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DOMINANCE OF THE ECONOMIC SECURITY OF SERVICE AND LOGISTICS COMPANIES: RELIABILITY FOR CLIENTS AND OWN STABILITY

The purpose of this article is to monitor the influx of logistical security of business processes on stable functioning, economical efficiency and economical security of providers and suppliers of logistics services. It is emphasized that in the globalized economic space, with the high intensity of trade flows, risks and insignificance, logistics services have become a key factor in the economic security of wealthy market participants. The author's designation of logistics warehouse economic security of enterprise as a set of minds, mechanisms and indicators that ensure economically efficient, uninterrupted and resource-balanced functioning of logistics processes aimed at minimizing logistics costs, avoiding economic costs from logistics risks and trimming financial viral resistance acceptance in the minds of internal and external threats. In the context of agricultural enterprises, the threats that face participants in the agricultural market and which directly extend to the field of logistics have been systematized. They include purchasing, transport, warehouse and elevator, manufacturing and logistics, information and logistics, consumer goods and financial and logistics, which are characterized from the position of their I will contribute to the economic security of agricultural producers. It is emphasized that for export-oriented agricultural firms, which are characterized by high level of integration in global food

and commodity markets, logistics warehouses of their activities are strategically important for economic stability of the national economy and on the macro level. It is emphasized that a logistics company in service economy can be seen not only as a factor in ensuring the economic security of its clients, but also as an economical orientation of the subject market risk factors that need to be controlled to maximize the economic efficiency of market value creation processes. It is noted that to increase the efficiency of logistics processes it is advisable to use modern digital technologies. The functional purpose of the most common digital technologies was characterized from the standpoint of their impact on the economic security of logistics companies.

Keywords: *service economy, logistics service, agricultural enterprises, grain market, non-peat markets, threats, economical business performance, living value, logistics trap, digital logistics technologies.*

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ДОМІНАНТИ ЕКОНОМІЧНОЇ БЕЗПЕКИ СЕРВІСНО-ЛОГІСТИЧНОЇ КОМПАНІЇ: НАДІЙНІСТЬ ДЛЯ КЛІЄНТІВ ТА ВЛАСНА СТАБІЛЬНІСТЬ

Метою статті визначено дослідження впливу логістичного забезпечення бізнес-процесів на стабільне функціонування, економічну результативність і економічну безпеку надавачів і отримувачів логістичних послуг. Акцентовано, що в глобалізованому економічному просторі, з високою інтенсивністю товаропотоків, ризиками і невизначеністю логістичні послуги стали ключовим фактором економічної безпеки багатьох учасників ринку. Запропоновано авторське визначення логістичної складової економічної безпеки підприємства – як сукупність умов, механізмів та показників, що забезпечують економічно ефективне, безперебійне та ресурсно збалансоване функціонування логістичних процесів підприємства, спрямованих на мінімізацію логістичних витрат, запобігання економічним втратам від логістичних ризиків та підтримання фінансової і виробничої стійкості підприємства в умовах внутрішніх і зовнішніх загроз. На прикладі агропідприємств систематизовано загрози, з якими стикаються учасники аграрного ринку і які безпосередньо належать до сфери логістики, а саме: закупівельні, транспортні, складські та елеваторні, виробничо-логістичні, інформаційно-логістичні, збутові та фінансово-логістичні, які охарактеризовано з позицій їх впливу на економічну безпеку агровиробників. Підкреслено, що для експортно-орієнтованих агрофірм, які характеризуються високим рів-

нем інтеграції у глобальні продовольчі та товарні ринки, логістична складова їх діяльності є стратегічно важливою для економічної стабільності національної економіки і на макрорівні. Акцентовано на тому, що логістична компанія в сервісній економіці має розглядатися не тільки як фактор підтримання економічної безпеки своїх клієнтів, а також як економічно орієнтований суб'єкт ринку з ризиками власної діяльності, які потрібно контролювати для максимізації економічної ефективності процесів створення ринкової цінності. Ці процеси структуровано за їх місцем у логістичному ланцюзі та наведено цифрові інструменти з відповідним функціональним призначенням, які дають змогу підвищувати їх ефективність і позитивно впливати на рівень економічної безпеки логістичних компаній.

