

ПОДБОР ОПТИМАЛЬНОГО НАБОРА ИНСТРУМЕНТОВ REVENUE МЕНЕДЖМЕНТА В ГОСТИНИЦАХ

Охарактеризованы основные экономические и аналитические инструменты управления доходами в гостиницах. Приведены преимущества и недостатки основных аналитических инструментов: Rate Shopper; аналитика и инструментарий в OTA; RMS (revenue management system) – системы управления доходом. Доказана необходимость использования современных аналитических инструментов для оптимизации доходов в отеле и принятия стратегических решений. Для выбора оптимального набора инструментов разработана процедура принятия решений по работе с аналитическим инструментом.

Ключевые слова: revenue management, оптимизация доходов, аналитические инструменты, доход с гостя, доход с номера, каналы продаж.

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Plikus I.**INVESTIGATION OF THE EXISTING METHODOLOGY OF VALUE ESTIMATION AND METHODS OF DISCOUNT RATE ESTIMATION**

Розкрито економічна сутність справедливої й теперішньої (дисконтованої) вартості та досліджено їх використання у Міжнародних стандартах фінансової звітності. Запропоновано алгоритм вибору методів оцінки за справедливою вартістю з використанням дисконтування. Проаналізовано існуючі підходи до оцінки ставки дисконтування та запропоновано формули розрахунку ставки дисконтування для обґрунтованого відображення в обліковій політиці підприємства.

Ключові слова: алгоритм вибору методів оцінки за справедливою вартістю, оцінка ставки дисконтування, розрахунок ставки дисконтування.

1. Introduction

In the globalization and integration processes, accounting and financial reporting play a fundamental role in providing operational, tactical and strategic information management, so ensuring its reliability and reliability becomes a top priority. However, accounting systems in which elements of financial statements are valued only at historical cost, do not fully meet the needs of the business. In this regard, the priority direction for development of the valuation of assets and liabilities of enterprises is the concept of fair value, since this estimate better reflects the actual value of assets and liabilities. It should be noted that in the international practice this assessment is sufficiently integrated, confirming its advantages, but at the same time there are difficulties in its understanding, namely, the determination of fair value by the method of current (discounted) cost and the choice of the discount rate. The importance of this issue is underscored by the 9th meeting of the Developing Council Group on International Financial Reporting Standards (IFRS), which was held on May 25–26, 2015 in Mexico City, and was devoted to the application of the present (discounted) cost in selected IFRSs and the choice of discount rates in the member countries of the Group [1].

2. The object of research and its technological audit

The object of research is the current practice of determining the fair value of assets and liabilities using discounting. According to International Financial Reporting Standards, discounting is an integral part of accounting. This process can affect the carrying amount of any asset or liability, the financial performance of the entity during the reporting period and the reliability level of the financial statements. The process of discounting is not difficult. One of the most problematic places is the determination of the discount rate, which belongs to the jurisdiction of a professional accountant's judgment.

3. The aim and objectives of research

The aim of research is substantiation of the choice of the method of estimating the discount rate in order to increase the reliability level of financial reporting.

To achieve the stated aim, it is necessary to determine the following tasks:

1. To propose an algorithm for choosing methods for fair value estimation.

2. To propose a formula for calculating the discount rate for reasonable reflection in the accounting policy of the enterprise.

4. Research of existing solutions of the problem

The problem of determining fair value, including the method of current (discounted) value and the choice of the discount rate, is engaged by many world theorists and practitioners. The paper [2] considers the concept of fair value and its measurement, and concludes that supporting fair value on the part of accountants is not enough. Some authors [3] note that «the choice between fair and historical value is the subject of long-standing disputes among accountants». In their study, they come to the conclusion that fair value will not be the main method for assessing illiquid nonfinancial assets on a voluntary basis. But other authors [4] give arguments in favor of valuation of property and equipment at fair value.

