



Available Online at EScience Press Journals

International Journal of Agricultural Extension

ISSN: 2311-6110 (Online), 2311-8547 (Print)

<http://www.esciencepress.net/IJAE>

ORGANIZATION OF FINANCIAL AND ECONOMIC SECURITY MANAGEMENT OF PORT ACTIVITIES

Liudmyla Shyriaieva*, Liudmyla Chiz, Olga Koretska, Natalia Khoteyeva, Anastasiia Petrova
Odesa National Maritime University, Odesa, Ukraine.

ARTICLE INFO

Article History

Received: November 01, 2021

Revised: December 19, 2021

Accepted: December 30, 2021

Keywords

Organization

Management

Financial and economic security

Port activity

Enterprises of port activity

ABSTRACT

The purpose of this article is to develop a model and proposals for the organization of management of financial and economic security (FESM) of port enterprises (PE). Improvement of the management of financial and economic security we propose to begin with the development of methodological approaches to assessment of the level of financial and economic security. To do this, the article makes a proposal to use a functional criterion, which is defined as the ratio of costs for the organization and operation of the financial security service to the profit obtained during the period of the study. Also, a set of indicators is developed that, unlike existing ones, take into account specifics of the industry. The article also proposes optimal plans for cargo processing, which result in a minimum cost and maximum profit. Through the function of the process management, a comprehensive statistical model of managing the system of financial and economic security of port enterprises is proposed. This model takes into account specific factors of PE operation and developed approaches that ensure the organization of PE FES management by embracing traditional financial approaches and their alternatives. The authors state that for the effective organization of financial and economic security of port enterprises it is necessary to conduct timely monitoring of external and internal threats, assess and analyze the level of financial and economic security and develop strategic ways of enterprise development. And the recommendations to the management is to carry out well-timed control and audit of financial condition.

Corresponding Author: Liudmyla Shyriaieva

Email: shyriaieva8199@sci-univ.com

© The Author(s) 2022.

INTRODUCTION

The guaranty of security, in particular, of financial and economic of the functioning of PE requires not only its launching and efficient operation, but further development with subsequent optimal use of resources and capitalization. Under the current economic situation, the port enterprises have economic independence to determine their own economic, financial and investment policies, form a portfolio of orders, reload cargo, and thus, they are solo responsible for the results of all accomplished activities. All this contributes to the

problem of ensuring the main component of economic security - financial. The Law of Ukraine "On Seaports of Ukraine" (Verkhovna Rada of Ukraine, 2013), which entered into force on June 14, 2013, prescribes a fundamental reform of the entire port sector, including PE. The Law on Concessions (Verkhovna Rada of Ukraine, 2019), which is the most common form of public-private partnership and one of the most effective means of realizing the economic potential of the country, has also entered into force. Therefore, under the current conditions of existence and operation of port

enterprises, there is a growing need in development of new approaches to the organization of their financial and economic security management, development of tools of effective assessment of their condition, which would be taking into account the specifics of their work, namely cargo operations, interaction with other modes of transport as well as market competition in the market of transport services.

Many scientists have researched into the problem of financial and economic security management (FESM) of enterprises. Shirayeva (2015) proposed that effective management of FES should conduct regular monitoring with the aim to identify potential threats and ensure their timely prevention. If we consider the enterprises of port activity, a number of authors of the monograph (Shirayeva, 2021) argue that to ensure their effective work, it is necessary to regulate the processes of cargo mobility by making managerial decisions. Some authors (Hamri and Jouad, 2020) claim that the concept of FESM should be the basis for developing a general management strategy and management of decisions for those enterprises. Therefore, to ensure profit, to the managers of enterprise they recommend, firstly, allocate and form a system of interests in the operation of the enterprise, set priorities and choose mechanism of interaction with other enterprises (Shirayeva, 2021).

Bondarenko (2014), states that the effectiveness of FESM should be consistent with the development of scientific findings, with global trends, and grounded in relations between enterprises, companies and the state. Researchers, who have considered the problems of FESM, argue that in the beginning of the work on management improvement, a financial analysis of the enterprise should be conducted and considered existing relationship with other enterprises, namely, roads and railways. Then it is possible to start the development a management strategy, which would be rooted in the market of transport needs. However, to do this, it is necessary to involve expert-managers who specialize in security management of profiled enterprises (Koretska and Khoteyeva, 2016).

