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Analysis of aircraft enterprise activity in the context of economic development of Ukraine

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Abstract. The priority direction of the economy of Ukraine is the development of the aircraft industry. Analysis of the activities of aircraft manufacturing enterprises will improve the efficiency of their management, which will contribute to the modernization of the Ukrainian economy in general. The purpose of the study was to analyse the financial condition of aircraft manufacturing enterprises and determine the prospects for expanding their export activities. The research uses the methods of system analysis, induction and deduction, analysis and synthesis, index method. An analysis of the capital of main aircraft-building enterprises of Ukraine was carried out, and distinctive characteristics of the structure, movement and efficiency of its use were established. An analysis of solvency and financial stability was performed. It was established that the financial condition of enterprises is unsatisfactory, which leads to deterioration of the efficiency of the industry as a whole. Studying the activities of enterprises in modern conditions led to the need to conduct a study of the influence of structural factors on the volume of product exports. The presence of dynamic fluctuations in demand requires companies to have the knowledge and skills to use scientific methods of seasonality analysis. The need to use the index method, in particular seasonal indices, to measure the impact of seasonal fluctuations on the volume of product exports has been proved. The amount of aircraft exports during 2018-2020 and the seasonality index are presented graphically. Seasonal fluctuations in the export of aircraft according to monthly data of 2018-2020 by aircraft manufacturing enterprises are estimated. Effective methods of improving the analysis of enterprise activity are proposed. It was estimated that the established trends should be taken into account when forecasting the production indicators of the enterprise. The results of the study can be useful for specialists whose activities are related to ensuring the financial stability and development of the aircraft construction complex of Ukraine

Keywords: liquidity, financial condition, solvency, export of aircraft, seasonality index

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INTRODUCTION

The result of the economic development of Ukraine, the directions of which are developed taking into account global trends and the country's internal capabilities in the National Strategy of Economic Development for the period until 2030, is expected to create a competitive economy on the international market. Financial difficulties are one of the most important threats faced by businesses, regardless of their size and activity. Bankruptcy or collapse of a business can have a negative impact on both the company itself and the global economy. During 1980-2020, financial distress research has been a hot topic for academics and practitioners as it serves as an effective early warning signal for creditors, investors, corporate regulators and other stakeholders.

In the context of forecasting financial problems, researchers are motivated to identify early warning signs of financial problems. In particular, E.I. Altman [1] analysed the effectiveness of the Z-Score model for firms from 31 European and 3 non-European countries using various modifications of the original model. This is the first study to offer such a comprehensive international analysis. His results show that the Z-Score model works well for most countries (prediction accuracy is around 0.75) and the classification accuracy can be improved (above 0.90) with a country-by-country score that includes additional variables. N. Mselmi [2] investigated the ability of financial ratios to signal financial difficulties one or two years before their occurrence. The authors compared the accuracy of five forecasting models. Scientists have established that the PLS-SVM (Partial Least Squares Support Vector Machines) hybrid model overcomes the shortcomings of using

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each method separately and has a high level of prediction. A number of scientists are focused on improving existing bankruptcy forecasting models. J. Almamy [3] tested individual ratios of Altman's original Z-score model and found that cash flow combined with the output variable of the Z-score is very important in predicting the health of British companies. The J-UK model was developed to check the health of UK companies. Compared with the Z-score model, the predictive power of the J-UK model was 82.9%, which is consistent with the British Taffler model.

The problems considered by Ukrainian scientists relate to the generalization of theoretical approaches to determining the essence of the financial state of the enterprise. In particular, V. Chepka [4] provided an interpretation of the concept of "financial condition of the enterprise" as a system of financial relations, which, in addition to indicators of the enterprise's financial resources, includes its competitiveness and ability to finance its activities. In the work of O. Levkovich [5], the methods for studying the financial stability of the enterprise are worthy of attention, as well as the main aspects of its influence on the enterprise's activities are formed, namely: the prerequisites for strengthening competitive positions and the development of investment activities are formed. It should be noted the position of the authors regarding the interpretation and analysis of the categorical apparatus in the study. N. Volkova [6] paid attention to the improvement of the methodology of financial analysis and proposed indicators whose dynamics can satisfy the expectations of stakeholders and owners of the enterprise in the context of sustainable development of the business entity. These indicators characterize the performance of the enterprise, the level of risks in the market, the effectiveness of the use of production potential, the level of financial stability and financial stability. The use of the proposed methodology will ensure timely management decisions to establish the economic and financial balance of the enterprise's activities. Individual authors pay special attention to the issues of registration, storage, transmission, recovery and use of information used for economic analysis. V. Nitsenko [7] proved that the quality of information provided by accounting has a significant impact on increasing the competitiveness of the enterprise, proved the need to separate information and information resources for management needs.

