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#### **FACTORING MANAGEMENT ON THE BASIS OF FORMATION OF OPTIMIZING FACTORING PORTFOLIO OF TRADE ENTERPRISES**

**Abstract.** The article is devoted to the study of the effectiveness of factoring management as an innovative product based on the formation of the optimization factoring portfolio of trade enterprises, which will serve as a basis for management decisions on the implementation of this service in business.

As a result of the research a number of conclusions and methodical recommendations of practical direction are formulated. The formation of the optimization factoring portfolio is based on the principles of the CAPM portfolio investment model proposed by W. Sharp. The conditions for the formation of portfolio investments, which are reflected in the price model of the capital market, were adapted to the formation of the factoring portfolio. The key conditions of the factoring agreement are: limits on credit risk and a given level of income, that is the company must choose a portfolio with the maximum profitability, which is achieved by minimizing the cost of this service; seek to increase the funding limit for debtors; to remove from the portfolio of debtors of the enterprise with a high risk of non-repayment of debt.

We propose to determine the debtors of the enterprise that will form the optimization factoring portfolio through the variables  $x_1 - x_n$ . When  $x = 1$ , the debtor is added to the factoring portfolio, and if  $x = 0$ , then it is necessary to exclude the debtor from the portfolio. In the language of factoring regression agreements, you can use a continuous linear programming problem in which the variable  $x$  will be in the range from 0 to 1, that is funding limits for debtors can be broken.

The target function of the factoring portfolio of commercial enterprises is proposed both for «invoice-discounting» (only receivables financing) and for «full factoring», that is full-fledged factoring (the use of additional related factoring services).

The profitability of the enterprise from factoring operations depends on the number of debtors in the factoring portfolio. The greater the number of debtors in the portfolio, the higher the profitability of the company from factoring. However, the company needs to consider debtors with high credit risk in order to minimize the non-repayment of receivables. Therefore, debtors with the highest credit risk of factoring should be excluded from the factoring portfolio.

To assess the economic efficiency of factoring management of trade enterprises on the basis of the formed optimization factoring portfolios, we propose to use the Cronbach & Gleser method.

The proposed proposals for the management of factoring of commercial enterprises, which is based on the formation of factoring portfolios, will regulate debt relations between enterprises with the involvement of third parties, that is, to prevent the occurrence of negative phenomena in the debt relations between commercial enterprises in the future, as well as will help maximize profits in the studied business entities.

Further research will focus on adapting the factoring portfolio of commercial enterprises to changes in the value of financial resources under the influence of transformational changes in the economy.

**Keywords:** factoring portfolio, trading enterprises, transformational changes, factoring management, debt relations between enterprises, profit maximization.

**JEL Classification** C44, C65, C61, F65

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## УПРАВЛІННЯ ФАКТОРИНГОМ НА ОСНОВІ ФОРМУВАННЯ ОПТИМІЗАЦІЙНОГО ФАКТОРИНГОВОГО ПОРТФЕЛЯ ТОРГОВЕЛЬНИХ ПІДПРИЄМСТВ

**Анотація.** Присвячено дослідженню питань ефективності управління факторингом як інноваційним продуктом на засадах формування оптимізаційного факторингового портфеля підприємств торговельної галузі, що послужить підґрунтям для ухвалення управлінських рішень щодо впровадження цієї послуги в господарську діяльність суб'єктів господарювання.

У результаті дослідження сформульовано низку висновків і методичних рекомендацій практичного спрямування. Формування оптимізаційного факторингового портфеля ґрунтується на засадах моделі портфельних інвестицій CAPM, запропонованої В. Шарпом. Умови формування портфельних інвестицій, що відображені в цій моделі ринку капіталів, були адаптовані до формування факторингового портфеля. Ключовими умовами факторингової угоди є: обмеження на кредитний ризик і заданий рівень доходу, тобто підприємство повинно обрати портфель із максимальною прибутковістю, що досягається мінімізацією витрат на цю послугу; прагнути до збільшення ліміту фінансування дебіторів; вилучити з портфеля дебіторів підприємства із високим ризиком неповернення заборгованості.

