УДК 657.6:005.932

Ye. Vorobets,
Financial Manager, Master's student of the Department of Financial Analysis and Audit, State University of Trade and Economics
ORCID ID: https://orcid.org/0009-0006-6253-3672
V. Miniailo,
PhD in Economics, Associate Professor,
Associate Professor of the Department of Financial Analysis and Audit,
State University of Trade and Economics
ORCID ID: https://orcid.org/0000-0001-5867-7135
T. Kopotiienko,
PhD in Economics, Associate Professor,
Associate Professor of the Department of Financial Analysis and Audit,
State University of Trade and Economics
ORCID ID: https://orcid.org/0000-0001-6107-9937
N. Pryimak,
PhD in Economics, Head of the Department of Management, Finance and Business Administration, International European University
ORCID ID: https://orcid.org/0000-0002-0206-2577

DOI: 10.32702/2306-6814.2024.20.156

DUE DILIGENCE AND PROJECT AUDIT AS TOOLS FOR MANAGING THE LOGISTICS ACTIVITIES OF AN ENTERPRISE

Є. О. Воробець,
фінансовий менеджер, магістрант кафедри фінансового аналізу та аудиту,
Державний торговельно-економічний університет
В. П. Міняйло,
к. е. н., доцент, доцент кафедри фінансового аналізу та аудиту, Державний торговельно-економічний університет
Т. Ю. Копотієнко,
к. е. н., доцент, доцент кафедри фінансового аналізу та аудиту, Державний торговельно-економічний університет
Н. В. Приймак,
к. е. н., завідувач кафедри менеджменту, фінансів та бізнес-адміністрування, Міжнародний європейський університет

ДЬЮ ДИЛІДЖЕНС ТА АУДИТ ПРОЄКТІВ ЯК ІНСТРУМЕНТИ УПРАВЛІННЯ ЛОГІСТИЧНОЮ ДІЯЛЬНІСТЮ ПІДПРИЄМСТВА

The article is devoted to the study of the essence and significance of due diligence audit services in providing comprehensive pre-investment analysis and audit of projects related to the implementation of intermediary activities in logistics operations for delivery from China to Ukraine on LCL/FCA delivery terms. The theoretical and methodological basis of the research is a comprehensive approach to the application of general scientific and special methods of cognition, namely: induction and deduction, synthesis, analysis, abstraction, methods of economic analysis (comparison). When conducting scientific research, scientific research and publications, statistical data, reports of international and state organizations, official resources and legislative acts served as materials. The study examines the main approaches to the interpretation of the essence of the

concept of "due diligence". Based on the analysis of theoretical provisions, the main objects of due diligence were identified. Accordingly, the article analyses the main operations inherent in logistics activities on LCL/FCA delivery terms. The differences between operations and procedures that are inherent in this logistics process and that may be the object of project audit and due diligence are noted. The analysis of the Incoterms and their transformation in accordance with the current economic conditions made it possible to identify the process subjects, stages of the process implementation, and its main operations and procedures that affect the cost of providing the final transportation service and, therefore, form the final price of goods in the market. For the purposes of due diligence of logistics activities, the features of customs value formation under FCA delivery conditions when importing goods to Ukraine were considered. A comparative calculation of the costs of LCL transportation under FCA delivery conditions for the purposes of due diligence of logistics activities was carried out, which showed that it is more economically feasible for carriers to take about 50% of their own goods for transportation. With all other variables held constant, the main cost drivers were the indicators related to the formation of containers and packaging.