In work [5] the use of fair value in accounting from the point of view of investors is investigated, and also questions of determination of fair value of financial instruments are considered. The author of this work suggests how best to minimize the error in measuring fair value. He notes that interstate institutional differences have an important role in determining the effectiveness of fair value accounting. The authors [6] analyze the importance of using the fair value method from the point of view of users of accounting information and conclude that there is «some concern about the reliability of the methods for fair value estimation». The study [7] notes that the present value is often the only acceptable method for fair value estimation and considers the problem of interpreting the change in the present value between the reporting dates. Some aspects of this problem are described in [8–11]. Thus, in [8] the problems of choosing the discount rate are investigated and it is noted that for most Australian enterprises the difference between the expected and actual discount rates is significant. The authors [9, 10] emphasize that when considering corporate pension plans, difficulties in choosing the discount rate. They suggest using local discount rates at fair value for nominal accrued pension liabilities. Ukrainian experts are also exploring the problem of choosing a discount rate. So, in the opinion of [11] «the issue of objective calculation of the discount rate does not find its due coverage in the Ukrainian scientific and practical literature». The author notes that this is due to the fact that the practice of discounting in Ukrainian accounting is still fragmentary and has not been widely adopted.

Thus, the results of the analysis allow to conclude that the specificity of determining the fair value using the current (discounted) cost method in terms of individual assets and liabilities, assessing the risks associated with its application, and the choice of the discount rate are still debatable and unresolved.

5. Methods of research

In the work, such research methods are used:

- methods of deduction, analysis and synthesis, formal logic and generalization in disclosing the essence of fair value, the current (discounted) value and the study of its use in IFRS;

- methods of formalization, system approach and scientific classifications when proposing an algorithm in choosing methods for fair value estimation;
- methods of a hypothetical assumption, a systematic approach and scientific abstraction in justifying the formation of accounting policy with respect to the choice of the discount rate.

6. Research results

As the study has shown, the valuation at initial cost is less and less reflected in the financial statements, because today accounting is increasingly based on fair value and the impetus for this is:

- firstly, the result of the joint work of the IASB and the FASB, which was embodied in IFRS 13, «Fair Value Measurement» (IASB and FASB implemented the fair value paradigm gradually);
- secondly, on the one hand, the international convergence of financial reporting standards (globalization processes), on the other hand, the inter-professional convergence of accounting and evaluation standards.

These convergences occur in the constant refinement of basic professional concepts, both from a financial and economic point of view. At the same time, let's note that the use of certain financial and economic terms (valuation) in accounting and vice versa does not remove the essential differences between the accounting methodology (for financial reporting) and the financial and economic methodology (for valuation), concerning the different interpretation of the notion of «fair value». Thus, in accordance with International Valuation Standards (IVS), «Fair value is the estimated price of an asset or liability when it is exchanged between identified investors and interested parties that properly reflects the respective interests of these parties» [12], but provides the classification of cost bases reveals the essence of the concept of «fair value», namely:

a) the category of assessment bases aimed at reflecting prices prevailing in open observable markets, in this case, first of all, it is a question of market value;

b) the category of assessment bases associated with the definition of subject-specific values, the investment value is used;

c) the category associated with value-in-exchange modeling – fair value is used. However, as IFRS 13 notes, «fair value is the price that would have been received on the sale of an asset or paid for the transfer of an obligation in a normal operation on a primary (or favorable) market as at the date of the assessment of current market conditions (that is, the reference price), irrespective of moreover, such price is observed directly, or estimated using another valuation method» [13].

As can be seen from the above:

- for IFRS 13, fair value is classified as an assessment basis aimed at reflecting prices prevailing in open observable markets, that is, market value;
- in the IVS, the fair value is determined by the price that is considered fair for two specific parties to the transaction, taking into account the respective advantages or disadvantages that each party will receive from the operation;
- for a professional valuation, fair value is the value in exchange.

In order to determine fair value for accounting purposes (financial statements), IVS refer to IFRS 13, «Fair Value Measurement» (IVS 104 Bases of Value, 2017). The concept of fair value also exists in the RICS valuation standards [14]: «Fair value is also the basis of the measurement required in accordance with International Financial Reporting Standards and its application is made in accordance with specific additional conditions that mean that it is usually equated to market value». Thus, both the RICS and the IVS standards indicate that market and

fair values refer to valuation categories, while allocating fair value for the purposes of IFRS.