Дебітори підприємства, що формуватимуть оптимізаційний факторинговий портфель, пропонуємо визначати через змінні  $x_1 - x_n$ . Коли  $x = 1$ , то дебітор додається до

факторингового портфеля, а за умови  $x = 0$ , потрібно виключити дебітора з портфеля. За умови укладання регресійних договорів факторингу можна використати неперервну задачу лінійного програмування, в якій змінна  $x$  буде в діапазоні від 0 до 1, тобто ліміти фінансування на дебіторів можуть дробитися.

Цільова функція факторингового портфеля торговельних підприємств запропонована як для «invoice-discounting» (лише фінансування дебіторської заборгованості), так і для «full factoring», тобто повноцінного факторингу (застосування додаткових суміжних послуг факторингу).

Дохідність підприємства від факторингових операцій залежить від кількості дебіторів у факторинговому портфелі. Що більша кількість дебіторів у портфелі, то вища прибутковість підприємства від факторингу. Проте підприємству потрібно враховувати дебіторів із високим кредитним ризиком з метою мінімізації неповернення дебіторської заборгованості. Отже, дебітори, які мають найбільший кредитний ризик факторингу, повинні бути виключені з факторингового портфеля.

Для оцінювання економічної ефективності управління факторингом підприємств торговельної галузі на основі сформованих оптимізаційних факторингових портфелів пропонуємо використовувати методику *Cronbach & Gleser*.

Запропоновані пропозиції щодо управління факторингом торговельних підприємств, в основу якого покладено формування факторингових портфелів, дозволять урегулювати боргові відносини між підприємствами із залученням третіх сторін, тобто запобігти виникненню негативних явищ у боргових відносинах між торговельними підприємствами в майбутньому, а також будуть сприяти максимізації прибутку на досліджуваних суб'єктах підприємництва.

Подальші напрями дослідження будуть спрямовані на адаптацію факторингового портфеля торговельних підприємств до змін вартості фінансових ресурсів під впливом трансформаційних змін в економіці.

**Ключові слова:** факторинговий портфель, торгові підприємства, трансформаційні зміни, управління факторингом, боргові відносини між підприємствами, максимізація прибутку.

**JEL Classification** C44, C65, C61, F65

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**Introduction.** In conditions of transformational changes, economic growth in Ukraine requires the use of innovative tools adapted to the European and world economic space. One of such innovative products of the financial market of Ukraine is factoring.

International experience of the leading countries of the world shows that the use of factoring allows not only to increase sales volumes, increase profitability, liquidity and business activity of enterprises, but also has a positive effect on the country's economic development. According to the statistics of the International Factoring Association «Factors Chain International», the world's factoring turnover in 2019 amounted to 2,917 billion euros and was the largest in the last decade. The growth of the volume of factoring services in the world during this period amounted to 99% [1]. Ukraine experienced a decrease in the volume of factoring turnover during 2014—2016 due to economic and political instability. However, it should be noted that according to the National Commission for State Regulation of Financial Services Markets, the value of factoring agreements in the first quarter of 2020 increased by 118.2% compared to the same period last year [13].

Integration into the European Economic Area is a strategic direction for Ukraine, which will encourage entrepreneurs to use factoring as a special business support tool that is characteristic of the European financial market.

Factoring as an innovative product of the financial market is peculiar to business entities, which are characterized by regular delivery of goods on terms of late payment. This applies to supplying companies that work with retailers. Factoring enables you to manage financial flows of an enterprise, improve its financial stability, liquidity and is a key driver of business growth.

Factoring operations have a number of benefits, both for supplier companies, buyer companies, and for a financial institution that provides factoring services [3].

The benefits of factoring for supplier companies are:

- acceleration of turnover of working capital;
- increase of buyers;
- ensuring competitiveness;
- improvement of financial condition;
- increase in sales volume, etc.

The following advantages of using factoring operations are available for the buyer's businesses:

- receipt of goods with delayed payment;
- increasing purchasing power.

For financial institutions that provide factoring operations, it is necessary to distinguish the following benefits:

- income growth;
- diversification of services;
- increase of clients;
- diversification of credit risk.

Factoring companies, in addition to financing supplier companies, provide additional services such as enterprise accounting, management of accounts receivable and minimization of risks in the activities of enterprises.

The UNIDROIT Convention on International Factoring, adopted in 1988 in Ottawa, states that a financial institution to provide factoring services must fulfill at least two of the four functions [4]:

- supplier financing;
- keeping records of accounts receivable;
- presentation of payment claims;
- protection against risks of non-return of funds from debtors.

