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## SUPPLY CHAIN RISKS OF TRADE COMPANIES DURING A LARGE-SCALE CRISIS

## РИЗИКИ ЛАНЦЮГІВ ПОСТАЧАННЯ ПІДПРИЄМСТВ ТОРГІВЛІ ЗА МАСШТАБНОЇ КРИЗИ

**Introduction.** The effectiveness of modern management of business structures directly depends on the analysis of potential risks and assessment of the probability of their occurrence. Risk management tools are of particular importance in optimizing the functioning of supply chains of trade enterprises.

**Problem.** Russia's full-scale military invasion of Ukraine significantly changes approaches to supply chains organization, requires their promptly reformatting. This necessitates an analysis of the key risks associated with the operation of martial law and the consequences of their impact on supply chains in trade.

**The aim** of the article is to determine the nature of the risks of functioning of trading companies' supply chains under martial law and to substantiate the practical tools of logistics management aimed at minimizing losses as a result of their occurrence.

**Methods.** The methodological apparatus of the research consists of general scientific methods (system analysis, determination of direct

**Вступ.** Ефективність сучасного менеджменту підприємницьких структур напряму залежить від аналізу можливих ризиків та оцінки ймовірності їх настання. Особливого значення інструменти управління ризиками набувають при оптимізації функціонування ланцюгів постачання підприємств торгівлі.

**Проблема.** Російське повномасштабне військове вторгнення в Україну значною мірою змінює підходи до організації ланцюгів постачання, вимагає оперативного їх переформатування. Це потребує аналізу ключових ризиків, пов'язаних з дією воєнного стану, та наслідків їх впливу на ланцюги постачання в торгівлі.

**Метою** статті є визначення характеру ризиків функціонування ланцюгів постачання торговельних компаній в умовах воєнного стану та обґрунтування практичних інструментів логістичного менеджменту, спрямованих на мінімізацію втрат у результаті їх настання.

**Методи.** Методологічний апарат дослідження становлять загальнонаукові методи (системного аналізу, визначення прямих та

and reverse relations between economic phenomena and processes, comparative analysis) and special economic methods (statistical-analytical, qualitative and quantitative analysis, situational analysis).

**Results.** It was determined that the logistics industry was one of the first to feel the consequences of military actions and the urgent need to rebuild the established mechanisms of logistics services of trade flows. The main groups of risks that affect the operation of trade companies supply chains in war conditions have been studied, the main forms of their manifestation and consequences have been assessed.

**Conclusions.** Considering the acute impact of the military invasion of Ukraine on the functioning of trading companies' supply chains, the necessity of flexible and diversified transformation of their logistics strategies has been determined. The importance of risk monitoring and the development of alternative action plans for various scenarios has been proven.

**Keywords:** supply chain of trade company, martial law risks, logistics route change, logistics management, supply chain risks.

**JEL Classification:** D81; L81

зворотних зв'язків між економічними явищами та процесами, порівняльного аналізу) та спеціальні економічні методи (статистично-аналітичний, якісного та кількісного аналізу, ситуаційного аналізу).

**Результати дослідження.** Логістична галузь однією з перших відчула наслідки військових дій і нагальну потребу в перебудові ustalених механізмів логістичного обслуговування торговельних потоків. Досліджено основні групи ризиків, які в умовах війни впливають на функціонування ланцюгів постачання підприємств торгівлі, обґрунтовано основні форми їх прояву та наслідки.

**Висновки.** Зважаючи на гострий вплив військового вторгнення в Україну на функціонування ланцюгів постачання підприємств торгівлі, визначено необхідність гнучкої та диверсифікованої трансформації їх логістичних стратегій. Доведено важливість моніторингу ризиків та розроблення альтернативних планів дій для різних сценаріїв розвитку подій.

**Ключові слова:** ланцюг постачання торговельного підприємства, ризики воєнного стану, зміна логістичного маршруту, логістичний менеджмент, ризики ланцюгів постачання.

**Introduction.** The analysis of risks and assessment of the probability of their occurrence is the traditional, familiar function of the management of business structures. The scientific achievements that offer the whole arsenal of approaches, methods and models for practical use in the risk management strengthen this direction of managerial activity constantly.

