

Standardization of valuation activities in the field of property

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Abstract. The present research paper demonstrates the relevance of standardization of valuation activities in the assessment of the market and other values of real estate. It characterizes the changes in the federal valuation standards that took place in the Russian Federation in 2022. It indicates the remaining elements of ambiguity in the federal valuation standards, which do not allow to ensure the rights of consumers of valuation services, to increase the objectivity of the performed calculations and conclusions of the market value of the object, which most adequately reflects the current situation on the market. The possibility of additional use of International Financial Reporting Standards and International Auditing Standards for clarification of the provisions contained in the federal standards of assessment. There are pointed out the necessity of developing the Methodological recommendations for the appraisal of different kinds of values named in the federal law on the appraisal activities and in the federal appraisal standards. A provision is formulated that the term cost should be used in two meanings: as an economic category and as a valuation index Interpretation of the concept of cost as an economic category is given. A proposal to increase the number of methods included in the cost approach has been made. The new method of the cost approach, the method of discounting the estimated cost with the help of which market cost of real estate can be estimated has been offered. The main conclusions and proposals are formulated.

1 Introduction

The development of high-speed rail service requires either the construction of new lines or the reconstruction of existing lines and (or) certain infrastructure facilities. Since these activities often involve the seizure (redemption) of land plots and improvements located thereon or the execution of their lease, Russian law requires the participation of independent appraisers to determine the market or other value of the real estate. In addition, the operation of high-speed railway lines may result in a situation that is quite common in business and involves challenging the results of cadastral appraisal to optimize the amount of land tax. A specific feature of the Russian economy is that taxes continue to be levied separately on the value of a building (regional property tax) and the value of a land plot -land tax, which

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belongs to local taxes and levies. The basis for land tax collection is cadastral value as defined by the Tax Code of the Russian Federation. At the same time, the owner of the land plot has the right to challenge the amount of cadastral value determined by the mass appraisal method and assess its market value, which may be lower than the amount obtained at cadastral appraisal. Either a pretrial settlement with the tax inspectorate or appealing to the court, which is done based on preparing a report of an independent appraiser, is possible here.

In recent years, a fairly large number of articles have been published that have considered various methodological aspects of assessing the market value of real estate [1-9]. Other works point to the need to improve the validity of valuation activities and the reliability of determining either the market value of the real estate or the amount of income when using it [10-13]. However, as evidenced by the experience of evaluation activities, in addition to the issues considered, there is a need for a critical analysis of the current state of affairs in the field of standardization of evaluation activities, which in the Russian Federation is provided by the federal law "On Evaluation Activities in the Russian Federation". [14], federal valuation standards, and other standards of valuation activities, including international standards.

Currently, quite often there are claims against appraisers regarding the validity of the market value of the assessed objects, which, among other things, are caused by an ambiguous interpretation of certain provisions of normative legal acts. Sometimes these disputes between customers of appraisal and report performers cannot be settled in the pretrial order. In addition, there are appeals of law enforcement agencies to courts of different instances.

To better protect the rights of consumers of services of appraisers, and increase the validity of their determination of the amount of market or other valuation objects, in our opinion, should be improved regulations adopted in the Russian Federation by public authorities and administration and supplement them with a methodological framework that specifies the provisions of assessment legislation.

2 Improving the validity of real estate valuations

As is known, the basis for assessing the market value of real estate is the federal law and the Federal Valuation Standards (FVS), approved by Order No. 200 of the Ministry of Economic Development of the Russian Federation on 14.04.2022 [15]. The above normative legal acts are supplemented by other documents, among which are several Resolutions of the Government of the Russian Federation on the cadastral evaluation of various categories of land (for example, [16] and [17]), Decree of the RF Ministry of Property [18] and others. In the initial period of formation of appraisal activity in the Russian Federation, when the legislation was just beginning to be developed and there was a lack of normative-legal acts adopted at the federal level, the subjects of the Russian Federation adopted their own normative and methodological documents. For example, in St. Petersburg, a significant role was played by the now repealed order of the governor of the city [19], which can still be used for methodological purposes, as it contains a significant amount of provisions specifying the federal standards of assessment.

