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MECHANISM FOR ENSURING THE FINANCIAL AND ECONOMIC SECURITY OF TRANSPORT AND FORWARDING COMPANIES

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МЕХАНІЗМ ЗАБЕЗПЕЧЕННЯ ФІНАНСОВО-ЕКОНОМІЧНОЇ БЕЗПЕКИ ТРАНСПОРТНО-ЕКСПЕДИЦІЙНИХ КОМПАНІЙ

In the context of the active development of the transport and logistics services market, ensuring the financial and economic security of transport forwarding companies becomes particularly relevant. It is due to emerging risks associated with fluctuations in exchange rates, instability in fuel and lubricants prices, changes in customs and tax legislation, as well as the impact of force majeure circumstances (in particular geopolitical and military), which pose threats to the stability of the functioning and development of enterprises in this sector. The purpose of this study is to substantiate and develop a conceptual mechanism for ensuring the financial and economic security of transport forwarding companies, capable of enhancing their resilience in a changing market environment and ensuring the effective use of resource potential. As a result of the conducted research, a systematically organized set of interrelated organizational-economic, financial, and managerial measures (mechanisms) for ensuring the financial and economic security of transport forwarding companies has been

identified. The authors have demonstrated that this mechanism includes six key stages with corresponding measures, which cover: monitoring financial indicators and market changes; identifying and assessing risks related to currency fluctuations, fuel prices, legislative changes, and logistical disruptions; financial planning and budgeting taking crisis scenarios into account; diversification of routes, suppliers, and client base; formation of financial and material reserves to minimize the impact of unforeseen events; and the implementation of modern information systems for the operational management of resources. It is stated that the proposed mechanism ensures the ability to counteract the negative impacts of both external and internal environments, while maintaining sustainable growth and preserving competitiveness. Prospects for further research in the field of ensuring the financial and economic security of transport forwarding companies lie in the development and implementation of methodologies for the quantitative assessment of the effectiveness of each stage of the proposed mechanism, taking into account the specifics of different market segments and the scale of enterprises' operations.

В умовах активного розвитку ринку транспортно-логістичних послуг питання забезпечення фінансово-економічної безпеки транспортно-експедиційних компаній набуває особливої актуальності. Це зумовлено висхідними ризиками, що пов'язані з коливаннями валютних курсів, нестабільністю цін на паливно-мастильні матеріали, змінами у митному та податковому законодавстві, а також впливом форс-мажорних обставин, що створюють загрози стабільності функціонування та розвитку підприємств цієї галузі. Метою даного дослідження є обґрунтування та розробка концептуального механізму забезпечення фінансово-економічної безпеки транспортно-експедиційних компаній, здатного підвищити їхню стійкість в умовах ринку та забезпечити ефективне використання ресурсного потенціалу. У результаті проведеного дослідження визначено системно організований комплекс взаємопов'язаних організаційно-економічних,

фінансових та управлінських заходів (механізм) із забезпечення фінансово-економічної безпеки транспортно-експедиційних компаній. Авторами доведено, що цей механізм включає шість ключових етапів із відповідними заходами, які охоплюють: моніторинг фінансових показників і ринкових змін; ідентифікацію та оцінку ризиків, пов'язаних із валютними коливаннями, мінливими цінами на паливо, законодавчими змінами та логістичними збоями; фінансове планування та бюджетування з урахуванням кризових сценаріїв; диверсифікацію маршрутів, постачальників і клієнтської бази; формування фінансових і матеріальних резервів для мінімізації наслідків непередбачуваних подій; впровадження сучасних інформаційних систем для оперативного управління ресурсами. Констатовано, що запропонований механізм забезпечує здатності протидіяти негативним впливам зовнішнього та внутрішнього середовища, дотримуючись сталого зростання та зберігаючи конкурентоспроможність. Перспективи подальших досліджень у сфері забезпечення фінансово-економічної безпеки транспортно-експедиційних компаній полягають у розробці та впровадженні методик кількісної оцінки ефективності кожного з етапів впровадження запропонованого механізму з урахуванням специфіки різних сегментів ринку і масштабів діяльності підприємств.

