


“Financial monitoring of the port industry companies on the basis of risk-oriented approach”

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## Financial monitoring of the port industry companies on the basis of risk-oriented approach

### Abstract

The paper determines that the need in financial monitoring of Ukrainian companies of the port sector is caused by financial consequences related to the need to protect the environment, the existence of a dominant part of payments in foreign currency (foreign exchange risk associated with currency fluctuations), the possibility of cash outflows into the shadow sector of the economy and the possibility to use transport for smuggling. In addition, in the recent years there is a tendency of diminished financial stability of the seaports of Ukraine, which is a signal to determine the factors that have an impact on this situation, the consequences of risky operations and the optimal structure of sources for the formation of assets. An important aspect of financial monitoring is the necessity to identify the data about the objection the basis of insignificant and relevant information, which makes it possible to avoid non-essential features and parameters and to speed up the decision making process at the lowest cost of expenditures and time. The study offers a methodical approach to financial monitoring of the port industry companies on the basis of the risk-based approach that takes into account the conditions for the functioning of port companies and their business characteristics, making it possible to implement the appropriate measures to prevent and avoid risky financial transactions and, consequently, to increase/preserve the competitiveness of the port sector companies. Regarding the need in further studies of the practical realization of financial monitoring of the port sector companies, there is a choice and substantiation of aggregate indicators of the financial monitoring system, their listing with a view to specific features, types and scale of activities.

**Keywords:** monitoring, financial monitoring, risk, risk-based approach, port industry companies.

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### Introduction

The need in new methods and instruments of financial management that would correspond to the dynamic changes in the external environment of the companies' functioning, gives prominence to the financial aspects of the business activity. Under the conditions of high probability of financial risks associated with late payments, reduced financial stability, probability of the loss of solvency, bankruptcy of counteragents, it is the financial control that should serve as a basis for the prevention, inadmissibility and avoidance of these phenomena. Such financial control requires an improved methodology for assessing and identifying development scenarios, the monitoring of financial and economic processes and improvement in the quality of the analysis of factors that influence these processes.

As a strategic object of Ukraine, the port industry companies are of particular importance. The results of their activity are significantly influenced by financial consequences such as fines related to

environmental protection in the port area, the possibility of an outflow of resources into the shadow sector of the economy, insecurity of material values and the use of transport for smuggling. In addition, the tendency towards reduction of financial stability of the seaports in Ukraine, which is observed in the recent years, is a clear signal for identifying the factors that influence this situation, the consequences of risky operations and the optimal structures of sources for the formation of assets.

### 1. Analysis of the recent research and publications

Financial monitoring is a part of the general management system along with other types of monitoring. The determination of the nature, subject, object, goals and practical realization of financial monitoring is based on the conceptual framework of the essence of the category "monitoring", which, in general terms, manifests itself in "the continuous monitoring of the object in order to analyze its current activities and to learn about the positive and negative factors affecting the management process" (Boiko, 2016). Quite often monitoring is associated with control (FATF Recommendations; Final Report), as well as statistical method (Finansovi plany).

In practical terms, monitoring is defined as "information servicing of public authorities or the public in general on different levels of government" (Haiievskyi, 2015).

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The study of Helena Kościelniak (2010) indicates that “monitoring is an information mechanism to track the quantitative and qualitative changes caused by certain objects observations using specific methods of registration” (Informatsiia pro vodnyi transport Ukrainy). Informational support of management as the main goal of monitoring, is emphasized in the work of O. Kolyada, who states that “organization of system monitoring raises special requirements for information flows in companies causing a synthesis of management accounting and financial control with the use of modern automated means for the processing and dissemination of information” (Kanunnikova et al., 2012).

A review of the literature regarding the concept of “financial monitoring” reveals the following.

Financial monitoring as a specially organized systematic and continuous observation of financial activities and financial position of the object and their efficient assessment is considered by such scientists as V. Zabrodsky (Khmeliuk, 2014) and I. Plikus (Kisielnicki and Sroka, 1999).