The functioning of supply chains has also demonstrated the need to introduce the factors of unpredictability, instability and uncertainty in time into their management model for a long time, which are dictated by the changing and risky environment of the global economic system.

Therefore, the course chosen by logistics management to optimize supply chains and their processes with an emphasis on timely delivery, minimizing stocks and costs requires the more detailed study of external risks, variable modeling of situations when they occur.

**Problem.** As the Russian full-scale military invasion of Ukraine demonstrated, the vast majority of management systems did not go beyond their knowledge and demonstrated either the absence of a plan of action in the conditions of martial law as such, or an unpreparedness for its immediate implementation. Since trading companies are at the forefront of meeting the needs of the population in finished products, it is their supply chains that needed the most rapid reformatting in view of the huge number of risks of uninterrupted, reliable, efficient functioning.

**Analysis of recent research and publications.** The study of the risks of supply chains of trading companies is the direction of scientific interests

of a number of domestic and foreign scientists, including N. Trushkina, K. Kitrish, D. Lambert, V. Vitlinsky, V. Skitsko, I. Palamarchuk, O. Sushkova [1-5] and others.

In particular, these authors explore epy current trends in supply chain management of trade enterprises in the view of digitalization and globalization of economic relations; approaches to the formation of risk management systems in supply chains, etc.

However, they mostly reveal the general principles of risk management in trade, among which much more attention is paid to the factors of the economic, social and technological environment. The practical experience of risk management in this area is studied by such figures of the managerial link of business structures as: A. Alekseev, S. Mukoid, L. Komarova, Y. Poenko, M. Bugayev, A. Golimbovsky, S. Yeremeyev, A. Zhuk, P. Savchuk [6-10]. But such materials do not reflect the complex nature of risk management systems in the supply chains of trade enterprises in an unstable political environment. There are practically no works devoted to the impact of military conflict risks on the functioning of supply chains in trade. Approaches to the formation and functioning of risk management systems for military operations of trade enterprises are scientifically unfounded.

**The aim** of the article is to determine the nature of the risks of supply chain functioning of trade enterprises under martial law and to substantiate practical tools of logistics management aimed at minimizing losses as the result of their occurrence.

**Methods.** The theoretical and methodological basis for writing the article was formed by the modern scientific concepts and theoretical developments on the effective organization of supply chains under the influence of various risks, analytical studies of the Oxford Economics Global Forecasting Center, the United Nations, GMK consulting organization, the Association of Retailers of Ukraine, statistical data of the World Bank, the State Statistics Service of Ukraine. The methodological apparatus of the study consists of: general scientific methods (system analysis, determination of direct and reverse links between economic phenomena and processes (in particular, when analyzing the impact of risks on changes in supply chains), comparative analysis (to study risk groups, forms of their manifestation and consequences for supply chains).

To achieve this goal, special economic methods were also used, which made it possible to conduct the comprehensive analysis of the problem of supply chain risks in war conditions: statistical and analytical, qualitative and quantitative analysis, situational analysis for determining the main guidelines for optimizing supply chains, taking into consideration the complex impact of risks caused by war.

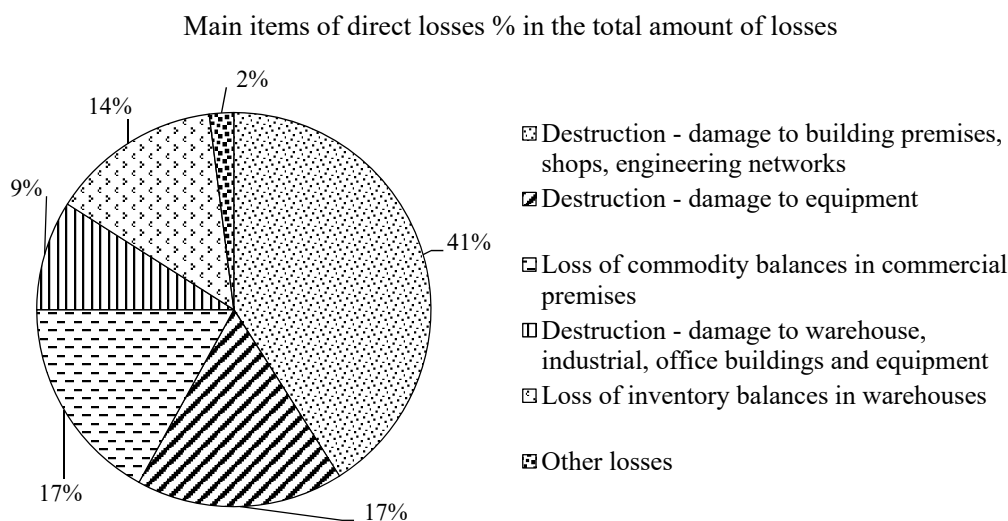
**Results.** The war in Ukraine canceled most of the usual, optimized mechanisms of management in all sectors of the economy. The logistics industry as the separate sector of the business environment, aimed at ensuring the functioning of other spheres of society, was one of the first to feel the