Despite significant scientific progress, a number of important problems in the organization and methodology of financial analysis of enterprises require further research, in-depth study and development of new improvement approaches in modern conditions. Accordingly, the goal was to study the financial condition of enterprises on the example of enterprises of the aircraft industry and determine the prospects for expanding their export activities.

MATERIALS AND METHODS

To achieve the goal of the research, a combination of general and specific methods of scientific knowledge was used. To establish the main changes that occurred in the financial condition of the enterprises, the method of systematic analysis was used, thanks to which distinctive characteristics of the capital structure of the mentioned enterprises were revealed. The work analyses the activities of such major aircraft manufacturing enterprises of Ukraine as: ANTONOV Company, State Enterprise PLANT 410 CIVIL AVIATION (hereinafter SE "PLANT 410 CA"), Kharkiv State Aircraft Manufacturing Company (hereinafter KSAMC). The sources of information for the analysis of capital and the calculation of indicators of financial stability were the data of annual financial statements of these enterprises, located on the official websites of ANTONOV Company and KSAMC [8-9] and the open data portal "Clarity Project" [10].

The use of inductive and deductive methods in the work made it possible to carry out an analysis of the enterprises of this industry and draw conclusions regarding the determination of prospects for the expansion of export activities. Identification of general and special characteristics of aircraft manufacturing enterprises of Ukraine was carried out using the comparison method. This made it possible to establish that most of these enterprises have unsatisfactory financial stability. Inductive generalization makes it possible to determine the level of potential risk of adverse events. Analysis and synthesis were used to build an algorithm for conducting a financial analysis of the company's activity, which made it possible to identify promising directions for increasing the export component at the companies. The use of the abstract-logical method made it possible to identify the essential elements of the system of indicators of the financial state of the enterprise, as well as to form the conclusions of the study. The assessment of the financial condition is carried out using the analysis of indicators of the property condition, financial stability and liquidity. The procedure for calculating indicators is carried out according to the methodology proposed in the work of O. Yatsukh and N. Zakharova [11]

Visual summarization of the results of the analytical study was carried out using a graphic method. Its use made it possible to reveal the unevenness of the export of aircraft of Ukraine in 2018-2020; demonstrate typical relationships between aircraft exports under different HS (Harmonized System) codes; to clearly present the peak periods of exports during the year. The index method was used to determine the seasonality of the export of aircraft products. The seasonality index is determined by the formula:

$$I_s = \frac{\bar{y}_i}{\bar{y}_0} \times 100, \qquad 1)$$

where $\bar{y}_i$ is the average level of the dynamics series for the time interval i; $\overline{y_0}$ is the average level of the dynamics series for the year. The source of data on the export of aircraft of Ukraine is the UN database on statistics of international trade in goods UN comtrade database [12]. The set of methods used made it possible to conduct a thorough financial analysis of enterprises, emphasizing the uniqueness of the aircraft industry and form development prospects.

RESULTS AND DISCUSSION

The basis of the successful implementation of reforms in the economic sphere of Ukraine is its structural modernization, improvement of the business climate, creation of conditions for the development of industry. Among the key tasks of modernization of the economy of Ukraine, special attention is paid to ensuring effective management of state-owned enterprises, especially those that are strategically important. Ukraine is one of the nine aircraft-building countries in the world [13]. This branch of mechanical

engineering is strategically important for Ukraine and one of the priority directions for the development of the national economy. The industry includes more than 60 enterprises, which account for about 25% of the people employed in mechanical engineering in Ukraine [14]. As a result of the Russian armed aggression against Ukraine, which began in 2014, cooperation with the Russian Federation was terminated and the industry experienced a crisis.