Thus, factoring is a financial-commission transaction in which a client transfers a receivable to a bank or a factoring company in order to immediately receive most of the payment and accelerate the turnover of funds in the calculations, accompanied by elements of lending, administration, monitoring, control of receivables, as well as insurance of risks for the corresponding remuneration.

The uniqueness of this instrument is that it not only performs functions of credit, insurance of currency, inflationary risks, but also solves a wide range of tasks aimed at increasing the efficiency of management of accounts receivable enterprises.

**Analysis of research and problem statement.** The study of issues related to the management of factoring operations was paid to the attention of many Ukrainian scientists, in particular, Kovalova, Levchenko, Gilorme, Grundmann, Ivanovic, Sasa, Suzana Baresa, and Sinisa Bogdan, Janekova, Kasimov, Knape, Kolodizieva, Bickers, Makarovych, Robert Lumbuye Tomusange and others.

In his research Lepokhin outlines the positive and negative aspects of factoring and provides recommendations for maintaining the viability of enterprises based on managing factoring transactions [5]. Levchenko reveals the mechanism of using factoring in the management of accounts receivable enterprises [6]. Kovalova substantiates expediency of factoring in modern conditions with the purpose of improvement of liquidity of the enterprises and reception of additional profits in banks [7]. Moroz considers the main preconditions for the use of factoring in Ukraine, its main functions and tasks, and also gives advantages and disadvantages of factoring operations in Ukraine [8]. However, in the works of scientists, the effectiveness and feasibility of factoring in the activities of enterprises on the theoretical level, without considering the practical aspect, is substantiated.

Gerasymovych et al. consider the effectiveness of factoring in the activities of a commercial bank, which «...is determined by the following indicators: the proportion of factoring transactions in the total amount of active operations of the commercial bank; the size of factoring operations for 1 UAH. capital; the size of factoring operations for 1 UAH authorized capital; the level of the purchase of receivables» [9, p. 123].

The expediency of factoring operations for a commercial bank was investigated by Volokhova and Zaharenko [10]. In their opinion, the utility of a service is determined by comparing the proportion of the share of profits from factoring operations in the total amount of bank profits with the share of factoring operations in the total assets of the bank.

Vnukova et al. studied the effectiveness of the organization of factoring in the bank according to the logistic approach, believing that such an approach would enable to optimize financial flows and ensure the effectiveness of the financial transaction. According to the authors, such an approach to factoring receivables financing takes into account the financial result that a bank can obtain in the case of a single borrower financing, and not only focus on the financial position, reputation and quality of debt service receivables, as foreseen in the methodologies used native banks [11].

In the future, the problem of effective management of factoring service on the basis of logistic approach was developed by Kolodiziev proposing to increase the efficiency of factoring management based on the profitability index of the logistic chain of factoring services and the determination of the equilibrium rate for factoring transactions, taking into account the interests of the participants in the factoring agreement [12].

Among the native scientists who studied the effectiveness of factoring in the activities of enterprises should be noted Makarovych, Stupnytskyi and Koverda [13; 14].

Yes, Stupnytskyi and Koverda suggest investigating the efficiency of factoring in the activities of enterprises based on the analysis of the effectiveness of factoring as a tool for managing receivables in the following areas [14]:

- analysis of the influence of factoring on the dynamics and level of receivables;
- analysis of the influence of factoring on financial results;
- analysis of the efficiency of factoring in comparison with alternative sources of financing and management of accounts receivable.

Makarovych holds a similar opinion on the analysis of the efficiency of factoring in enterprises and considers the effectiveness of factoring using the position of financial institution and enterprise [14].

Most European economists such as M. Bickers [15], M. Forman, J. Gilbert [16], F. R. Salinberg [17] and others believe that the essence of factoring services is modified, being close in content to factoring operations.

Despite a large number of scientific developments on factoring issues, the economic basis for managing this service can not be considered explicitly, as scientists pay great attention to the study of development, the efficiency of the use and management of factoring transactions by commercial banks, and less focused on managing factoring in enterprises. Formation and implementation of factoring management method at Ukrainian enterprises will increase the efficiency of using their working capital by refinancing receivables. The necessity of solving the above-mentioned questions in modern conditions of management caused the relevance of the chosen topic.