consequences of hostilities and the urgent need to restructure the established processes, methods and mechanisms of logistics services for material flows. Disruptions in the functioning of logistics supply chains were felt by every consumer, whose demand for goods and services is not fully satisfied, with the significant delay and without the guarantees.

*The set of martial law risks* that directly affect the parameters of the functioning of supply chains of trade enterprises is quite wide.

*Infrastructure risks* – destruction, damage or inaccessibility as the result of hostilities or occupation of territories of logistics and trade infrastructure facilities – transport, warehouse, trade, communication. Thus, only in the Kyiv region, according to the CEO of *Ekol Logistics Ukraine* and the director of *Logistics Plus*, about 400,000 m<sup>2</sup> of warehouses were destroyed or damaged. This is 20 % of all warehouse area in Kyiv and the region [8].

Logistics providers and trading companies suffer huge losses of investments in these infrastructure facilities. For example, the destruction of a warehouse complex with an area of 100 thousand m<sup>2</sup>, which belongs to one of the *Dragon Capital* companies, caused losses of EUR 45.8 million, and for the *Good Wine* company, whose goods were stored in this warehouse, the losses have already been estimated at EUR 15 million [8]. In generalized form, the structure of the main losses of retail chains during the first two months of the Russian full-scale military invasion of Ukraine is presented in *Figure 1*.



**Figure 1. Structure of direct losses of trade networks as a result of hostilities as of 23.04.2022**

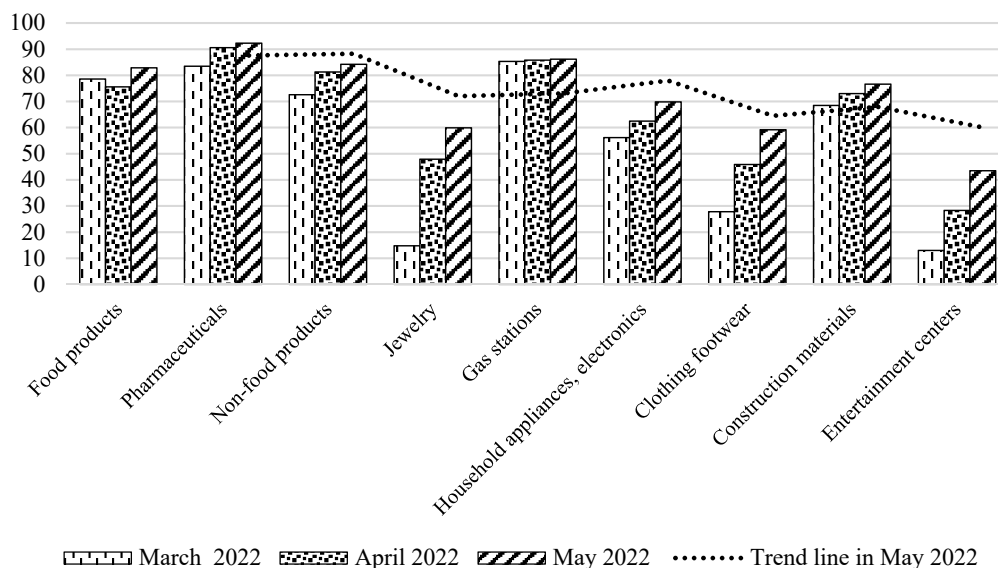
*Source:* compiled by the authors based on [11].