Financial stability is vital in a market economy because it provides an advantage over other companies in times of economic crisis. Businesses seek to maximize profits, increase capitalization and achieve sustainability. The financial stability of company is the most complete and important analytical characteristic of its financial condition. It determines not only the ability to achieve strategically important goals, but also to ensure their continuous development. As a result, the majority of Ukrainian aircraft construction enterprises are in an unsatisfactory financial condition, which negatively affects the economic efficiency of the industry and the economy of Ukraine as a whole and requires development of measures to improve the current situation. In accordance with the identified opportunities, prerequisites are created, certain changes in processes, technologies and products take place.

In the modern business environment, capital plays an important role in the growth of enterprises, protects the interests of its owners and is an important factor in managing the financial situation. Capital and its structural model have a direct impact on the solvency, liquidity and profitability of the enterprise. Capital analysis allows you to get reasonable information about the financial condition of the enterprise and take measures to improve it. The comparative characteristics of the capital of aircraft manufacturing enterprises of Ukraine in 2020 are provided in Table 1.

Table 1. Composition and capital structure of aircraft manufacturing enterprises of Ukraine in 2020

Indicators	ANTONOV Company	SE "PLANT 410 CA"	KSAMC
Capital – total, thousand UAH	11 905 963	465 585	2 246 259
Capital structure by source of formation, % of the total:			
• equity	69.9	39.1	-73.6
• loan capital	29.1	60.9	173.6
Capital structure by nature of circulation, % of the total:			
• fixed capital	49.8	24.7	40.4
• working capital	50.2	75.3	59.6

Source: calculated by the authors based on data [8-10]

From the data in Table 1, it can be seen that the size of the capital of the analysed enterprises is different in terms of scale: SE "PLANT 410 CA" has the smallest capital – 465.6 million UAH, the capital of ANTONOV Company exceeds it 24 times and amounts to UAH 11.9 billion, and the capital of KSAMC is 4.8 times larger than the previous one and amounts to UAH 2.2 billion. The structure of the capital also has significant differences: if at the ANTONOV Company enterprise, the largest share is equity capital – 70%, then the other two are dominated by loan capital. It should be emphasized separately that at the KSAMC enterprise there is a depreciation in equity capital, as a result of which its share is negative and amounts to minus 74%. The obtained results testify to the excellent characteristics of the capital structure of these enterprises. At ANTONOV Company and KSAMC, the structure is more balanced and is characterized by a slight excess of the share of working capital – 50% and 60%, respectively. At SE "PLANT 410 CA" the share of fixed capital is even smaller and is about 25%. This is explained by the specificity of its activity – repair, maintenance and modernization of airplanes and helicopters. Given the fact that the main role in the enterprise's production base is the fixed capital, its structure should be considered in more detail (Table 2).

Table 2. Composition and structure of fixed capital of aircraft manufacturing enterprises of Ukraine in 2020

Indicators	ANTONOV Company	SE "PLANT 410 CA"	KSAMC
Total capital, thousand UAH	5 934 797	115 216	907 183
including % of the total:			
• fixed assets	83.4	42.3	11.6
• intangible assets	0.7	57.1	85.1
• financial investments	15.9	0.6	3.3

Source: calculated by the authors based on data [8-10]

There are significant differences in the structure of the fixed capital of these enterprises. At ANTONOV Company, the majority of capital is concentrated in fixed assets – 83%. The second important component is financial investments, the share of which is 16%. On the contrary, at the SE "PLANT 410 CA" enterprise, intangible assets account for 60%, and fixed assets account for 42%. At the KSAMC enterprise, intangible assets are the most important and make up 85% of the total fixed capital, while fixed assets are only 12%. The obtained results indicate that KSAMC has a lot of intellectual capital, but does not use it to its full potential. Since the structure of the fixed capital of most enterprises is dominated by intangible assets, their structure needs to be considered in more detail (Table 3).

Table 3. Composition and structure of intangible assets of aircraft manufacturing enterprises of Ukraine in 2020

Indicators	ANTONOV Company	SE "PLANT 410 CA"	KSAMC
Total intangible assets, thousand UAH	212 757	66 888	776 470
including % of the total:			
• property use rights	–	76.38	99.45
• rights to commercial designations	0.33	-	-
• rights to industrial property objects	0.68	-	-
• copyright and related rights	1.35	-	0.54
• other intangible assets	97.64	23.62	0.01

Note: "-" – no data

Source: calculated by the authors based on data [8-10]

Among the intangible assets of aircraft construction enterprises, the largest share is the rights to use property – 75% for SE "PLANT 410 CA" and 99% for KSAMC. Copyright and related rights, as well as rights to objects of industrial property and commercial designations are presented in a small amount. Other intangible assets are 98% in ANTONOV Company and 23% in SE "PLANT 410 CA". These specific features must be taken into account when working out directions for the development of aircraft industry. Since more than half of the fixed capital consists of fixed assets, the analysis of this element of enterprise assets is carried out in the work. The composition and structure of fixed assets of enterprises in 2020 is presented in Table 4.