Many studies of economic and financial security of enterprises and of their management have been conducted by foreign and local scientists. Their works present a number of studies of the main components, aspects and essence of the definition of "economic security", "financial security", "financial and economic security". Also, their studies look into threats, both

external and internal, security level indicators, criteria for its assessment (Ignatenko *et al.*, 2009; Stanković *et al.*, 2021; Donets, 2008). Many modern scientists have focused their research on the study of financial and economic security management in transport, including maritime, as well as maritime transport enterprises. Namely, it was found that the specifics of maritime transport enterprises involve the use of management approach, which is associated with the financing of expenses on security measures, operational adjustments of cargo processing plans, management of capital structure, development strategy (Vasylytsiv *et al.*, 2012; Zhikharyeva, 2021; Hanafiah *et al.*, 2021; Amaro Garcí, 2021; Kotlubai, 2012).

The review of the scientific resources reveals a variety of approaches to the management, but they all cover certain organizational aspects and do not take into account the situation in port enterprises in particular, the transport services market in general, the competitiveness of enterprises, as well as external and internal risks. The purpose of the article is to develop proposals for the organization of management of financial and economic security of port enterprises.

METHODOLOGICAL FRAMEWORK

Within the research framework it was found out that the financial and economic security management of the port enterprises cannot be systemized. It can be characterized by diversity of the activities and services for the passenger's marine transportation and cargo proceedings. There may be included the services for the cargo storage too. Therefore, taking into account the complexity of the operation of port enterprises, there exists a considerable quantity of the approaches to assessment of their financial and economic security, as well as relevant methods of such assessment.

Methodological problem of the financial and economic security of port enterprises is a development of general financial budget of such enterprise and clarification of the interconnections of such economic notions as 'threat to financial and economic security management' and 'risk'. The notion of 'risk' is a category, which should be defined in the first place, and then the 'threat' is defined on the other level as a risk which has been defined and which may appear in the course of the intentional or unintentional flaws of the managers in the field of assessment of financial and economic security of the port enterprises. Such mistakes appear during the

optimization of the active assets and equities, control over the management of debit and credit debts, optimization of amortization and tax policies, lack of development of other transport enterprises.

For defining the main constituents which influence the level of financial and economic security of port enterprises, it is necessary to consider the development of anti-crises measures. To do this, in this paper it is suggested to use the methods of strategical analysis. For analysis of the inner environment SNW – analysis (S – strength position; N – neutral position; W – weakness position); for analysis of the external environment – PEST-analysis: P – political and legal environment, E – economic environment, S – sociocultural environment, T – technological environment. As another method of analysis of external and internal environment may also be suggested SWOT – analysis.

For development of organizational structure of financial and economic security of port enterprises the paper suggests application of the trend (horizontal) analysis of financial indicators, which presupposes studies of those indicators during a certain period of time. In the process of conduct of the horizontal analysis was carried out and calculated the absolute deviation of the indicators, rate of increase of indicators of financial reporting, also were compared the indicators of previous period and of the current reporting period, used for the assessment of financial and economic security. Use of the horizontal analysis is based on findings from structural analysis of active assets and equities and structural analysis of the money flows. For comparison with other port enterprises it was suggested to use comparative financial analysis. In particular it was suggested to compare indicators of financial records of the competitors and thus ensure the effective decision-making on provision of sufficient financial and economic security. At the same time, the comparative analysis of the indicators of financial records can be used for comparison of internal indicators between the sub-departments of the same enterprise, especially focus on the interconnection between management department and operational departments (housewares, complexes of cargo operations, customs, companies-agents).

For analysis of financial coefficients, a number of the indicators was suggested. Those have been developed in the chapter “Research Outcomes”. These coefficients take into account the specifics of work of the port enterprises with regard to the high constituent of

continuous expenses. It is also possible to use a method of correlational and regressive analysis which was used for calculation of the indicative value (for three years) for stevedoring company “Olviya”. The correct usage of correlational methods provides a possibility to realise the deep essence of the processes of interconnections. In these processes there is no absolute correlation between cause and effect, thus only certain relational nature between them can be observed. The specifics of correlational connections contribute to definition of two tasks with the theory of correlations: define theoretical form of connection (regression analysis) and measure the precision of that connection (correlational analysis). The first task implies the discovery of the functional connection, which is responsible for the essence of the correlational interdependence. The second task demands measuring with the aid of special indicators of how correlational connection approaches the functional connection.