Ключові слова: *сервісна економіка, логістичний сервіс, агропідприємства, зерновий ринок, безпекові ризики, загрози, економічна результативність бізнесу, споживча цінність, логістичний ланцюг, цифрові технології логістики.*

Problem statement. One of the important trends in the development of modern markets is the formation of a service economy. This is reflected in a significant increase in the role of enterprises that provide services to manufacturing and trading companies. In the context of growing global competition, limited resources, and increasing demands for speed and quality of service, it is service enterprises that ensure the effective functioning of manufacturers, performing a wide range of functions – from financial support to consulting and logistics [1, 2]. Services complement or even replace purely production models of economic activity, giving them flexibility, versatility and sustainability. For manufacturers, this means that they can rely on external «service operators» (logistics providers) without investing in their own infrastructure. In these business models, logistics companies play an extremely important role for the sustainability and development of manufacturing or trading businesses, as they ensure the organization of material, information and financial flows, act as integrators of supply chains and guarantee the continuity of operations. By outsourcing logistics to professionals, manufacturers can focus more on their core business (improving production processes, improving product quality, implementing technological, product, marketing or other innovations that increase the consumer value of their market offerings). Logistics companies take on some of the risks associated with the movement of resources and goods, reduce capital expenditures, and increase manufacturers' adaptability to market turbulence. It can be argued that in doing so, they make a significant contribution to maintaining the economic security of the enterprises that use their services.

Analysis of recent research and publications. Many modern scientists are engaged in the study of the problems of logistical support of the activities of business entities whose business processes go beyond the boundaries of one manufacturer – after all, in the structure of service needs of manufacturers, logistics services are basic, without them the full-fledged work of the enterprise is impossible. Thus, D. Bowersox and D. Kloss emphasize that logistics has become the basis of inter-firm organizational interaction and a fundamental component of market infrastructure, since material flows cannot be separated from the processes of creating consumer value [3]. I. Kosichenko [4] argues that service enterprises provide manufacturers with additional competencies, integrated technologies and highly specialized solutions that are more economically feasible than the development of similar functions within the company. According to K. Christopher, logistics creates a competitive advantage for enterprises due to the speed of response, reliability and individualization of service [5], which is achieved through the use of the latest digital technologies, the possibilities and feasibility of using which in logistics processes are revealed in quite detail in the works of T. Kolodizev and G. Rudenko [6], Yu. Kravchyk, V. Margasova and E. Shevchenko [7], V. Bokovets, L. Davydiuk and T. Pilyavoz [8], I. Zrybneva [9], Yu. Popovsky [10] and many others. Scientists are unanimous in their conclusions that digital technologies significantly improve the manageability of logistics processes and positively affect the economic performance of businesses. This positively affects the overall results of economic activity of business entities, drawing attention to the issues of studying the role of logistics in maintaining the required level of their economic performance. On the other hand, the provision of logistics services also generates economic results. Its magnitude and stability of receipt are components of the economic sustainability of logistics firms, whose business processes in unstable markets and a dynamic business environment are influenced by a significant number of risks. The occurrence of a risk event reduces the economic efficiency of logistics services, which can disrupt the level of economic security of their providers, as indicated in their work by O. Vivchar and A. Shatarsky [11]. All this indicates the need for research into the impact of logistics support of business processes on the economic security of both participants in such interaction. In this context, there are not enough scientific publications, although individual issues of the impact of logistics on the economic security of enterprises were considered by such scientists as A. Bykova and I. Yefimenko [12], O. Sumets [13], P. Pererva and A. Cherep with co-authors [14] etc. In our opinion, it is important to see both sides of this process in their dynamic interaction. This determined the goals and objectives of this study.

The purpose of the article is to study the impact of logistics support of business processes on the stable functioning, economic efficiency and economic security of providers and recipients of logistics services. To achieve this goal, it is necessary to: a) consider the activities of logistics companies from the standpoint of their contribution to the efficiency of the economic activity of the enterprise; b) reveal the role of logistics companies in the formation of the economic security of the service economy; c) outline the directions and tools for improving the logistics support of business entities from the standpoint of the economic security of participants in inter-firm organizational interaction.

Presentation of the main research material. The service economy is developing as a result of the growing need of consumer enterprises for external services that allow them to reduce costs, increase adaptability and accelerate response to changes in the external environment. Among the large number of services that modern production requires – legal, financial, IT services, marketing, engineering – logistics services occupy a special place.