Table 4. Composition and structure of fixed assets of aircraft manufacturing enterprises of Ukraine in 2020

Indicators	ANTONOVCompany	SE "PLANT 410 CA"	KSAMC
The initial cost of all fixed assets, thousand UAH	6 292 835	123 171	565 594
including % of the total:			
• buildings, structures and transmission devices	39,09	41,78	39,44
• machinery and equipment	8,90	34,16	19,76
• vehicles	38,26	4,15	2,18
• tools, devices and inventory	0,91	11,63	12,90
• other fixed assets	12,84	8,28	25,72

Source: calculated by the authors based on data [8-10]

According to the data of Table 4, it can be seen that the value of fixed assets of the enterprises is very different in size: at KSAMC, the value exceeds the similar indicator of SE "PLANT 410 CA" by 6 times, at ANTONOV Company – by 11 times and amounts to UAH 6.3 billion. The structure of fixed assets is dominated by buildings, structures and transmission devices, the share of which in all enterprises is about 40%. The second place in each enterprise is dominated by a separate group – at ANTONOV Company it is "Vehicles" – 38%, at SE "PLANT 410 CA" it is "Machines and equipment" – 34%, at KSAMC it is other fixed assets – 25%. Accordingly, such structural differences also affected the ratio of other groups of fixed assets. Table 5 presents indicators of the technical condition, movement and efficiency of the use of fixed assets.

Table 5. Indicators of fixed assets of aircraft manufacturing enterprises of Ukraine in 2020

Indicators	ANTONOV Company	SE "PLANT 410 CA"	KSAMC
1. Indicators of the technical condition of fixed assets			
Depreciation rate	0.196	0.604	0.814
Suitability factor	0.804	0.396	0.186
2. Indicators of movement of fixed assets			
Receipt ratio	0.005	0.069	0.005
Dropout rate	-	0.001	0.001
Growth factor	0.005	0.069	0.004
3. Indicators of the efficiency of the use of fixed assets			
Fund return	1.221	4.259	0.114
Fund capacity	0.819	0.235	8.737
Profitability ratio	0.174	-0.263	-0.297

Note: "-" – no data

Source: calculated by the authors based on data [8-10]

The technical condition of fixed assets is good at ANTONOV Company, as the depreciation rate is 20%. On SE "PLANT 410 CA" the technical condition of the fixed assets is satisfactory, as the wear rate is 60%, on KSAMC the technical condition is unsatisfactory, as the wear rate is 81%. A low level of movement of fixed assets is observed

at all aircraft construction enterprises. It is the highest on SE "PLANT 410 CA", but even there the value of indicators does not exceed 10%. Considering the rather high level of wear and tear of this enterprise, this level is not enough for a qualitative renewal of fixed assets. Traffic at the KSAMC enterprise is also unsatisfactory. Here, the coefficients of entry, exit and growth do not even reach 1%. This indicates a threatening situation at the enterprise regarding the renewal and technical condition of fixed assets. At ANTONOV Company, although there is a small amount of income, given the excellent technical condition of fixed assets, this is enough. In most cases, the indicators of the efficiency of using fixed assets indicate the effective use of SE "PLANT 410 CA" except its profitability. The worst indicators are observed at the KSAMC enterprise. Taking into account all the above, it should be noted that the company ANTONOV Company has the most efficient use of fixed assets. Solvency of enterprises significantly affects their financial condition. Determination of the level of solvency is carried out using liquidity ratios (Table 6).

Table 6. Dynamics of liquidity indicators of aircraft manufacturing enterprises of Ukraine in 2020

Indicators	ANTONOV Company	SE "PLANT 410 CA"	KSAMC
Absolute liquidity ratio	0.623	0.102	0.001
Quick liquidity ratio	1.072	0.444	0.029
Total liquidity ratio (coverage)	1.997	1.076	0.393

Source: calculated by the authors based on data [8-10]

The calculation of liquidity indicators showed that only at ANTONOV Company the values of indicators are close to the normative ones. At other enterprises, the level of solvency is unsatisfactory. Therefore, it is advisable to analyse the system of indicators of financial stability (Table 7).