To conclude, for definition of effective directions of application of methodical means it is possible to use the models of mathematic modeling, statistical analysis (correlational and regression), economic forecast and expert methods. It requires certain adjustment to the specifics of the operation of the port enterprises. And with regard to a particular enterprise, it might imply considering the specialization of the cargo operations and, consequently, analyzing threats to its’ financial and economic security with the aid of PEST- analysis and SWOT – analysis; and for internal use apply SNW-analysis. These analytical works should aim at ensuring the prevention of influence of external and internal risks on the formulation of anti-crisis program of development and organization of management of financial and economic security.

RESULTS AND DISCUSSION

To organize the management of financial and economic security of port enterprises, it is proposed to use the existing common concept of management of FESM enterprises. According to this concept, it is necessary to determine specific indicators that characterize the financial condition of PE, then develop an algorithm for their evaluation and identify major internal and external factors of financial and economic security. The concept of financial and economic security management should be aimed at the efficiency of port enterprises, because this concept serves as basis for management decisions.

Therefore, their legitimacy should become an incentive for effective work of staff and management of PE.

One of the stages of the organization of financial and economic security management is development of mathematical models that require comprehensive consideration of uncertainties associated with the specifics of the PE under the current risks. Afterwards, it is necessary to use this tool for assessment of the level of financial and economic security. That is why it is justifiable to start with the development of methodological approaches which determine and underpin the assessment of the level of financial and economic security. The previous research analyzed the existing methodological approaches to assessment of the financial and economic security of enterprises. As one of the research findings we may conclude that there is no general method of assessment of the financial and economic security of port enterprises, which would be rooted in the specifics of their work. Thus, the existing methodological approaches need to be improved.

The next step of the work was to develop the improvement using the combination of indicator and resource-functional approaches, which, in contrast to existing methodological approaches, takes into account the specifics of the PE. We propose to calculate the indicators on the basis of the relative functional criteria δ_i , which is the ratio of the total loss from the implementation of a set of measures spent to form economic security by financial component (FC) to the total value of total costs of the enterprise (Vrk) and the total loss to the enterprise according to financial component of its economic security (ZBz). The relative functional criteria is equal to:

$$1/\delta = (Vrk + FCz)/FC, \quad (1)$$

where

Vrk – is the value of the total cost of MOPA for implementation of a set of measures for the establishment of economic security;

FCz - total loss of MOPA according to its financial component of economic security;

FC - the value of the total cost of MOPA for implementation of a set of measures for the establishment of economic security in its financial component.

For a general assessment of financial and economic security, we propose to use an index of functional criteria:

$$I = \delta a / \delta b, \quad (2)$$

where

$\delta a, \delta b$ - index of the criteria analyzed and the basic one, respectively.

Let's construct an aggregative index by comparing the general safety indices taken in the analyzed and basic periods:

$$I = (Va rk + ZBa z) / ZB / (V6 rk + ZB6 z) / ZB, \quad (3)$$

The difference between the numerator and the pronoun of the FES index characterizes its absolute increase (decrease). A set of indicators allows to assess comprehensively the level of financial and economic security of an individual enterprise that, in contrast to existing ones, considers specifics of the industry in relation to a large share of fixed costs, such as share of fixed costs, estimated profitability, profitability of fixed costs-unloading works (CUW), together with the unevenness of the volume of operations and the necessity to preserve the significant reserves of production capacity, indicated as the share of the cost of maintaining reserves in total costs, the coefficient of monthly unevenness of income and expenses, the coefficient of monthly unevenness of cargo flows.

Such assessment of the levels of financial and economic security can be universal for all transport enterprises and for port enterprises in general. The level of financial and economic security of the PE is influenced by transshipment rates for cargo processing. It is one of the components that affects the financial condition of port enterprises, because the main activity of enterprises is cargo processing. Thus, to ensure financial and economic security, it is necessary to optimize the ratio of transshipment rates to profit and make an optimal plan for cargo processing. The plan should aim to minimize the cost of processing with the use of modern fleet of production equipment, which, in turn, will reduce resource and energy consumption. In this perspective, the renewal of the fixed capital of port enterprises is a decisive factor in the profitability of their work.