The main purpose of the article is to study the management of factoring of enterprises on the basis of the formed optimization factoring portfolio of debtors.

**Methodology and research methods.** In the process of research general scientific and special methods of scientific cognition are used, namely: critical analysis, scientific abstraction and generalization of scientific experience of modern theoretical research; method of diversification; capital investment valuation model proposed by W. Sharp (in order to form an optimal factoring portfolio of trade enterprises); Cronbach & Gleser methodology (in order to evaluate the effectiveness of factoring management based on the formed factoring portfolios).

**Research results.** The use of factoring in the activities of enterprises allows them to improve their financial position, increase their efficiency and strengthen their position in the market. However, despite the fact that factoring is an effective tool for enterprise development, the use of this service requires effective management, which should take into account the maximum number of factors, management implications and facilitate the achievement of management tasks. Factoring services are most common among trading enterprises. Therefore, further research on factoring management is intended for trading enterprises, but can also be used for economic entities of various sectors of the economy.

The main method of researching factoring management as an innovative product is the formation of an optimization factoring portfolio, which will serve as the basis for making managerial decisions on the implementation of this service in the economic activities of business entities.

The optimization of the factoring portfolio of trade receivables is based on the portfolio investment model proposed by Sharpe. In developing CAPM (the capital market price model), Sharp determined the assumptions of creating an investment portfolio [18], which were adapted, taking into account the factors of factoring, to the formation of an optimization factoring portfolio:

- factoring portfolio estimation is determined on the basis of two factors: the profitability of the transaction and the level of risk;
- when choosing several factoring portfolios, the company should choose a portfolio with the maximum profitability;
- the enterprise can receive maximum returns from factoring at the expense of minimization of expenses for this service;
- if the company prefers to reduce the risks of non-payment of debtors, then chooses a portfolio with the lowest risk;
- the enterprise may not be fully financed, that is, financial institutions offering factoring transactions, determine the limits of financing of debtors;
- in order to determine the validity of the financing limit of the debtors, the enterprise should determine the number of turns of deliveries in monthly terms: the greater the turnover of supplies, the higher the funding limit.

It is proposed to optimize factoring portfolios in enterprises depending on income and credit risk factoring taking into account the number of debtors in the portfolio. A trading company can maximize revenues from factoring transactions by minimizing the cost of this service.

The mathematical expectation of the cost of a trading enterprise for a factoring transaction is (1):

$$\bar{\gamma}_i = \sum_{j=1}^m (d + s_i) \cdot p_j, \quad (1)$$

where  $d$  — interest rate for the use of funds in the factoring transaction during the period of delay of payment;

$s_i$  — commission interest for setting the financing limit, processing documents and making settlements;

$p_j$  — probability of debt repayment.

Given that factoring transactions are risky, it is therefore necessary to quantify the credit factoring risk for each of the debtors through — the coefficient.

As already noted, businesses in the trading industry are not funded on the basis of factoring in full. That is, the financial institution that provides factoring services determines for the enterprise the maximum limit on financing by debtors ( $F$ ). On the basis of the financial statements of the debtors, the Sub-financing of  $V_i$  is determined for the individual debtor. Consequently, the condition of the limit of financing of debtors in factoring transactions is defined as the sum of sublimits of financing (2):

$$V_1 + V_2 + \dots + V_n = F. \quad (2)$$

The limit of financing of the debtors depends on the number of sales turns during the month. The higher the turnover of supplies, the greater will be the funding limit.

Assume that  $i$  the debtor has  $t_i$  departures, that is, the debtor 1 has a delayed payment  $t_1$ , debtor 2 –  $t_2$ , and the debtor  $n$  — the delay  $t_n$ . Accordingly, the turnovers of deliveries by debtors will be marked  $O_1, \dots, O_n$ .

With a minimum credit risk, the financing limit for the enterprise will be equal to  $O_1 \cdot n$ , and with the maximum credit risk —  $O_n \cdot n$ . The most optimal for an enterprise is the average limit value:  $\bar{O}_i \cdot n$ .