Keywords: *set of measures; mechanism; monitoring of financial indicators; risk identification; logistical disruptions; financial planning; budgeting; route diversification; reserve formation.*

Ключові слова: *комплекс заходів; механізм; моніторинг фінансових показників; ідентифікація ризиків; логістичні збої; фінансове планування; бюджетування; диверсифікація маршрутів; формування резервів.*

Problem statement. In the context of the dynamic development of the transport and logistics services market, ensuring the financial and economic security of transport forwarding companies becomes particularly urgent. This is due to emerging risks associated with fluctuations in exchange rates, instability in fuel and lubricant prices, changes in customs and tax legislation, as well as the impact of force majeure circumstances (notably geopolitical and military [5]), which pose threats to the stability of the functioning and development of enterprises in this sector. For example, a sharp increase in the cost of diesel fuel can lead to:

- Significant rise in transportation costs, reducing the company's profitability.
- Changes in customs procedures can cause delays in cargo delivery and result in penalties.
- Currency exchange rate fluctuations can lead to unpredictable losses in international transactions.

A separate group of risks consists of unforeseen events such as the blocking of transport corridors, military actions, or the imposition of international sanctions, which can completely halt operations on certain transportation routes.

The financial and economic security of a transport forwarding company is a comprehensive characteristic of its ability to resist negative impacts from both external and internal environments while maintaining sustainable growth and preserving competitiveness. Considering that the activities of transport forwarding companies are directly linked to international transportation, global logistics chains, and a high dependence on partnership relations, the development of an effective mechanism to ensure financial and economic security becomes of key importance.

Analysis of research and publications. Various issues related to ensuring the financial and economic security of transport forwarding companies have been reflected in the works of such economists as Mischenko M. I., Martsenyuk L. V., Chernova N. S., Hrinenko M. O. [4], Haruta V., Marunych V., Haruta V. and Grigorevskoy M. [6]. In particular, these scholars examined key aspects of financial risk management, methods for assessing and minimizing the impact of external and internal threats, issues of reserve formation, budgeting methods considering crisis scenarios, as well as the role of information systems in improving the efficiency of control and resource management in transport forwarding companies.

It should be noted that the outlined studies have formed the theoretical foundation for developing comprehensive approaches to ensuring the stability and competitiveness of enterprises in the transport sector amid a dynamic market environment. At the same time, the issue of developing a conceptual mechanism for ensuring the financial and economic security of transport forwarding companies is presented very fragmentarily in the scientific literature, which highlights the need for further research in this area.

Formulation of the article's objectives. The purpose of this study is to substantiate and develop a conceptual mechanism for ensuring the financial and economic security of transport forwarding companies, capable of enhancing their resilience in a changing market environment and ensuring the effective use of resource potential.

The paper main body. The authors emphasize that the activity of transport and forwarding companies is unstable due to the influence of a complex set of internal and external factors, which complicates the maintenance of their financial and economic security. For example, during the currency crisis of 2014–2015, when the US dollar exchange rate rose from approximately 8 UAH to over 25 UAH within a few months, most Ukrainian transport enterprises suffered significant losses. Purchases of fuel and technical equipment in foreign currency led to a 30–50% increase in costs, substantially raising the cost of services and transportation [1]. Due to economic instability and the decline in customers' purchasing power, companies were forced to limit tariff increases, which reduced the profitability of their business.

A similar situation repeated in 2022 due to global energy crises that caused a sharp rise in fuel costs, inflicting significant financial losses on many Ukrainian transport and forwarding companies. Additionally, the COVID-19 pandemic caused logistical disruptions, delays in cargo delivery, and increased storage expenses. For instance, the company "XYZ Logistics" lost part of its client base due to failure to fulfill contractual obligations on time, which negatively impacted its financial condition.

Currently, the military conflict in eastern Ukraine creates additional financial and economic risks for transport and forwarding companies, including restricted access to key routes, destruction of infrastructure, and increased danger to personnel and cargo [5]. These factors directly affect the stability of companies' operations and their financial condition, complicating the task of maintaining their financial and economic security under current conditions.

In response to the challenges facing transport forwarding companies, the authors have developed a mechanism to ensure their financial and economic security, which represents a systematically organized set of interrelated organizational-economic, financial, and managerial measures.

This mechanism is aimed at the timely identification, assessment, prevention, and neutralization of both internal and external threats that may negatively affect the stable functioning and further development of companies providing comprehensive services for the organization and support of cargo transportation.

Special emphasis is placed on ensuring the solvency, profitability, and competitiveness of these enterprises in a rapidly changing and complex market environment [1].

The outlined mechanism for ensuring the financial and economic security of transport forwarding companies includes the following key measures [1; 3; 5-6]: monitoring financial indicators and market changes; identifying and assessing risks related to currency fluctuations, fuel price volatility, legislative changes, logistical disruptions, and other factors; financial planning and budgeting considering possible crisis scenarios; diversification of routes, suppliers, and client base to reduce dependence on individual counterparties; formation of financial and material reserves to minimize the impact of unforeseen events; the implementation of modern information systems for the operational management and control of resources.