According to statistics, an error in the amount of the transshipment rates rate for cargo processing by only one percent already leads to significant losses. While under the conditions of fierce competition, these losses raise to set two to three percent (Shiryayeva, 2021). Purposefully, let us set the optimization criteria as the maximum profit. In order to do this, let us imagine that the demand, cost and production capacity of different

types of reloading equipment, which are by processed PE, are independent. Therefore, we denote the transshipment rates for the processing of a unit of cargo through f , the demand for services for this cargo $Q(f)$, the cost of processing a unit of cargo $Z(Q(f))$. Then the profit of MOPA will be determined by the following equation:

$$\Pi(f) = (f - Z(Q(f))) * Z(Q(f)) \rightarrow \max, \tag{4}$$

To find the optimal transshipment rates, we take the first derivative and equate it to zero:

$$\Pi(f)' = Q(f)' * (f - Z(Q(f))) + Q(f) * (1 - ZQ' * Q(f)) = 0, \tag{5}$$

from here

$$f = Z(Q(f)) + Q(f) * (ZQ' - 1 / Q(f)), \tag{6}$$

Thus, the optimal transshipment rates consist of the cost and a certain addition, which is defined by proportion to the optimal volume of cargo. The purpose of the optimal plan for processing of cargo from production points to a vessel and vice versa is to minimize the costs of cargo owners:

$$R(X) = \sum_{i=1}^m \sum_{j=1}^n cij * xij \rightarrow \min, \tag{7}$$

$i = 1, j = 1$

where

- R(X) - the cost of processing cargo;
- cij - transshipment rates rate for processing of the i-cargo with the use of modern j- production equipment;
- xij - the amount of processed cargo of the i- type with the

use of modern j -production equipment.

$$\sum_{j=1}^n xij = ai, i = 1, m \tag{8}$$

$$J = 1$$

$$m$$

$$\sum_{i=1}^m xij = bj, j = 1, n \tag{9}$$

$$i = 1$$

$$xij \geq 0, i = 1, m, j = 1, n \tag{10}$$

Also, we propose to use an integrated indicator of the intensity of profit building for simultaneous accounting of both financial indicators and of the profitability of the main port activities.

$$R(X) \rightarrow \min$$

$$D(X) - R(X) \rightarrow \max, \tag{11}$$

$$D(X) \rightarrow \max$$

The use of the criterion of optimality can lead to differences in plans that meet the criteria of the minimum total cost of processing cargo and the maximum intensity of profit, so the question arises about developing such plans that would meet this condition (Table 1). To ensure financial and economic security, it is necessary to optimize the ratio of the transshipment rates to profit and make an optimal plan for cargo processing, which would aim to minimize the cost of its cargo processing with the use of modern fleet of production equipment. Secondly, it will reduce resource and energy consumption. To conclude, the renewal of the fixed capital of PE is a decisive factor in their profitable operation.

Table 1. Plans that correspond to the minimum cost and maximum.

<u>PROFIT</u> Cost minimization $R(X) \rightarrow \min,$ $X \in D'$	<u>MAXIMUM PROFIT</u> $D(X) - R(X) \rightarrow \max$ $X \in D'$
where R(X) is the cost of cargo handling; X - cargo processing plan; $X \in D'$, where D' is the range of admissible solutions; X* - the optimal condition, then $\min R(X) = R(X^*)$ $X \in D'$	where $D(X) = D = \text{const}$ - revenues from cargo processing; $\max D - R(X) = D - R(X^{**})$ where X** is a plan that maximizes profits. In the general case $X^{**} \neq X^*$

Source: developed by the authors

However, as was mentioned above, the plans of cargo processing, which count the minimum costs, do not

correspond to the plans, which count to the maximum profit. Therefore, it is necessary to find the optimal ratio

of costs and profits that would ensure financial and economic security. Consequently, to ensure the assessment and forecasting of the level of financial and economic security of the EP, it is necessary to use economic tools of integrated assessment which would consider the negative impact of external factors, in particular, pricing policy on related modes of transport that aim to reduce the prime cost of the cargo, reduction of time of cargo operation, down time of equipment.

Many scientists, who studied the management of port enterprises, believe that the management process is always a cyclical process. The analysis and opinion of various authors are presented in the work of Lazarev (2015). The main components of the cyclical management process are referred to determining why and for what purpose the company is created and operates, development of plans for the effective work, constant monitoring of indicators which affect the level of financial and economic security of enterprises. For the sustainable development of the domestic economy, for the effective operation of port enterprises, and in order to overcome their critical state, it is necessary to use both tactical and strategic directions in the management of the FES.