Logistics service is a system of operations and solutions aimed at meeting the needs of the consumer in terms of providing material, information and related flows [15]. Such services include transportation, freight forwarding, warehousing, packaging and preparation of products, inventory management, information support of supply chains, customs brokerage services, client transport management, outsourcing to connect logistics processes «on a turnkey basis». For an industrial manufacturer, these services are the basis for ensuring rhythm, since without them material resources would not arrive at the production lines at the right time, volume and quality – especially for multi-component production [16]. And logistics companies, by ensuring critical processes of movement of goods and information, create conditions under which manufacturers can focus on their core activities and minimize unproductive costs. In this chain of interdependence of the goals and needs of all participants in market interaction, the main motivator that determines the expediency of cooperation [17] is economic efficiency (Fig. 1).

As can be seen from the above scheme, logistics companies act as intermediaries in value chains, providing a wide range of services necessary for producers and consumers, integrating material and information flows, reducing costs, managing risks – all this with an orientation towards optimizing the economic efficiency of the processes of goods movement for all its participants. From the point of view of economic security, they play the role of «stabilizers» – ensuring the constancy, predictability and control of the movement of goods

from the supplier to the consumer under the financial conditions of the relevant transactions specified in the agreements. This predictability is of particular importance in international supplies, with large volumes of transportation, during seasonal fluctuations or instability of the business environment.

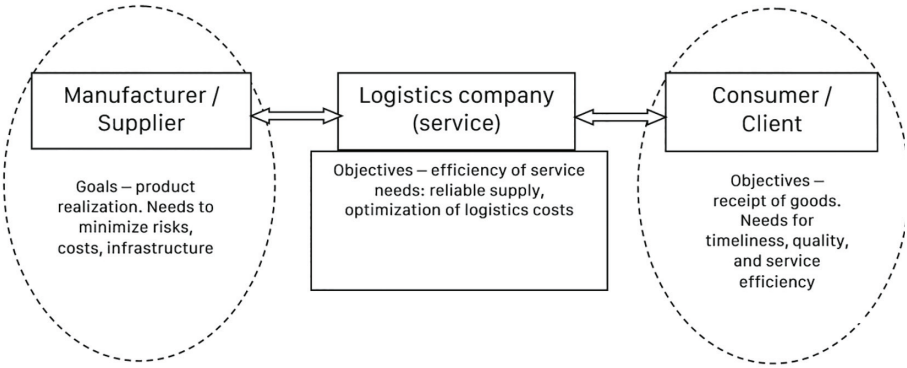

Fig. 1. Relationship between goals and needs of logistics participants
Source: own development

In the previous work, we proposed to define the definition of «economic security of an enterprise» from the standpoint of a dynamic approach – as «the ability of an enterprise to remain an economic system that can withstand market challenges and ensure its self-reproduction in a mode set by the processes of creating consumer values, evolving in response to external changes and ensuring that capital holders (business owners) achieve planned economic results of activity in a selected market segment with a certain institutional content» [17]. From the point of view of the tasks of this study, the key theses of the definition we have given are the statement that economic security should be considered in the dynamics of the enterprise's functioning and in the context of economic performance (achieving planned economic results). The better and more stable the dynamics of economic results are in retrospect of the studied period, the higher the level of economic security of the enterprise can be called. And effective logistics activities contribute to this.

Therefore, we propose to consider the logistical component of the economic security of an enterprise as a set of conditions, mechanisms and indicators that ensure economically efficient, uninterrupted and resource-balanced function-

ing of the enterprise's logistics processes, aimed at minimizing logistics costs, preventing economic losses from logistics risks and maintaining the financial and production stability of the enterprise in conditions of internal and external threats.

From this definition it follows that important conditions for the effective functioning of the enterprise's logistics processes are the most complete identification of logistics risks – to prevent them and minimize losses in the event of their occurrence. We consider it necessary to illustrate the threats from their occurrence on a specific example – for agricultural enterprises that suffered the most from their occurrence during a full-scale invasion, but gradually managed to adapt to new risks.

The activities of agricultural enterprises are characterized by high dependence on external conditions, which causes a wide range of threats that can negatively affect their economic security. These threats concern not only production, but also sales of products, especially for export-oriented agricultural companies specializing in grain production and operating in grain markets [18-20]. In view of this, it is important to group logistics threats, which allows identifying key security risks, establishing their impact on production and economic activities and developing effective measures to minimize them. We believe that the greatest impact on the economic security of these enterprises is exerted by the following threats related to logistics:

A. Procurement logistics threats. These are threats associated with violations in the processes of providing the agricultural company with material and technical resources (seeds, plant protection products, fertilizers, fuel, etc.). The main risks are delays in delivery, dependence on a limited number of suppliers, fluctuations in purchase prices and the risk of purchasing raw materials of inadequate quality. Their danger lies in possible violations of agro-technological deadlines, reduced yields and increased production costs, which directly affects the financial stability of the agricultural company.