Thus, the largest share in the structure of losses falls on losses caused by damage to retail areas, equipment, as well as loss of inventory in stores and warehouses [11]. By product groups, food chains suffered the most – 60 % of losses in the industry, fashion retailers (clothing and footwear) – 11 %, sellers of electronics and household appliances – 7 % [9].

Trade participants will continue to experience the increase of costs associated with infrastructure risks: due to the forced change of routes and delivery methods, loss of sales due to the inability to deliver products to points of sale, incomplete product range due to supply disruptions. These circumstances require the rapid change in the configuration of supply chains and processes in them, which usually means higher logistics costs.

The destruction or blocking of access to warehouses and retail facilities requires additional logistics operations to evacuate and relocate inventory. Trade companies also experienced negative consequences due to disruptions and uneven supply, shortages of goods and reduction of the range of products offered to consumers due to the destruction or blocking of warehouses and production facilities of suppliers.

In order to reduce the level of concentration of inventory in the warehouse areas of distribution centers or in cases of their destruction or inaccessibility, trade enterprises began to make wider use of the practice of direct deliveries from manufacturers to stores, as well as to create the system of hub stores where suppliers delivered their products. During March–May 2022, there was a fairly positive dynamics of the retail sector recovery in the country (Figure 2).



**Figure 2. Dynamics of retail sector recovery in Ukraine in March-May 2022 (% of operating facilities)**

Source: compiled by the authors based on [7; 12].

Thus, the largest percentage of operating facilities currently characterizes the sectors of food and non-food products, pharmaceuticals and gas stations. The trend line presented in Pic. 2 trend line in May 2022 allows us to highlight those sectors that managed to significantly resume their work within 3 months. Among them are jewelry, clothing and footwear, and entertainment centers [7]. At the same time, 5 % of the total number of retail facilities of Ukrainian food chains remained in the occupied territories [12].

Due to the damage or inaccessibility of certain transport infrastructure facilities, the emergence of roadblocks, the transport component of supply chains has also undergone significant changes: the length of product delivery routes and delivery time have increased, that is why the speed of travel has decreased. Thus, the logistics director of the Volyn poultry farm (TM "Epikur" and "Cheboturochka") noted that the route to Kyiv increased by 43 %, and to Kharkiv and Dnipro – by 24 % and 9 % respectively [6].

*Contractual risks* associated with the inability to fulfill contractual obligations between supply chain participants. For trading companies, these are most often suppliers and logistics service providers. Therefore, in the conditions of war, the flexibility of the supply chain is manifested in the ability to quickly change the composition of participants and partners.

Trade enterprises were forced to revise the contractual terms of relations with their suppliers. First of all, it concerned the leveling of strict requirements to comply with the established delivery schedules and establishing priority under the Pick by Line (PBL) delivery schemes, shortening the terms of procurement plans often to a weekly or even daily level, moving away from fixed volumes and assortment of purchases, introducing flexible terms of settlements with suppliers of goods and services. Since the beginning of the war in Ukraine, most suppliers of trade enterprises have switched to advance payments and pickup.

*Economic and financial risks* are external factors affecting the level of costs and added value, as well as the ability to manage financial flows in the supply chains of trade enterprises – financial, settlement and foreign exchange transactions. General economic risks are manifested in the supply chains of trade enterprises through:

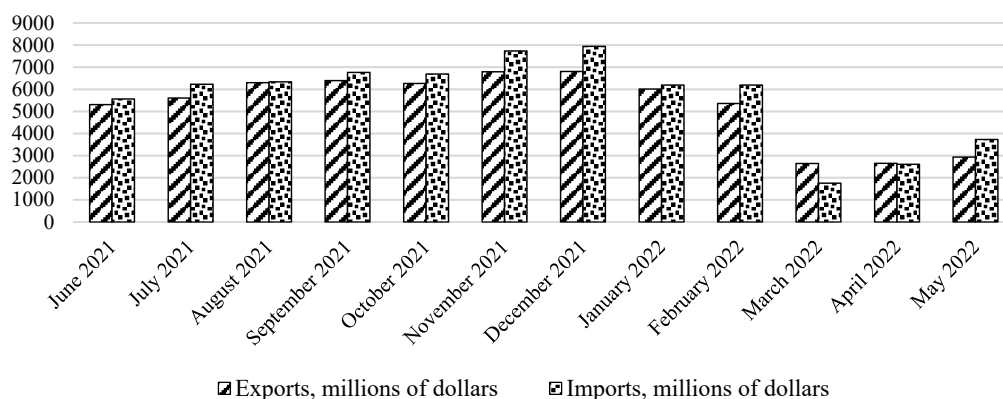
- reduction in demand due to a decrease in the purchasing power of the population; reduction in the supply of goods due to a reduction in GDP;
- restricted access to credit resources for supply chain financing;
- rising energy prices and restricted access to them;
- depreciation of the national currency and a number of others.

Thus, the sharp rise in fuel prices immediately affected the cost of commercial freight transportation, which almost doubled by the end of March 2022, which also affected food prices, which increased by an average of 4 % [13]. In particular, the increase in tariffs for rail transportation is significant. Thus, railway tariffs for the transportation of mineral fertilizers and chemical cargoes increased by 41.7 %, grain cargoes – by 15 % compared to the first quarter of 2021. In general, tariffs for freight transportation by rail increased by 25.4 % in the first three months of 2022 [14].

Significant consequences for trade operations are caused by financial risks, which are manifested primarily through restrictions on currency conversion, which makes it impossible to pay for imports, setting limits on cash and non-cash payments, the transition to prepayment in working with suppliers of products and logistics services. It is also worth noting significant

difficulties in the work of collection logistics. Risks of this group also cause changes in the composition of supply chain participants, especially suppliers, reduce the volume of trade flows and reduce the level of profitability of trade in general.

The impact of this group of risks can also be traced in the analysis of the dynamics of foreign trade operations, which has undergone significant changes under martial law (*Figure 3*).



**Figure 3. Dynamics of export-import of goods of Ukraine in June 2021 – May 2022, million US dollars**

Source: compiled by the authors based on [15].

The results of the analysis of trends presented in *Figure 3*, indicate the significant reduction in the volume of export-import operations in March–May 2022 compared to the same period of the previous year [15]. In particular, the reduction in imports leads to changes in the structure of the range of supply and sales, the need to replace certain components and finished goods with domestic analogues. Also, the main obstacle to making payments for imports were, firstly, restrictions on the nomenclature of imports (establishing a list of critical imports) and, secondly, currency conversion. In particular, during the war, imports of clothing and footwear that do not belong to critical imports decreased by almost 60 % [10]. Moreover, foreign suppliers, given the high level of risks, also began to work mainly on the prepayment basis. Therefore, the reduction of imports due to the termination of trade relations with Russia and Belarus, blocking of a number of transport routes from other countries became the main prerequisites for replacing a significant part of foreign suppliers with local ones.

Failures in the collection logistics also forced trade enterprises to give preference to non-cash payments with consumers. Moreover, stores of some retail chains, such as Fozzy Group, Eva, provided consumers with the opportunity to withdraw cash at the cash desk, which turned out to be a very convenient service for the population, given the problems with cash withdrawals from ATMs, and also allowed companies to reduce the amount of cash and be less dependent on its cash collection.