W. Olejniczak (1989) emphasizes that financial monitoring is one of the most creative instruments of management, which makes it possible to create new information and make decisions related to resources (Kodeks torhovelnokho moreplavstva Ukrainy). Helena Kościelniak (2010) argues that financial monitoring is a tool for management in the area of functioning of financial processes in enterprises. It is understood as a process of continuous economic and financial analysis supporting the process of making decisions by managers (Informatsiia pro vodnyi transport Ukrainy).

Financial monitoring is a standalone tool of financial management and financial standing (Koliada, 2003) and supports management in the supervision of the most important components of the objects' activities (Kisielnicki and Sroka, 1999).

The work of A. Skowronek-Mielczarek and Z. Leszczyński (2007) studies the role of financial monitoring in the system of management from the perspective of functions and instruments of management. The functions of management include planning, organization, supervision and controlling. The instruments of management include key areas, analysis, methodology and standards (Kovalenko, Holovina, 2012).

## 2. Unsolved parts of the general problem and formulation of the paper's goals

Definitions of financial monitoring by various researchers differ according to assessment methodologies, metrics, procedures of analysis and control. The mechanisms, methods and measures of

financial monitoring of businesses in general, certain areas of financial monitoring such as evaluation of the financial condition, business activity, financial and economic activity and financial results are clearly defined. Almost all studies lack a definition of the risks inherent to a particular aspect of activities. They do not consider possibilities of changes in the environment of companies under the influence of external and internal factors as well as methodological provision of financial monitoring. In addition, there is no research of financial monitoring on the basis of a risk-based approach. These facts make it possible to determine that the methodology of financial monitoring is insufficiently developed and needs further improvement.

Based on the conducted analysis of scientific sources it is possible to conclude that the conducted studies are not focused on the improvement of financial monitoring both in theoretical and practical aspects. Of particular importance is a research in this area, which takes into account sectoral characteristics of enterprises, including the port industry companies.

**The goal of the article** is a substantiation of methodological approach to financial monitoring of the port industry companies on the basis of a risk-based approach.

## 3. The main results of the study

Monitoring is a continuous process of observation and registration of the planned and actual parameters of business entities to track dynamic changes and is based on the analysis and diagnosis of the impact of processes and factors on business activity. An important aspect of monitoring is the need to identify data about the object on the basis of insignificant and relevant information in order to avoid non-essential features and parameters and to speed up the decision-making process.

It should be noted that monitoring is not an independent instrument of management and it is aimed at obtaining the information that is necessary to make optimal management decisions at the lowest costs of resources and time, which is necessary, especially in the conditions of increasing competition and economic crisis.

The necessity and importance of financial monitoring for companies is defined as follows:

- ◆ increased risk of the impact of external environment, which requires the use of specific methods of management;
- ◆ inadequacy of the existing system of accounting and reporting, which requires the creation of an improved system of informational and analytical

provision for the implementation of managerial decisions;

- ◆ development of plans is mainly based on the results for the previous period and, consequently, the absence of substantiated indicators that requires an improved coordination within the entire system of the company's management.

Thus, the lack of financial control may be a drawback in the management of companies, but with the help of financial monitoring it becomes possible not only to follow the state of the object in each time interval, but to identify the factors that have an impact on it. Which, in turn, can act as stimulants and de-stimulants of development (Lahovska et al., 2016)?

The object of financial monitoring depends on the level and the subject of financial monitoring (Olejniczak, 1989), which are divided into the subjects of state financial monitoring and subjects of initial financial monitoring (Oleksiuk, 1998).

In this study the objects of financial monitoring are the subjects of initial financial monitoring such as enterprises, institutions and organizations of different forms of ownership, physical persons who carry out financial transactions within the financial system of Ukraine.

The subject of financial monitoring includes microeconomic processes and phenomena in the company, which are characterized by certain indicators – the indicators in their dynamics and macroeconomic processes in the country, which directly affect the economics of the company (Lahovska et al., 2016).