IFRS 13 indicates the possibility of applying different approaches to valuation, with emphasis on market, income, cost, each of which uses different methods and the subject of management has the opportunity to choose at their discretion these approaches and methods. Let's note that an enterprise can use either one or several approaches. Fig. 1 shows the algorithm for deciding how to determine the fair value of an asset using different approaches.

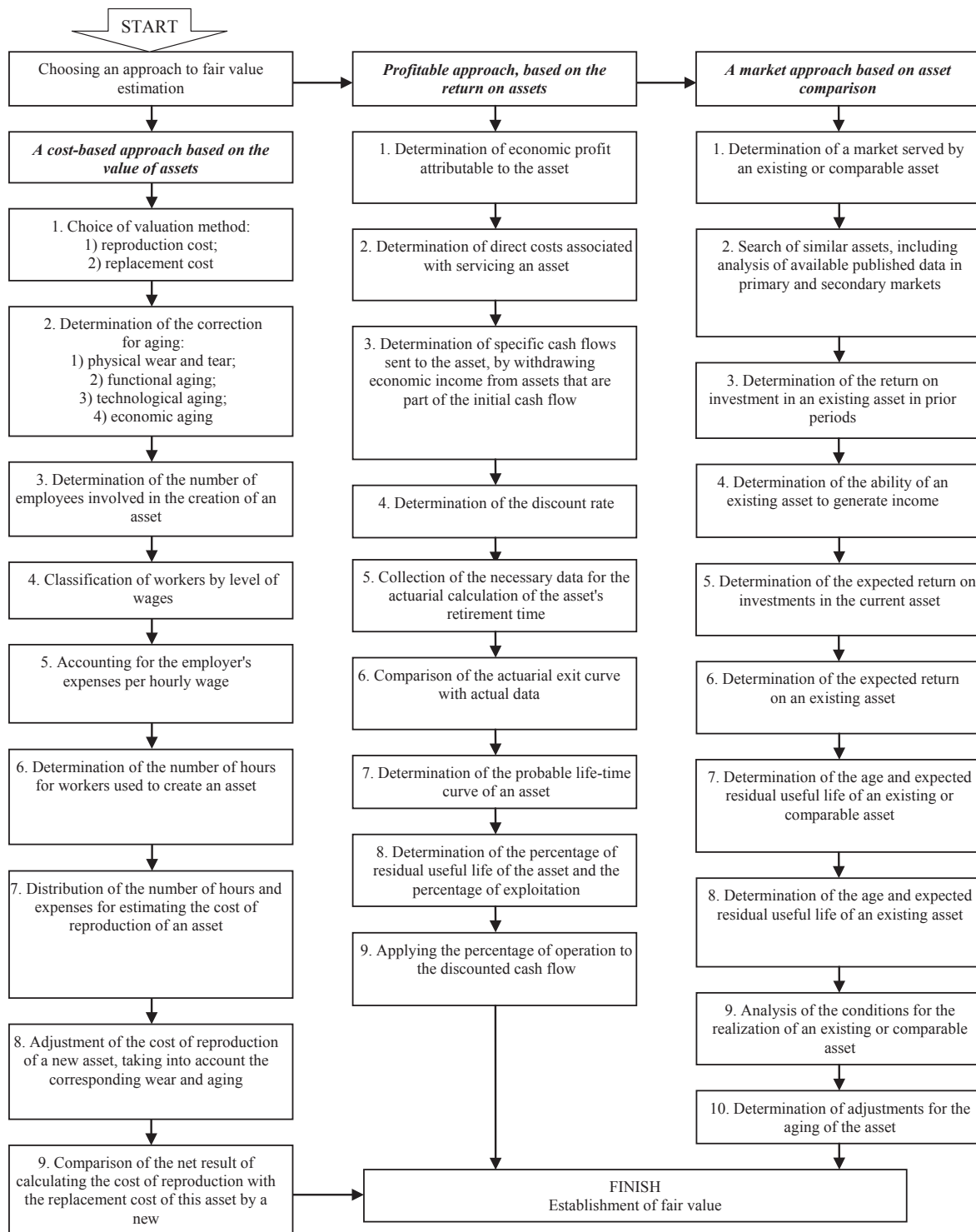


Fig. 1. Algorithm for making a decision to determine the fair value of an asset (in general, based on [13, 15])