Table 7. Dynamics of indicators of financial stability of aircraft manufacturing enterprises of Ukraine in 2020

Indicators	ANTONOV Company	SE "PLANT 410 CA"	KSAMC
Coefficient of autonomy (independence)	0.664	0.251	-0.652
Coefficient of financial stability	2.335	0.341	-0.428
Coefficient of financial dependence	1.505	3.977	-1.534
The coefficient of the ratio of borrowed and equity capital	0.494	2.977	0.917
Current liabilities ratio	0.866	0.985	0.001

Source: calculated by the authors based on data [8-10]

ANTONOV Company is distinguished by a sufficient level of financial stability, predominantly financed by own funds and a low level of financial risks. At other enterprises, the level of financial stability is unsatisfactory. Thus, most of the aircraft manufacturing enterprises of Ukraine have an unsatisfactory financial condition, which affects the economic efficiency of the industry and the economy of Ukraine as a whole, and requires the development of measures to improve the existing condition. One of such promising directions is a reorientation to the European and Asian markets and an increase in the export of aircraft devices. Authors of the study agree with the opinion of the authors I.A. Kravchenko and V.Y. Golyuk [13] that the positions of countries in the global market for the production of aircraft equipment for military and special purposes are stable. In particular, Ukraine has a full cycle of aircraft construction, where all types of aviation equipment are produced: airplanes, helicopters, small aircraft, and unmanned aerial vehicles are being developed. In the field of civil aviation, there is a high interest in Antonov aircraft from the countries of Central and South America, Egypt, etc. Ukraine has aerospace developments, takes part in the production of satellites, ballistic missiles, rocket-space complexes. The largest trading partners in this direction are the countries of South America, Asia, the Middle East, and the USA. Realization of the export potential of military aviation of Ukraine, in addition to the production of airplanes and rotorcraft, is also promising for the production of unmanned aircraft complexes. Figure 1 presents data on the export of aircraft from January 2018 to December 2020.

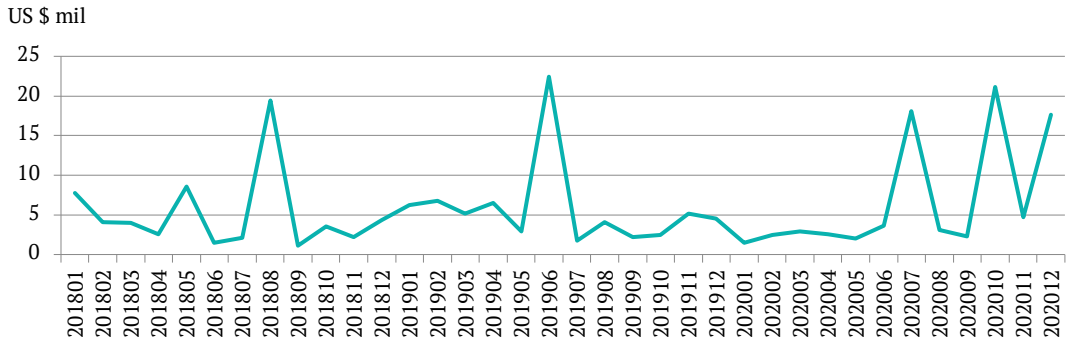

Figure 1. Export of aircraft of Ukraine in 2018-2020 per month, million US dollars

Source: developed by the authors based on data [12]

From the data presented in Figure 1, it can be seen that the volume of aircraft exports is uneven with a significant increase at the end of the year. The largest amount of exports was in June 2019 and amounted to US $22 million. On the other hand, in 2020, there were more peak values – in July and October, about US $20 million. The total amount of exports increased from US $60.1 million in 2018 to US $81.9 million in 2020, which is 136%. The characteristics of the export of aircraft are carried out according to HS codes and include the following types of export products: code 8801 – balloons and dirigibles, gliders, hang gliders and other non-powered aircraft; code 8802 – other aircraft (for example, helicopters, airplanes); spacecraft (including satellites) and suborbital and spacecraft launch vehicles; code8803 – parts of goods of heading 8801 or 8802; code8804 – parachutes (including dirigible parachutes and paragliders) and rotochutes; parts thereof and accessories thereto; code 8805 – aircraft launching gear; deck-arrestor or similar gear; ground flying trainers; parts of the foregoing articles (Fig. 2).