To optimize the factoring portfolio of trade receivables, we will form its terms:

$$\sum_{i=1}^n V_i x_i - \sum_{i=1}^n V_i x_i \bar{\gamma}_i \rightarrow \max; \quad (3)$$

$$\sum_{i=1}^n V_i x_i \bar{\gamma}_i \rightarrow \min; \quad (4)$$

$$\sum_{i=1}^n V_i x_i \leq F; \quad (5)$$

$$\sum_{i=1}^n V_i x_i \frac{\beta_i}{F} \leq \beta_{\max}; \quad (6)$$

$$x_i \in \{0, 1\}, \quad i = 1, 2, \dots, n. \quad (7)$$

where  $V_i$  — sublimit financing of debtors under factoring transaction;

$x_i$  is a variable that determines whether or not to include the debtor in the factoring portfolio;

$F$  — limit of financing of debtors under factoring transaction;

$\beta_i$  — credit risk of the debtor;

$\beta_{\max}$  — the maximum allowable value of the credit risk of the entire factoring portfolio.

The target function of the factoring portfolio of trading enterprises will be as follows (8):

$$\sum_{i=1}^n V_i x_i \left( \sum_{j=1}^m (d + s_i^j) p_j \right) \rightarrow \min. \quad (8)$$

At the same time, minimization of the target function will increase the income that the company will receive when applying factoring at the expense of reducing costs — payment to the financial institution for the transaction.

This formula is used for «invoice-discounting», whereas, as for full factoring, the existence of commissions, for example, for processing documents, additional means for managing receivables, etc., is possible.

The objective function of the factoring portfolio in «full factoring» is the following (9):

$$\sum_{i=1}^n V_i x_i \left( \sum_{j=1}^m (d + s_i^j) p_j \right) + \sum_{i=1}^n V_i f_i \rightarrow \min, \quad (9)$$

where  $f_i$  — commission for management of accounts receivable.

In order to optimize the factoring portfolio of trading enterprises, it is proposed to determine the debtors using the variables  $x_1 - x_n$ . These variables will indicate whether the debtor is included in the total factoring portfolio or not. If  $x = 0$ , then the debtor is excluded from the factoring portfolio, when  $x = 1$ , then the debtor is added to the portfolio.

Numerous restrictions are used if necessary to reduce the amount of receivables in factoring portfolios.

If the trading company concludes only regression factoring agreements, then one can use the continuous linear programming task (when the limits on the debtors can be broken down), in which the variable  $x$  will be in the range from 0 to 1. All other restrictions formulated with the target function remain unchanged.

It is proved that the greater number of debtors in the factoring portfolio brings higher returns to the enterprise from factoring operations, but it is necessary to take into account debtors with high risk of non-repayment of debts. Debtors with the highest credit factoring risk should be excluded from the factoring portfolio due to the fact that it will be difficult for trading companies to find a

financial institution that would have agreed to serve such debtors. After eliminating the most risky debtors from the factoring portfolio, based on the solution of discrete and continuous linear programming problems, it is possible to obtain information for making managerial decisions about the effectiveness of factoring. The calculations showed that the factoring portfolio without the participation of the most risky debtors did not become more effective in terms of increasing returns, therefore, in order to maximize revenues, the enterprise should choose a factoring portfolio with a larger number of debtors, which is more reliable due to its diversified content.

In order to calculate the economic efficiency of managing factoring of trading enterprises, taking into account optimization factoring portfolios of debtors, it is proposed to use the formula, which was proposed by Cronbach & Gleser [19]:

$$\Delta U = N_E \cdot T \cdot SD_y \cdot R_{xy} Z_x - K \cdot N_B, \quad (10)$$

where  $\Delta U$  — profit growth due to implementation of the personnel management mechanism (ths. UAH);

$N_E$  — the number of personnel who have been certified by this mechanism (ie, positively evaluated, persons);

$T$  — duration of selected personnel at the enterprise (year);

$SD_y$  — standard deviation of the performance criterion expressed in monetary units, reflects the existing differences in the enterprise between successful and unsuccessful personnel in the profits they bring to the enterprise (ths. UAH);

$R_{xy}$  — coefficient of criminological validity of the mechanism;

$Z_x$  is the average standardized value of the main indicator for those who passed the evaluation;

$K$  — cost of evaluation (for example, ths. UAH);

$N_B$  — number of evaluated persons.

This technique was used only in social diagnostics in the management of personnel.