A considerable number of normative documents are used to provide individual stages of the procedure for assessing the market and other types of real estate value, for example, in terms of determining the balance or estimated cost of objects of assessment: the order of the Ministry of Finance of the Russian Federation [20] and the order of the Ministry of Construction and Housing and Communal Services of the Russian Federation of August 4, 2020, № 421/pr "Methodology for determining the estimated cost of construction, reconstruction, capital repair, demolition of capital construction, works on the preservation of objects to [21]. Moreover, International Financial Reporting Standards (IFRS) - IAS 1, 2, 7, 8, 10-12, 16, 18-21, 23, 24, 26-29, 32-34, 36-41; IFRS 1-8, 10-13; IFRIC Clarifications

(IFRIC) 1, 2, 5-7, 9, 10, 12-21; SIC Clarifications (SIC) 7, 10, 25, 29, 31, 32) are allowed for application in RF territory. Of most interest from a real estate valuation perspective are IFRS 13 "Fair Value" and IAS 36 "Impairment of Assets".

IFRS 13, in particular, includes:

- the concept of fair value, which, however, is identified with the price (item 24) that would be received to sell the asset (i.e., determined from the seller's perspective) or paid to transfer the liability in an arm's length transaction between market participants at the measurement date (fair value fewer costs to selling, determined from the buyer's perspective). In addition, item (c) para. 6 notes that some similarities with fair value are net realizable value as measured under IAS 2 Inventories or value in use as determined by IAS 36 Impairment of Assets, but are not fair value. Also, paras. 57-60 address fair value measurement upon initial recognition;
- classification of valuation methods (paragraph 62), which are referred to as approaches to evaluation (income, cost, and market), which in terms of Russian valuation law is a confusion of the two concepts;
- recommendations for the use of raw data, which are grouped (classified) into three levels according to the degree of reliability, which is important when working with information used to assess the market and other property values;
- the most effective use of the asset is explained;
- recommendations for estimating the discount rate.

IAS 36 contains references and definitions of book value and fair value, the distinction of concepts of depreciation and amortization, At the same time paragraph 2 (f) of IAS 36 states that the standard does not apply to the accounting for impairment of investment property measured at fair value (IAS 40 "Investment property"), and by paragraph 3 this standard is not applied to assets arising from construction contracts, and assets classified as held for sale (or included in the disposal group, which is classified as disposal group, which is classified as

Other normative legal acts of the Russian Federation regulating, by Article 1 of the federal law [14], the relations arising in the implementation of valuation activities also include International Standards on Auditing (ISA), recognized as subject to application in the Russian Federation based on Ministry of Finance of Russia [23]. Among them are:

- ISA 200 "The main objectives of the independent auditor and the conduct of the audit by international auditing standards," which, in particular, is in paragraphs. 25-29 establishes requirements for professional judgment;
- ISA 250, Consideration of Laws and Regulations in the Audit of Financial Statements, which allows for a more informed approach to analyzing the most effective use of the object of evaluation;
- ISA 505, External Assurance, which is important for reviewing the sources of information used by the evaluator;
- IAS 560 "Events after the balance sheet date," which is appropriate when characterizing an appraiser's assumptions;
- ISA 620 "Use of expert auditor's work", where paragraph 6 makes a distinction and the possibility of engaging both internal and external experts (engaged either by the auditor or the client of the audit), and also provides provisions for establishing the reliability of the results of value assessment, which is important because the report of the independent evaluator is a document of financial reporting and thus is equivalent to a report for the purposes

AS 710 "Comparative Information-Comparative Figures and Comparative Financial Statements", which may help ensure the reliability of the independent appraiser's report when using the comparative approach;

-ISA 3400 (formerly ISA 810), Verification of Forecast Financial Information, which can provide greater reliability in the use of the income approach to the valuation of the market value of the real estate.

It is necessary to consider separately the issue of the types of assessed value by appraisal legislation. The fact is that article 3 of federal law [14] stipulates that market, cadastral, liquidation, investment, or other values stipulated by federal valuation standards may be established in respect of valuation objects. At the same time article 7 of the above law notes that if a normative legal act requiring mandatory appraisal of an object, or an appraisal agreement does not specify a particular type of value of an appraisal object, the market value of that object must be established. This rule shall also be applied in the case of the use in the normative legal act of terms defining the type of value of the object of evaluation, including the terms "actual value", "reasonable value", "equivalent value", and "real value" and others, not provided for by the federal law [14] or the evaluation standards. In the latter case the term "appraisal standards", as opposed to the term "federal appraisal standards" used above, draws attention. By the law [14] valuation standards are developed by self-regulating organizations of appraisers and they cannot contradict the named law and the federal valuation standards, approved by the federal executive body. Thus, if the standards of self-regulating organizations state, for example, the fair value, then the valuation is subject to the market value of the object.