Strategic measures should include long-term measures aimed to improve the entire management system of the FES in the port enterprises in the future. For determination of the strategic directions of management it is possible to use the methods of mathematical modeling, statistical analysis (correlation-regression), economic forecasting, expert methods. It requires adaptation both to the specifics of port enterprises, and to an individual enterprise, depending on the specifics of its specialization in the operation of cargo. It also requires analysis of the threats to FES, both external and internal, with the aim to prevent them and thus create a viable anti-crisis development program.

Important areas of anti-crisis management of FES of port enterprises, firstly, should include the following: modernization of fixed assets, improvement of technological process of cargo operation works, diversification, improvement of financial indicators, reduction of tariff rates for cargo operations, competitiveness in market of transport services and systematic statistical analysis. This article proposes a methodological approach to the organization of management. The suggested approach takes into account the relationship and interaction of the external

and internal environment of given PE. At the same time, it considers the life cycle of the enterprise, which is formed under the influence of the maritime industry in general, technology of transshipment processes, organizational forms of business, qualified personnel, etc. Therefore, it requires a constant survey of internal and external processes relevant for EP.

Through the process of management function, we propose to create a comprehensive statistical model of management of the system of financial and economic security of port enterprises, which embraces such specific factors of the EP life cycle and environmental issues:

$$MFESmpe = f(R, O, RF, I, MEM, \dots), \quad (12)$$

where

MFESmpe - model of financial and economic security management of port enterprises;

f - a function that reflects the objectives of the management of a particular port enterprise, namely increasing of the competitiveness of port enterprises in the market of transport services, increasing of cargo flows through their berths, ensuring of the level of economic attractiveness of service channels and transport-technological systems of cargo delivery. To conclude, this function unites the constituent factors of financial and economic security management

R - resources available at the enterprises of the main port activity, namely, material, labor, production, information, which belong to enterprises; the dependence of the timely arrival of goods at the berths of enterprises;

O - organizational structure of enterprises: analytical department and the department of operational work at the berths of enterprises that are responsible for the continuity of loading and unloading. Here we choose those factors that take into account the specifics of each individual port activity, depending on its specialization.

RF - organizational, economic and regulatory framework of the enterprise management system, primarily related to the significant influence of the Administration of Seaports of Ukraine;

I - indicators that reveal the features of methods of influence to external and internal threats;

MEM - a model for effective management of financial and economic security, which situationally looks into the status quo in the market of transport services, possible negative changes in other transport companies, actions

of cargo owners, port administrations, force majeure, which might arise in conditions of risks and dangers. Thus, this model allows influence on the level of financial and economic security. Also, it can identify indicators that negatively affect security and contribute to reduction of their impact on the organization of financial and economic security management (Lazarev, 2015).

The suggested below improved complex static model of management of system of financial and economic safety of the enterprises of port activity considers specifics of work of the enterprises of port activity, namely: versatility of works and services which they render; a large number of participants in the transport process; the need to adhere to a high level of competitiveness in the market of port services. It will effectively and efficiently assess the factors of influence, ensure a high level of financial and economic security of PE by considering destabilizing economic and political processes, negative changes in internal and external environment.

Improvement of the structure of the management organization should begin with the generalization of results of the efficiency of the main port activities and relationship with other transport organizations, setting new goals that meet market needs (Shaikh *et al.*, 2021). At the next stage the ways of realization of these tasks are outlined. And, as a result, the program of carrying out necessary activities is offered. It includes the suggestions of researches and list of concrete works which imply involvement of experts who have experience in management of the enterprises of the basic port activity.

In this study we propose to use optimal methods, because the solution of this problem is multi-criteria and multivariate. To solve this problem, it is possible to apply a cost-effective approach and an approach that is used to maximize the quality and effectiveness of the management of FES. Let us investigate the cost approach, which is applicable to the certain period of operation of an individual port enterprise. To do this, we should define the criteria for solving the problem of optimizing the management structure of FES, which should relate to the tasks of dynamic forecasting and should require obtaining of forecast estimates. The reason for setting these conditions may be the limitations of the mathematical apparatus. To avoid this difficulty, the solution of a specific problem is approached in conditional statics, by reducing the total

cost of creating each variant of the management structure of the FES to a conditional average value.

In the second variant in the form of an integrated qualitative characteristic of the FES control in the j -th variant of its structural unit by the value of the entropy of the system. In the general case, the entropy of the system is determined by the reliability of the system in a given state on the logarithmic reliability. The disadvantage of this approach is the difficulty of establishing the relationship between the entropy of the system for management and management of costs, but without this optimization by the criteria of maximum entropy it can lead to unreasonable costs (Koretska, 2021).