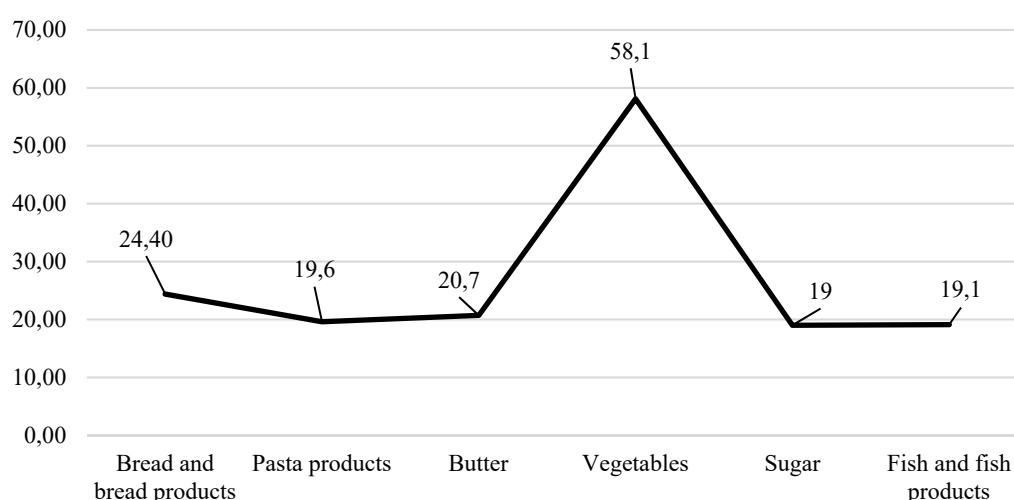
*Social risks* that involve changes in the characteristics of demand in the country during the war. First of all, we are talking about the rapid change of priorities in the structure of consumption, which are absolutely shifting towards essential goods. Accordingly, trade enterprises should revise the structure of the trade range of products, as well as approaches to the formation of stocks. Social risks are also associated with meeting demand with goods of proper quality, which often poses the threat due to the inability to ensure proper storage conditions. The conditions of martial law also make the participants of the supply chains of trading companies socially vulnerable in the context of their inability to maintain a socially oriented level of prices for goods and services.

In addition to the significant decline in consumer demand in Ukraine since the beginning of the Russian-Ukrainian war, which resulted from the mass migration of Ukrainians and the loss of income, trade enterprises note significant changes in the structure of demand. They are typical for all sectors, but have their own characteristics, taking into consideration the specifics of each of them. Thus, as noted by the Director of Logistics of the Milk Alliance Holding, baby food and long-term storage products have become popular, while niche products. In general, market participants indicate a tendency to simplify the trade assortment. Suppliers and manufacturers have also largely revised their product mix matrices in favor of goods with shorter production cycles. Moreover, especially at the beginning of Russia's military invasion of Ukraine, the assortment of trade enterprises was often determined more by the available commodity resources of producers rather than the needs of the end consumers and products with a short shelf life have experienced a decrease in demand [6]. In general, market participants indicate the tendency to simplify the trade assortment. Suppliers and manufacturers have also largely revised their product mix matrices in favor of goods with shorter production cycles. Moreover, especially at the beginning of Russia's military invasion of Ukraine, the assortment of trade enterprises was often determined more by the available commodity resources of producers rather than the needs of the end consumer.

Most trade enterprises, seeking to meet consumer demand for certain products, with the supply of which there were difficulties, began to pay special attention to the search for analogues of these products from alternative sources of supply. Thus, in the retail network "Varus", according to the director of logistics, the launch of an automatic ordering system with certain restrictions and changes was announced, algorithms are being developed and implemented: search for analogues and substitution of goods to meet the needs of customers in certain groups of goods; formation of orders for the movement of goods between the DC according to the format of the vehicle [6].

The hostilities also affected the retailer's logistics – transportation prices almost doubled, which, together with other factors, affected the cost of products for the end consumer, which, in turn, also significantly affects changes in demand for various categories of products (*Figure 4*).





**Figure 4. Changes in consumer prices for selected products in Ukraine in January–June 2022 compared to January–June 2021, %**

Source: compiled by the authors based on [16].

Figure 4 shows only those groups of goods, the percentage of change in consumer prices for which exceeds 19–20 %, as, in our opinion, this makes it possible to analyze the main reasons for their rise in price. Among them, it is worth highlighting the reduction in imports (mainly related to fish and vegetables), the lack of supply from the occupied southern territories (vegetables), and supply chain disruptions due to infrastructure risks. Instead, changes in consumer prices in the analyzed period in the clothing and footwear segment amounted to 5.5 % [16].

*Operational risks* are the probable occurrence of events and situations that will lead to the destruction of the established processes in the supply chains of the trade enterprise, will make it impossible to effectively perform logistics operations for transportation, warehousing, procurement and distribution.