In this connection, it may be noted that in valuation activity there is no point in singling out new types of value if the methodology for determining them does not differ in any way from the algorithm for assessing market value. As an example, let us take the definition of fair value given in paragraph 2 of IFRS 13: "Fair value is a valuation based on market data, not an entity-specific valuation. For some assets and liabilities, observable market transactions or market information may be available. For other assets and liabilities, observable market transactions or market data may not be available. However, the objective of measuring fair value in both cases is the same: to determine the price that would be received in an orderly transaction between market participants to sell the asset or transfer the liability at the measurement date under current market conditions (that is, the exit price at the measurement date from the perspective of the market participant that holds the asset or is the obligor under the liability).

From this definition, it is clear that, first, we are talking about the market value of the object, as it is conducted based on market data and the implementation of the usual sale transaction in the current market conditions, but it is specified that this value must be determined from the seller's point of view. How to take this into account in the method of calculation is not quite clear. One can assume that in the case of the income approach the discount rate should be set at a minimum of the most probable range (which will increase the result and thus reflect the seller's interest); in the case of the cost approach, the entrepreneurial profit rate should be set at maximum, while in case of comparative approach the price of supply should be more in line with the price.

One cannot ignore the stated goal-to determining the price, which the appraiser cannot do because he does not know all the circumstances of the future transaction. Thus, two notions - price and value-are equated here, the inadmissibility of which is noted, in particular, in the work of V. N. Myagkov "Cost-not price. Types of values and prices", published in the journal "Voprosy evaluation" (2019, № 2, p. 2-33).

It may be noted that a similar, but without the term, "price" and a shorter definition is given in clause 3.13.1 of the International Valuation Standards 2 "Valuation bases other than market value: "Fair, or Objective, Value. The sum of money for which a property may be sold (or a debt written off) in a commercial transaction between competent willing parties. The words "may be sold" allow the fair value to be interpreted as both equal to market value and equal to market value with any discount to which the "competent willing parties" may

agree, and the reference to the commercial nature of the transaction does not at all imply the priority of the market participant who holds the asset in question.

At the same time, international standards of evaluation (ISO-2021/2017) cannot be considered a normative legal act because they have not been enacted in the territory of the Russian Federation neither by the relevant international treaty, nor by other federal laws, nor by order of the Ministry of Finance of the Russian Federation.

In 2022 an order from the Ministry of Economic Development of Russia [15] amended the Russian valuation legislation by approving new valuation standards and canceling a number of the previous ones. In them, as in the previous federal valuation standards, the methods for assessing the market and other values are described in very general terms, which do not allow to make of specific calculations and do not specify the differences in the methods for assessing different types of value. Hopefully, to protect the rights of consumers of appraisers' services, in the future Methodological Recommendations will be adopted, describing in sufficient detail the methods of appraising the types of value indicated in the FSO, but not limiting the right of independent appraisers to choose their methods of evaluation, including those not specified in the federal standards of evaluation.

By FSO I "Structure of the federal valuation standards and basic concepts used in the federal valuation standards". [15] (the new valuation standards are numbered in Latin numerals, further FSS I) all the federal valuation standards are divided into two groups: general valuation standards and special valuation standards. In general, this innovation does not give anything from the point of view of protecting the rights of valuers' consumers and increasing the validity of determining the market value of valuation objects. However, we may note a somewhat greater precision in the classification of the various types of federal standards. For instance, item 4 of FSO I notes that the general standards of valuation define general requirements to the procedure for valuation of all types of valuation items and expert evaluation reports, while special valuation standards define additional requirements to the procedure for valuation, including those for certain types of valuation items (real estate, machinery and equipment, businesses, intangible assets, and intellectual property). Six new standards and FSO 5 [24] from the previously adopted federal standards are included in the General valuation standards by order of the Russian Ministry of Economic Development [15]. Additionally, here may be used an order of the Federal Agency for State Property Management [25], which specifies the number of requirements contained in the federal valuation standards.

The most unpleasant thing is that there are currently no special standards for the assessment of cadastral, liquidation, and investment value in Russia at all, since clause 2 of the order of the Ministry of Economic Development of Russia [15] previously valid standards for the assessment of these types of value were canceled, and new ones have not yet been approved. About cadastral value assessment, there is a paradoxical situation: there is no federal standard of assessment, but there are rules for conducting such an assessment (for example, the Government of the Russian Federation Decree N 316 of April 8, 2000 "On approval of the Rules for state cadastral valuation of land"). The other previously approved standards may be classified as special ("Evaluation of Real Estate (FSO No. 7)" [26], [26], Business Valuation (FSO No. 8) [76], "Evaluation for the Purposes of Collateral (FSO No. 9)". [28], "Valuation of machinery and equipment (FSO No. 10)" [29], and "Valuation of intangible assets" [30], [29] and "Valuation of Intangible Assets and Intellectual Property (FSO No. 11)". [30]), are still in force, taking into account the editorial changes made to their text by order of the Ministry of Economic Development of the Russian Federation [15].