B. Transport logistics threats. The transport logistics of an agricultural company covers both internal movements of equipment and raw materials and external transportation of products and resources. Typical threats of this group are lack of transport during peak periods, equipment malfunctions, unsatisfactory condition of road infrastructure, as well as failures in international logistics. These threats create risks of delays in field work, disruption of product delivery to consumers, transport downtime and increased transportation costs.

C. Warehouse and elevator threats. The third group covers risks associated with product storage and the functioning of warehouse and elevator infrastructure. Typical threats include a lack of storage capacity during the period of mass harvest, improper storage conditions, technological failures in equipment operation and insufficient throughput capacity of elevators. The consequences of such violations can be direct product losses, deterioration of its quality, a decrease in sales prices and an increase in logistics costs.

D. Production and logistics threats. This group focuses on the internal processes of material resource movement within the production cycle of an agricultural company. Of particular danger are fuel shortages in the season, errors in resource planning, weather factors that complicate the access of equipment to the fields, as well as breakdowns of agricultural equipment during critical periods. The impact of such threats is manifested in delays in production operations, disruption of optimal deadlines for technological processes and, accordingly, a decrease in productivity and yield.

E. Information and logistics threats. They arise due to imperfect information systems, errors in accounting and management of logistics flows. Failure of ERP, WMS and GPS systems, inaccuracy in warehouse accounting, disruptions in the operation of equipment monitoring systems or cybersecurity threats can lead to ineffective route planning, loss of resources, inaccuracy of management decisions and even blocking of logistics processes.

G. Sales threats. They arise at the stage of product sales and are associated with the delivery of goods to consumers, changes in market conditions and the organization of sales channels. Delays in the delivery of finished products, limited available sales channels, significant price fluctuations in the agricultural market can lead to penalties, loss of customers, a decrease in the company's income and an increase in costs associated with product storage.

F. Financial and economic logistics threats. This group includes risks associated with the economic parameters of logistics – an increase in transportation tariffs, currency fluctuations, a lack of working capital for the purchase of resources. Such threats increase the cost of products, complicate financial planning and can create obstacles to the implementation of seasonal logistics operations.

Just a simple list of the threats listed shows how much they permeate the entire activity of an agricultural company and how significant their impact on

economic security can be if they occur. This is especially true for export-oriented agricultural companies. They are characterized by a high level of integration into global food and commodity markets, which makes their logistics activities strategically important for economic stability. In this context, the logistical component of economic security becomes particularly relevant for several reasons.

1. High dependence on external markets. Large agricultural companies that export grain directly depend on delivery times and the reliability of logistics channels. Any disruption in the supply chain (delayed transportation, poor condition of port infrastructure, logistical failures in importing countries) can lead to fines, loss of contracts and a decrease in competitiveness.

2. Significant material intensity and volume of products. Export agricultural companies work with large volumes of grain crops. This creates increased requirements for storage, transportation and processing of products, and therefore, logistical risks become a significant economic factor. For example, downtime of elevators or a delay in transport for several days can cause financial losses, deterioration of grain quality and a decrease in its export price. Failures in logistics lead to increased transportation and storage costs, loss of income from untimely sales of products, reduced profitability and liquidity.

3. Increased competition in the global grain market. The modern grain market is characterized by high competition, dynamic price fluctuations and requirements for timely deliveries. Export agro-firms cannot afford losses due to logistical delays, as this directly affects their market rating and reliability with partners. Counterparties abroad expect stability, timely deliveries and proper quality. Without reliable logistics, this cannot be guaranteed – otherwise the company risks losing the market, reputation or contract.