In this context, it is advisable to propose a scheme of the mechanism for ensuring financial and economic security (Fig. 1), which will clearly and structurally reflect the key stages and corresponding measures that will contribute to ensuring the stability and resilience of transport forwarding companies in a changing market environment and amid growing risks.

Stage 1. Measures for monitoring financial indicators and market changes

↓

Involves continuous tracking of key financial indicators (profitability, liquidity, asset turnover, transportation efficiency, etc.) and external factors that impact the operations of a transport forwarding company.

Stage 2. Measures for identifying and assessing risks related to currency fluctuations, fuel prices, legislative changes, logistical disruptions, etc.

↓

Involves continuous identification of potential threats to financial and economic security, including currency fluctuations, changes in fuel prices, innovations in customs or tax legislation, logistical delays, as well as force majeure situations.

Stage 3. Measures for financial planning and budgeting (taking into account possible crisis scenarios)

↓

Involves the development of income and expenditure plans considering possible crisis scenarios (for example, a sharp increase in fuel prices or a decline in transportation demand).

Stage 4. Measures for diversifying routes, suppliers, and client base

↓

Involves continuous reduction of the transport forwarding company's dependence on a limited number of counterparties and transportation routes.

Stage 5. Measures for forming reserves to minimize the impact of unforeseen events

↓

Involves creating and continuously adjusting financial reserves (insurance funds, deposits, credit lines) and material stocks (fuel, spare parts, backup transport) of the transport forwarding company.

Stage 6. Measures for applying modern information systems for operational management and resource control

↓

Involves the implementation of ERP, CRM, and TMS solutions that automate financial transaction accounting, route planning, real-time vehicle monitoring, and the optimization of logistics processes.

Fig. 1. Diagram of the mechanism for ensuring the financial and economic security of transport forwarding companies

Source: compiled based on [1;3; 5-6]

Thus, the scheme serves as an important tool for managing financial and economic security, enhancing the transparency, efficiency, and adaptability of a transport forwarding company. Let us examine each component of the mechanism for ensuring the financial and economic security of transport forwarding companies in more detail, from the perspective of its effectiveness.

So, the stage of monitoring financial indicators and market changes involves continuous tracking of key financial metrics—profitability, liquidity, asset turnover, transportation efficiency, financial stability ratios—as well as external factors affecting the company's operations, such as the market conditions for transportation services, currency exchange rate dynamics, and fuel and lubricant prices. The purpose of implementing these measures is the timely detection of negative signals, enabling a swift response to changes.

The stage of risk identification and assessment involves a comprehensive determination of potential threats to the financial and economic security of the transport forwarding company. Essentially, the main categories of risks to be identified include currency fluctuations, which can cause significant financial losses due to instability in exchange rates on international markets. Additionally, changes in fuel prices, which directly affect transportation and production costs, are also taken into account.

An important aspect is the continuous monitoring of changes in customs and tax legislation, as new rules or amendments may create additional costs or complications in the company's operations. Logistical risks, such as supply disruptions, delays, or shutdowns of ports and border crossings, also require close attention since they directly affect the timely delivery of goods and the fulfillment of contractual obligations [1-2]. Additionally, it is necessary to consider the impact of force majeure circumstances, which often have an unpredictable nature—such as military conflicts, the imposition of sanctions, natural disasters, technological accidents, and more. Identifying these risks allows for the development of effective mechanisms for adaptation and mitigation of their negative effects. The goal of implementing these measures is to conduct a qualitative and quantitative assessment of risks, ranking them by their level of impact and likelihood of occurrence.

The stage of financial planning and budgeting, which operates taking into account possible crisis scenarios, involves the formation of a comprehensive system of planning documents covering both short-term (monthly and quarterly) and long-term (annual and multi-year) financial plans. Within such planning, revenues and expenses are calculated not only based on the basic, most likely scenario but also on several alternative scenarios that take into account potential threats and fluctuations in the external environment. For example, scenario planning considers [1; 3]:

- A sharp increase in the cost of fuel and lubricants may significantly raise transportation costs.
- A decrease or seasonal fluctuation in demand for transport forwarding services affects revenue levels.
- Currency exchange rate instability may lead to additional expenses in international transportation.
- Changes in regulatory requirements related to customs clearance, taxation, or transport security may necessitate additional costs or restructuring of business processes.
- The occurrence of unforeseen logistical restrictions, such as the blocking of transport corridors or port closures.