Clause 7 of FSO I [15] proposes an interpretation of the term "value" as a measure of the value of an object of evaluation for market participants or specific persons, expressed in the form of a sum of money. It seems that this interpretation is given in the federal standard as a direct borrowing from English-language publications, where value is designated as "value".

This notion came from English political economy (members of the older generation remember that this theory belonged to one of the three sources of Marxism in Soviet political economy), in which the concepts of value and value were identified.

From the standpoint of the branch of philosophy that studies values and their nature and is called "Axiology", they (values) can be both objective and subjective and can be quite diverse: group (national, religious, gender, age), universal (family, love, friendship, freedom, respect), situational and others, and not necessarily measured in money at all. If the value is understood as the degree to which someone's needs are met, in practice the appraiser is unable to determine this and performs an appraisal to determine the value of a particular type of value that most adequately reflects the situation on the market.

In our opinion, it should be taken into account that the concept of "value" is used with two meanings: as an economic category and as a valuation indicator.

The concept of value as an economic category is characterized in various ways by representatives of various scientific schools. For example, value is identified with the price based on the equality of supply and demand (Alfred Marshall, the founder of the neoclassical direction in economic theory) and comes to a complete negation when the thesis is put forward that the value of any object is not inherent in it at all (Henry S. Harrison in "Real Estate Valuation"). According to Henry S. Harrison, an object can have value only as a result of the influence of external, market forces: supply and demand, which determine utility, which is the basis of value, as well as scarcity and solvent demand.

We are supporters of the so-called classical theory, which goes back to the works of Aristotle (Nicomachean Ethics, book V and Eudemus Ethics, book IV) and was developed in the works of Adam Smith, David Ricardo, and Karl Marx, where it was argued that value is created by labor (the theory of labor value). At the same time, K. Marx proceeded from the principle of monism, proving that labor is the only basis for the emergence of value. Thus, it can be considered that the economic category of "value" is characterized by the index of labor input and is measured in the corresponding units - man-hours and man-days. Hence K. Marx's expression: the price is the monetary expression of value, i.e., the result of recalculation of labor inputs, including those mediated, into money.

In our opinion, without going into the FSO I explanation of the concept of "value" as an economic category, this standard should have indicated that it is an evaluation indicator, which should always be used together with a specific definition characterizing the type of value to be evaluated: market, cadastral, investment, etc., which is necessary because of the differences in calculation methods. Here we can point to the above-mentioned work of V.N. Myagkov, in which quite a large number of types of value and prices are singled out. Thus, a particular type of value is an appraisal indicator that characterizes the amount of money determined by the approaches and methods of calculation chosen by the appraiser.

Section III, clause 12 of FSO I states that "A valuation method is a sequence of procedures making it possible to determine the value of the valuation object based on the information essential to this method". One cannot agree with this, since the sequence of procedures is a methodology, while the method of evaluation is a specific method of calculation, including, in particular, calculation formulas with explanations of their application, methods of processing (interpretation) of the initial information and the results obtained.

Clause 14 of FSO I introduces a new provision by which the result of an appraisal may be presented not only as a number but also (or) an interval of values. Previously, it was established that the report indicates the market or other value of an object in the form of a single number.

Important is the establishment in the new FSO I (paragraph 17) of the concepts "shall", "should", and "may", which are used to indicate the degree of obligation to fulfill the requirements and recommendations of evaluators.

Clause 12 of FSO II [15] defines a new type of value - equilibrium value. The characteristic of this type of value given in clause 15 states, firstly, that it, unlike the market value, reflects the conditions of the transaction for each party, including the advantages and disadvantages that each party will receive as a result of the transaction. In particular, this may be a discount rate, reflecting the rate of return on investments with comparable risk expected not by the market participants, but by the specific participants in the transaction (clause 15 of FSO V [15]). Secondly, it is not indicated that it is necessary to evaluate the assumption of the most effective use of the object, and in determining the equilibrium value it is necessary to take into account the intended use of the object by the parties to the transaction and other conditions relating to the circumstances of the particular parties to the transaction. At the same time, item 21 of FSO II notes that assumptions on the ways of use other than the most efficient must be indicated in the assignment for evaluation and in the report on the evaluation of the object of evaluation (hereafter-evaluation report) and must correspond to the purpose of evaluation.