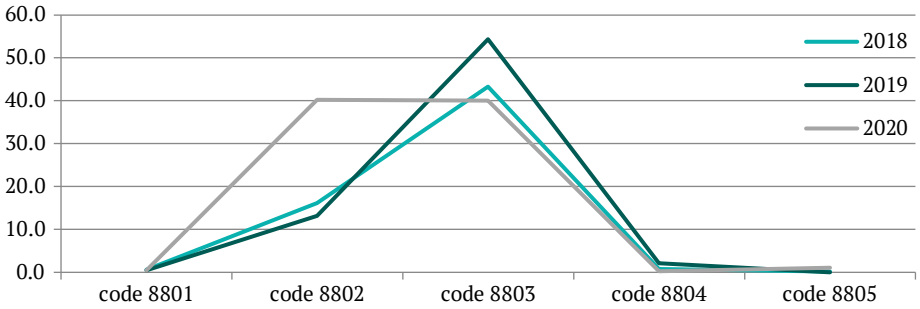

Figure 2. Export turnover of aircraft of Ukraine in 2018-2019 (according to HS codes), million US dollars

Source: developed by the authors based on data [12]

According to the data presented in Figure 2, it can be seen that the largest share of exports falls on aircraft parts in the amount of US $40-50 million annually. In 2020, the export of airplanes and helicopters increased significantly.

According to the data presented in Figure 1, it can be seen that the export of aircraft is carried out unevenly with moderate growth in the second half of each year. In addition, there are noticeable fluctuations between the volume of exports in different months of the year. This makes it possible to analyse the seasonality of the presented dynamic series, which will increase the effectiveness of forecasting and planning of seasonal indicators of the enterprise's export activity. The graphic representation of the seasonality index is shown in Figure 3. The results of the seasonality index calculations are presented in Table 8.

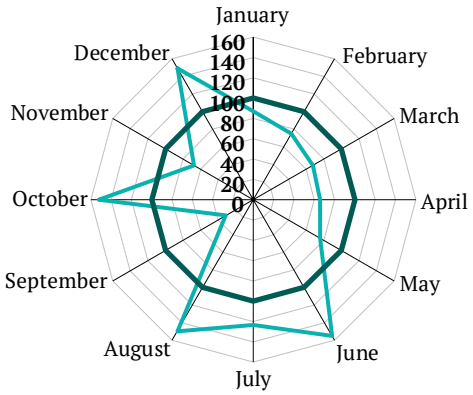

Figure 3. Indicator of seasonality of the export of aircraft of Ukraine, %

Source: developed by the authors based on their own calculations

Table 8. Calculation of seasonal indicators of the export of aircraft of Ukraine in 2018-2020, thousand US dollars

Months of the year	2018	2019	2020	Average value	Absolute deviation	Relative deviation, %	Seasonality index, %
January	7 739	6 259	1 477	5 158	-763	-12.89	87.11
February	4 076	6 786	2 459	4 440	-1 481	-25.01	74.99
March	3 996	5 142	2 873	4 004	-1 918	-32.39	67.61
April	2 560	6 528	2 592	3 893	-2 028	-34.25	65.75
May	8 603	2 892	1 985	4 493	-1 428	-24.12	75.88
June	1 466	22 427	3 650	9 181	3 259	55.04	155.04
July	2 096	1 764	18 102	7 321	1 399	23.63	123.63
August	19 385	4 099	3 118	8 867	2 946	49.75	149.75
September	1 118	2 156	2 305	1 860	-4 062	-68.60	31.40
October	3 501	2 443	21 107	9 017	3 095	52.27	152.27
November	2 167	5 127	4 683	3 992	-1 929	-32.58	67.42
December	4 343	4 540	17 614	8 832	2 911	49.15	149.15

Source: developed by the authors based on data [12]

As can be seen from the obtained results, Ukraine's export of aircraft is characterized by significant fluctuations both in one direction and in the other direction in relation to the average annual level. A deviation at the level of 70% in a smaller direction is observed in September; to a greater extent – in June, August, October and December. In the first half of the year, the export level is usually lower than the annual average. Information on the largest export deliveries in 2018-2020 is presented in Table 9.