Taking into account the economic mechanism of managing factoring of trading enterprises on the basis of optimization factoring portfolios, the adjusted formula has the form:

$$\Delta P = FP_s \cdot T \cdot SD_y \cdot R_{xy} Z_x - C_F \cdot FP_o, \quad (11)$$

where  $\Delta P$  — profit growth due to introduction of factoring management mechanism (based on optimization factoring portfolios) (ths. UAH);

$FP_s$  — the number of factoring portfolios that have been implemented using this mechanism (units);

$T$  — duration of current factoring portfolios;

$SD_y$  is a standard deviation of the performance criterion, which determines the existing differences between successful and unsuccessful factoring portfolios in the profits they bring to the company (ths. UAH);

$R_{xy}$  — coefficient of criminological validity of the mechanism;

$Z_x$  is the average standardized value of the main factor for the success of factoring portfolios;

$C_F$  — expenses for introduction of factoring (thousand UAH);

$FP_o$  — number of factoring portfolios that were rated (units).

We suggest that the standard deviation of factoring income be calculated in accordance with Schmidt & Hunter's methodology [20]. The results of the study show that the standard deviation of the performance of the work being performed in monetary terms is at least 40% of the admissible income.

The criterion validity criterion of the mechanism is calculated by sociologists taking into account the opinion of enterprise managers, their specialists and a potential financial institution that offers factoring services. The average standardized value of the main criterion for the success of factoring portfolios is proposed to be determined by the formula of the scope of variation.

Consequently, the introduction of factoring portfolios will have an impact on improving financing of working capital, maximizing profits and increasing profitability of sales at trading enterprises, and will contribute to increasing the efficiency of factoring management at trade enterprises in order to reduce non-payments for goods sold.



**Conclusions.** Taking into account the foregoing, we will formulate a number of conclusions:

- factoring plays a significant role in the development of enterprises;
- the use of factoring contributes to the increase in sales;
- factoring influences acceleration of turnover of funds in the calculations;
- factoring improves the solvency and competitiveness of enterprises.

However, factoring as an innovative tool needs to be managed.

Managing factoring of trading enterprises is carried out through the formation of an optimization factoring portfolio.

The main conditions for the formation of an optimization factoring portfolio, based on the CAPM market model, are:

- the enterprise can get maximum return from factoring at the expense of reduction of expenses for this service;
- an enterprise should strive to increase the funding limit for a separate debtor, but not to exceed the total funding limit for the enterprise;
- the credit factoring factor for one debtor should not exceed the total credit risk factor of the enterprise.

The effectiveness of factoring management based on the formed factoring portfolios will be determined using the Cronbach & Gleser methodology.

Implementation of the proposed measures will promote increase of profitability and competitiveness of economic entities.