Thus, while the market value is determined for an indefinite circle of market participants, i.e. independent market participants, the equilibrium value refers to two specific parties who have already met and agreed on the transaction with the real estate object. In this case, paragraph 4 of FSO II "Variety of Value" states that the assumptions about the specific participants in the transaction, and the specific users of the object are non-market prerequisites. However, what are the peculiarities in the method of calculation? We should expect a special valuation standard and Methodical Recommendations, which will specify in more detail the peculiarities of the method of its determination.

Clause 12 of FSO II does not mention cadastral and liquidation value, but there is a reference to other types of value provided for by the Federal Law [14], in article 3 of which these types of value are specified.

Generally speaking, given that in the future federal standards for the assessment of cadastral, equilibrium, investment, and liquidation value will obviously be developed, it is advisable to apply the matrix approach when coordinating their text with the interested parties. By the matrix approach, we mean the developed matrix in which the main differences in the performance of calculations when assessing various types of values for certain types of objects are indicated.

Matrix of consideration of peculiarities of application of methods of evaluation of different types of values for certain types of objects

Table 1. Types of evaluation objects and costs

Types of costs	Types of evaluation objects				
	Real Estate	Machinery and equipment	Intangible assets	Bail	Business
Market					
Equilibrium					
Investment					
Liquidation					

The cells of the matrix should reflect the provision established in paragraph 2 of FSO II, that the result of the evaluation, including the choice of approaches and methods, is influenced by the prerequisites of value, which are listed in paragraph 3 of the above standard, among which, in particular, the participants in the transaction or users of the object (specific or indefinite persons), the intended use of the object, the nature of the transaction. Here it is also possible to refer to the conditions of the transaction, which are named in the characteristic of the equilibrium value (clause 15, FSO II). If the text of the relevant federal

standard and (or) the Methodological Recommendations specifying it do not reflect the peculiarities of the calculation of a particular type of value for specific objects of assessment, they should be entered in the relevant document. The exception is the cadastral value, which is determined only by real estate.

Section IV "Cost Approach" is significantly supplemented in FSO V [15], where, unlike the previous version of a similar federal standard, two methods of evaluation are specified:

- 1) reproduction or replacement cost method;
- 2) method of summing up the value of components in the composition of the object of evaluation.

In this case, about the first of the above methods in clause 32, it is noted that in determining the costs of reproduction or replacement it is necessary to consider the use of actual costs incurred in the creation of the object of evaluation or a similar object. For real estate appraisal, we are talking about the use of estimate documentation, including executive estimates preserved by the owner of the appraisal object. Then this paragraph lists the adjustments to the actual estimated cost to be taken into account in the calculations. Thus, we are talking about the expertise of the estimate documentation available with the owner of the object (including acts of work performed by form No.2), at which the following should be done:

1. Bring the composition and amount of work and costs in line with the actual presence of the elements of the structure because during the operation of the facility many of its elements are modified;
2. To calculate the market value of the equipment of the object, which by the assessment assignment is an integral part of the property and is not included in the estimated cost;
3. Take into account current norms of limited costs (overheads, estimated profits, winter appreciate of works, temporary buildings, and structures, other works and costs) by the methodology for determining the estimated cost of construction (major repairs) in force on the date of assessment;
4. Perform indexation of the estimated cost to the price level at the date of assessment;
5. Take into account the taxes that are included in the estimated cost as of the date of the estimate. As a rule, it is the value-added tax, but in different periods, other types of taxes were also included in the estimate documentation, which is not currently in force.

Thereby eliminated an apparent contradiction, when the federal standards state that the approach is a set of methods of evaluation, but in the previous version of the federal standard, in describing the cost approach, methods are not called.

However, in our opinion, the composition of the cost approach in FSO V should be significantly supplemented and include methods:

- balance sheet valuation;
- estimated pricing;
- discounting of the estimated cost.

The inclusion in the cost approach of the book value method is determined by the requirement contained in article 11 of Federal law No. 135-FZ [14], by which the report of an independent appraiser must indicate, if available, the book value of the appraised object. The reservation "if available" refers to cases where the market or other value is determined about real estate belonging to a legal entity since physical persons do not have such a document as a balance sheet.