Стаття присвячена дослідженню сутності та значення аудиторської послуги "дью диліджeнс" у забезпеченні комплексного передінвестиційного аналізу та аудиту проєктів, пов'язаних зі реалізацією посередницької діяльності в логістичних операціях при здійсненні доставки з Китаю до України на умовах доставки LCL / FCA. Теоретичною і методологічною базою дослідження є комплексний підхід до застосування загальнонаукових та спеціальних методів пізнання, а саме: індукції та дедукції, синтезу, аналізу, абстрагування. При проведенні наукового дослідження, матеріалами слугували наукові дослідження та публікації, статистичні дані, звіти міжнародних та державних організацій, офіційні ресурси та законодавчі акти. За результатами дослідження було розглянуто основні підходи щодо трактування сутності поняття "дью диліджeнс". На основі аналізу теоретичних положень було виділено основні об'єкти дью диліджeнс. Відповідно до цього в статті було проаналізовано основні операції, властиві логістичній діяльності на умовах доставки LCL / FCA. Зазначено відмінності між операціями та процедурами, які властиві даному логістичному процесу та які можуть бути об'єктом аудиту проєктів та дью диліджeнс. Проведений аналіз умов Інкотермс та їх трансформації відповідно до сучасних господарських умов дозволив виділити суб'єктів процесу, стадії реалізації процесу та його основні операції й процедури, які впливають на вартість надання кінцевої послуги з транспортування, а отже формують кінцеву ціну товарів на ринку. Для цілей дью диліджeнс логістичної діяльності було розглянуто особливості формування митної вартості за умов постачання FCA при імпорті товарів в Україну. Проведено компаративне калькулювання витрат на здійснення LCL перевезення за умов постачання FCA для цілей дью диліджeнс логістичної діяльності, яке засвідчило те, що перевізникам більш економічно доцільно займати для перевезення власних товарів близько 50% обсягу продукції. За всіх інших схожих показників, основними впливовими елементами вартості виявилися показники пов'язані з формуванням тари та упаковки продукції. Встановлено, що за схемою FCA на покупця припадає значна кількість ризиків, які виникають при перевезенні продукції, тому крім транспортно-логістичної компанії покупцеві доцільним буде залучити ще й посередницьку організацію, що забезпечуватиме контроль всіх складових операцій на окремих стадіях процесу постачання.

Key words: due diligence, audit, project audit, analysis, management, investment management, logistics activities, LCL (Less Container Load), FCA Incoterms conditions, profitability.

Ключові слова: дью диліджeнс, аудит, аудит проєктів, аналіз, менеджмент, інвестиційний менеджмент, логістична діяльність, умови неповного завантаження контейнеру LCL (Less Container Load), умови FCA Інкотермс, рентабельність.

PROBLEM STATEMENT

The relevance of the research problem is that increased capital migration in the world and active foreign economic activity of business entities require proper information support for the management of both large and small private investment projects. The specifics of trade and supply activities determine the need for a thorough study of the level of profitability of trade and transport operations to determine the profitability of individual investment projects. Providing the interested user with information on possible risks and important aspects of the project is possible through a comprehensive pre-investment study — due diligence. It is due diligence that provides the investor with an understanding of the risk/return ratio of the project, which allows them to justify the feasibility of implementing the project.

ANALYSIS OF RECENT SCIENTIFIC RESEARCH

An analysis of recent research and publications shows that many leading scientists have studied the theoretical and practical aspects of due diligence audit services, in particular: V. Bondar [1], L. Hutsalenko [2], H. Datsenko [3], I. Nazarenko [5], A. Osinska [6], I. Tomashevska [7] and others. In particular, I. Nazarenko explores the essence, purpose and circumstances under which due diligence is required [5]. V. Bondar pays attention to the study of the methodological principles of economic, legal and financial due diligence [1]. Datsenko G. V. focuses on the feasibility and features of operational due diligence [3]. The scientific achievements of such authors as T. Kopotienko, V. Pavlov, B. Shyrchenko, V. Lysyi include proposals for the use of control and analysis methods in conducting due diligence, which contributes to the improvement of its methodology [8].

IDENTIFICATION OF PREVIOUSLY UNRESOLVED PARTS OF THE OVERALL PROBLEM

In today's business environment, it is important for investors to invest their resources efficiently and effectively, so it is worth paying more attention to researching the costing of logistics operations of an investment project in terms of their profitability, determining the profitability of projects and the feasibility of investing in certain individual shares, which can be done through due diligence services.

THE AIM OF THE RESEARCH

The purpose of the article is to analyze the essence of due diligence, the specifics of its application to ensure a comprehensive study of an investment object in terms of calculation and assessment of the profitability of logistics operations, determination of the overall profitability of projects, and analysis of actual costs incurred in the process of providing services.

PRESENTATION OF THE MAIN RESEARCH MATERIAL

The term "due diligence" is derived from the English term for ensuring transparency of a transaction. According to the definition proposed by V. Bondar [1], L. Hutsalenko [2], I. Nazarenko [5], I. Tomashevska [7], 'due diligence is a procedure for drawing up an objective view of an investment object, including an assessment of investment risks, an independent assessment of the investment object, a comprehensive study of the company's activities, a comprehensive check of its financial condition and market position' [7]. It should be noted that due diligence is a pre-investment due diligence of an investment object. Such a procedure is usually carried out before the purchase of a business, a merger (acquisition) transaction, signing a contract or starting cooperation between companies.

