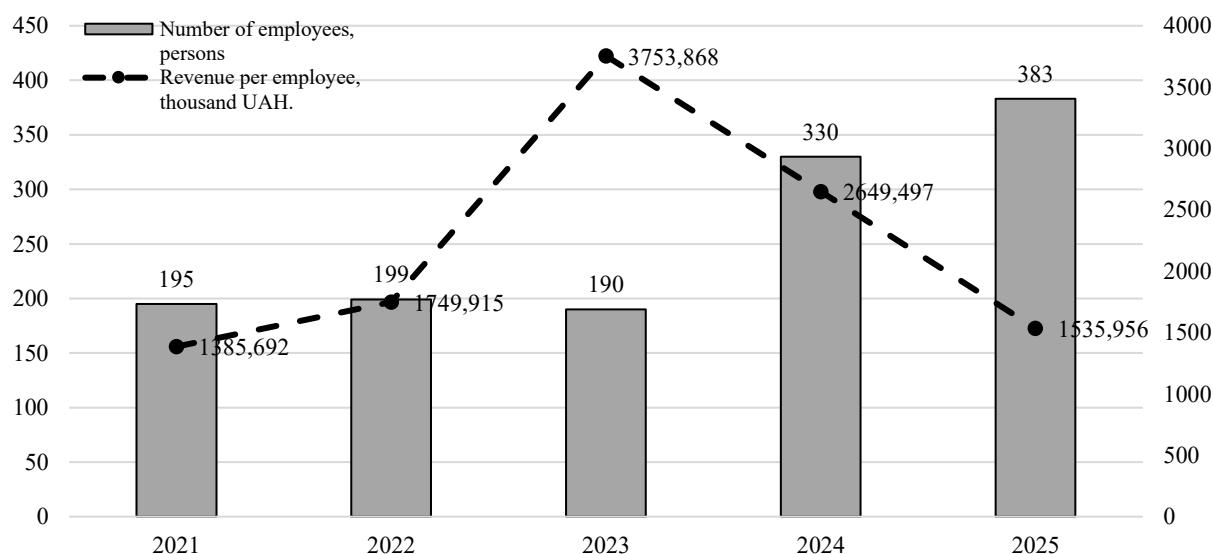
Graphically, the financial performance indicators of LLC Firma “Astarta-Kyiv” for the study period are presented in Fig. 2



**Figure 2. Dynamics of financial performance indicators of LLC Firma “Astarta-Kyiv”, 2020-2025**

\*Source: [43-45].

The number of employees and income per employee of the studied enterprise for the period are presented in Fig. 3.



**Figure 3. Number of employees and revenue per employee of LLC Firma “Astarta-Kyiv”, 2021-2025**

\*Source: [43-45].

Based on public information, indicators of the financial condition of the startup project LLC Firma “Astarta-Kyiv” for 2025 were formed (Table 10).

**Table 10. Indicators of the financial condition of the startup project LLC Firma “Astarta-Kyiv”, 2025**

Group	Indicator	Value
Fixed Assets Assessment Indicators	Share of fixed assets in the company's assets	26,03%
Liquidity	Current (total) liquidity ratio	5,54
Financial Stability Assessment Group	Financial dependence ratio	4,82
	Debt to equity ratio	3,84
	Current solvency, thousand UAH	-3288,412
Fixed Assets Assessment Indicators	Product profitability	28,44%

\*Source: [43-45].

As we can see, a slight decrease in the current (total) liquidity ratio of 5.54 pp in 2025 compared to 6.144 pp in 2024. Assessment of the business entity's activities in 2025 due to the profitability of products of 28.44%.

Based on public information - the report for the first half of 2025, which is published on the website of LLC Firm “Astarta-Kyiv”, the company's total revenue in the first half of 2025 amounted to 227 million euros, of which the company received 138 million euros from exports, which is 61% of total revenue.

The crop industry - agricultural production of the startup project LLC Firm “Astarta-Kyiv”

during this period was characterized by a number of climatic challenges. At the same time, thanks to effective planning, prompt deployment of equipment, and coordinated work of agronomic and production teams, the company ensured timely and high-quality harvesting. Wheat yield was 5.2 t/ha (-3% y/y), gross harvest — 237 thousand t (-9% y/y). Rapeseed yield was 2.7 t/ha (-20% y/y), gross harvest — 31 thousand t (-23% y/y). The highest results were achieved by agricultural companies in Western Ukraine: “Zhytnytsia Podillya” with a wheat yield of 7.4 t/ha and “Volochnysk-Agro” with a rapeseed yield of 3.1 t/ha. According to the results of the first half

of 2025, revenue in the segment amounted to 61 million euros (-38% y/y) against the background of a decrease in crop sales last year. Exports provided 83% of the segment's revenue (versus 93% in H1 2024).

According to the results of H1 2025, the sugar segment's revenue amounted to EUR 79 million, which is 38% less than in the same period last year. This was due to a decrease in sugar prices by 11% and a decrease in sales volumes by 29%. Sugar exports provided 47% of the segment's revenue compared to 58% in H1 2025.

Regarding soybean processing, in H1 2025, the volume of soybean processing was stable compared to the same period last year and amounted to 123 thousand tons. Revenue decreased by 6% to EUR 55 million due to price fluctuations, and exports provided 91% of the segment's revenue. The investment project to build a soy protein concentrate production plant is underway. Production is scheduled to start in 2026.