The method of estimated pricing is necessary for determining the estimated cost of construction of improvements that are part of the evaluated real estate. In this case, the value of the estimated construction cost is used not only in the cost approach but also in assessing the market value of the land by the method of intended use, the residual method, and allocation method, as well as in the income approach to calculating the net operating income in terms of determining the reserve for the replacement of the fast-moving elements of the

structure. Thus, the method of estimated formation is a tool in the conduct of professional activities by independent appraisers and is used to calculate individual pricing indicators used in various methods of valuation of the market and other types of real estate values.

An interesting provision is contained in paragraph 31 of FSO V [15]: "When calculating the costs of reproduction and replacement costs, the entrepreneur's profit (Ppr) may be taken into account. In the methodology of calculation, in the assessment of market or other values, this account is considered mandatory. Therefore, it is necessary to specify additionally the cases when the profit of the businessman can be not considered.

The FSO V does not regulate in any way the procedure for assessing the Entrepreneurial Norm, which in the practice of evaluation activities is often determined based on the intuition of the evaluator and is not considered in the normative and methodological documents. Sometimes expressed the view that it is impossible to regulate the procedure for establishing the norm of the entrepreneur and, even more so, to perform at least approximately perform rationing its value because of the interaction of supply and demand in the market for a particular type of objects is very individual and highly differentiated by different territories and types of objects, dynamically changing. The objects that have little or no presence in the market turnover cause special difficulties here. To reduce subjectivity in assessing the value of this parameter can be, firstly, to establish the limiting values of Ppr, and, above all, for specialized real estate rail transport, secondly, methodically establish a procedure for obtaining and analyzing market information used to calculate the value of Ppr, thirdly -use analytical methods for assessing Ppr, including based on the indicator "project discount" (Dp), proposed in the Methodological Recommendations for Evaluating the Effectiveness of Investment Projects [31, p. 26]

$$D_p = NV - NPV, \tag{1}$$

Where NV—net income (net value), rubles;

NPV-net discounted income (net present value), rubles.

For real estate valuation using the cost approach, it is advisable to present the absolute value of Dp in the form of profit margin-a relative value in percentage terms.

In our opinion, it is advisable to introduce a provision in FSO V stipulating that the determination of the costs of reproduction or replacement can be carried out both by aggregate and unit norms and prices. This is all the more important because the abolition of the former methods for determining the construction cost estimates, which included integration norms and prices, excluded this section in a modern similar document (Order of the Ministry of Construction, Housing and Communal Services of the Russian Federation [21]). In addition, it is necessary to establish the scope of application of the enlarged and unitary norms and prices due to the differences in the base prices in which they were issued (starting from 1969) and the composition of the indicators.

In addition to the above methods of the cost approach, we can offer another one, which we propose to call the method of discounted estimated cost. The name of the method reflects the mechanism of calculation, which combines two approaches - cost and income. The essence of the method consists in discounting by the end of the investment period the investor's expenses distributed by construction periods (calculation steps) to the date of completion of construction (the end of the marketing period):

$$C_{DEC} = \sum_{t=0}^{T-1} [(C_{ic_t} \times F_{it}) + C_{ic_T}] + C_{lp}, \tag{2}$$

where C_{DEC} —the market value of the real estate, evaluated by discounted estimated cost method, rubles;

T—duration of the investment cycle for the construction of the assessment object, months;

t – the ordinal number of the calculation step;

$T - t$ – the penultimate calculation step;

$C_{ic\ t}$ – the number of investor's costs at the t -the moment of erection of the evaluated object, rubles;

$F_{1\ t}$ – multiplier of the fourth compound interest function (the future value of the current unit – future value (FV) of present value (PV);

$C_{ic\ T}$ – the investor's costs at the last step of the investment cycle, rubles;

C_{lp} – the market value of the land plot as of the date of real estate appraisal, rubles.

In formula (2) the investor's costs are understood to be the sum of the estimated cost of construction by the consolidated estimate and the investor's indirect costs, or, in the terminology of FSO No. 7 "Appraisal of Real Estate" [26, p. 24h] – the costs associated with the creation of the object, but not included in the construction and installation work. [26, p. 24g], – costs associated with the creation of the object, but not included in the construction and installation work.

The performance of the discounting procedure replaces the consideration of the profit margin of the entrepreneur, as referred to in paragraph 31 of the FSO V. Since the assessment of the value (norm) of this pricing indicator is associated with considerable difficulty and often with the subjectivity of the appraiser, the use of the formula (2) allows you to replace the account of the profit of the entrepreneur on the discount rate, which is the rate of return on capital.

Expression (2) is given for the case where the valuation date coincides with the end of the investment period, including the so-called marketing period, during which the final sale of commercial real estate.