Osinska notes that in modern conditions due diligence is aimed primarily at eliminating risk at the stage of establishing contractual relations. At the same time, due diligence can be carried out not only to determine the riskiness of the counterparty, but also to assess the level of synergy effect from cooperation with the counterparty [6].

When conducting due diligence, such objects as [2] are necessarily investigated:

— corporate documentation;

— documentation regarding the acquisition or sale of shares or other property;

— agreements;

— customer and/or supplier databases;

— real estate documents;

— materials of legal proceedings;

— documents confirming the ownership of copyright objects and possible cases of infringement of such rights;

— information security and data protection issues.

However, the list of objects to be investigated may vary depending on the areas and objectives of due diligence. Accordingly, there are due diligence of the legality of the company's activities, due diligence of financial statements, due diligence of the company's operating activities and other types. This study proposes to analyze the intermediary activities that arise in logistics operations when providing services for the delivery of goods from China to Ukraine under conditions of incomplete loading of an LCL (Less Container Load) container. It should be noted that partial loading of a container is used when there is a need to transport a small shipment of goods. As a rule, companies use this method when making the first trial shipment, when it is inappropriate to pay the full cost of the container, but it makes sense to share such cost with other senders or recipients of goods.

The delivery of the cargo from China (LCL) involves many operations and procedures, each of which is important in the transportation process.

Such operations include [1]:

1. Collecting goods from all suppliers at the consolidation warehouse. The goods must be classified by similar characteristics and allowed to be transported in the same container.

2. The next operation is the picking operation for goods moving in one direction. This is done in order to seal the container and preserve the goods until their final destination.

3. It is mandatory to pack and label the goods for their further identification.

4. Documentation can be classified more as a procedure that ensures the speedy passage of cargo through customs control. It is thanks to the correct documentation of the shipment that the company receives a guarantee and legal confirmation that the cargo was following the established route in case of emergency.

As a result of these operations, the cargo is placed in a container, where it is placed in accordance with the rules and conditions specified in the agreement to prevent its deterioration during the journey. This creates a range of services for the client to control the cargo from the seller to the buyer.

At the same time, it is necessary to consider the main advantages inherent in LCL container transport:

— regular weekly shipments make it possible to receive small quantities of cargo on a regular basis with predictable transit times;

— the ability to maximise the optimisation of the transport route, taking into account the wishes of the client, as well as in accordance with current market trends;

— use of the existing extensive network of agents and contracts with all global shipping lines, which allows to carry out transportations to any part of the world, as well as organise door-to-door delivery of goods;

— availability of cargo insurance and customs brokerage services;

— the possibility of organising multimodal transport: sea-road, sea-rail, sea-air.

In addition, keep in mind the advantages of consolidating cargo in warehouses in the port and the ability to obtain information about the location of cargo in real time 24/7. To ensure cost-effective delivery, each customer's cargo is consolidated with other shipments, and the shipping cost is calculated by the transport company per cubic metre of container volume. The main value that determines the price of transportation is the volume of the declared cargo, but its characteristics may also be taken into account.

So, the main elements that form the cost of delivery of groupage cargo (LCL) are:

— the volume of transportation, with a break-even container load, you can get a discount on the tariff;

— transportation distance, where the cost is affected by the distance, which can be inversely proportional to the value when a certain distance is reached$

— the size and weight of the cargo determines the complexity of the possible route and, accordingly, increases its cost;

— the carriage of dangerous goods inherently increases the cost of transportation, due to the conditions of the transportation itself and the transportation route. To calculate the cost of transportation in this case, you need a MSDS (Master Safety Data Sheet);

— seasonality and the risks it causes. This is due to the periods of navigation, weather conditions, and the corresponding increase in transportation security costs, which also extends the area of military risks.

Based on the possible conditions for container transportations from China under the FCA Incoterms delivery rules, firstly, it should be noted that the Incoterms rules are constantly being improved in accordance with innovations in the field of transport and the dynamics of changes in external conditions.

The latest version of Incoterms 2020 includes a list of important updates compared to the FCA Incoterms 2010 [4]. In particular, it is necessary to note the clarification of the parties' obligations, which include: responsibility for registration and payment for transport services; insurance conditions; responsibility for loading and unloading operations.

Regarding the change of insurance terms, the terms are agreed upon to simplify the insurance procedure for the parties as much as possible.