In the livestock sector, the average number of cattle increased to 29 thousand heads (+4% y/y). An increase in milk yield per cow by 3% - to 28 kg/day, led to an increase in milk production by 2% y/y - to 63 thousand tons. Revenue in the segment increased by 17% y/y - to 29 million euros due to an increase in prices by 11% y/y and an increase in sales volumes by 2% y/y. The company continues to maintain leadership in the industrial milk production market in Ukraine.

The ecosystem of responsible partnership of the LLC Firma "Astarta-Kyiv" defines social impact projects, i.e. partnerships with private and government initiatives allow building a responsible ecosystem of cooperation. Which allows the business to develop and at the same time make a real contribution to the sustainability and development of communities and Ukraine.

In the first half of 2025, LLC Firma "Astarta-Kyiv" continued to scale up the Common Help Ukraine project, launched jointly with the charitable foundation "Believe in Yourself". The initiative unites business, international organizations and communities for systematic support of Ukrainians. Since the beginning of the project, total charitable and humanitarian assistance has exceeded 36.4 million euros. Among the main areas of work: financial and educational grants for the development of regional entrepreneurship, support programs aimed at developing and increasing physical, mental, professional and social potential [7].

The next thing to study and analyze is the foreign economic activity of the startup project LLC Firma "Astarta-Kyiv" for the study period (Table 11).

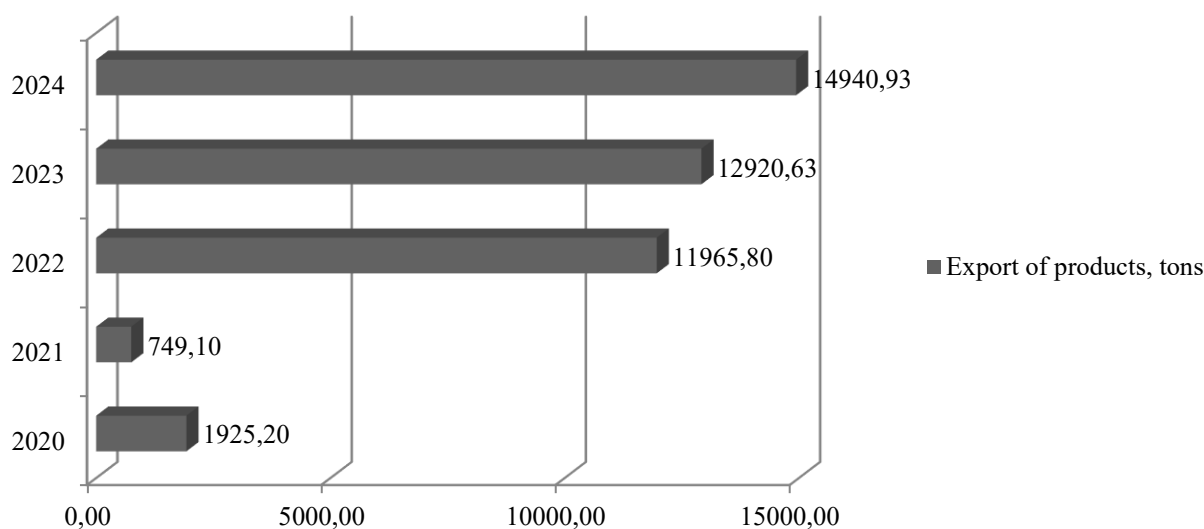
Table 11. Dynamics of indicators of foreign economic activity of the startup project LLC Firma "Astarta-Kyiv", 2020-2024.

Indicators	2020	2021	2022	2023	2024	On average, 2020-2024.	Deviation	Deviation
Product export, tons	1925,20	749,10	11965,80	12920,63	14940,93	8500,33	13015,73	776,07
Total products sold, thousand UAH	1764925,0	3477999,0	3610471,0	3696677,6	3719450,6	3253904,67	1954525,6	210,74
including exported products, thousand UAH	1234236,0	1834542,0	1866810,0	1877770,0	1914057,0	1745483,00	679821,00	155,08
Share of exports in the total volume of products sold, %	69,93	52,75	51,71	50,80	51,46	55,33	-18,47	X
	3884,00	5714,00	9762,00	10331,33	11270,33	8192,33	7386,33	290,17

\*Source: [43-45].

We observe the dynamism of the foreign economic processes of the business entity, only the decrease in the share of exports in the total volume of products sold by 18.47 pp is negative, but given the situation it is quite justified.