4. Dependence on external factors and force majeure. Large export-oriented agro-firms face numerous external threats: political instability, regulatory changes, port blockades, road restrictions, weather anomalies. And large volumes of activity mean high logistical vulnerability – when it comes to tens of millions of tons of grain, any logistical disruption can lead to significant losses. And in the 2023/2024 marketing year, Ukraine exported ≈50.8 million tons of grain and leguminous crops. Accordingly, in the 2022/23 marketing year, grain exports amounted to 49.2 million tons, and in the 2021/22 marketing year – 48.4 million tons [21]. In the 2025/2026 marketing year, despite the difficult situation, the country still continues to export large quantities – according to data as of mid-November 2025, Ukraine has already shipped ≈10.4 million tons of grain and leguminous crops [22]. Such a volume of ex-

ports creates a colossal burden on the logistics system – from the purchase of resources to the storage of stock structuring, transportation, storage, transshipment, export routes, etc. Only minor logistical failures can cause significant economic losses, product damage, fines, and non-fulfilment of contracts. Therefore, for export-oriented agricultural companies, control systems, planning, risk management, backup routes, insurance, etc. are critically important – everything that allows developing mechanisms for adaptation, reducing risks and increasing business sustainability. For such enterprises, logistics is not just one of the functions, but a key strategic resource and factor of economic security.

For enterprises operating in global grain markets, logistics companies are critically important institutions capable of providing:
- alternative routes for the movement of goods;
- rapid adaptation to changing geopolitical conditions;
- optimization of international transportation costs;
- compliance with international security standards.

In conditions of global shocks (trade wars, port blockades, changes in customs regimes), it is logistics operators who become the main barrier between the enterprise and external threats. In general, in the logistics services market, where the main value for the client is speed and reliability, logistics operators provide critical efficiency parameters:
- reduce the turnover time of goods;
- guarantee transparency of supplies;
- increase the predictability of business processes;
- mitigate the consequences of crisis situations;
- increase the level of trust between market participants.

A reliable logistics provider increases the competitiveness of customers: it ensures reliable supplies of raw materials, timely delivery of products, quality control, minimizes losses and delays – all this reduces business risks. Logistics companies help enterprises reduce costs for logistics, warehousing, transportation – often through specialization, scale, route optimization, use of IT and services. This has a positive impact on the financial stability and economic security of customers.

At the same time, logistics companies themselves, as service enterprises, have their own economic security: they create infrastructure (warehouses, fleet, IT), implement quality standards, service models – and become a reliable partner for manufacturers. Their stable operation also reduces systemic risks through-

out the chain. And a significant role in this is played by digital technologies, which radically change the structure of logistics services. According to the conclusions of S. Brynjolfsson and E. McAfee, digitalization creates the effects of "network synergy", when the quality of service increases with an increase in the amount of data and interactions [23].

Practical experience of logistics companies shows that the use of modern digital technologies creates opportunities for reducing the delivery cycle time, reducing costs, increasing the accuracy of inventory management and optimizing the level of service for end consumers [24]. This creates conditions for obtaining a certain type of economic effect, and therefore improves the economic results of the logistics company's activities. That is, it directly affects the level of its economic security, which we have shown in Table 1.

Table 1. Digital Tools for Maintaining the Economic Security of a Logistics Company in Customer Operations

Digital Tool and Functional Purpose	Key Tasks	Economic Effect	Impact on Economic Security
TMS – Transportation Management System – Transport Operations Management	Route planning and optimization Real-time transportation monitoring Automated calculation of logistics costs Fleet management	Reduction of fuel and routing costs (by 10–25%) Minimization of delays and penalties	Increased reliability and timeliness of deliveries strengthens customer loyalty and builds reputational capital Improved operational stability through accurate stock control
WMS – Warehouse Management System – Warehouse Logistics Management	Tracking cargo movement Inventory management Automated receiving/shipping Support for RFID and barcoding	Reduction of warehouse losses (by 15–30%) Higher inventory accuracy Shorter cargo-handling time	
ERP – Enterprise Resource Planning – Integrated Enterprise Resource Management	Financial accounting Procurement, HR, and customer management Cost planning and budgeting Integration with TMS/WMS	Improved cost transparency Control of logistics profitability	Reduction of financial risks
IoT Sensors and Trackers – Cargo and Transport Condition Monitoring	GPS positioning Monitoring temperature, humidity, shock impacts Container door control Alerts on deviations	Reduced losses due to spoilage or theft	Greater supply chain transparency and enhanced insurance/security levels

