FINANCIAL SUPPORT OF LOGISTICS: SECURITY ASPECTS AND SUSTAINABLE DEVELOPMENT (IN UKRAINIAN CONTEXT)

NATALIIA ANTONIUK, KATERINA MELNYKOVA, YULIA KOLODNAYA, IGOR BRITCHENKO, NATALIA KHOIUIK, SVITLANA ROGACH, TETIANA SHMATKOVSKA

National Academy of Management, 15, Ushynskogo Str., 03153, Kyiv, Ukraine

Simon Kuznets Kharkiv National University of Economics, 94, Nauky Av., 61002, Kharkiv, Ukraine

University of Security Management in Košice, 2373/1, Košice, Slovakia

Liesya Ukrainka Volyn National University, 28, Vymychnenko Str., 43025, Lutsk, Ukraine

National University of Life and Environmental Sciences of Ukraine, 11, Heroes Obolonsky Street, 03041, Kyiv, Ukraine

Emails: antoniuskatsya20@gmail.com, melnykova7k@gmail.com, kholodnaya.julia@gmail.com, igor_britchenko_zavivachyvm.sk, natalialia9184@gmail.com, rogach.sm@ukr.net, shmatkovska2016@gmail.com

Abstract: The article defines the relevance of financial support for logistics as a critical element of ensuring sustainable development in modern conditions of global economic challenges. Security aspects and the impact of financial strategies on logistics processes are considered. Financial planning, budgeting, and risk management tools aimed at ensuring logistics chains' reliability and sustainable development are defined. The importance of effective interaction between monetary and logistical components of economic activity for achieving sustainable development goals has been proven.

Keywords: financial support; economic security; sustainable development; investments; competitiveness.

1 Introduction

The specificity of business processes functioning in the modern economic system is characterized by profound changes in the global economic environment, which pose numerous challenges and tasks to business entities. Logistics plays a vital role in this context, as it ensures the efficient organization of supply, production, and distribution of goods and services. Accordingly, it is critical for achieving sustainable development of individual enterprises, business processes, and society [30].

Logistics' financial support is a critical aspect of this modern reality. This is because business entities must provide sustainable financial support to optimize logistics processes and ensure the reliability and security of logistics supply chains. At the same time, the consideration of security aspects becomes a necessary condition for efficiency since threats from the actions of competitors, technical failures, innovative challenges, and other factors can significantly affect the functioning of logistics systems.

On the other hand, the need to study the relationship between financial support and logistics, with a particular emphasis on security aspects and sustainable development, is gaining special relevance now. In particular, it means using essential financial tools, such as financial planning, budgeting, and risk management, to ensure the proper level of security and sustainable development of logistics systems in production business processes and national and regional economic systems.

Thus, there is a need for an in-depth study of strategic cooperation between the financial and logistics divisions of organizations since, for the business environment, such cooperation is an essential element of success in ensuring the long-term sustainable development of business entities [12]. In addition, the security of logistics processes includes not only protection against potential threats but also risk management related to the financial activities of enterprises. Therefore, understanding, analyzing, and minimizing financial risks in logistics currently represent an essential asset for any enterprise. At the same time, the effective management of financial resources can reduce the cost of storing goods, contribute to the optimization of the enterprise's production stocks, and help maintain the balance between the volume of stocks and demand.

Therefore, considering the relevance of financial support for logistics processes, there is a need for a deeper understanding of the importance of an appropriate financial strategy to ensure the efficiency and sustainable development of logistics systems and consider the role of security aspects in this context.

2 Literature Review

Financial support of logistics is one of the main factors in ensuring the sustainable development of business entities in the modern business environment. At the same time, there is a significant amount of scientific work in which this problem is revealed in detail and systematically.

In particular, in this aspect, it is worth noting the works of I. Britchenko [1-9], O. Hrynkevych [23], N. Kunitsyna [27], N. Popadynets [31-32], M. Rudenko [35] and A. Yakymchuk [42], who define logistics as a set of measures and methods used to optimize the flow of financial, material, and information resources in the system of supply of goods and services. At the same time, it is noted that the primary condition for the successful functioning of logistics systems in modern business processes is the need for adequate financial support. The authors emphasize that the financing of logistics operations allows for a significant increase in the efficiency of supply chains and reduces the overall costs of the enterprise, which will directly impact the price of the finished product and strengthen the position of the economic entity in the market struggle.

It is also worth paying attention to the studies of Y. Danshina [10] and I. Lazaryshyna [28] which determine that security is an essential aspect of the financial support of logistics since logistics systems are exposed to various risks and threats. At the same time, it is claimed that such threats can be related to the influence of natural factors, as well as to technical production failures, loss of property, etc. The general conclusion of this research direction is that the importance of financial resources for responding to risks and threats is determined, which contributes to the more effective security of logistics systems.