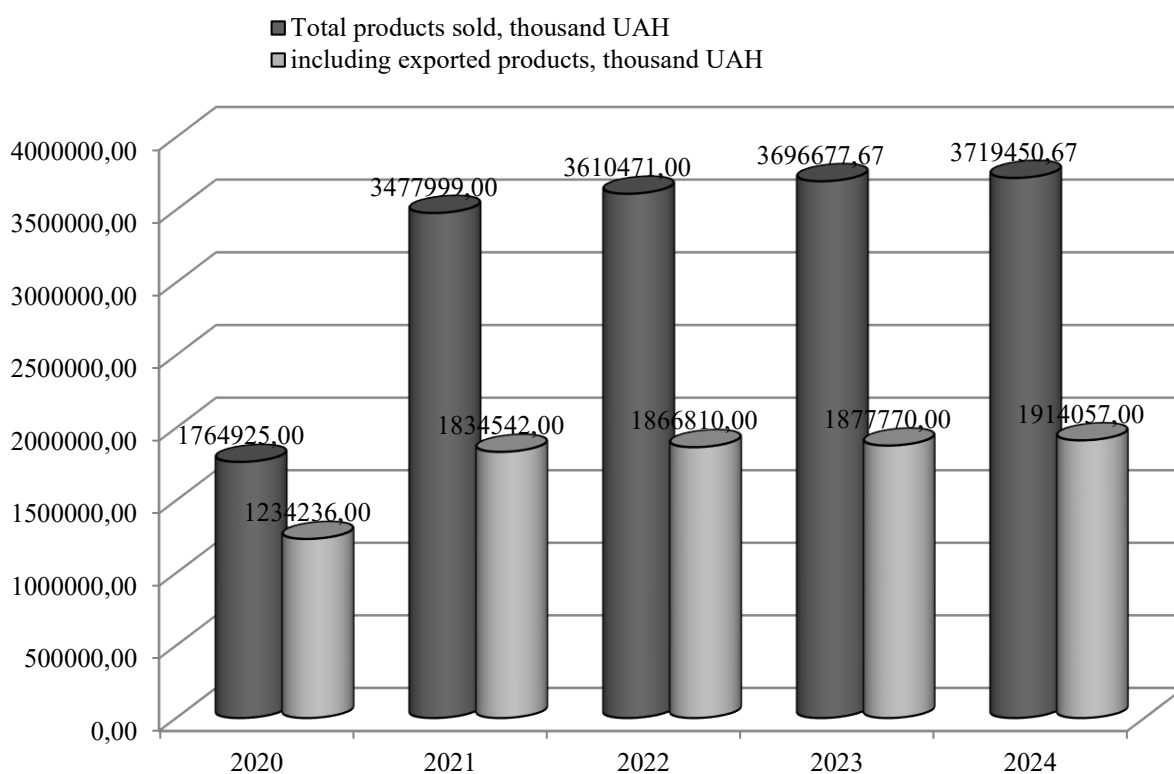
An illustration of the export of products of the startup project LLC Firma "Astarta-Kyiv" in physical mass over the past five years is presented in Fig. 4.



**Figure 4. Dynamics of export of products of the startup project LLC Firm “Astarta-Kyiv”, 2020-2024**

\*Source: [43-45].

The dynamic series of products sold, including for export in monetary units is presented in Fig. 5.



**Figure 5. Dynamics of products sold by the startup project LLC Firma “Astarta-Kyiv”, 2020-2024**

\*Source: [43-45].

Given the chosen topic of financial marketing of startup projects, let us analyze the dynamic series of marketing expenses of LLC Firma “Astarta-Kyiv” over the recent period (Table 12).

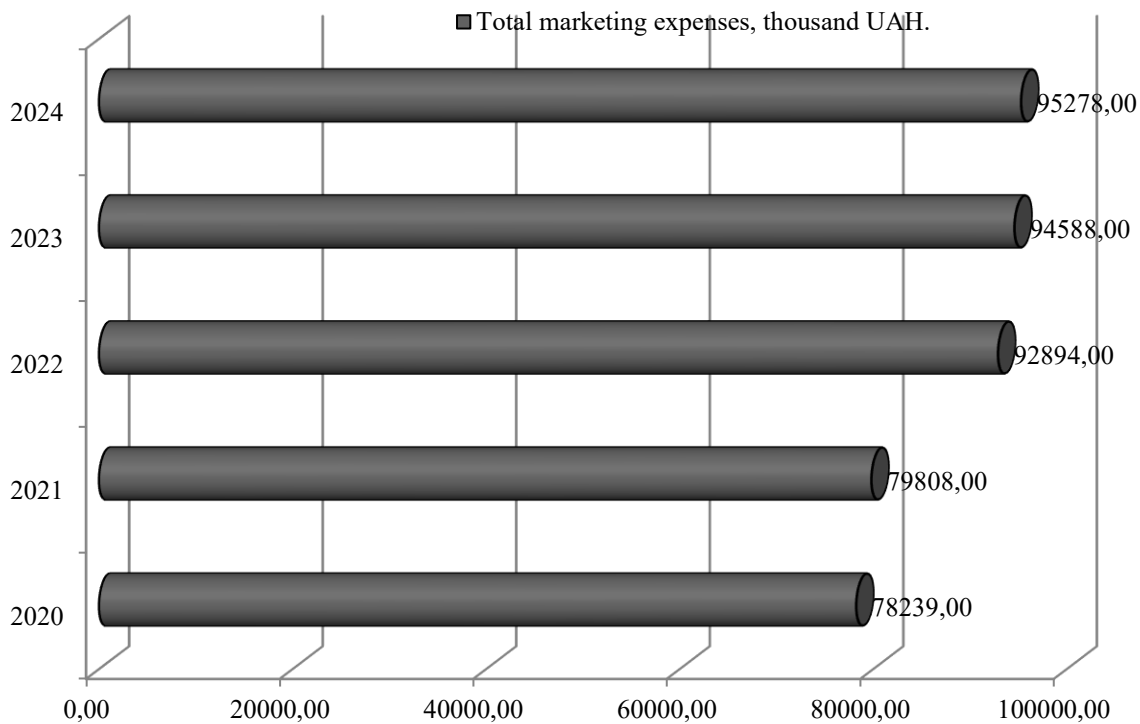
**Table 12. Dynamics of marketing expenses of LLC Firma “Astarta-Kyiv”, 2020-2024**