The study of the literature (Informatsiia pro vodnyi transport Ukrainy; Lahovska et al., 2016; Pfister, 2016) makes it possible to determine the goals of financial monitoring in the following way:

- ◆ specification of objectives, content and areas of financial analysis, diagnostics and control;
- ◆ determination of informational and analytical provision and sources of information;
- ◆ selection and substantiation of methods for the assessment of financial flows, optimization of financial resources, the value of enterprises and the structure of capital;
- ◆ selection and systematization of indicators that meet the requirements for the analysis of enterprise value;
- ◆ assessment of the current financial condition of the company, identification of the causes and factors that influence deviation from the recommended values or negative trends;

- ◆ preparation of statistical and analytical data for making financial decisions;
- ◆ processing of effective indicators and timely response to their deviations;
- ◆ adjustment of financial decisions;
- ◆ monitoring and development of the software products that can accelerate the calculation of indicators that are needed for making financial decisions;
- ◆ identification, tracking and avoidance of negative situations and trends in enterprises;
- ◆ evaluation of the efficiency of financial decisions and the speed of responding to the changes in the functioning of enterprises under the influence of threats and crises.

Based on the presented tasks it can be concluded that financial monitoring, as an element of the system of management, is an effective instrument for the timely identification of “problem areas” in the functioning of business entities, while the structure, methods and ways of the practical realization of monitoring are determined by the industry characteristics of an enterprise.

For certain sectors of the economy, financial monitoring as a form of financial control, has some specific features caused by the peculiarities of the core activities, the formation of financial results, critical values of indicators for the assessment of financial stability, liquidity, solvency or business activity.

For industrial enterprises financial result is a profit (loss) from the sales of products, which depends on the quality of the purchased raw materials and their prices. It is characterized by the high material intensity and technological material losses. For transportation companies – profit (loss) from provided services and performed work is characterized by the absence of manufactured material products and represents a continuation of production within the process of turnover, that is, a transportation service is the movement of people and goods without creating a material product. Financial result – profit (loss) for trade companies – from the realization of commodity products, for construction companies – from providing construction works, for insurance companies – from providing insurance services.

As an object of financial monitoring, this study is focused on the port industry companies as a component of the maritime transport complex of Ukraine. Seaports are part of the transport and industrial infrastructure of the state due to their location in international transport corridors. The efficiency of ports, the level of their technological and technical equipment, the compliance of the

system of management and infrastructure development with modern international requirements have an impact on the competitiveness of the domestic transport sector on the global market. The port sector has one of the most powerful potential among the leading countries of the world and consists of 13 continental seaports with the capacity of 262 million tons per year, including 38 state-owned enterprises with a turnover of about 10 billion UAH annually, 5000 branch entities. Besides, one job in the industry stimulates the creation of 4-5 jobs in related industries (Plikus, 2003).

The basic structural unit of port enterprises is a port operator (stevedoring company).

**According to the Law of Ukraine “On sea ports of Ukraine”**, port operator (stevedoring company) is an entity that carries out the operation of a sea terminal, conducts cargo handling, maintenance of cargo ships and servicing of passengers, as well as other operations related to this kind of economic activity (Pro zapobihannia ta protydiu lehalizatsii (vidmyvanniu) dokhodiv, 2014).

In the recent decades globalization and trade liberalization have a profound impact on the port industry. Governments are becoming increasingly aware that sea ports are the most dynamic element in the international transportation network and, consequently, even in efficient ports can benefit from trade liberalization. Port authorities are trying to increase the effectiveness of ports through the introduction of new technologies both in the process of cargo handling and in management. This increased attention to financial monitoring is caused by the changes in the status of a seaport as a public enterprise in accordance with the Merchant Shipping Code of Ukraine (Puhachova et al., 2003) after the enactment of the Law of Ukraine “On sea ports of Ukraine” of 13.06.2013 (Pro zapobihannia ta protydiu lehalizatsii (vidmyvanniu) dokhodiv, 2014). The European Commission’s report “On measures to enhance the efficiency and quality of port services in the EU” (2013) in its analysis of the functioning of the European ports, indicates six areas of inefficient use of resources, which include over-investment caused by inappropriate financial objectives, excessively large cash flow, failure to return profits to stakeholders, or under-pricing of the cost of capital (for example through state aid) (Roumdoutsos and Pallis, 2010).

Another important factor that determines the difference between the port industry and other industries regarding the belonging of the property is the possibility of private investments in the objects of the port infrastructure of state property on the sea port territory based on concession agreements,

which is focused on the control of financial income in the form of concession fees. Thus, not all private stevedoring companies may have the necessary financial resources to finance the major projects of infrastructure development. It is likely that concessionaires will be required to provide credit or other sources of funding to satisfy financial commitments that are necessary for the implementation of concessions. With the acquisition of substantial autonomy in business activity, the industry’s companies have to significantly reduce their costs, because in this dynamic competitive port environment success is achieved only by those business structures, which are able to optimize their costs while providing the necessary quality of products and services.