In addition, we can note the research of S. Koskova [24-25], M. MašFán [29], O. Ramos [33], and A. Zielinska [43], in which the importance of strategic planning and budgeting in the financial support of logistics is determined. In this aspect, attention is focused on the fact that an appropriately adjusted financial strategy helps business entities achieve more effective results in logistics operations, resulting in a general reduction of unproductive costs in production activities.

Separately, it is worth paying attention to a number of the latest approaches and technologies for the financial support of logistics, which are focused on the broad application of digital and information products, including the latest software products [36]. In particular, this direction is defined in the works of M. Dziamalyč [13-21], M. Kryštianovcov [26], J. Reitšíp [34], and I. Voronenko [41], which indicate significant prospects for using blockchain technologies and artificial intelligence to significantly increase the efficiency of financial support and improve security in logistics processes.

On the other hand, available scientific research determines the importance of financial support of logistics for the sustainable development of enterprises in the modern business environment. At the same time, there is an objective need to deepen research in the field of using financial resources to ensure security and optimize logistics processes to increase competitiveness and ensure the successful operation of enterprises in the conditions of dynamic changes in the modern business environment [22; 39].
3 Materials and Methods

Various scientific research methods are used in the research process, which revealed the financial support of logistics and its impact on security aspects and sustainable development. In particular, such methods were used to obtain a deeper understanding and analysis of the relationship between financial support and logistics and their impact on the sustainable development of business entities.

One of the critical methods was the analysis of literary sources, based on which a review of theoretical approaches to the essence and principles of logistics financial support was carried out, the results of previous research in this field were evaluated, and other sources related to the research topic were analyzed. The analysis of literary sources became the basis for formulating the study’s conceptual framework.

Methods of synthesis and generalization were used to combine and generalize information from various sources. At the same time, based on the synthesis, a holistic view of the financial support of logistics processes was formed by combining individual elements of information. Fundamental aspects and conclusions from literary sources were highlighted by generalization.

The abstraction method highlighted the key ideas and concepts of the study. In particular, with the help of this method, attention was focused on the essential aspects of the financial support of logistics and the need to reduce risks and threats to logistics processes.

An empirical method was used to confirm the theoretical conclusions and to study specific scenarios of applying financial strategies in logistics. It was used to collect and analyze practical data on enterprises’ financial and logistical activities, as well as to evaluate data from other information resources.

In general, with the help of the mentioned methods, information was systematized, and the problem of logistics financial support was evaluated, which allowed us to reveal its impact on the stability and security of logistics systems in modern business processes.

4 Results and Discussion

In modern conditions, characterized by significant turbulence of economic relations, logistics processes are one of the most important in the mechanism of formation of financial and economic security of business because its logistics component is a concept of ensuring financial and economic security within the framework of one or more business structures. In the business processes of enterprises, the logistics component occupies a leading place because it concerns the financial and economic security of the business. That is why forming an organizational and economic mechanism for the financial support of logistics requires a high level of organization, systematizity, structure, and control.

The prevalence of flow approaches characterizes the logistics stage of the economy, which is determined by the integration of market entities to achieve optimal interaction in micro- and macro-logistics systems and the formation of global logistics networks. In these conditions, the basis for developing effective mechanisms for managing the financial support of logistics processes of enterprises is the integration of methodological provisions of financial management into the logistics system.

The financial and economic security of a business is a state of the enterprise’s management system in which the management of financial resources is achieved, and it is possible to respond to changes in the external and internal environment adequately and to project potential threats and reactions to them to ensure the crisis-free development of the enterprise. After all, the management system recognizes threats and develops measures to overcome them. Therefore, the main goal of providing the financial and economic security of business at present is to achieve the maximum stability of its functioning and to create a basis for the further growth of its economy even in the presence of objective and subjective factors [40].

It is worth noting that from the point of view of the systemic approach, the logistical component of the financial and economic security system is a relatively stable set of structural or functional divisions of enterprises, suppliers, and consumers, which are interconnected and united by a single system of managing the logistical process of financial and economic security for implementation of the logistics strategy. Therefore, a systematic approach to the formation of logistics strategies for the system of financial and economic security of business requires the fulfillment of two mandatory conditions:

1. They must be connected with other functional strategies and correspond to the optimal process of implementing the competition strategy to ensure the business's financial and economic security.
2. They should cover all financial and economic security areas of business processes.