During the military operations, operational risks had the greatest impact on the organization of cargo transportation. In particular, due to the emergence of roadblocks, blocking of certain sections of transport routes, the introduction of curfews and limited access to the Internet in certain places, there was a need for constant reconstruction of routes, the use of maps, the search for hitchhiking and smaller vehicles, the organization of sites for consolidation of cargo and the implementation of cross-docking delivery schemes.

The hostilities also affected the retailer’s operational warehouse logistics. Thus, the priority of shipments has changed (in particular, in relation to goods for humanitarian headquarters and the needs of the Armed Forces of Ukraine and terrorist defense); PBL technologies have become more widely used, while the level of long-term storage in warehouses has decreased; evacuation operations of warehouses from the combat areas have become relevant. Significant changes in the organization, schedules and duration of operational processes in warehouses occurred due to difficulties with their provision with personnel, the significant part of which had migrated.

Operational activities in the supply chains of trade enterprises related to procurement and inventory have also changed significantly. First of all, procurement planning cycles have been significantly shortened in accordance with the almost daily adjustment of sales ratios and tracking of warehouse balances. Procurement procedures and technologies, ordering algorithms are being reviewed and simplified.

One of the bottlenecks for the supply chains of trade enterprises became stocks, which, according to the latest trends in logistics management, are "optimized", that is, focused on short-term income generation by liquidating them. Therefore, many companies, having no safety stock, were not ready to meet the existing demand.

In distribution channels, trade enterprises focus on the diversification of participants, resorting to the mediation of dealers and 3PL providers use various forms of trade (including "from the wheels"), and, in an effort to quickly replenish working capital, intensively sell off the remaining of products.

*Reputational risks* associate with the formation of the impression of consumers and supply chain partners about the trading company as an insufficiently reliable partner or seller in the event of supply failures, lack of the necessary goods or non-compliance with its quality indicators. The consequence of reputational risks may be a change in the structure of material flow, assortment, composition of suppliers, etc.

The reputational risks may also be incurred by trade enterprises as the result of their mistakes in the context of compliance with the patriotic sentiments of consumers. For example, if the company has not tracked and continues to sell products of the aggressor country or manufacturers that have not left the Russian market. Thus, in order to prevent the sale of such goods in the process of planning the assortment and order formation, the algorithm of temporary blocking of certain goods is being revised in the company "Varus". Appropriate adaptation and trend decisions to change the range of products are also made by manufacturing companies. Thus, with the beginning of the war, Kyivkhlіb renamed the Belarusian bread to Ataman bread, and added new products – Palianytsia bread and Myrny loaf.

In general, the impact of different groups of martial law risks on supply chains is presented in the *Table* below.

*Table*

**Risks of martial law for supply chains of trade enterprises**

Group of risks	Form of manifestation	Implications for supply chains
Infrastructural	Destruction, destruction, restriction of access to warehouse and commercial facilities; destruction and blocking of transport infrastructure; damage or blocking of suppliers' production infrastructure.	Loss of investments in warehouse and trade infrastructure; loss of product stocks; violation of delivery terms; incomplete assortment; increase in the range and time of delivery; Changes in the configuration and composition of supply chain participants

*End of the Table*

Group of risks	Form of manifestation	Implications for supply chains
Contractual	Failure to comply with contractual obligations between supply chain participants	Failure to comply with delivery schedules; reduction of procurement planning time; shortage of supplies; change of terms of settlements with suppliers of goods and services
Economic and financial	Decrease in the level of demand and supply, including due to the fall in GDP; restricted access to credit resources; unstable functioning of the banking system; restrictions on currency conversion; restrictions on cash and non-cash transactions	Increasing the transport component in supply chains; Reducing the level of profitability of supply chains; shortage of working capital to finance supply chains; reduction of the share of imports in the structure of the assortment; inability to make settlements with suppliers of goods and services, as well as consumers
Social	Changes in the structure of consumption; difficulties in meeting demand with goods of proper quality; inflationary processes	Shifting the emphasis in the sales structure towards essential goods, long shelf life and the emergence of excess stocks of other categories of goods; the need to find analogues of products for which there is a deficit from alternative sources of supply; increased need to minimize costs in order to maintain a socially oriented level of prices for goods
Operational	Obstacles to the timely execution of logistics operations; inability to perform certain logistics operations; difficulties with staffing of processes in supply chains	Operational reconfiguration of TMS (Transport Management Systems); reformatting of logistics processes in warehouses in terms of execution time and list of operations; simplification of procurement algorithms and technologies; diversification of distribution channels
Reputational	Increasing patriotic sentiments of consumers and their demands regarding the country of origin of goods and their names	Exclusion from the range of goods originating from the aggressor country and manufacturers that continued their activities in its territory; replacement of products with names associated with the aggressor country; introduction of new products in the assortment that meet the patriotic sentiments of consumers; increasing the share of goods of Ukrainian origin

*Source:* developed by the authors.