Given the disadvantages of the above approaches, we offer an option, which is a combination of both of those options and is based on minimizing the cost of managing the FES while, at the same time, limiting the value of the entropy of the system. Thus, knowing that security technology is a business process, it should cover all levels of the Management of port activity (MOPA), namely - all stages of the transshipment rates process, from planning to the use of profits. It should be noted that each of the stages is a part of a general process and cannot exist independently. In this case, security at each stage contributes to forming the overall basis of proper security.

To summarize, the financial and economic security of each PE is a comprehensively designed management process that considers various risks and has mechanisms to counter them, and which embraces all functional units at all levels of financial and economic security management of the main port activities. The study of approaches to the management of financial and economic security of PE and its characteristics makes it possible to identify the following principles of management of their financial and economic security:

- compliance with the laws and regulations established in Ukraine regarding maritime enterprises;
- development of a balance between the state, region, port, enterprises of the main port activity and individuals;
- responsibility of structural subdivisions and personnel for ensuring financial and economic security at the PE;
- the relationship of internal and external environment at all levels, namely - within the region, state, world economic system, as well as between other legal entities and individuals.

Thus, only the presence of a comprehensive system of general and specific functional characteristics of the strategic approach to the organization of financial and economic security management allows us to hope for sustainable long-term development in a dynamic highly competitive and unstable environment. Based on two approaches (functional and procedural) and by using traditional financial approaches and alternatives, expressing their advantages and disadvantages, the approaches to ensure the organization of the management of FES of PE were developed (Fig. 1). In the current conditions of development of PE and considering the development of the financial market, the methodological approaches to financial risk management are undergoing changes, namely insurance and hedging, which are described in the first block. The process of developing insurance and hedging in Ukraine is becoming increasingly common in the context of financial and economic security management.

Insufficient dissemination of methods of insurance of financial risks and hedging is caused by the lack of definition, nature and classification of the category "financial risks" at the regulatory level. On the one hand, hedging operations are complicated by the low level of financial literacy of the management of the main port enterprises, on the other hand – by the imperfection of the legal framework. Each of the stages is part of a general process and cannot exist separately. Therefore, security at each stage forms the basis of proper security of the PE in general. Thus, an activity for improving the management structure must be carried out constantly. One of the stages of the organization of financial and economic security management is the development of mathematical models that require comprehensive consideration of uncertainties that are associated with the peculiarities of the PE in the current risks. Therefore, it is necessary, first, to determine the level of financial and economic security by carrying out its assessment.

The main problem of building an effective mathematical model is the difficulty of determining the purpose of the study, namely - profit maximization and cost minimization, its impact on the components of the entire cargo processing operations, which, in turn, depends on the attractiveness of the location of a given enterprise, interaction and dependence on other modes of transport.

CONCLUSIONS

Now it can be seen that in case of application of a complex of statistical, economic and mathematic models in the process of assessment of the state of financial and economic security of port enterprises, those should be organized in holistic algorithm. Eventually it allows a possibility of effective system of management of financial security. To ensure the effective outcome we suggest:

- form the system of indicators of assessment of financial and economic security which takes into account the specifics of operation of port enterprises in general. Apply this system for informing the forthcoming research;

- run the assessment of the level of financial and economic security of the port enterprises and analyze the enterprise dynamics over the years with the aid of horizontal analysis, then conduct vertical analysis with the aim of researching structure of active assets and equities, research structure of the capital, analyze the money and investment flows;

- with preventive purpose carry out the constant monitoring of external and internal factors with the aid of methods of strategical management (PEST- analysis and SWOT – analysis; and for internal use apply SNW-analysis);

- for the more effective assessment of financial and economic security

- it may be suggested to compose and apply the mathematic models of assessment of financial and economic security that would be taking into account the changes of the internal factors and of those caused by the operations of other transport enterprises, cargo owners, consignors, port administrations, influence of force majeure, including political circumstances;

- develop strategical approaches to organization of management and assessment of financial and economic security of the port enterprises considering the competition in the market of transport services.