At the same time, logistics financing is closely related to logistics planning and affects all aspects of the company’s logistics operations. Logistics planning defines the strategies and principles used to achieve optimal results in managing the flow of goods and services in logistics supply chains. Financial support, in turn, ensures the allocation of financial resources to implement these plans and ensure the reliability of logistics systems. In practical terms, financial support is implemented based on logistics planning, which includes several principles, namely:

1. Resource Budgeting and Analysis – logistics planning involves determining resource needs, such as vehicles, storage facilities, equipment, inventory, and personnel. Therefore, financial support includes the budgeting process, which allows allocating the financial resources required to meet these needs.
2. Inventory management – logistics planning includes inventory management strategies that affect inventory levels and product turnover. At the same time, financial support guarantees the availability of sufficient capital for the purchase and storage of production stocks of the enterprise, as well as for optimizing their level by strategic goals.
3. Infrastructure and technologies – logistics planning can include developing and modernization of infrastructure and using modern technologies. Accordingly, financial support consists in finding sources of financial resources necessary for the construction and improvement of infrastructure, the implementation of functional systems, and the development of new technologies to optimize the logistics processes of the economic entity.
4. Risk management – logistics planning includes analyzing and managing risks associated with logistics operations. At the same time, the financial support of these operations is aimed at allocating funds to reduce risks, such as delays in deliveries, natural disasters, and other unforeseen circumstances.
5. Suppliers and partners: logistics planning can include interaction with suppliers and logistics partners. Financial support helps develop relationships with these parties through investment and financial incentives to achieve shared goals.

Logistics financial support is generally based on logistics planning and determines the allocation of financial resources to achieve strategic logistics goals. This approach helps enterprises achieve sustainable development goals and ensure the efficiency of their logistics operations.

In the practical aspect of implementing financial support, the planning of logistics operations significantly depends on specific logistics technologies for stream management optimization, which are essential for increasing the efficiency and
competitiveness of logistics systems. At the same time, optimizing flows allows a rational use of resources, helps enterprises to reduce costs, etc. (Figure 1).

As one can see, the most common modern logistics technologies for stream management optimization are:

1. **Supply Chain Management**, which optimizes the entire supply chain, including suppliers, manufacturers, distributors, and customers. This technology allows refining and analyzing information on demand, inventory, production, and delivery of goods to plan optimal solutions.

2. **Inventory Management Systems**. Such systems allow enterprises to manage their stocks, effectively minimizing their excess and shortage. They are based on demand analysis, forecasting, and optimization of inventory levels to ensure the best performance and reduce costs.

3. **Transportation Management Systems** that help manage traffic flows and optimize delivery routes. They consider various parameters such as cost of transportation, delivery time, and selection of optimal vehicles.

4. **Forecasting Systems** – these systems use analytical methods and algorithms to forecast the demand for goods and services. This allows enterprises to adapt their operations to future changes in logistics and reduce the risks of shortages or oversupply of goods.

5. **Information Technology**. The use of modern IT solutions, such as artificial intelligence and the Internet of Things, allows business entities to receive online information about the state of logistics flows and to automate and digitize almost all processes involved in modern logistics systems.

6. **Tracking and Monitoring Systems** – these systems allow tracking the movement of goods and vehicles in real-time, which contributes to increasing transparency and control over logistics processes.

7. **Network Optimization Systems**. Such systems help business entities determine the most optimal supply and distribution network, which considers the cost of delivery, its volume, distance, and other factors necessary to ensure the optimal location of warehouses and production.

Thus, these technologies help optimize logistics flows, increase enterprise productivity, improve customer service, and reduce costs. All of them are based on the collection, analysis, and use of information to make optimal management decisions in logistics.

Thus, we conclude that the organizational and economic mechanism of the logistics component of the financial and economic security system of business processes provides the necessary set of services with the maximum possible reduction of associated costs caused by the performance of logistics operations (Figure 2).

Let us talk about the security aspects of the financial support of logistics. They are determined by a set of measures and strategies to ensure the reliability and safety of financial resources invested in the enterprise's logistics operations. Such aspects are crucial for the sustainable functioning of logistics systems and the successful development of a business entity. In particular, security aspects include protecting financial resources from risks and threats associated with the destructive influence of external factors. This may impact natural factors and the risks of political and economic instability, technical failures, cyber threats, etc., which may lead to the loss or reduction of the company's financial assets. Therefore, ensuring resistance to such risks requires developing and implementing a risk management system.

In addition, the security aspects of financial support are related to the need to avoid financial transactions that may lead to financial losses or financial accounting inefficiencies. Such aspects include developing and implementing internal control and regulatory systems, audit of economic activities, control over access to financial resources, and other measures to prevent financial abuse.

On the other hand, the security aspects of financial support include the preservation of liquidity and financial stability of the enterprise. Therefore, optimizing liquidity management and ensuring the appropriate level of financial reserves help the business entity to ensure the stability of its financial flows for logistics operations. In a practical context, this is implemented by developing crisis management plans and diversifying financial resources.