LLC Firm “Astarta-Kyiv”	2020	2021	2022	2023	2024	On average 2020-2024	Deviation, +,-	Deviation, %
Advertising	61272,00	62170,00	72271,00	73534,00	74056,00	68660,60	12784,00	120,86
Sales promotion	8127,00	9657,00	9754,00	10036,00	10090,00	9532,80	1963,00	124,15
PR	5554,00	5826,00	6503,00	6620,00	6688,00	6238,20	1134,00	120,42
Direct marketing	3286,00	2155,00	4366,00	4398,00	4444,00	3729,80	1158,00	135,24
Total marketing expenses, thousand UAH.	78239,00	79808,00	92894,00	94588,00	95278,00	88161,40	17039,00	121,78

\*Source: [43-45].

We observe an increase in the costs of marketing activities of the business entity by 17,039 thousand UAH or 21.78%.

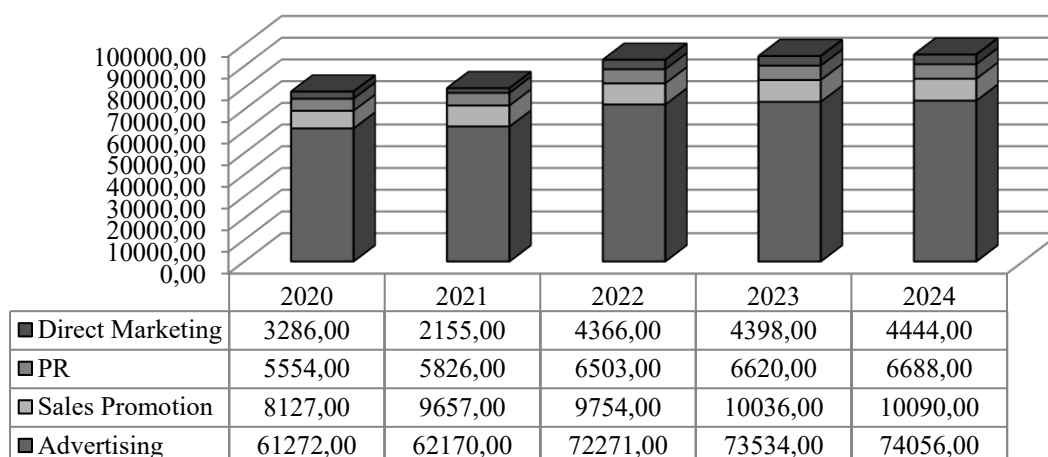
The dynamics of marketing costs of LLC Firm “Astarta-Kyiv” for the period of the study is graphically presented in Fig. 6.



**Figure 6. Dynamics of marketing expenses of LLC Firma “Astarta-Kyiv”, 2020-2024**

\*Source: [43-45].

An illustration of the dynamic series of marketing expenses of the selected business entity by type is presented in Fig. 7.



**Figure 7. Dynamics of marketing expenses by type of LLC Firm “Astarta-Kyiv”, 2020-2024**

\*Source: [43-45].

As a result of studying the financial marketing of startup projects on cluster resource saving in the conditions of change management of LLC Firm “Astarta-Kyiv”, we will determine compliance with the “golden rule of enterprise economics” [43-46].

The financial indicators of LLC Firm “Astarta-Kyiv” were previously presented (Table 9), we will check to what extent the indicators of

production and financial activity comply with the “golden rule of enterprise economics”. When analyzing the dynamics of absolute indicators, we will assess whether this dynamics corresponds to their optimal ratio. To do this, we will form the indicators of production and financial activity of the selected business entity for the last six years in Table. 13.

**Table 13. Dynamics of indicators of production and financial activity of LLC Firm “Astarta-Kyiv” to determine compliance with the “golden rule of enterprise economics”, 2020-2025**

LLC Firm “Astarta-Kyiv”	Growth rate 2021/2020, %	Growth rate 2022/2021, %	Growth rate 2023/2022, %	Growth rate 2024/2023, %	Growth rate 2025/2024, %
Net financial result: profit	-247,02%	-12,99%	-731,63%	-52,71%	-32,02%
Net income from sales of products (goods, works, services)	94,80%	128,87%	204,82%	122,59%	67,28%
Average value of assets	80,18%	118,03%	107,73%	173,97%	113,13%

\*Source: [43-46].

To determine how much the indicators of production and financial activity of LLC Firm “Astarta-Kyiv” correspond to the “golden rule of enterprise economics”, we use the formula:

$$T_{pn} > T_{pe} > T_{pa} > 100\% \quad (1)$$

where  $T_{pn}$ ,  $T_{pe}$ ,  $T_{pa}$  – growth rates of profit, income (revenue) from sales and assets, respectively.

If there is an excess of gross profit growth over net income growth from sales of products (goods, works, services), as well as an excess of revenue growth rate over asset growth rate. This indicates full compliance with the “golden rule of enterprise economics” [43-46].