If the valuation date is set later than the end of the investment period, the discounted estimated cost from the date of completion of construction to the valuation date will additionally need to be indexed by the construction appreciation index and a new element of the formula – the amount of accumulated depreciation.

3 Conclusions and suggestions

1. The normative legal documents regulating the appraisal activities of independent appraisers in the Russian Federation should include not only the law [14] and federal appraisal standards [15] and several orders of ministries and departments of the Russian Federation, but also International Financial Reporting Standards (IFRS) [22] and International Standards of Auditing (ISA) [23]. At the same time, valuations performed independently by employees of banks, insurance companies, accountants, or auditors, which may be called internal valuations based on job titles and requirements for accounting, auditing, and estimating construction cost estimates, are not valuation activities and are not regulated by the valuation legislation.
2. The introduction of the new federal standards of evaluation has not eliminated the ambiguity of interpretation of certain provisions, does not fully meet the needs of the subjects of evaluation activities, and requires revision of the FSO.
3. In carrying out appraisal activities, "fair value," "actual value," "reasonable value," "equivalent value," and "real value" cannot be assessed, which are the subject of the work of internal appraisers.
4. Article 2 of the law [14] should be supplemented with the words "... and located on the territory of the Russian Federation" to that the requirements of this law apply to real estate located only within the borders of the Russian Federation.
5. In valuation activities it makes no sense to distinguish any type of value if you cannot uniquely and accurately determine the differences in the methodology of their calculation.

6. In addition to the federal appraisal standards it is necessary to develop Methodological Recommendations for determining each type of value, which is the subject of appraisal activities, in which to determine the methodology of appraisal and recommendations for the sources of information used, taking into account the dependence of the result on the purpose of the assessment and its intended use.

References

1. Ü. Özdilek, The scientific basis of value and valuation / Journal of Revenue and Pricing Management, **18(3)**, 266-277 (2019) doi: 10.1057/s41272-018-00169-z.
2. N.V. Chepachenko, A.A. Leontiev, G.A. Uraev, N.A. Polovnikova, *Features of the factor models for the corporate cost management purposes in construction*, IOP Conference Series/ Materials Science and Engineering, **913(4)**, 042075 (2020) doi: 10.1088/1757-899X/913/4/042075.
3. O. Pokrovskaya, R. Fedorenko, *Methods of rating assesment for terminal and logistic complexes*, IOP Conference Series: Earth and Environmental Science, **403(1)**, 012199 (2019) doi: 10.1088/1755-1315/403/1/012199/.
4. M. Walacik, M. Renigier-Biłozor, A. Chmielewska, A. Janowski, Property sustainable value versus highest and best use analyzes / Sustainable Development, **28(6)**, 1755-1772 (2020) doi: 10.1002/sd.2122.
5. A. Minnullina, *Residential real estate value assessment considering the influence of various factors*, E3S Web of Conferences, **91**, 08049 (2019) doi:10.1051/e3sconf/20199108049.
6. M. Renigier-Biłozor, M. D'Amato, The valuation of hope value for real estate development Real Estate Management and Valuation, **25(2)**, 91-101 (2017) doi:10.1515/remav-2017-0016
7. S.V. Kolankov, S.P. Voronova, U.A. Golikova, Development of methods of assessing the land market value, Materials Science Forum, MSF, **931**, 1137-1141 (2018) <https://doi.org/10.4028/www.scientific.net/MSF.931.1137>
8. N. Leskinen, J. Vimpari, S. Junnila, Using real estate market fundamentals to determine the correct discount rate for decentralised energy investments, Sustainable Cities and Society, **53**, 101953 (2020) doi: 10.1016/j.scs.2019.101953.
9. E.A. Gromova, S.V. Pupentsova, *Simulation modelling as a method of risk analysis in real estate valuation*, IOP Conference Series: Materials Science and Engineering, **898(1)**, 012048 (2020) doi: 10.1088/1757-899X/898/1/012048.
10. E. Korovyakovskiy, Y. Panova, Dynamics of Russian dry ports. Research in Transportation Economics, **33(1)**, 25-34 (2011) doi: 10.1016/j.retrec.2011/08/008/.
11. N. V. Malyshev, E. K. Koroviyakovskii, S. A. Rostovceva, Robotic auto mation of inland container terminals. Scientific Journals of the Maritime University of Szczecin, **63(135)** [https:// DOI i.org/10.17402/441](https://DOI.i.org/10.17402/441).
12. L.G. Selyutina, E.V. Pesotskaya, T.V. Maleeva, *Management of housing construction and reconstruction of the housing stock based on the modern concept of forming marketing in vestment decisions*, IOP Conference Series: Materials Science and Engineering, **698(7)**, 077030 (2019) doi: 10/1088/1757-899X/698/7/077030.
13. J.A. Carrasco-Gallego, Real estate, economic stability and the new macro-financial policies / Sustainability (Switzerland), **13(1)**, 1-19 (2021) doi:10.3390/su13010236.