End of the table 1

Digital Tool and Functional Purpose	Key Tasks	Economic Effect	Impact on Economic Security
BI Systems (Business Intelligence) – Analytics and Forecasting	Big data processing Forecasting demand, congestion, and risks Scenario modeling Building KPI monitoring dashboards	Optimized operational planning Reduced operational costs	Prevention of logistics disruptions
SCM Platforms (Supply Chain Management) – End-to-End Supply Chain Management	Coordination of suppliers, warehouses, and carriers Order synchronization Contract and SLA management	Minimization of the bullwhip effect	Reduced strategic risks due to stabilized supply continuity
External Risk Monitoring Systems (OSINT Platforms) – Situational Awareness	Monitoring political, military, and economic risks Analysis of transport corridors Alerts on force-majeure events	Lower likelihood of critical disruptions Ability to quickly reroute shipments	Increased strategic resilience of the enterprise
Cybersecurity Systems (SIEM, SOAR) – Data and IT Infrastructure Protection	Monitoring cyberattacks Protection of commercial data Automated incident response	Prevention of data leaks	Reduction of reputational and financial risks

Source: formed by the authors based on the characteristics of digital tools [6-10; 24]

Summarizing the impact of the functionality of digital technologies on the activities of enterprises from the standpoint of economic security, we can conclude that the digitalization of logistics provides:

- reduction of losses and theft;
- increase of accuracy and timeliness of delivery;
- minimization of downtime;
- reduction of costs for logistics operations;
- real-time risk control;
- protection of critical information infrastructure.

This makes logistics companies not only service, but also technological centers of economic security of enterprises using their services. At the same time, logistics companies perform security functions both at the micro level (for customers) and at the macro level (for markets and the economic system). Their impact is manifested in the following areas:

1. Financial security of customers – minimizing costs and losses, ensuring stability of supplies.

2. Operational security – guaranteeing the continuity of production cycles.

3. Information security – data protection, flow control (important for all stakeholders).

4. Foreign economic security – adaptation to global risks.

5. Security of maintaining competitive advantages through innovation – digitalization, implementation of new logistics service models.

Thus, logistics companies can be called system-forming elements of the service economy and key carriers of economic security at all levels of economic process management. They play the role of an "infrastructural core", ensuring: physical movement of goods between market entities; coordination of material, information and financial flows; integration of producers, consumers, warehouses, transport operators and customs services; support of critical infrastructure (warehouses, hubs, transport corridors). Thus, they form the basis of sustainability, flexibility and competitiveness of enterprises that act as producers of material goods, reduce the risks of their market transactions, ensure uninterrupted operation and create conditions for long-term economic development. At the same time, the specificity of the work of specialized service enterprises is to ensure mutual benefit for all participants in the value chain. From the perspective of security-oriented management, this means that the organization of logistics companies' activities should have a positive impact on both the economic security of their clients and ensure the efficiency of logistics processes as the basis of their own business. And this efficiency will allow maintaining not only the stability of supply chains, but also the appropriate level of economic security of logistics services.

Conclusions. The conducted research provides grounds for such conclusions. Logistics companies occupy a strategically important place in the structure of the national economy, as they form the basis of service chains, on which other enterprises – trade, agricultural, industrial, forwarding, insurance and others. In a globalized economic space, with high intensity of commodity flows, risks and uncertainty, logistics services have become not just an auxiliary function, but a key factor in the economic security of both the enterprises themselves and all market participants. The author's definition of the logistics component of the economic security of an enterprise is proposed as a set of conditions, mechanisms and indicators that ensure economically efficient, uninterrupted and resource-balanced functioning of the enterprise's logistics processes, aimed at minimizing logistics costs, preventing economic losses from logistics

risks and maintaining the financial and production stability of the enterprise in conditions of internal and external threats.

In the work, using the example of agricultural enterprises, the threats faced by participants in the agricultural market and which are directly related to the sphere of logistics are systematized. These include procurement, transport, warehouse and elevator, production and logistics, information and logistics, sales and financial and logistics, which are characterized from the standpoint of their impact on the economic security of agricultural producers. It is emphasized that for export-oriented agricultural companies, which are characterized by a high level of integration into global food and commodity markets, the logistics component of their activities is strategically important for the economic stability of the national economy and at the macro level. At the same time, it is emphasized that a logistics company in a service economy should be considered not only as a factor ensuring the economic security of its clients, but also as an economically oriented market entity with risks of its own activities, which must be controlled to maximize the economic efficiency of the processes of creating market value. These processes are presented in a structured manner according to their place in the logistics chain and digital tools with the appropriate functional purpose are presented, which allow to increase their efficiency and positively influence the level of economic security of logistics companies. Further research is advisable to continue in the direction of forming a system for assessing the level of ability of a logistics company to maintain the required level of logistical support for the economic security of customers, while maintaining its own economic stability and security of functioning and development.

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