Based on the aim of research, let's consider the income approach, the advantages of which, in comparison with the market and cost approach, is that:

- this approach more reflects the representation of the investor or owner about the property as a source of income;
- this approach assumes that, as of the valuation date, the value of the valuation objects is equal to the present value of the net proceeds that the owner may receive from the use of the proceeds in the future years. Fair value can be estimated;
- based on the option valuation model (Black-Scholes-Merton, Binomial model, including methods for estimating current value and reflect both the time and the internal value of the option);
- method of discounting cash flows (used to estimate the fair value of some intangible assets);
- method of estimating the present value (taking into account the value of money in time and the risks that may arise from owning the asset) [15–17].

Let's note that the present value is used to compare future amounts with the existing amount and is determined by discounting future cash flows. The need for discounting in accounting arises when the period of payment or receipt of the corresponding monetary value of values, in particular, exceeds one year, the discount requirement is directly or indirectly noted in IFRS. The use of discounting in the accounting according to IFRS is given in Table 1.

Depending on various economic tasks, the discount rate is calculated in different ways. In international practice, the discount rate is defined as the cost of attracting capital to the enterprise. For these purposes, the WACC (Weighted Average Cost of Capital) model is mainly used, as shown by the results of a survey conducted by ACCA among enterprises of various industries (Fig. 2).

The conducted analysis of research on the problems of selection of the discount rate [19–23] shows that the discount rate is used to bring future economic benefits into a single value of current value. At the same time, the discount rate:

- 1) is a pre-tax rate;
- 2) is in correlation with the predicted value of inflation;
- 3) is chosen and approved only after the weighted average cost of the enterprise's capital is determined, that is, an indicator characterizing the level of the total amount of expenditures for securing each source of financing, and also the borrowing rates existing on the market will be revealed;

4) takes into account the market risks typical for assets and liabilities, the amount of which has not been adjusted for future money-development calculations [17, 21–23]. As a rule, the discount rate consists of three components:

- the interest rate on borrowed funds is also the remuneration that the creditor would have received if he had provided the borrower with a fixed amount of money for a certain period;
- the interest rate of credit risk is the risk that the creditor considers to be in the event of a non-repayment of the loan amount;

– the expected interest rate of inflation (in no case the discount rate can't be lower than the expected inflation rate).

The choice of the discount rate should be determined by the objectives of the procedures. For example, in determining the current value of non-current assets acquired with a deferred payment, the discount rate can be used to use the market interest rate, under which the enterprise could raise funds (financial assets) on comparable terms [11, 17, 23]. In any case, the discount rate is a tool for allocating costs in the deferred payment period, the higher it is, the less the profit of the current period is affected.

Table 1

Discounting in International Financial Reporting Standards

Scope of application	IFRS/IAS
Estimation of initial cost of received assets	p. 18 IAS 2 «Inventories», p. 23 IAS 16 «Property, plant and equipment» p. 32 IAS 38 «Intangible assets»
Estimation of long-term accounts receivable and accounts payable	p. 4.1.2, 4.1.3 IFRS 9 «Financial instruments», p. K38 of app. A to IAS 39
Accounting of sales in installments	p. 11 IAS 18 «Revenue»
Accounting for financial leasing operations, namely: assessment of minimum lease payments, non-guaranteed liquidation value, net investment in leases; calculation of the present value of minimum lease payments	p. 20 IAS 17 «Leases»
Accounting for securities transactions, namely, the future payments or cash inflows are estimated in advance for the expected life of the financial instrument	p. 9 IAS 39
In determining the collateral (collateral associated with the retirement of cash)	p. 46 IAS 37
In carrying out the impairment test, the calculation of obligations under the pension plans, namely: – accounting by a business entity of defined benefit plans; – the present value of any economic benefits available in the form of reimbursements from the program or decreases in future contributions to the program	p. 40 IAS 36, p. 9 IAS 39 p. 48, p. 50, p. 58 IAS 19
Amount payable on demand, accounting for the acquisition of an uncontrolled interest	p. 47, p. 69 IFRS 13

Note: generalized, based on [18].