Having applied the suggested main constituents of financial and economic security, which consider the specifics of the port enterprises, it can be pointed out that the most negative influence to it is caused by the external factors, namely, policy of price forming for the compatible transport means, absence of coordinating function and interaction of all participants of the transportation process, high variety of works and services, presence of a number of mediators in cargo operations, necessity to keep up the level of

competitiveness in the market of transport services and operations. The conducted analysis of methodological approaches to the assessment of financial and economic security has defined these defects. The development and improvement of the existing methods of assessment of financial and economic security of the port enterprises

have important methodological meaning. The necessity of this activity is connected to the necessity of the everyday control of financial state with the aim of sustaining the proper level of financial and economic security, getting to know about the threats from financial side of economic security and planning its' integral indicators in the future.

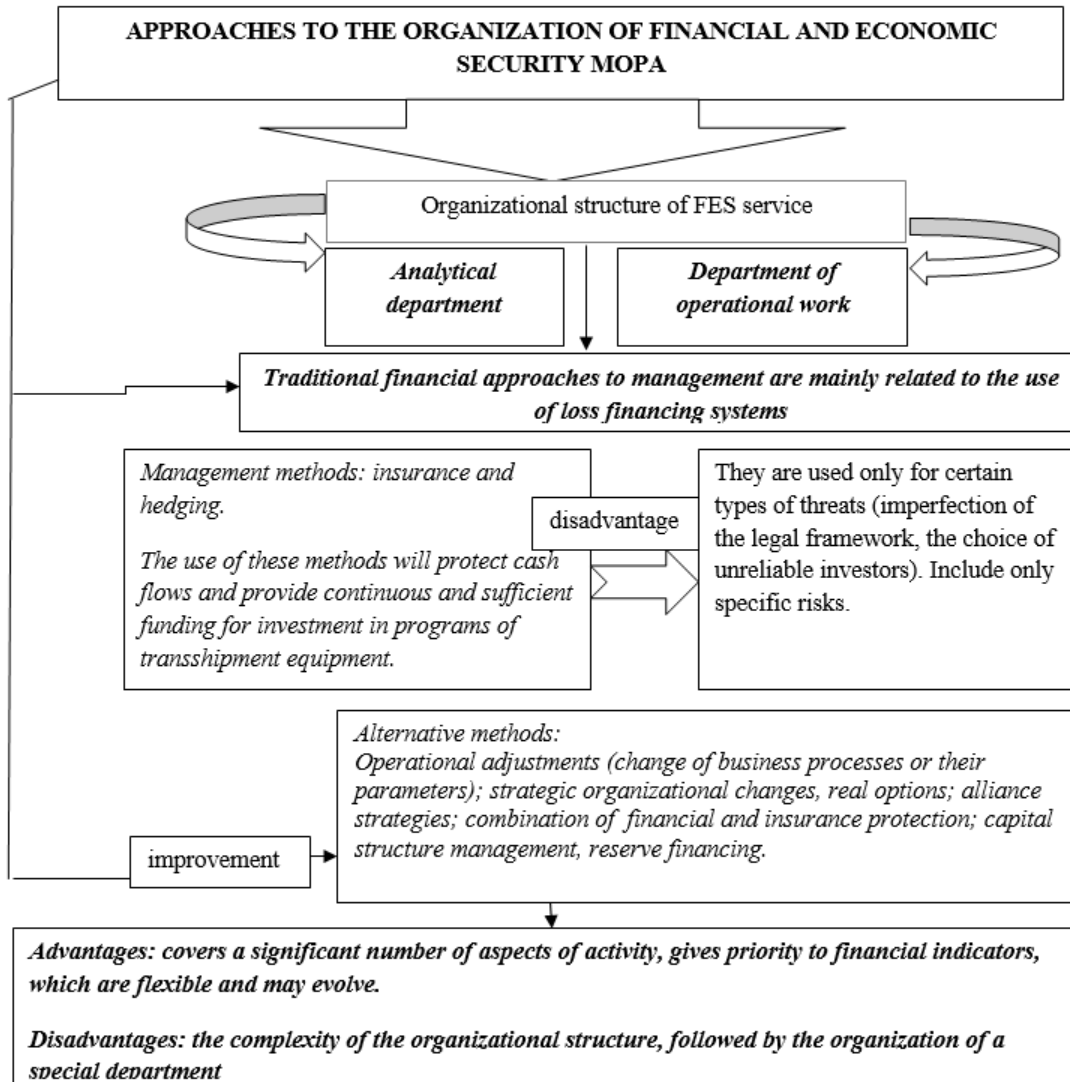


Figure 1. Approaches to the organization of management FES of PE. Source: developed by the authors