Thus, as a result of calculating compliance with the “golden rule of enterprise economics” of LLC Firm “Astarta-Kyiv” over the past six years, the characteristics of its activities were obtained, which are grouped in Table. 14.

**Table 14. Results of calculating compliance with the “golden rule of enterprise economics” of LLC Firm “Astarta-Kyiv”, 2020-2025**

Period	2021/2020	2022/2021	2023/2022	2024/2023	2025/2024
LTD Firm “Astarta-Kyiv”	incomplete compliance with the “golden rule of enterprise economics”	incomplete compliance with the “golden rule of enterprise economics”	incomplete compliance with the “golden rule of enterprise economics”	incomplete compliance with the “golden rule of enterprise economics”	incomplete compliance with the “golden rule of enterprise economics”

\*Source: [43-46].

As a result of the calculation, the compliance with the “golden rule of enterprise economics” of the selected business entity was obtained. Considering that the growth rate (decrease) of profit, revenue and assets fluctuated throughout the entire period under study, we can draw a conclusion about the decrease in the economic potential of LLC Firma “Astarta-Kyiv” and the need to find reserves for its further growth [43-46]. At the final stage of studying the financial marketing of startup projects on cluster resource saving in the conditions of change management of LLC Firma “Astarta-Kyiv”, we will conduct regression analysis, modeling and forecasting of the main components of the effective activity of

the selected business entity. Using a linear production function, Microsoft Excel spreadsheets and built-in statistical functions, we will model the impact of net income from sales of products (goods, works, services and marketing expenses on the autonomy coefficient, as an indicator and indicator of the financial independence of a business entity. As a result of the data processing of LLC Firm “Astarta-Kyiv” and correlation-regression modeling, the coefficients of the regression model were obtained. Further, using the obtained production regression coefficients, both the factor characteristics and the effective indicator of the autonomy coefficient were predicted (Table 15).

**Table 15. Forecasting factor characteristics and the effective indicator of the autonomy coefficient of LLC Firm “Astarta-Kyiv”, 2027**

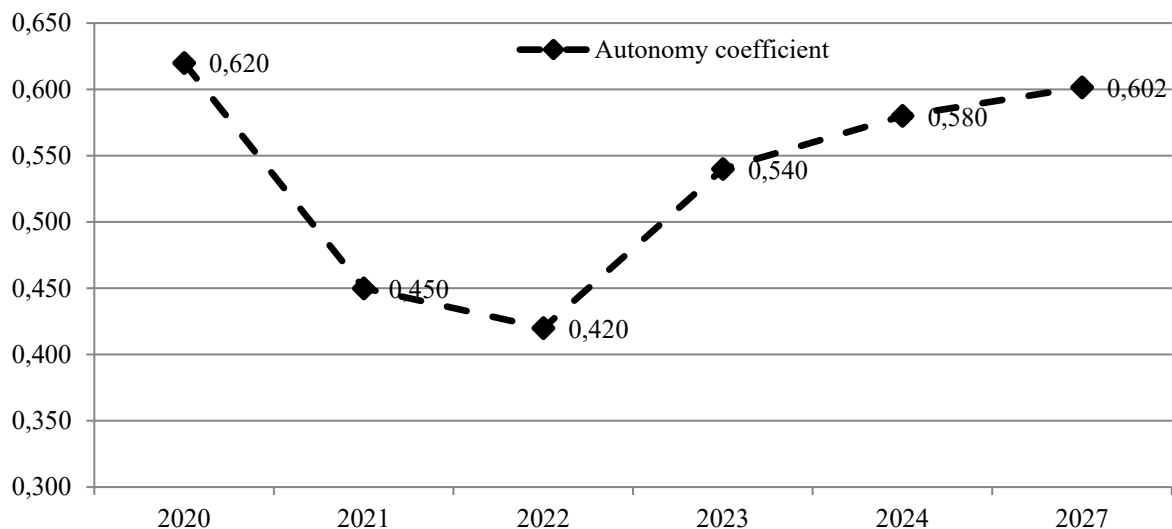
Startup project	Net income from sales of products (goods, works, services), thousand UAH.	Marketing expenses, thousand UAH	Autonomy coefficient
LTD Firm “Astarta-Kyiv”	1309029,70	112590,40	0,602

\*Source: [43-46].

From the obtained forecast results, we see an increase in both factor characteristics and the effective indicator of the autonomy coefficient. Thus, the factor characteristics of net income from sales of products (goods, works, services) and expenses for marketing activities in the forecast 2027 increase by 434695.70 thousand UAH or 49.72% and 17312.40 thousand UAH. or 18.17%, respectively.

As a result of the increase in factor characteristics, there is an increase in effectiveness as a selected coefficient by 0.022

p.p. We note the optimistic scenario of the obtained result for the short-term period, and also take into account that the autonomy coefficient is within the normative value, i.e. more than 0.50 pp, which may indicate the financial independence and activity of LLC Firma “Astarta-Kyiv” as a successful domestic startup project. Visualization of the actual and forecast values of the autonomy coefficient of the selected LLC Firma “Astarta-Kyiv” is presented in Fig. 8.



**Figure 8. Actual and forecast values of the autonomy coefficient as an indicator and indicator of financial independence of LLC Firma “Astarta-Kyiv”, 2027**

*\*Source: [43-46].*

Thus, LLC Firma “Astarta-Kyiv”, as a successful startup project and cluster entity, has an established financial marketing system and resource potential, which in the conditions of change management allows to regulate and optimize production activities in order to increase the efficiency of the entire enterprise management system, improve financial stability and increase profitability [43-46].