In an unstable military and political environment, the world is actively implementing new security rules that place greater emphasis on the responsibilities of participants to ensure security and protect against risks associated with terrorism and fraud.

The updated rules for vehicles owned by the buyer have become a separate requirement for transport safety. However, this is a rather expensive option and is not often used.

Regarding the use of innovative technologies, the latest version of Incoterms takes into account the possibility of using electronic documents and communications, which greatly simplifies both the search for a carrier and the paperwork, and also allows booking and selecting places in containers under LCL conditions.

Thus, FCA delivery terms mean that the sender fulfils its obligations by delivering the goods, which have been cleared for export, to the carrier designated by the buyer at a named place or point. This place may be a specific location, such as the manufacturer's premises, terminal, warehouse or any other agreed point.

Therefore, the supply of goods involves three parties: the buyer, the seller and the carrier, who are responsible to varying degrees for both the physical safety of the goods and the compliance with the conditions of the goods' movement.

In terms of FCA delivery, it should be considered that [4]:

— the sender is responsible for ensuring that the products are delivered to a pre-agreed location;

— In accordance with the FCA Incoterms, the responsibility passes from the carrier to the customer;

— under the FCA's terms of delivery, only the client is responsible for the costs and risks.

The carrier plays an important role in the FCA process and acts as a free carrier, meaning that the seller is responsible for delivering the goods to the destination, covers the costs of transportation, but is not responsible for cargo insurance. After that, all risks and responsibilities for the sale and purchase are transferred to the buyer. In other words, the principle of determining the place and time of transfer of responsibility and costs between the seller and the buyer in international transport is actively applied.

The carrier in FCA can be chosen by both the seller and the buyer in accordance with the terms of the contract. The carrier's responsibilities include:

— acceptance of products from the seller;

— organization of transport;

— ensuring delivery of cargo to the final destination in accordance with the buyer's instructions.

However, under these delivery conditions, there may be an alternative option for organizing transportation by using the so-called 'free carrier', when the seller transfers the goods to the carrier appointed by the buyer at a specified place or point. However, the word 'free' in this context does not necessarily mean that there are no costs, but rather reflects the transfer of risk and responsibility.

When analyzing the FCA's pricing processes, several key elements of influence can be identified, namely:

— goods and packaging that determine the value of the product and packaging that ensures its suitability for transport to the agreed place;

— cargo costs associated with the seller's responsibility for loading the goods onto the vehicle, whether on

Table 1. Determination of customs value under FCA delivery conditions when importing goods into Ukraine

Cost element	Nature of accounting
1. Packaging	*
2. Load on the vehicle	*
Costs included in the price of goods in accordance with Incoterms	
3. Delivery to the main carrier	+
4. Export duty	
5. Transport insurance	+
6. Load on the main transport	+
7. Payment for the main transport	+
As a result, all expenses incurred before crossing the customs border of Ukraine are considered	
8. Unloading	
9. Import duty	
10. Delivery to the main transport	
11. Unloading at the company's warehouse	
Expenses on the territory of Ukraine are taken into account	

*When determining the customs value, the following costs are added.

its own premises, at a terminal or elsewhere by mutual agreement;

— export duties and taxes paid by the seller before the goods are transferred to the carrier;

— directly the transport costs incurred by the seller when handing over the products to the carrier, from which point the customer becomes responsible for financing the costs associated with the further transport of the goods;

— payment for the risk associated with the cargo is transferred from the manufacturer to the customer at the moment when the goods are handed over to the carrier, which effectively means that the buyer is responsible for any loss or damage that occurs after that moment.

Due diligence of the company's logistics activities involves researching and ensuring transparency in understanding the complex nuances of the terms of the transaction by the customer of this service.

Table 2. Initial data for calculating the costs of LCL transport under FCA delivery conditions for the purposes of due diligence of logistics activities

Cost elements	Percentage of container loading		
	10% LCL	50% LCL	75% LCL
Cost of goods	100	100	100
Cost (CIF)	120	120	120
Labour cost	50	50	50
Container	25	75	40
Packaging	40	20	30
Cost of certificates and licenses	25	25	25
Fixed costs	17	17	17
Delivery to the port of departure	350	350	350
Other expenses	50	50	50
Percentage of financing, %.	50	50	50
Tax, %.	25	25	25
Profitability, %.	20	20	20
Total	3330	8070	-4692

Source: Authors' compilation based on the Incoterms calculator.