For efficient work on the market of port services port operators need to have certain competitive advantages, which include the factor of “quality port services”. In turn, among the main objectives of improving the efficiency and quality of port services the key one is “Ensure a more transparent framework for financial relations between public authorities, port authorities and providers of port services” (Roumdoutsos and Pallis, 2010).

At present seaports of Ukraine have operating state enterprises that have remained as a result of restructuring of state enterprises of sea transport (public stevedoring companies), private stevedoring companies and other participants of economic activity. In total, in Ukraine there are about 90 port operators, who occupy the second position in the Black Sea-Azov basin (Table 1).

Table 1. Cargo turnover of sea ports  
(with a volume of more than 100 thousand tons)  
of the Black Sea-Azov basin, mln. tons

Ports	2014	2015	Growth rate, %	Number of port operators
Yuzhny Sea Port	47.4	48.6	102.4	10
Odessa Sea Port	24.5	25.6	104.1	14
Mykolayev Sea Port	20.8	22.2	106.9	17
Black Sea Port	17.6	17.3	98.3	9
Mariupol Sea Port	13.0	9.0	69.1	2
“Oktyabrsk” specialized Sea Port	6.9	6.9	99.1	3
Ismail Sea Port	3.1	4.8	156.0	4
Berdiansk Sea Port	3.2	4.5	139.2	3
Kherson Sea Port	3.9	4.1	106.0	11
Black Sea Fishing Port	1.5	2.1	139.5	1
Reni Sea Port	1.5	0.91	61.9	9
Belgorod Dnestrovsk Sea Port	0.61	0.72	116.4	1

Notes: Compiled by using (Rozporiadzhennia “Pro zatverdzhennia Vymoh do orhanizatsii i funktsionuvannia systemy upravlinnia ryzykamy u strakhovyka” vid 04.02.2014 № 295). Key financial indicators of state stevedoring companies, which are the leaders on the market of port services in Ukraine, are presented in Table 2.

Table 2. Financial indicators of public stevedoring companies in Ukraine in the period 2014-2015, mln. UAH

State stevedoring companies	Net income from product sales (goods and services)			Cost of the sold products (goods and services)			Net financial result (profit)		
	2014	2015	Growth rate, %	2014	2015	Growth rate, %	2014	2015	Growth rate, %
Sea Commercial Port "Yuzhny"	1297.1	2172.6	167.5	633.0	809.6	127.9	384.0	772.7	201.2
Odessa Commercial Sea Port	291.5	504.9	173.2	142.9	217.2	152.0	146.6	293.9	200.5
Mykolayiv Commercial Sea Port	35817	38148	106,5	34325	35604	103,7	1492	2544	170.5
Commercial Sea Port "Chernomorsk"	769.2	1631.9	212.2	655.1	1037.9	158.4	117.3	487.7	415.8

Notes: Compiled by using (Ryzhenkova, 2016).

According to all financial indicators of the state stevedoring companies there is a growth of revenues, which happens at a faster rate than the cost of the sold products, which significantly affects the net financial result in the form of profit that increased 4 times for the commercial Sea Port of Chernomorsk, and 2 times for Odessa commercial sea port and port Yuzhny. The main factors that influence the growth of revenues are an increase in cargo turnover, changes in tariff policy, reduction in the share of transit freights (with smaller rate), growth in the rate of UAH against the US dollar (in 2014 the average exchange rate was 11.9 UAH/USD while in 2015 it was 19.9 UAH/USD). An increase in the cost of the sold products (goods and services) is caused by the rising prices on energy supplies, increased utility rates, labor costs and increased taxes on land.

In any case, the functioning of any system of financial monitoring is accompanied by risks. The legislation states that "subjects of the preliminary financial monitoring shall ensure risk management and develop risk criteria" (Oleksiuk, 1998).