Table 9. Countries with the largest volume of aircraft imports from Ukraine

Country	2018	Country	2019	Country	2020
Exports of Ukraine for the year, million US dollars	61.0	Exports of Ukraine for the year, million US dollars	70.2	Exports of Ukraine for the year, million US dollars	81.9
including % of the total					
• USA	32.6	• India	28.9	• USA	24.9
• India	21.8	• USA	28.2	• Turkey	21.5
• Sudan	10.0	• UAE	4.7	• Kazakhstan	12.2

Source: developed by the authors based on data [12]

Therefore, the analysis of the calculations regarding the characteristics of seasonality confirms the presence of seasonal fluctuations in the export of aircraft of Ukraine. This process is characterized by a significant amplitude of oscillations – more than 50%. Uneven loading of enterprises during the year, idle labour force and equipment during a drop in demand negatively affect not only the volume of production, but also its quality, labour productivity, the level of use of fixed capital, etc. Adjusting production volumes for seasonal indices will make it possible to forecast fluctuations in sales volumes, which will ensure the sustainable development of manufacturing enterprises in the aviation industry of Ukraine. The need to reduce seasonal fluctuations in demand will encourage the expansion of export activities at the expense of non-seasonal areas, such as the provision of maintenance services for aircraft engines, current and major repairs of aircraft. According to experts, the market share of such services in the total costs of the global aviation industry in 2017 was 11.3% [15].

Expanding the export activity of aircraft manufacturing enterprises will allow the realization of the National Strategy of Economic Development for the period until 2030 in terms of creating a competitive economy on the international market, achieving the export value of at least $150 billion and increasing the efficiency of the functioning of state-owned enterprises [16]. On the basis of the conducted analysis, it can be stated that the results of all types of activities of the enterprise are interdependent and affect its financial condition. Economic instability, which has intensified in Ukraine since 2014, forces enterprises to regularly use financial analysis tools to achieve harmony in crisis conditions between the economic development of the enterprise and its sustainability. The financial analysis methodology used in this work can be expanded in accordance with the conditions of the aircraft industry and the needs of state property management. Worthy of attention is the work of M.V. Pataridze-Vyshinska [17], in which, based on the analysis of the methods of various Ukrainian scientists, an own approach is proposed. It provides, in addition to performing an express analysis, performing an in-depth analysis of the financial state of the enterprise by carrying out an assessment of property potential; liquidity, solvency; financial stability; business activity; cash flows; financial results; efficiency of activity; probability of insolvency and bankruptcy.

Y. Kovtunenko and A. Oleksiichuk [18] payed attention to the specifics of financial analysis in conditions of economic instability. This is a really relevant problem, but it is not disclosed by the authors quite fully. Their recommendations on this issue come down to the need for constant analysis of the company's activity without providing periodicity parameters or introducing additional indicators. In practice, acute financial difficulties do not always lead to bankruptcy. Compulsory revisions are possible, or a company can strategically go bankrupt early to break unprofitable contracts and protect itself from lawsuits; or a firm can avoid bankruptcy by meeting its current obligations even though it is technically insolvent in the long run. Authors of the article agree with the opinion of R. Jayasekera [19], whose research includes an overview of known bankruptcy forecasting models, a critical discussion of these models, and the proposal of the "Value Erosion Model" concept. According to this concept, "value" is interpreted as the future potential of the firm.

The work of N. Koussis [20] deserves the respect. In it, in order to change the upcoming external financing and the risk of losses, a model is propagated, in which non-distribution of profits is saved in the form of liquid assets, which bear a certain interest per period. In the opinion of the authors, this serves as a substitute for changing the upcoming foreign financing and the risk of bankruptcy. The authors emphasize negative impact of accumulated money savings on the cost of own capital through the likelihood of spending in case of default, which is not compensated by the high costs of external financing. A U-like connection from the company's equity is also creating a new return on capital and investment. understanding the specifics of the activities of enterprises in a particular area. E. Akyildirim [21] traced the impact of airline accidents on the profitability and financing structure of the engine manufacturer. The investigators brought the dramatic impact of the plane crash on the net income and financial leverage of the generator regardless of whether the generator was found guilty of such an incident. This work reinforces the importance of the findings made by L. Khoja [22], due to the need to look into the analysis of financial problems not only from accounting data, but also from macroeconomic and industrial indicators. The results showed that the financial status of companies can be researched on the place within the local microenvironment. This is also important for effective management of the company, as paying more

attention only to the aspect of financial activity increases the risk of insolvency. In the face of political and economic instability, it is necessary to find new approaches to help businesses overcome the crisis and protect their financial and economic situation.