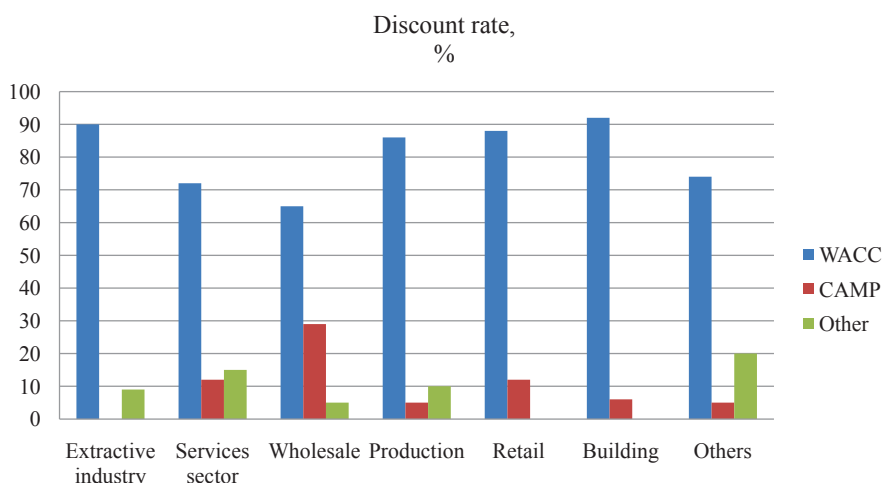


Fig. 2. Application of the discount rate by different methods [1]

When determining the discount rate, it is necessary to proceed from the mathematical dependence of the current value of one future cash flow (V) with its nominal value (A) and the discount rate (R), which is displayed by the formula:

$$V = \frac{A}{(1+R)^T}, \quad (1)$$

where V – current present value of the future cash flow; A – nominal value of the future cash flow; R – discount rate; T – the time from the valuation date to the payment date.

In formula (2), A and T are known values that are taken directly from the primary records. The dilemma reduces to which of the two values of V or R will be evaluated primarily, that is, directly based on the terms of the contract associated with a particular asset or liability, and which will be calculated by formulas (again).

If proceed from the desire to minimize the influence of professional judgments in the valuation on accounting indicators, it is expedient to first determine the value of V and recalculate the value of R . This means that the present (discounted) value of the asset or liability can be determined directly on the basis of the conditions and circumstances of the relevant contract, then it should be taken as a basis for the valuation of this asset or liability, without the use of discounting. In this case, the discount rate for the purposes of the following estimates of the asset or liability can be calculated using formula (2) on the basis of formula (1).

$$R = \sqrt[T]{\frac{A}{V}} - 1. \quad (2)$$

The discount rate calculated according to formula (2) is the actual rate of discounting, since it is inherently a latent rate, which the parties to the contract actually agreed upon by agreeing the terms and amounts of the corresponding payments. The actual discount rate is the interest rate, the application of which compares the cash that will be paid or received in the future to the original discounted value of the asset or liability determined by direct means.

If, however, the value of V can't be determined directly from the conditions and circumstances of economic activity, then the quantity R must first be determined, and the value of V is calculated by the formula (1). In such cases, the most acceptable basis for determining the interest rate is the interest rate for similar instruments:

1) when it comes to the assets of an enterprise, the basis for determining the discount rate may be debt instruments of third parties – issuers with a similar credit rating;

2) when it comes to the obligations of the enterprise, the basis for determining the discount rate may be the debt instruments of the enterprise.

7. SWOT analysis of research results

Strengths. The strength in the study is the proposed scientific and methodological approaches that allow to solve a number of specific problems arising in the process of valuation of assets and liabilities in accounting using discounting.

Weaknesses. The weak side is that the discounting practice in Ukrainian accounting is still fragmentary and has not become widespread, so there is no possibility to investigate the application of the discount rate by different methods at Ukrainian enterprises.