In general, it is worth noting that the security aspects of logistics' financial support are crucial for ensuring the reliability and stability of the company's logistics systems and their successful development. Therefore, ensuring the security of financial resources requires a combination of technological solutions, internal policy, and strategic management. In practice, the most...
straightforward tool for forming security aspects of financial support is most often used - a local SWOT analysis of threats and opportunities of logistics systems. It allows identifying the strengths and weaknesses of the organization’s internal activities and analyzing the opportunities and threats that affect the external environment [38].

Accordingly, if we consider the financial support of logistics systems, it is suggested to develop enterprise strategies to increase the reliability of financial resources, reduce risks, and ensure the sustainability of economic activities in the logistics context. For this purpose, we have developed a specialized SWOT matrix, which determines the financial and logistical opportunities and threats of business entities based on security (Figure 3).

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>Security of logistics systems</td>
<td>Financial problems</td>
</tr>
<tr>
<td>Financial security</td>
<td>Lack of investment resources</td>
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<tr>
<td>Service logistics service</td>
<td>Failures in the functioning of logistics systems</td>
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<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>Opening of new supply chains</td>
<td>Instability of calculations</td>
</tr>
<tr>
<td>Improvement of the material and technical base</td>
<td>Regulatory constraints in supply chains</td>
</tr>
<tr>
<td>of logistics systems</td>
<td>Unforeseen changes in business processes</td>
</tr>
</tbody>
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Figure 3. SWOT-matrix of the financial and logistical potential of enterprises based on security principles
Source: developed by the author

The proposed matrix of SWOT analysis reflects important aspects of financial support and security of logistics at the enterprise. Among the strengths, there is the reliability of logistics systems and financial stability, which contributes to successful operations and customer service. However, weaknesses such as financial problems and lack of investment can threaten the efficiency of logistics operations. Opportunities such as the opening of new supply chains and improved infrastructure provide potential for growth and development. At the same time, threats that include settlement instability and regulatory restrictions require attention and flexibility in management to prevent possible risks and maintain the stability of logistics financing.

To determine the efficiency of logistics systems based on this matrix, it is needed to analyze the feasibility of financial costs. At the same time, for each of the cost elements, it is necessary to divide it into risk areas, which represent a zone of total losses, within which there is a threat to the effective functioning of logistics systems:

- area of absolute stability;
- area of normal stability;
- area of unstable state;
- area of critical condition;
- area of crisis.

In the future, to determine the safety indicator of the efficiency of logistics in certain of the specified areas, it is necessary to apply the table of correspondence of the values of the indicators (Table 1).

| Table 1: Assessment of safety indicators of feasibility of financial expenditures |
|-----------------------------------------------|-----------------------------------------------|
| Area of assessment                            | Indicator values                              | Risk level, %                                  |
| Absolute stability                            | I=0                                           | 0                                              |
| Normal resistance                             | I=0                                           | 0-25                                           |
| Unstable condition                            | I=0                                           | 26-50                                         |
| Critical condition                            | I=0                                           | 51-75                                        |
| State of crisis                               | I=0                                           | 76-100                                        |

Source: [5]

In general, the application of this method makes it possible to assess the practicality of implementing financial costs to improve the efficiency of logistics systems and evaluate the current state of security of the financial support of logistics. In particular, if in the process of SWOT analysis of the logistics system, the critical value of a specific parameter is revealed, then it is advisable to implement a comprehensive system improvement program to ensure its effectiveness by the defined safety parameters.

5 Conclusion

Thus, we conclude that security aspects represent a significant factor in ensuring enterprise logistics’ reliability and sustainable development. At the same time, the analysis of strengths, such as the security of logistics systems and financial stability, shows significant achievements in these areas, contributing to successful operations and ensuring a high-efficiency level of logistics systems. However, the presence of weaknesses, such as financial problems and lack of investment resources, can significantly affect the efficiency of logistics operations. Therefore, enterprises must solve these problems and look for ways to improve financial security. At the same time, one should consider the opportunities that open up, in particular, the opening of new supply chains and the improvement of infrastructure, thanks to which the potential for the sustainable development of the business entity and the improvement of its logistics system is formed.

The presence of threats related to the instability of settlements and regulatory restrictions in supply chains requires the management of logistics based on risk management. At the same time, developing strategies to overcome the identified threats can help the enterprise maintain the stability of the financial support of logistics. In general, adequate financial support for logistics is essential in ensuring a business entity's sustainable development. In turn, solving financial problems and using opportunities for growth can strengthen its competitive position in the market and allow achieving success in logistics.

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Leadership (ICESEL 2018), 217, 115-121.


Primary Paper Section: A

Secondary Paper Section: AE, AH