Research and application of new methods of analysis and ways of improving the financial condition of the enterprise will allow to increase its property potential, restore solvency and profitability. Providing management personnel with up-to-date information on financial sustainability on a regular basis contributes to strengthening the enterprise's ability to further develop and overcome existing crisis phenomena at state-owned enterprises in the aircraft industry of Ukraine. In this work, the seasonality of the export of products of aircraft manufacturing enterprises was investigated, the amplitude of monthly fluctuations of which is more than 50%. The results of the calculations provide an opportunity to improve the production activity of enterprises in the aviation industry of Ukraine and ensure their sustainable development.

CONCLUSIONS

It is important for the state to determine priority and strategic industries for its development, among which is the aviation industry of Ukraine. A rational and balanced approach to the analysis of enterprises in this industry, namely financial analysis, becomes the basis and enables enterprises to determine sustainable directions of development: determining the prospects for expanding export activities. According to the results of the financial analysis, excellent characteristics of capital structure of the analysed enterprises were established, which is explained by the specificity of their activities – repair, maintenance and modernization of airplanes and helicopters. There are significant differences in the structure of fixed capital of the mentioned enterprises, which are manifested due to concentrating of the share of capital in fixed assets. Among the intangible assets of aircraft construction enterprises, the largest share is the rights to use property, which must be taken into account when developing directions for the development of this industry. It is established that only one of the analysed enterprises has financial stability, namely ANTONOV Company.

According to the results of the analysis of the export of aircrafts of Ukraine, the main share of which falls on structural elements of airplanes and helicopters, its significant unevenness during the year was established. A promising way to prevent the negative impact of seasonal fluctuations in demand is the provision of aircraft maintenance and repair services. Based on the above, the urgent need for financial analysis in conditions of relative scarcity of key resources and unstable demand becomes a reality for most companies. Based on the results obtained in the study, the direction of further research may be in finding ways to improve the financial condition of other Ukrainian machine-building enterprises.

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Аналіз діяльності авіабудівних підприємств в контексті економічного розвитку України

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Анотація. Пріоритетним напрямком економіки України є розвиток авіабудівної галузі. Аналіз діяльності авіабудівних підприємств дозволить покращити ефективність управління ними, що сприятиме модернізації української економіки загалом. Метою дослідження був аналіз фінансового стану авіабудівних підприємств та визначення перспектив розширення їх експортної діяльності. В дослідженні застосовано методи системного аналізу, індукції і дедукції, аналізу і синтезу, індексний метод. Здійснено аналіз капіталу основних авіабудівних підприємств України, встановлено відмінні характеристики структури, руху та ефективності його використання. Виконано аналіз платоспроможності та фінансової стійкості. Встановлено, що фінансовий стан підприємств є незадовільним, що призводить до погіршення ефективності функціонування галузі в цілому. Вивчення діяльності підприємств у сучасних умовах призвело до необхідності проведення дослідження впливу структурних факторів на обсяги експорту продукції. Наявність динамічних коливань попиту вимагають від підприємств знань та умінь використовувати наукові методи аналізу сезонності. Доведено необхідність застосування індексного методу, зокрема індексів сезонності з метою виміру впливу сезонних коливань на обсяг експорту продукції. Представлено графічно розмір експорту літальних апаратів протягом 2018-2020 рр. та індекс сезонності. Оцінено сезонні коливання експорту літальних апаратів за щомісячними даними 2018-2020 рр. виробничими підприємствами авіабудівництва. Запропоновано ефективні методи удосконалення аналізу діяльності підприємства. Встановлено, що слід брати до уваги встановлені тенденції при прогнозуванні виробничих показників підприємства. Результати дослідження можуть бути корисними для фахівців, діяльність яких пов'язана із забезпеченням фінансової стійкості та розвитку авіабудівного комплексу України

Ключові слова: ліквідність, фінансовий стан, платоспроможність, експорт літальних апаратів, індекс сезонності