Opportunities. Opportunities for further research are investigation of the impact of risks that may arise from owning an asset on the choice of the discount rate.

Threats. The definition of the discount rate belongs to the jurisdiction of the professional judgment of the accountant, since the rate is different for different enterprises, transactions and tasks, so an unreasonable decision about its choice affects the reliability level of financial statements.

8. Conclusions

1. From the author's position, an algorithm is proposed in the choice of methods for fair value estimation, which allows more reliably to determine the real value of accounting objects and elements of financial reporting. Using the proposed algorithm, it is possible to simulate the process of calculating the cost of objects by sequentially identifying the adjustment of the aggregation of value values.

2. The existing approaches to estimating the discount rate are analyzed and a formula for calculating the discount rate for justified reflection in the company's accounting policy are proposed, which will minimize the impact of professional accounting judgments on the reliability level of financial reporting.

References

1. Official website of IFRS Foundation. URL: <http://www.ifrs.org> (Last accessed: 16.01.2018).
2. Lustosa P. R. B. The Fairness of Fair Value: SFAS 157, Irving Fisher and GECON // SSRN Electronic Journal. 2011. doi:10.2139/ssrn.1814176
3. Christensen H. B., Nikolaev V. V. Does Fair Value Accounting for Non-Financial Assets Pass the Market Test? // SSRN Electronic Journal. 2012. doi:10.2139/ssrn.1269515
4. Herrmann D., Thomas W. B., Saudagaran S. M. The Quality of Fair Value Measures for Property, Plant, and Equipment Accounting Forum // SSRN Electronic Journal. 2005. doi:10.2139/ssrn.312150
5. Landsman W. R. Fair Value Accounting for Financial Instruments: Some Implications for Bank Regulation // BIS Working Paper. 2006. No. 209. doi:10.2139/ssrn.947569
6. Da Silva J. M., Rezende A. J., Braunbeck G. O. Judgment of the Relevance of Fair Value in Biological Assets: A Experimental Analysis on the Market Perception Versus the Academic Perception // SSRN Electronic Journal. 2016. doi:10.2139/ssrn.2803418
7. Analysis of Change in Present Value Measurements / Bradshaw J. H. et al. // SSRN Electronic Journal. 2005. doi:10.2139/ssrn.1286942
8. Ji K. Some Rates are Better than Others // Journal of Applied Research in Accounting and Finance. 2010. Vol. 5, No. 2. P. 14–25. doi:10.2139/ssrn.1535678
9. Swinkels L. A. P. The Case for Local Fair Value Discount Rates Under IFRS // SSRN Electronic Journal. 2011. doi:10.2139/ssrn.1762291
10. Anantharaman D., Henderson D. Understanding Pension Liabilities: A Closer Examination of Discount Rates // SSRN Electronic Journal. 2016. doi:10.2139/ssrn.2864447
11. Tereshchenko O. The discount rate: the problems of calculation and the ways of their solution // The World of Finance. 2006. Vol. 4, No. 9. P. 144–150.
12. International Valuation Standards. December 2016. URL: <https://www.ivsc.org/files/file/view/id/812> (Last accessed: 16.01.2018).