14. The Law of the Russian Federation of 29.07.98 No. 135-FZ "On valuation activities in the Russian Federation"
15. Order of the Ministry of Economic Development of the Russian Federation, dated 04/14/2022 "On Approval of Federal Evaluation Standards and on Amendments to Some Orders of the Ministry of Economic Development of the Russian Federation on Federal Evaluation Standards", 200 (2022)
16. Decree of the Government of the Russian Federation No. 316 of April 8, 2000 "On Approval of the Rules for Conducting State Cadastral Land Assessment"
17. Decree of the Government of the Russian Federation No. 582 of July 16, 2009 "On the Basic Principles of Determining Rent when Renting Land Owned by State or Municipal Property, and on the Rules for Determining the Amount of Rent, as well as the Procedure, Conditions and Terms of Payment of Rent for Land Owned by the Russian Federation"
18. Decree of the Ministry of Property of the Russian Federation No. 568-r dated 07.03.2002 "Methodological recommendations for determining the market value of land plots"
19. 19. Order of the Governor of St. Petersburg dated August 1, 1996 No. 113-r "On the procedure for assessing State-owned Immovable Property and Rights to it"
20. Order of the Ministry of Finance of the Russian Federation of 29.07.1998 N 34n "On approval of the Regulations on accounting and financial reporting in the Russian Federation"
21. Order of the Ministry of Construction and Housing and Communal Services of the Russian Federation No. 421/pr dated August 4, 2020 "Methodology for determining the estimated cost of construction, reconstruction, capital repairs, demolition of capital construction facilities, works to preserve cultural heritage objects (historical and cultural monuments) of the peoples of the Russian Federation on the territory of the Russian Federation"
22. Order of the Ministry of Finance of the Russian Federation No. 217n dated December 28, 2015 "On the Introduction of International Financial Reporting Standards and Clarifications of International Financial Reporting Standards into Effect on the Territory of the Russian Federation and on the Invalidation of Certain Orders (Individual Provisions of Orders) Ministry of Finance of the Russian Federation"
23. Order of the Ministry of Finance of the Russian Federation dated 09.01.2019 N 2n "On the Introduction of International Auditing Standards in the Territory of the Russian Federation and on the Invalidation of Certain Orders of the Ministry of Finance of the Russian Federation"
24. Order of the Ministry of Economic Development of the Russian Federation No. 328 dated 04.07.2011 "On Approval of the Federal Assessment Standard "The Procedure for Conducting an Expert Examination, requirements for an Expert Opinion and the Procedure for its Approval" (FSO No. 5)
25. Order of the Federal Agency for State Property Management dated 09/23/2009 No. 272 "On Approval of the Procedure for Consideration of Assessment Reports during the Implementation by the Federal Property Management Agency of the Powers of the Owner of Federal Property"
26. Order of the Ministry of Economic Development of the Russian Federation No. 611 dated 25.09.2014 "On Approval of the Federal Valuation Standard "Real Estate Valuation (FSO No. 7)"

27. Order of the Ministry of Economic Development of the Russian Federation dated 01.06.2015 N 326 "On approval of the Federal Assessment Standard "Business Assessment (FSO No. 8)"
28. Order of the Ministry of Economic Development of the Russian Federation No. 327 dated 01.06.2015 "On Approval of the Federal Assessment Standard "Assessment for Collateral Purposes (FSO No. 9)"
29. Order of the Ministry of Economic Development of the Russian Federation No. 328 dated 01.06.2015 "On Approval of the Federal Valuation Standard "Valuation of Machinery and Equipment (FSO No. 10)"
30. Order of the Ministry of Economic Development of the Russian Federation No. 385 dated 22.06.2015 "On Approval of the Federal Valuation Standard "Valuation of Intangible Assets and Intellectual Property (FSO No. 11)"
31. V.V. Kossov, V.N. Livshits, A.G. Shakhnazarov, Methodological recommendations for evaluating the efficiency of investment projects (second edition)/ Min. econ. RF, Min, fin. RF, Civil Code on the Construction, archit. and lived. politics; 421 (Moscow, OAO "NPO " Publishing House "Economics", 2000)