The FCA price is calculated using the formula [8]:

$$FCA = \frac{MPN + MPE + MO + ENV + EMB + FI + SI + CER + GFB + OG - DWx\,(1 - IG)}{1 - (IP + (U / (1 - IG)))}$$

where MPN — (Materias Primas Nacionales (Spanish) cost of national goods (raw materials);

MPE — (Materias Primas Extranjeras (Spanish) cost of foreign (imported) goods (CIF);

MO — (Mano de Obra (Spanish) labour cost;

ENV — (Envases (Spanish) container;

EMB — (Embalajes (Spanish) packaging;

FI — (Flete Interno (Spanish) domestic cargo transport;

SI — (Seguro Interno (Spanish) internal insurance;

CER — (Certificacione (Spanish) certification;

GFB — (Gastos Fijos Bancarios (Spanish) fixed banking costs;

OG — (Otrost Gastos (Spanish) other expenses;

DWx — (Draw Back (Spanish) compensation;

IP — (Intereses de Prefinanciacion (Spanish) pre-financing interest;

U — (Utilidat (Spanish) usefulness;

IG — (Impuestos a las Ganancias (Spanish) income tax.

According to this formula, for the purposes of due diligence of logistics activities, it is advisable to consider the specifics of the formation of customs value under the terms of delivery when importing goods to Ukraine [9] (Table 1).

Therefore, when conducting due diligence of logistics activities, it is advisable to analyze the purchase of goods in terms of investment attractiveness by conditional volume and cost and analyze the possible level of profitability (Table 2).

Thus, the obtained indicators show that it is indeed more economically feasible for carriers to use about 50% of their own goods for transportation. For all other similar indicators, the main influential cost elements were those related to the formation of containers and packaging. However, in general, it is characterized as a condition that provides the producer and buyer with a certain flexible timeframe for organizing the operations themselves. In other words, the main advantage here is the sequence of operations and their distribution in time. Under these conditions, the shipper is relieved of liability at the moment when he hands over the goods to the carrier selected by the buyer. The buyer bears further risks for the transport of the goods on its own. The buyer also bears all shipping and customs clearance costs for imports, while the seller carries out all export formalities and customs procedures and pays for them. Over the course of the experience gained in working under this delivery term, both buyers and sellers have noted its convenience and significant advantages.

It is the volume of cargo that determines the price of transportation, but factors that affect the cost of packaging and containers based on the dimensions of the cargo, such as weight and nature, are also important.

Hence, according to the classic FCA scheme, Fig. 1, the buyer bears a fairly large number of risks that arise during the transportation of products, so in addition to the transport and logistics company, it would be advisable for the buyer to involve an intermediary organization that will ensure control of all components of operations at certain stages of the supply process, in particular at its control points, as shown in Fig. 1.

The intermediary organization will also control the cost of services at all stages of the cargo, as well as perform financial settlements between the supplier and carriers, for which it will receive remuneration from the buyer's customer.

CONCLUSIONS

The results of the due diligence of the company's logistics activities led to the conclusion that investing in such a project with the involvement of an intermediary is beneficial, since there is a continuous supply of goods to Ukraine, and not only from China. The study determined that the cost of delivering sea cargoes on LCL/FCA terms from China to Ukraine depends on such key components as the nature of the container and packaging of the cargo, the need for additional processing, as well as the proportion of the volume occupied by the cargo in the container during transportation. In addition, the cost of sea groupage cargoes takes into account: calculation of the cost of a range of services; organization of cargo delivery to a warehouse in China; consolidation of cargo at a warehouse in China; shipment of cargo to Ukraine; control over the status of cargo; customs clearance of cargo; receipt of cargo and payment for services by the client. On the other hand, project audits can be viewed as a set of operations in the areas of activity within the entire project, individual units of the organization, which determines the actual costs incurred in the provision of logistics services, their rejections and proposals. Prospects for further research could be the construction of an organizational and structural calendar plan for the execution and implementation of logistics operations along individual transport routes.

Література:

1. Бондар В. Методичні засади експертизи правового та фінансового становища компанії при складанні звіту Due Diligence. Бухгалтерський облік і аудит. 2010. № 8. С. 23—28.

2. Гуцаленко Л. В. Дью ділідженс — гарант успішності інвестиційного проекту в бізнес-сфері. Економіка, фінанси, менеджмент: актуальні питання науки і практики. 2017. № 7. С. 20—31.