### Conclusions

The obtained scientific results allowed us to determine a comprehensive understanding of the theoretical aspects of financial marketing of startup projects on cluster resource conservation in the conditions of change management. The emphasis is on the fact that an effective toolkit of financial marketing appears as a powerful functional aspect of the management policy of business entities, and also serves as a synergistic source of investment, economic, financial, social and communication tools that will support the sustainable development of enterprises implementing startup initiatives, which will undoubtedly increase their competitiveness. The practical testing of the methodology proposed by us was implemented on the example of LLC Firm “Astarta-Kyiv”, the results of which confirmed the effectiveness of the systematic approach developed by us to determining the financial stability of enterprises and determining its

solvency. The implementation of the proposed methodology in practice showed positivity in the dynamics of assets, sufficient liquidity, business activity and solvency of the enterprise. The above-mentioned showed the ability of the enterprise to effectively use the available resource potential, the positive ability of the enterprise to quickly adapt to the challenges of the external environment. At the same time, our analysis revealed negative trends that we found in the imbalance of financial resources, manifested in fluctuations in profitability and the lack of ability of the enterprise to maintain its profitability. This situation indicates the need to increase operational management of financial potential, the formation of a new policy of business activity in conditions of change and the increase in the level of education of the management resource, which would activate the internal reserves of the enterprise aimed at minimizing costs. An important result of the scientific research was the use of mathematical and statistical methods, which allowed us to show the relationship between profit, marketing indicators and the coefficient of capital autonomy. Such use of the listed tools proved the need to form an enterprise policy to increase the size of financial investments in marketing activities to preserve the financial autonomy of enterprises and support their sustainability.

## References

- Agribusiness Startups View (2026). Smart Ag - smart devices for agricultural navigation. <https://agrostartup.pp.ua>
- Aranchiy, V., Ganushchak-Efimenko, L., Khrystenko, L., Shkoda, M., Hnatenko, I., & Fastovets, N. (2022). Modeling of integrated assessment of the effectiveness of management of the financial position of business entities. *Financial and Credit Activity Problems of Theory and Practice*, 1(42), 259-270.
- Astartaholding (2026). Astra-Kyiv. <https://astartaholding.com/>
- Baharun, R., Jing Mi, T., Streimikiene, D., Mardani, A., Shakeel, J., & Nitsenko, V. (2019). Innovation in healthcare performance among private brand's healthcare services in small and medium-sized enterprises (SMEs). *Acta Polytechnica Hungarica*, 16(5), 151-172. <https://doi.org/10.12700/APH.16.5.2019.5.9>
- Bakhmat, N., Voropayeva, T., Artamoshchenko, V., Kubitskyi, S., & Ivanov, D. (2022). Quality Management in Higher Education in Terms of Sustainable Development. *International Journal for Quality Research*, 16(4), 1107-1120. <http://dx.doi.org/10.24874/IJQR16.04-10>
- Balanovska, T., Mykhailichenko, M., Holik, V., Dramaretska, K., & Troian, A. (2021). Development management of agricultural enterprises. *Financial and Credit Activity Problems of Theory and Practice*, (3), 134-143. <https://doi.org/10.18371/fcaptop.v3i38.237434>
- Bilan, Y., Zos-Kior, M., Nitsenko, V., Sinelnikau, U., & Ilin, V. (2017). Projecting the social component of the efficient management of land resources. *Journal of Security and Sustainability*, 7(2), 287-300.
- Bosniuk, V., Ostopolets, I., Svitlychna, N., Miroshnichenko, O., Tsipan, T., & Kubitskyi, S. (2021). Social Content of Psychological Specialists' Professional Activity. *Postmodern Openings*, 12(1), 01-20. <https://doi.org/10.18662/po/12.1/242>
- Clarity-project (2026). Limited liability company "Astarta-Kyiv" <https://clarity-project.info/edr/19371986>
- Duginets, A., Shvydanenko, O., Busarieva, T., Balanovska T., & Gogulya, O. (2023). Specific modern features of the transformation of the knowledge component of TNC. *Financial and credit activity problems of theory and practice*, 2(49), 384-397. <https://doi.org/10.55643/fcaptop.2.49.2023.4017>
- Ferasso, M., & Grenier, C. (2021). Fostering SME's co-development of innovative projects in biotech clusters: Extending the sets of enablers for the knowledge creation process. *Technology in Society*, 67, 101729. <https://doi.org/10.1016/j.techsoc.2021.101729>
- Fraj, E., Martínez, E., & Matute, J. (2013). Green marketing in B2B organisations: an empirical analysis from the natural-resource-based view of the firm. *Journal of Business & Industrial Marketing*, 28(5), 396-410. <https://doi.org/10.1108/08858621311330245>
- Ghezzi, A. (2019). Digital startups and the adoption and implementation of Lean Startup Approaches: Effectuation, Bricolage and Opportunity Creation in practice. *Technological Forecasting and Social Change*, 146, 945-960. <https://doi.org/10.1016/j.techfore.2018.09.017>
- Gryshchenko, I., Ganushchak-Efimenko, L., Hnatenko, I., & Rebilas, R. (2023). Management of environment design of the development of innovative entrepreneurship at integrated structures under the conditions of post-war reconstruction. *Financial & Credit Activity: Problems of Theory & Practice*, 5(52), 341-352. <https://doi.org/10.55643/fcaptop.5.52.2023.4199>
- Hnatenko, I., Bebeko, S., Ievseitseva, O., Kvita, H., & Zos-Kior, M. (2024). Market analysis of the renewable energy market of Ukraine in the context of changes in financial and economic processes. *Financial and credit activity: problems of theory and practice*. Volume 5 (58), 446-459. <https://doi.org/10.55643/fcaptop.5.58.2024.4576>
- Hnatenko, I., Kuksa, I., Naumenko, I., Baldyk, D., & Rubezhanska, V. (2020). Infrastructure of innovation enterprise: features of formation and regulation in modern market conditions. *Management Theory and Studies for Rural Business and Infrastructure Development*, 42(1), 97-104. <https://doi.org/10.15544/mts.2020.10>
- Jiby, B. J., Duggal, D., Gupta, A., Khaladkar, M., Mahankal, P., & Chavan, S. Integrating E-Marketing and Financial Management For Sustainable Growth In Environmental Startups. *International Journal of Environmental Sciences*, 11(19s), 2025. <https://theaspd.com/index.php>
- Kisanhub (2026). Connecting the fresh produce supply chain from seed to sale. <https://www.kisanhub.com/>
- Kubitskyi, S., Shorobur, I., Yevdokymova, N., Vlasiuk, T., & Shevchuk, L. (2023). Development of higher education institutions in the current conditions. *Cadernos de Educação Tecnologia e Sociedade*, 16(se2), 119-128. <https://doi.org/10.14571/brajets.v16.nse2.119-128>
- Lutkovska S., Martyn O., Kalinichenko O., Kulyk M., Prokopenko O., Lesiuk V., & Lesiuk A. (2025). Financial and economic management of the efficiency of energy crop production in the system of smart technological development of labor resources. *Management Theory and Studies for Rural Business and Infrastructure Development*, 47(2), 162-173. <https://doi.org/10.15544/mts.2025.13>
- Mazur, N., Khrystenko, L., Pásztorová, J., Zos-Kior, M., Hnatenko, I., Puzyrova, P., & Rubezhanska, V. (2021). Improvement of Controlling in the Financial Management of Enterprises. *TEM Journal: Technology, Education, Management, Informatics*, 10(4), 1605-1609. <https://doi.org/10.18421/TEM104-15>
- Mykhailichenko, M., Lozhachevska, O., Smagin, V., Krasnoshtan, O., Zos-Kior, M., & Hnatenko, I. (2021). Competitive strategies of personnel management in business processes of agricultural enterprises focused on