#### Література

1. Factors Chain International. URL : [https://fci.nl/en/industry-statistics?language\\_content\\_entity=en](https://fci.nl/en/industry-statistics?language_content_entity=en).
2. Огляд ринків фінансових послуг / Офіційний сайт Національної комісії, що здійснює державне регулювання у сфері ринків фінансових послуг. 2020. URL : [https://www.nfp.gov.ua/files/OgliadRinkiv/FK/FK\\_I\\_kv\\_2020.pdf](https://www.nfp.gov.ua/files/OgliadRinkiv/FK/FK_I_kv_2020.pdf).
3. Васильчишин О. Б., Гринчак Н. Я. Факторинг як перспективний напрям розвитку банківського бізнесу. *Вісник Університету банківської справи Національного банку України*. 2010. № 2 (8). С. 162—169.
4. Конвенція УНІДРУА «Про міжнародний факторинг» / Верховна Рада України. *Законодавство України*. 2006. URL : [http://zakon.rada.gov.ua/laws/show/995\\_210](http://zakon.rada.gov.ua/laws/show/995_210).
5. Лепьохін О. В. Факторингові операції як інструмент управління дебіторською заборгованістю підприємства з метою забезпечення своєї життєдіяльності. *Теоретичні і практичні аспекти економіки та інтелектуальної власності*. 2011. Вип. 2. С. 120—127.
6. Левченко Н. М., Кравченко Г. В. Факторинг як інструмент ефективного управління дебіторською заборгованістю підприємств. *Економічний простір*. 2009. № 23/2. С. 242—251.
7. Ковальова Т. В. Про доцільність факторингу в сучасних умовах. *Проблеми і перспективи розвитку банківської системи України*. 2011. Вип. 33. С. 135—139.
8. Мороз Е. Г., Грисюк І. В. Економічні особливості застосування факторингу в Україні. *Проблеми раціонального використання соціально-економічного та природно-ресурсного потенціалу регіону: фінансова політика та інвестиції*. 2010. № 3. С. 47—57.
9. Герасимович А. М., Алексеєнко М. Д., Парасій-Вергуненко І. М. Аналіз банківської діяльності. Київ, 2004. 599 с.
10. Волохова Л. Ф., Захаренко В. В. Аналіз ефективності факторингових операцій у комерційних банках. *Вісник ОНУ імені І. І. Мечникова*. 2016. Т. 21. Вип. 8 (50). С. 98—101.
11. Внукова Н. М., Опешко Н. С., Колодізева С. О. Удосконалення організації факторингу в банку за логістичним підходом. *Фінанси України*. 2012. № 5. С. 68—77.
12. Колодізева С. О. Методичний підхід до підвищення ефективності управління послугою факторингу. *Вісник Одеського національного університету імені І. І. Мечникова*. 2014. Т. 19. Вип. 2/5. С. 44—46.
13. Макарович В. К. Аналіз ефективності факторингових операцій як інструменту управління оборотним капіталом. *Економічний аналіз*. 2013. Т. 14. № 3. С. 114—122.
14. Ступницький О. І., Коверда В. М. Сучасний факторинг: ефективність торговельних операцій та управління корпоративними фінансами. Київ : Видавничо-поліграфічний центр «Київський університет», 2010. 255 с.
15. Bickers M. Factoring in the UK. London : Sweet&Maxwell, 2003. 232 p.
16. Forman M., Gilbert J. Factoring and Finance. London, 1976. 92 p.
17. Salinberg F. R. A Guide to factoring. Practice and Law. Croydon : Tolley Publishing Company Ltd, 1984. URL : <http://www.fci.nl/home>.
18. Sharpe W. F. Portfolio Theory and Capital Markets. *The Journal of Finance*. New York, 1970.
19. Гільорме Т. В., Шишкіна А. Ю. Концептуальні засади ефективності управління персоналом підприємства. *Економіка. Фінанси. Право*. 2015. № 7/1. С. 40—44.
20. Schmidt F. L., Hunter J. E. The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*. 1998. Vol. 124 (2). P. 262—274.