The paper of M. Boyko indicates that "considering that constant changes in the economic situation, the strengthening or weakening of competition or declines in economic activity and a number of other factors of uncertainty, have a great influence on the performance of stevedoring companies in general, in the present conditions it is impossible to do without the consideration of risk factors" (Selskii, 2013).

It is proposed to conduct a financial monitoring of the port industry companies on the basis of a risk-oriented approach that involves the identification of risks that arise in the course of financial and economic activity of an enterprise, the factors of their emergence, analysis and assessment for the management with subsequent monitoring.

On the legislative level the risk-based management is defined by the FATF Recommendations (Financial Action Task Force) (Skowronek-Mielczarek and Leszczyński, 2007) and by the Law of Ukraine "On prevention and counteraction to the legalization

(laundering) of proceeds from crime, financing of terrorism and financing of the proliferation of weapons of mass destruction" (Oleksiuk, 1998), "Regulation on prudential norms of professional activities on the stock market and requirements for risk management" (Sydorenko-Melnyk, 2013), "On approval of requirements to the organization and functioning of the system of risk management by insurers" (Tkachenko, 2014).

Scientists actively use the risk-based approach in the fight against money laundering (Skowronek-Mielczarek and Leszczyński, 2007; Sydorenko-Melnyk, 2013), in management (Tolchinskaia, 2015), the organization of internal control in banks (Zabrodskii and Kizim, 2000), audit (Zakon Ukrainy "Pro morskii porty Ukrainy", 2013), budgeting (Zhadko, 2015) and other areas.

The study of the use of a risk-based approach made it possible to define its main advantages:

- ◆ early identification of the emerging risks, identification of the most significant ones;
- ◆ regulation of the activity's results, of resources to achieve these results and, consequently, to improve the economic efficiency of an enterprise;
- ◆ possibility of adapting to the constantly changing conditions on the market;
- ◆ formation of experience about the emergence of risk situations and about the measures to prevent them (neutralization);
- ◆ assistance in the managerial decision making.

The necessity and peculiarities of financial monitoring of the port industry enterprises on the basis of a risk-oriented approach are caused by the following:

- ◆ In the seaports of significant importance are financial consequences related to environmental protection (the probability of oil spills, illegal emissions, wastewater leaks, hazardous freights), which result in significant penalties.
- ◆ The existence of a dominant share of payments in foreign currency, which directly affect the

foreign exchange risk associated with currency fluctuations, which are quite significant in the recent years in Ukraine.

- ◆ Increased attention to the prevention of the outflow of funds into the shadow sector of the economy, insecurity of property, the use of transport facilities for smuggling.
- ◆ In increased role of the private sector in the activities of the port industry enterprises. Along with an increase in economic efficiency of the port complex functioning by combining the interests of all stakeholders there is an increase in the likelihood of risky financial transactions.
- ◆ Manifestation of tendencies towards the reduction of financial stability of the seaports in Ukraine.
- ◆ Unlike other companies in which defaults are usually manifested in the form of excessive bills payable, enterprises of the port industry have a high share of receivables.

Considering that at present there are practically no methods of financial monitoring of the port industry taking into account the risk factor, their development and improvement is becoming especially relevant.

General methodological approaches to financial monitoring without consideration of risk factors and industry characteristics are presented in the works of many researchers (FATF Recommendations; Final Report; Informatsiia pro vodnyi transport Ukrainy; Kisielnicki and Sroka, 1999; Lahovska et al., 2016; Pfister, 2016). The separation of the risk-based approach is presented in the works (Sydorenko-Melnyk, 2013; Tolchinskaia, 2015; Zabrodskii, Kizim, 2000; Zakon Ukrainy "Pro morskii porty Ukrainy", 2013; Zhadko, 2015; Zhikhareva, 2012).

The study of O. Lagovska, S. Kucher and M. Yakymenko offers a risk-based approach to the process of budgeting of financial results, which is based on the methods of mathematical statistics and calculation of historical volatility of the total revenues of the company on the basis of the analysis of similar parameters achieved in the previous reporting periods (Zhadko, 2015). Certain provisions of the context analysis and the methodology for the distribution of risks of port concessions by using the examples of public-private partnerships are presented in the work of Roumdoutsos, A. & Pallis, A. A. (2010). Along with other risks, some financial risks were identified, "may be considered external to the project (e.g., taxation currency, exchange rates, debt rating of the country), and internal (e.g., loan interest rate and payback period, grant financing, loans availability)" (Zhuravleva, 2010). The proposed methodology can

be used as a guide for the distribution of risks between the port, other relevant authorities and private investors in order to optimize their participation in the strategy.