digitalization. *Management Theory and Studies for Rural Business and Infrastructure Development*, 43(3), 403–414. <https://ejournals.vdu.lt/index.php/mtsrbid/article/view/2519>

Nitsenko, V., Mardani, A., Streimikis, J., Ishchenko, M., Chaikovskiy, M., Stoyanova-Koval, S., & Arutiunian, R. (2019). Automatic Information System of Risk Assessment for Agricultural Enterprises of Ukraine. *Montenegrin Journal of Economics*, 15(2), 139-152. <https://doi.org/10.14254/1800-5845/2019.15-2.11>

Nitsenko, V., Mukoviz, V., & Sharapa, O. (2017). Accounting of transaction expenses of economic entities. *Scientific Bulletin of Polissia*, 4(12/2), 71-78. [https://doi.org/10.25140/2410-9576-2017-2-4\(12\)-71-78](https://doi.org/10.25140/2410-9576-2017-2-4(12)-71-78).

Official website of the Milk Producers Association (2026). Dairy Congress. <https://avm-ua.org/uk/post/nazvano-10-najcikavisih-startapiv-u-silskomu-gospodarstvi-za-2019-rik?milku=1>

Opendatabot (2026). LLC Firm “Astarta-Kyiv” <https://opendatabot.ua/c/19371986>

Prokopenko, O., Martyn, O., Bilyk, O., Vivcharuk, O., Zos-Kior, M., & Hnatenko, I. (2021). Models of State Clusterisation Management, Marketing and Labour Market Management in Conditions of Globalization, Risk of Bankruptcy and Services Market Development. *International journal of computer science and network security: IJCSNS*, 21(12), 228-234. <https://doi.org/10.22937/IJCSNS.2021.21.12.34>

Prylipko, S., Vasylieva, N., Kovalova, O., Kulayets, M., Bilous, Y., & Hnatenko, I. (2021). Modeling of Regional Management of Innovation Activity: Personnel Policy, Financial and Credit and Foreign Economic Activity. *International Journal of Computer Science & Network Security*, 21(11), 43-48. <https://doi.org/10.22937/ijcsns.2021.21.11.6>

Puppim de Oliveira, J. A., & Jabbour, C. J. C. (2017). Environmental management, climate change, CSR, and governance in clusters of small firms in developing countries: Toward an integrated analytical framework. *Business & Society*, 56(1), 130-151. <https://doi.org/10.1177/0007650315575470>