3. Даценко Г.В. Операційний дью дилідженс, як невід'ємна складова загальної процедури дью дилідженс. Облік, контроль і аналіз в управлінні підприємницькою діяльністю: зб. наук. пр. XI всеукр. наук.-практ. Інтернет-конф. (Вінниця, 23 квіт. 2023 р.) / Вінниця, 2023. С. 7—9.

4. Інкотермс® 2020 в Україні. ІНКОТЕРМС® 2020 в Україні. URL: https://incoterms2020.com.ua (дата звернення 27.08.2024).

5. Назаренко І. М. "Дью ділідженс": сутність, призначення та послідовність проведення. Наукові праці Кіровоградського національного технічного університету. Економічні науки. 2011. № 20. Ч. І. С. 360—366.

6. Осінська О. А. Комплаєнс та дью дилідженс як засоби забезпечення господарського правопорядку у цифровій сфері. Київський часопис права. 2024. № 2. С. 83—91.

7. Томашевська І. Л. Due diligence: поняття та призначення. Вісник ЖДТУ. 2010. № 2 (52). С. 189—191.

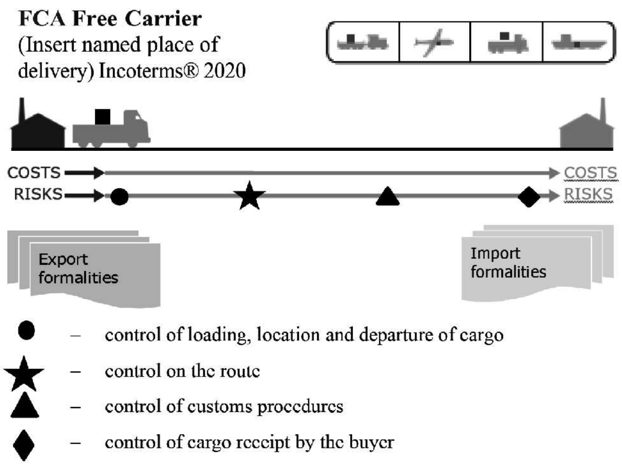

Fig. 1. Scheme of FCA implementation

Джерело: [4].

8. Копотієнко Т.Ю., Павлов В.В., Ширченко Б.С., Лисий В.І. Використання методів аналізу та контролю при проведенні дью диліджeнс. "Бізнес Інформ". 2024. № 5. 2024. С. 243—251.

9. OstApp Journal — Онлайн-журнал для підприємців. URL: https://journal.ostapp.com.ua (дата звернення 27.08.2024).

References:

1. Bondar, V. (2010), "Methodological principles of examination of the legal and financial position of the company in the preparation of the Due Diligence report", Accounting and Audit, vol. 8., pp. 23—28.

2. Hutsalenko, L. V. (2017), "Due diligence is a guarantor of the success of an investment project in the business sphere", Economics, finance, management: issues of science and practice, vol. 7, pp. 20—31.

3. Datsenko, G. V. (2023), "Operational due diligence as an integral part of the general due diligence procedure", Oblik, kontrol' i analiz v upravlinni pidpryiemnyts'koiu diial'nistiu: zb. nauk. pr. KhI vseukr. nauk.-prakt. Internet-konf. [Accounting, control and analysis in the management of entrepreneurial activity: a collection of scientific proceedings of the XI All-Ukrainian scientific and practical Internet conference], Vinnytsia, Ukraine, april 23, pp. 7—9.

4. Incoterms® 2020 in Ukraine (2024), available at: https://incoterms2020.com.ua (accessed August 27, 2024).

5. Nazarenko, I.M., Orekhova, A.I. 2011, "Due diligence": the essence, purpose and sequence of conducting", Scientific works of Kirovograd National Technical University. Economic Sciences, vol. 20, no. I, pp. 360—366.

6. Osinska, O. A. (2024), "Compliance and Due Diligence as Means of Ensuring Economic Law and Order in the Digital Sphere", Kyiv Journal of Law. vol. 2, pp. 83—91.

7. Tomashevska, I.L. (2010), "Due diligence: concept and purpose", Vestnik ZhDTU. vol. 2 (52), pp. 189—191.

8. Kopotienko, T.Y., Pavlov, V.V., Shirchenko, B.S., Lysyi, V.I. (2024). "The use of methods of analysis and control in conducting due diligence", Business Inform, vol. 5. pp. 243—251.

9. OstApp Journal — Online magazine for entrepreneurs (2024), available at: https://journal.ostapp.com.ua (accessed August 27, 2024).

Стаття надійшла до редакції 27.09.2024 р.