Trade enterprises in Ukraine during the martial law period have generally demonstrated the ability to respond quickly to challenges, draw conclusions and make reasoned, often innovative, decisions. In general, companies have become more vertically integrated, with a reduced product range and wider cooperation with suppliers and other counterparties.

Before outlining the most urgent and relevant areas of supply chain management in the field of trade during martial law, we will give a few theses on the results of a series of round table discussions "Restoration of supply chains of the food industry in the conditions of martial law and post-war situation in Ukraine" of the main players of domestic retail on their vision of promising management approaches in the organization of logistics support for their activities [6]:

- "Communication is the main tool in unpredictable times for business" – Marketing Director of "Kyivkhib";

- "In my opinion, the optimal solution is a combination of centralization and decentralization" – Logistics Director of Milk Alliance Holding;
- "Under any circumstances: should build clear communication, have a backup plan "B", think and work flexibly, and hold on to people – team, partners and customers" – project manager of the warehouse logistics department of Fozzy Group.

Thus, in the realities of wartime *the reformatting of supply chains* for trade enterprises should take place primarily in the plane of relations with suppliers: firstly, by diversifying the composition of suppliers with the allocation of a larger share of local (domestic) suppliers, and different for different places of sale; secondly, by making adjustments to contractual relations and the format of communications with suppliers: shifting the emphasis on warehouse storage at suppliers (responsible storage); optimization of transportation systems; prompt changes in the schedules, volumes and range of supplies; coordination of the parties' responsibilities in case of emergency, joint development of the action plan. The next segment of the perspective plan for the development of supply chains for trade enterprises is the identification and implementation of appropriate operational tools and measures: tools for automatic ordering; accounting and adjustment of stock levels; transportation technologies related to cross-docking schemes, drawing up plans and routes of transportation; creation and functioning of operational distribution points, etc. The given is that in the conditions of war the trade enterprises are faced with the urgent need to promptly make adjustments to the mechanism of functioning of their supply chains, they must necessarily implement and improve the practice of risk management. Moreover, in addition to assessing the risks of military operations, developing scenarios and drawing up an action plan for each of them, the vision of the role and practice of risk management should radically change, which should become a kind of "nerve" center in the company, the center of development strategies and crisis response strategies.

The challenges of military operations will provide for further changes in the organizational structure of risk management systems of trade enterprises with the allocation and strengthening of the role of specialists in political and military risks. The question of studying the behavior of consumers in the conditions of martial law in order to find adequate response measures in the supply chains of trade enterprises is of particular importance.

**Conclusions.** The military invasion in Ukraine showed, especially in the first month, that the most acute problems with the functioning of supply chains were felt by large trade enterprises and retail chains. This is primarily due to the high level of concentration in the supply chains; in particular, in terms of available logistics capacities (warehouses, distribution centers), stock levels, number of suppliers, freight volumes, etc. This situation is due to the course of economy of scale, optimization of processes, costs and stocks chosen by many trade enterprises before the war. As a result, such trade enterprises lose flexibility.

The main way out of the crisis for trade enterprises should be the transformation of the supply chain management system towards flexibility and diversification of logistics strategies, assets, participants, processes. The particular emphasis should be placed on establishing the new format of communication with suppliers and partners. And, most importantly, the practice of monitoring risks and developing alternative action plans for different scenarios must be implemented.

The further research of supply chains of trade enterprises should be aimed at systematizing approaches to the organization of risk management systems under the risks of military conflicts. The promising direction for further research is to determine the decision-making algorithm, as well as the set of the measures aimed at managing supply chains in trade under martial law.

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