To sum up, for effective assessment of the organization of management of financial and economic security of the port enterprises, it is necessary to conduct preliminary assessment and analysis of the state of the existing financial and economic security, develop the basis of management of financial and economic security, form

the system of indicators of financial and economic security of the port enterprises. Each stage of the works on improvement of financial and economic security and management of it is a part of general project of interaction of all departments of the enterprise and this it cannot be carries out separately. The insurance of

financial and economic security of the port enterprise and means for its' management on every stage guarantees and forms the basis of the proper security of enterprise operations in general, and therefore, such works should be carried out permanently.

REFERENCES

- Amaro-García, A. 2021. Relationship between blue economy, cruise tourism, and urban regeneration: Case study of Olbia, Sardinia. *Journal of Urban Planning and Development*, 147(3). Retrieved from <https://trid.trb.org/view/1856505>
- Bondarenko, O.M. 2004. Assessment of economic security of the airline. Kyiv: NAU.
- Donets, L.I. 2008. Economic security of the enterprise. Kyiv: Center for Educational Literature.
- Hamri, M.H. and Jouad, S. 2020. Management innovation for environmental sustainability in seaports: Application of sustainable balanced scorecard to the port of Agadir. In 13th International Colloquium of Logistics and Supply Chain Management, LOGISTI QUA 2020. Retrieved from <https://ieeexplore.ieee.org/document/9353882>
- Hanafiah, M.H., M.R. Jamaluddin and V. Kunjuran. 2021. Qualitative assessment of stakeholders and visitors perceptions towards coastal tourism development at Teluk kemang, port dickson, Malaysia. *Journal of Outdoor Recreation and Tourism*, 35. <https://www.sciencedirect.com/science/article/abs/pii/S2213078021000256?via%3Dihub>
- Ignatenko, A.V., V.G. Kabanov and O.I. Kharchenkoyu. 2009. Mechanisms for neutralizing financial risks of Ukrainian enterprises in the context of globalization. *Current Economic Problems*, 5(95): 136-143.
- Koretska, O.V. 2021. Theoretical and methodological support of management financial and economic security of the enterprises of the main port activity. Odesa: Odessa National Polytechnic University.
- Koretska, O.V. and N.V. Khoteyeva. 2016. Fundamentals of financial management economic and security of transport enterprises. *Economy: The Realities of Time*, 4(26): 135-141.
- Kotlubai, O.M. 2012. Theory: methodology of transport development technological system of cargo transportation. Odesa: IPREED NAS of Ukraine.
- Lazarev, N.O. 2015. Understanding PERFORMANCE business management. *Economic Bulletin of Donbass*, 40(2): 105-109.
- Shaikh, S. M. S., J.P. Tagde, P.R. Singh, S. Dutta, L.N. Sangolkar and M.S. Kumar. 2021. Impact of port and harbour activities on plankton distribution and dynamics: A multivariate approach. *Marine Pollution Bulletin*, 165. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S0025326X21001399>
- Shiryayeva, L.V. 2015. Financial and economic security of Ukrainian enterprises: strategy and provisioning mechanisms. Odesa: Interprint.
- Shiryayeva, L.V. 2021. Formation of a mechanism for ensuring financial and economic security in port enterprise management system. Kyiv: Publishing House «Internauka».
- Stanković, J.J., I. Marjanović, J. Papathanasiou and S. Drezgić. 2021. Social, economic and environmental sustainability of port regions: Mcdm approach in composite index creation. *Journal of Marine Science and Engineering*, 9(1): 1-17.
- Vasylytsiv, T.H., V.I. Voloshyn, O.R. Bojkevych and V.V. Karkavchuk. 2012. Financial and economic security of Ukrainian enterprises: strategy and provisioning mechanisms. Lviv: Vydavnytstvo.
- Verkhovna Rada of Ukraine. 2013. Law of Ukraine "On Seaports of Ukraine". Retrieved from <http://zakon4.rada.gov.ua/laws/show/4709-17>
- Verkhovna Rada of Ukraine. 2019. Law of Ukraine "On Concessions". Retrieved from <https://zakon.rada.gov.ua/laws/show/155-IX#Text>
- Zhikharyeva, V.V. 2021. Theoretical principles of sustainable development of water transport enterprises. Odesa: Kupriyenko.

Publisher's note: EScience Press remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.