A key element is the creation of a flexible system for real-time budget adjustment using digital planning tools (ERP systems, specialized financial software), which allow [1; 5]:

- Promptly analyze deviations of actual indicators from planned ones.
- Redistribute resources to priority areas.
- Forecast cash flows based on updated data.

To increase the effectiveness of this stage, it is advisable to apply various tools and methods, the main ones of which are presented in Table 1.

Table 1. List of tools for creating a flexible real-time budget adjustment system of a transport and forwarding company

Tool	Tool description	Advantages of using the tool
Contingency Budgets	Allocation of funds not assigned to any specific expense item, which can be used in case of unforeseen events.	Provide financial flexibility; enable quick response to crisis situations without additional resource involvement; reduce the risk of operational disruptions.
Currency Risk Hedging	Entering into forward or futures contracts to fix currency exchange rates in international transactions.	Minimize the impact of currency fluctuations on financial results; increase predictability of expenses and revenues; reduce the risk of losses in foreign economic operations.
Financial KPIs for Monitoring	Setting key indicators (EBITDA, liquidity ratio, operating cash flow) that signal deterioration of the situation.	Allow prompt identification of financial problems; ensure management transparency; facilitate timely managerial decision-making.
Sensitivity Analysis	Assessing the impact of changes in key parameters (fuel prices, exchange rates, transportation volumes) on financial results.	Help identify the most critical influencing factors; allow preparation for possible negative scenarios; improve forecasting accuracy.
Decision Tree System	Modeling action scenarios depending on situation development with the choice of the optimal strategy.	Provide a structured approach to decision-making; help assess risks and benefits of each option; increase the justification of managerial actions.
Rolling Forecast	Quarterly updating of forecasts and plans considering current market changes.	Improve forecasting accuracy; enable flexible plan adjustments to environmental changes; support continuous strategic planning.

Source: compiled based on [1;3; 5]

Special attention should be paid to the integration of financial planning with risk management, which ensures consistency between revenue/expense forecasting and crisis response strategies. This involves the use of financial modeling tools, sensitivity analysis, and decision tree construction to select the optimal course of action depending on how the situation develops.

The purpose of implementing these measures is not only to ensure the preparedness of the transport and forwarding company for unforeseen circumstances but also to create financial flexibility that allows for a rapid restoration of stability during periods of market fluctuations and the maintenance of competitive advantages even amid prolonged crises.

The stage of diversifying routes, suppliers, and the client base involves a strategic reduction of the transport and forwarding company's dependence on a limited circle of partners, sales markets, and transportation directions. This approach decreases the business's vulnerability in case of local disruptions, political instability in certain regions, changes in regulatory conditions, or the occurrence of force majeure events.

Diversification can cover several key areas (see Table 2): geographical diversification of routes; diversification of suppliers; expansion of the client base.

Table 2. Key directions of diversification of routes, suppliers, and client base of a transport and forwarding company

Key directions of diversification	Characteristics of key diversification directions
Geographical diversification of routes	Expansion of transportation geography to new regions and countries to avoid excessive concentration of cargo flows on a single route.*
Diversification of suppliers	Contracting with multiple suppliers of fuel, spare parts, and maintenance services to prevent supply disruptions.**
Diversification of the client base	Searching for new market segments (e.g., transportation of specialized cargo: hazardous, perishable, oversized).***
Industry diversification	Distribution of clients by industries (manufacturing, agriculture, retail, e-commerce) to reduce dependence on seasonality or crises in specific economic sectors.****

Note:
***** May include the use of alternative transport corridors (sea, rail, road), providing flexibility in case of blockage or congestion of main routes.
** May involve creating a base of alternative partners for quick engagement in case of failure or delay of the primary supplier.
*** May include entering adjacent service markets (warehouse logistics, customs brokerage, multimodal transportation), which allows increasing the number of customers and distributing the risk of losing individual contracts.
**** May cover various types of businesses from different regions and scales, enabling the creation of a more balanced client portfolio and minimizing risks associated with demand fluctuations or economic shocks.

Source: compiled based on [1-2; 5]

The purpose of implementing these measures is to create a flexible, adaptive, and resilient network of transportation and supply, capable of quickly restructuring in response to changes in the external environment. This contributes to the stability of cash flows, reduces the risk of losing key clients, and ensures competitive advantages even under crisis conditions [2].