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## References

1. Factors Chain International. (n. d.). Retrieved from [https://fci.nl/en/industry-statistics?language\\_content\\_entity=en](https://fci.nl/en/industry-statistics?language_content_entity=en).
2. Natsionalna komisiia, shcho zdiisniue derzhavne rehuliuвання u sferi rynkiv finansovykh posluh. (2020). *Ohliad rynkiv finansovykh posluh [Overview of financial services markets]*. Retrieved from <https://www.nfp.gov.ua/ua/Ohliad-rynkiv.html> [in Ukrainian].
3. Vasylyshyn, O. B., & Hrynychak, N. Ya. (2010). Faktorynh yak perspektyvnyi napriam rozvytku bankivskoho biznesu [Factoring as a promising direction of banking business development]. *Visnyk Universytetu bankivskoi spravy Natsionalnoho banku Ukrainy — Bulletin of the University of Banking of the National Bank of Ukraine*, 2 (8), 162—169 [in Ukrainian].
4. Verkhovna Rada Ukrainy. (2006). Konventsia UNIDROU «Pro mizhnarodnyi faktorynh» [UNIDROIT Convention on International Factoring]. *Zakonodavstvo Ukrainy — Legislation of Ukraine*. Retrieved from [http://zakon.rada.gov.ua/laws/show/995\\_210](http://zakon.rada.gov.ua/laws/show/995_210) [in Ukrainian].
5. Lepokhin, O. V. (2011). Faktorynhovi operatsii yak instrument upravlinnia debitorskoiu zaborhovanistiu pidpriemstva z metoiu zabezpechennia svoiei zhyttiedialnosti [Factoring operations as a tool for managing receivables of the enterprise in order to ensure its viability]. *Teoretychni i praktychni aspekty ekonomiky ta intelektualnoi vlasnosti — Theoretical and practical aspects of economics and intellectual property*, Vol. 2, 120—127 [in Ukrainian].
6. Levchenko, N. M., & Kravchenko, G. V. (2009). Faktorynh yak instrument efektyvnoho upravlinnia debitorskoiu zaborhovanistiu pidpriemstv [Factoring as a tool for effective management of receivables of enterprises]. *Ekonomichniy prostir — Economic Space*, 23/2, 242—251 [in Ukrainian].
7. Kovalova, T. V. (2011). Pro dotsilnist faktorynhu v suchasnykh umovakh [On the feasibility of factoring in modern conditions]. *Problemy i perspektyvy rozvytku bankivskoi systemy Ukrainy — Problems and prospects of development of the banking system of Ukraine*, Vol. 33, 135—139 [in Ukrainian].
8. Moroz, E. H., & Hrysiuk, I. V. (2010). Ekonomichni osoblyvosti zastosuvannia faktorynhu v Ukraini [Economic features of factoring in Ukraine]. *Problemy ratsionalnoho vykorystannia sotsialno-ekonomichnoho ta pryrodno-resursnoho potentsialu rehionu: finansova polityka ta investysii — Problems of rational use of socio-economic and natural resource potential of the region: financial policy and investments*, 3, 47—57 [in Ukrainian].
9. Herasymovych, A. M., Alekseienco, M. D., & Parasii-Verhunencko, I. M. (2004). *Analiz bankivskoi diialnosti [Analysis of banking]*. Kyiv [in Ukrainian].
10. Volokhova, L. F., & Zakharenko, V. V. (2016). Analiz efektyvnosti faktorynhovykh operatsii u komertsiiynykh bankakh [Analysis of the effectiveness of factoring operations in commercial banks]. *Visnyk ONU imeni I. I. Mechnykova — Bulletin of ONU named after I. I. Mechnikov*, Vol. 8 (50), 98—101 [in Ukrainian].
11. Vnukova, N. M., Opushko, N. S., & Kolodizieva, S. O. (2012). Udoskonalennia orhanizatsii faktorynhu v banku za lohystychnym pidkhdodom [Improving the organization of factoring in the bank on a logistical approach]. *Finansy Ukrainy — Finance of Ukraine*, 5, 68—77 [in Ukrainian].
12. Kolodizieva, S. O. (2014). Metodichnyi pidkhdid do pidvyshchennia efektyvnosti upravlinnia posluhoiu faktorynhu [Methodical approach to improving the efficiency of factoring service management]. *Visnyk Odeskoho natsionalnoho universytetu imeni I. I. Mechnykova — Bulletin of Odessa I. I. Mechnikov National University*, Vol. 2/5, 44—46 [in Ukrainian].
13. Makarovych, V. K. (2013). Analiz efektyvnosti faktorynhovykh operatsii yak instrumentu upravlinnia oborotnym kapitalom [Analysis of the effectiveness of factoring operations as a tool for working capital management]. *Ekonomichniy analiz — Economic Analysis*, Vol. 14, 3, 114—122 [in Ukrainian].
14. Stupnytskyi, O. I., & Koverda V. M. (2010). *Suchasnyi faktorynh: efektyvnist torhovelynykh operatsii ta upravlinnia korporatyvnymy finansamy [Modern factoring: efficiency of trade operations and corporate finance management]*. Kyiv: Vydavnycho-polihrafichnyi tsentr «Kyivskiy universytet» [in Ukrainian].
15. Bickers, M. (2003). *Factoring in the UK*. London: Sweet&Maxwell.
16. Forman, M., & Gilbert, J. (1976). *Factoring and Finance*. London.
17. Salinberg, F. R. (1984). *A Guide to factoring. Practice and Law*. Croydon: Tolley Publishing Company Ltd. Retrieved from <http://www.fci.nl/home>.
18. Sharpe, W. F. (1970). Portfolio Theory and Capital Markets. *The Journal of Finance*. New York.
19. Hilorme, T. V., & Shyshkina, A. Yu. (2015). Kontseptualni zasady efektyvnosti upravlinnia personalom pidpriemstva [Conceptual principles of effective personnel management of the enterprise]. *Ekonomika. Finansy. Pravo — Economy. Finances. Right*, 7/1, 40—44 [in Ukrainian].
20. Schmidt, F. L., Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*, Vol. 124 (2), 262—274.

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