13. Mizhnarodnyi standart finansovoi zvitnosti 13 «Otsinka spravedlyvoy vartosti» // Zakonodavstvo Ukrainy. 2013. URL: http://zakon0.rada.gov.ua/laws/show/929_068 (Last accessed: 16.01.2018).
14. RICS Rating Standards. Moscow: Alpina Publishers, 2011. 188 p.
15. Kontseptualna osnova finansovoi zvitnosti // Zakonodavstvo Ukrainy. 2010. URL: http://zakon3.rada.gov.ua/laws/show/929_009 (Last accessed: 16.01.2018).
16. Derun I. Vykorystannya spravedlyvoyi vartosti v bukhhalter-skomu obliku neoborotnykh aktyviv // Bukhhalterskyi oblik i audyt. 2012. Vol. 12. P. 20–27.
17. Kharlamova E. Spravedlivaya stoimost v MSFO. 2015. URL: <https://www.buh24.com.ua/spravedlivaya-stoimost-v-msfo/> (Last accessed: 16.01.2018).
18. Mizhnarodni standarty finansovoi zvitnosti // Zakonodavstvo Ukrainy. 2011. URL: http://zakon2.rada.gov.ua/laws/show/929_010 (Last accessed: 16.01.2018).
19. Rohova N. V. Bukhhalterskyi oblik dyskontuvannya zoboviazan: problemy realizatsii v umovakh MSFZ // Naukovyi visnyk Poltavskoho universytetu ekonomiky i torhivli. 2014. Vol. 4 (66). P. 193–197.
20. Dvorakova D. Developments in Fair Value Measurement: Some IFRS 13 View // Recent Researches in Applied Economics. 2011. P. 151–156. URL: <http://www.wseas.us/e-library/conferences/2011/Iasi/AEBD/AEBD-25.pdf> (Last accessed: 16.01.2018).
21. Ralko A. S. Metody opredeleniya stavky dyskontyrovaniya // Naukovyi visnyk Mizhnarodnoho humanitarnoho universytetu. 2015. P. 150.
22. Lesnova Yu. V. Diskontirovanie kak sposob opredeleniya spravedlyvoy stoimosti dlya tseyey MSFO // Korporativnaya finansovaya otchetnost'. Mezhdunarodnye standarty. 2014. Vol. 10. URL: <https://finacademy.net/materials/article/diskontirovanie-sposob-opredeleniya-stoimosti> (Last accessed: 16.01.2018).
23. Liliuk K. V. Vyznachennia stavky dyskontuvannya // Visnyk NTU «KhPI». 2015. Vol. 53 (1162). P. 33–36.

**ИССЛЕДОВАНИЕ СУЩЕСТВУЮЩЕЙ МЕТОДОЛОГИИ
 СТОИМОСТНОЙ ОЦЕНКИ И МЕТОДОВ ОЦЕНКИ СТАВКИ
 ДИСКОНТИРОВАНИЯ**

Раскрыта экономическая сущность справедливой и приведенной (дисконтированной) стоимости и исследованы их использования в Международных стандартах финансовой отчетности. Предложен алгоритм выбора методов оценки справедливой стоимости с использованием дисконтирования. Проанализированы существующие подходы к оценке ставки дисконтирования и предложены формулы расчета ставки дисконтирования для обоснованного отражения в учетной политике предприятия.

Ключевые слова: алгоритм выбора методов оценки справедливой стоимости, оценка ставки дисконтирования, расчет ставки дисконтирования.

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**FORMATION OF A SCIENTIFIC
 APPROACH TO FUNCTIONING
 AS A PROCESS OF DEVELOPMENT
 OF INNOVATION-ORIENTED
 ENTERPRISES**

Науково обґрунтовано теоретичні засади функціонування як процесу виконання економічних функцій суб'єктами господарювання, який і є основою розвитку як інноваційно орієнтованих підприємств, так і системи його економічних контрагентів. Розкрито науково-методологічні засади оперування розвитком інноваційно орієнтованих підприємств. На прикладі інноваційно орієнтованих підприємств машинобудування розкрито економічні функції, забезпечення виконання яких має реалізовуватись через оперування розвитком.

Ключові слова: економічні функції, функціональність інноваційно орієнтованих підприємств, оперування розвитком.

1. Introduction

Traditional consideration of the development of innovation-oriented enterprises as a process of change in order to achieve a strategic goal does not take into account the problems of its provision in conditions of unstable economic conditions. Insufficient validity of functioning as an operational development process negates its importance in the systematic implementation of economic functions to ensure a high level of economic status. This actualizes the need for the formation and scientific substantiation of functioning as a process for the development of innovative enterprises.

**2. The object of research
 and its technological audit**

The object of research is considering the functioning of the development process of innovation-oriented enterprises in changing, turbulent economic conditions.

The study of the processes of functioning and development is mainly considered by scientists apart. The justification of the theoretical foundations and methodological provisions for development is oriented to a long-term perspective, and functioning for a short-term period. One of the most problematic places is the lack of available scientific approaches to the implementation of