The authors offer their methodical approach to financial monitoring of the port industry companies on the basis of a risk-based approach, which is schematically shown in Figure 1 (see in Appendix).

On the first stage, during the determination of factors of the probability of risky financial transactions, a lot of work is done aimed at assessing the presence, frequency and significance of certain factors that affected the initial position of the company.

From the position of the practical implementation of this stage special attention should be paid to currency fluctuations that directly and significantly affect the results. For example, in the paper of V. Zhikhareva the author notes that "operational income, operational and capital costs can be in various currencies therefore it is necessary for staff of finance department to consider the aspects connected with rate fluctuations of rates of exchanges" (Zhikhareva, 2012). Thus, the indicators included in the financial plans of seaports may change significantly affecting the financial results.

On the second stage, we determine the actual risky operations and expenses incurred in connection with these operations, as well as expenses incurred as a result of risky operations. According to the analysis of quantitative and qualitative changes and factor analysis we determine the most relevant expenses by ranging risk operations taking into account their impact on the financial result.

On the third stage, during the substantiation of a system of quantitative and qualitative indicators it is important to remember that "to make a decision it is necessary to have the monitoring information not in the original form (the statement of facts), but in the adapted form (with the conducted evaluation, analysis, etc.), which is the result of interaction of a complex of actions (collection, organization, data processing, formation of reporting in convenient formats)" (Pfister, 2016).

The above-said makes it necessary to carry out a careful selection of indicators, which are to be monitored, taking into account the specific features, types and scale of activity of an enterprise, its legal form and organizational structure, the peculiarities of formation of cash flows, the state of financial resources, accounts receivable, the presence of the most risky financial operations, etc. Therefore, the system of financial monitoring should be based on the evidence-substantiated indicators, the choice of which should be subject to a high level of influence on the financial results.



During the fourth stage it is possible to use mathematical and statistical methods to study the relationships (correlation and regression analysis, factor analysis, variance analysis, principal component analysis, etc.), econometric methods (matrix methods, harmonic analysis), methods of economic cybernetics and optimal programming (methods of system analysis, linear programming, simulation programming, etc.).

During the fifth stage we formulate a conclusion about the qualitative and quantitative effects of certain risky financial operations and efficiency (inefficiency) of financial monitoring.

The proposed methodical approach to the financial monitoring of the port industry enterprises on the basis of a risk-based approach, takes into account the modern conditions of the companies' functioning and their business characteristics, makes it possible to implement the necessary measures to prevent and avoid risky financial operations and, consequently, to increase/retain the competitiveness of the port industry enterprises.

## Conclusions

It has been determined that the issue of improvement of financial monitoring, both in theoretical and practical aspects, remains insufficiently studied. Of particular importance is a research in this area, which takes into account the industry characteristics of enterprises. In particular, for companies of the port industry financial consequences are important: in the form of fines related to environmental protection in the port area, the probability of the outflow of resources into the shadow sector of the economy, insecurity of the property and the use of transport for smuggling. In

addition, in the recent years there is a tendency of diminished financial stability of the seaports of Ukraine, which is a signal to determine the factors that have an impact on this situation, the consequences of risky operations and the optimal structure of sources for the formation of assets.

An important aspect of financial monitoring is the necessity to identify the data about the object on the basis of insignificant and relevant information, which makes it possible to avoid non-essential features and parameters and to speed up the decision making process at the lowest cost of expenditures and time.

Financial monitoring, as an element of the system of management, is an effective instrument for the timely identification of "problem areas" in the activity of business entities. One may say that the functioning of any system of financial monitoring in companies is accompanied by certain risks.

The study offers a methodical approach to financial monitoring of the port industry companies on the basis of the risk-based approach that takes into account the conditions for the functioning of port companies and their business characteristics, making it possible to implement the appropriate measures to prevent and avoid risky financial transactions and, consequently, to increase/preserve the competitiveness of the port sector companies.