The stage of reserve formation to minimize the consequences of unforeseen events is one of the key elements in ensuring the financial and economic security of a transport and forwarding company. Its essence lies in creating and maintaining sufficient financial and material reserves that can be promptly utilized to support the stable operation of the enterprise during crisis conditions or sudden disruptions in activity.

The specifics of reserve formation for minimizing the impact of unforeseen events are presented in Table 3.

Table 3. Features of reserve formation in transport and forwarding companies to minimize the impact of unforeseen events

Directions of reserve formation	Features of reserve formation in transport and forwarding companies
Financial	Reserves are created from a portion of profits or special allocations; they include insurance funds, deposits, and pre-approved credit lines with banks.*
Material	Reserves include stocks of fuel, spare parts, backup vehicles, and specialized equipment, formed taking into account seasonality, transportation specifics, and anticipated risks; they are subject to regular updating and inspection.**
Organizational	Reserves include developed action algorithms for crisis situations; they ensure rapid recovery of operational activities after disruptions.***

Note^
* These reserves provide quick access to funds in crisis situations and are used to cover losses, pay urgent expenses, and finance unforeseen repairs or purchases.
** These reserves are created to ensure the uninterrupted operation of the vehicle fleet and the fulfillment of orders.
*** These reserves are established for the preparation of personnel, additional contractors, or partners who can be engaged in case of increased workload or emergency situations.

Source: compiled based on [4; 5]

The purpose of implementing these measures is to ensure effective reserve management enables the continuation of operations without significant interruptions, even in the event of force majeure circumstances.

The stage involving the application of modern information systems for operational management and resource control entails the implementation of comprehensive digital solutions — ERP (Enterprise Resource Planning), CRM

(Customer Relationship Management), and TMS (Transport Management Systems) — in accordance with the specifics outlined in Table 4.

Table 4. Features of applying modern information systems for operational management and resource control in a transport and forwarding company

Comprehensive digital solutions	Features of implementing comprehensive digital solutions	Features of the operation of comprehensive digital solutions
Enterprise Resource Planning	Integrate finance, logistics, procurement, human resource management, and other business processes into a unified information system. *	Integrate key business processes of the company into a single platform. Improve the accuracy of financial and operational reporting. Enable prompt assessment of resource utilization efficiency and forecasting of resource needs.
Customer Relationship Management	Designed to create a system for storing client interaction history, automating communications, order management, and tracking customer satisfaction levels **	Enable management of customer relationships. Allow responding to customer inquiries, forecasting demand, and creating personalized offers. Increase customer satisfaction levels.
Transport Management Systems	Provide planning of optimal routes, management of vehicle loading, real-time tracking of vehicle location and technical condition ***	Provide route planning, transport load optimization, and real-time tracking of vehicle movements. Allow monitoring the technical condition of the fleet, scheduling maintenance, and repairs.

Note^
* This comprehensive solution forms the foundation for centralized accounting, planning, and control of transport and forwarding operations and routes, management of fleet technical condition, and real-time order status monitoring.
** This comprehensive solution forms the basis for customer segmentation, personalized offers, and related functions.
*** This comprehensive solution provides the foundation for controlling service costs, delivery times, and the status of equipment maintenance.

Source: compiled based on [4-6]

Using these tools allows for the automation of financial transaction accounting, route planning, monitoring the technical condition and real-time location of vehicles, as well as optimizing resource utilization. This enhances management transparency, reduces the likelihood of errors, ensures timely detection of deviations from the plan, and increases the overall efficiency of the transport and logistics company’s operations.

Conclusions. As a result of the conducted research, a systematically organized set of interconnected organizational-economic, financial, legal, and managerial measures (mechanisms) has been identified to ensure the financial and economic security of transport and logistics companies.

The authors have demonstrated that this mechanism includes six key stages with corresponding measures, covering: monitoring financial indicators and market changes; identifying and assessing risks related to currency fluctuations, fuel prices, legislative changes, and logistical disruptions; financial planning and budgeting taking crisis scenarios into account; diversification of routes, suppliers, and customer base; formation of financial and material reserves to minimize the impact of unforeseen events; implementation of modern information systems for the operational management of resources.

It is stated that the proposed mechanism ensures the ability to counteract the negative impacts of both external and internal environments while maintaining sustainable growth and preserving competitiveness.

The prospects for further research in ensuring the financial and economic security of transport and logistics companies lie in the development and implementation of methods for the quantitative assessment of the effectiveness of each stage of the proposed mechanism, taking into account the specifics of different market segments and the scale of enterprise operations.

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