Purdenko, O., Artyushok, K., Riazanova, N., Babaiev, I., Kononenko, A., Lepeyko, T., & Zos-Kior, M. (2023). Financial management of innovative eco-entrepreneurship. *Management Theory and Studies for Rural Business and Infrastructure Development*, 45(2), 152-165. <https://doi.org/10.15544/mts.2023.16>

Ribeiro-Soriano, D., & Piñeiro-Chousa, J. (2021). Innovative strategic relationships among sustainable startups. *Industrial Marketing Management*, 94, 106-114. <https://doi.org/10.1016/j.indmarman.2021.01.008>

Semenov, A., Kuksa, I., Hnatenko, I., Sazonova, T., Babiy, L., & Rubezhanska, V. (2021). Management of Energy and Resource-Saving Innovation Projects at Agri-Food Enterprises. *TEM Journal: Technology, Education, Management, Informatics*, 10(2), 751-756. <https://doi.org/10.18421/TEM102-32>

Shumilova, I., Kubitskyi, S., Bazeliuk, V., Rudyk, Y., Hrechanyk, N., & Rozhnova, T. (2023). The System of Forming the emotional and ethical Competence of the Future education Manager in the conditions of transformational changes. *Ad Alta-Journal of Interdisciplinary Research*, 13(2), 82-89. <https://ep3.nuwm.edu.ua/28475/>

Sitnicki, M. (2018). Determining the Priorities of the Development of EU Research Universities Based on the Analysis of Rating Indicators of World-Class Universities. *Baltic Journal of European Studies*, 8, 1(24), 76-100. <https://doi.org/10.1515/bjes-2018-0006>

Sitnicki, M. (2018). Development of a model of digital research universities. *Baltic journal of economic studies*, 4(1), 311-318. <https://doi.org/10.30525/2256-0742/2018-4-1-311-318>

Sitnicki, M. (2018). Franchising model of commercialization of scientific libraries' services at Research universities. *Baltic Journal of Economic Studies*, 4(2), 214-221. <https://doi.org/10.30525/2256-0742/2018-4-2-214-221>

Sitnicki, M. W., Balan, V., Tymchenko, I., Sviatnenko, V., & Sychova, A. (2021). Measuring the commercial potential of new product ideas using fuzzy set theory. *Innovative Marketing*, 17(2), 149-163. [http://dx.doi.org/10.21511/im.17\(2\).2021.14](http://dx.doi.org/10.21511/im.17(2).2021.14)

Sitnicki, M. W., Prykaziuk, N., Ludmila, H., Pimenowa, O., Imbrea, F., Șmuleac, L., & Pașcalău, R. (2024). Regional perspective of using cyber insurance as a tool for protection of agriculture 4.0. *Agriculture*, 14(2), 320. <https://doi.org/10.3390/agriculture14020320>

Sitnicki, M., Horbas, I., Derkach, O., Flowers, A., Wielewska, I., Tucki, K., Zuzek, D., & Pimenov, S. (2024). Development and support of Ukrainian domestic entrepreneurship in the knowledge economy. *Sustainability*, 16(13), 5682. <https://doi.org/10.3390/su16135682>

Sitnicki, M., Kurinskyi, D., Pimenowa, O., Wasilewski, M., & Wasilewska, N. (2024). Strategic Formation of Agricultural Market Clusters in Ukraine: Emerging as a Global Player. *Sustainability*, 16(21), 9430. <https://doi.org/10.3390/su16219430>

Vashchenko, P. A., Zhukorskyi, O. M., Saenko, A. M., Khokhlov, A. M., Usenko, S. O., Kryhina, N. V., Sukhno, T. V., & Tsereniuk, O. M. (2023). The influence of feeding level on the growth of pigs depending on their genotype. *Regulatory Mechanisms in Biosystems*, 14(1), 112–117. <https://doi.org/10.15421/022317>

Voznyuk A., Kubitskyi S., Balanovska T., Dorofeyev O., & Chip L. (2022). Synergetic simulation of managing processes in educational sphere in the contest of temporary self-ruled managerial target teams application. *Financial and Credit Activity Problems of Theory and Practice*, 3(44), 317–327. <https://doi.org/10.55643/fcaptp.3.44.2022.3749> <https://fkd.net.ua/index.php/fkd/article/view/3749/3602>

Yatsenko, O., Meyers, W. H., Iatsenko, O., & Biletska, I. (2017). Modeling of development processes of bilateral trade and economic integration between countries. *Economic annals-XXI*, (168), 18-23. <https://doi.org/10.21003/ea.V168-04>

Yatsenko, O., Nitsenko, V., Mardani, A., & Tananaiko, T. (2018). The impact of global risks on the world trade and economic environment. *Financial and credit activity: problems of theory and practice*, 4(27), 435-444. <https://doi.org/10.18371/fcaptp.v4i27.154279>

Zapukhlyak I.B., Zelinska G.O., Pobihun S.A. (2018). Approaches, methods and tools for change management in the enterprise development management system. *Global and national economic problems*, 23, 204-209.

Zhyvko, Z., Morhachov, I., Zhelikhovska, M., Artiukh-Pasiuta, O., Hnatenko, I., Skripnik, V., & Yanechko, S. (2024). The Influence of the US Stock Market on the Institutional Security Strategy of the Management of Innovative Development. *Management Theory and Studies for Rural Business and Infrastructure Development*, 46(1), 104-111. <https://doi.org/10.22937/IJCSNS.2024.24.11.11>