Regarding the need in further studies of the practical realization of financial monitoring of the port industry companies there is a choice and substantiation of aggregate indicators of the financial monitoring system, their listing with a view to specific features, types and scale of activities.

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## Appendix

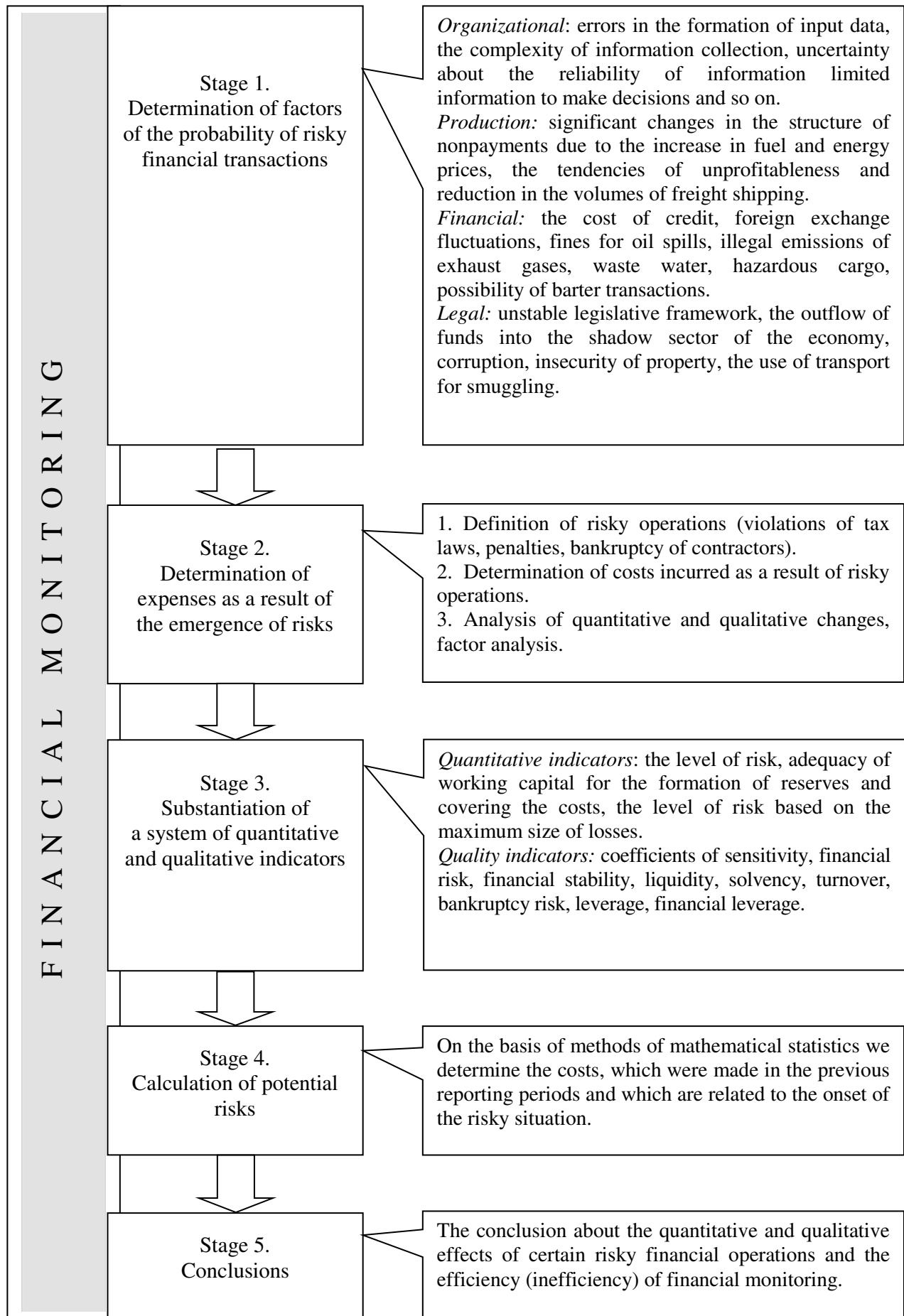


Fig. 1. Methodical approach to financial monitoring of the port industry companies on the basis of a risk-based approach