

EVALUATION OF THE REAL ESTATE PROPERTIES - NOVELTIES WITHIN THE COST APPROACH METHOD OF ASSETS

Lect. Raluca Florentina Crețu Ph. D
The Bucharest University of Economic Studies
Faculty Accounting and Management Information
System
Bucharest, Romania
Prof. Ion Anghel Ph. D
The Bucharest University of Economic Studies
Faculty Accounting and Management Information
System
Bucharest, Romania

Abstract: Like any other market, the real estate market registers a continuous evolution, acting like a sensitive barometer to the economic fluctuations and being seriously affected by economic, social and political factors. Whatever the economic situation might be, the evaluation of real estate properties is done in conformity with the International Valuation Standards (IVS), standards that are perpetually revised. Since 2004, IVSs have experienced numerous revisions, the latest done in 2011, and changes are both formal as well as substance related. The cost approach is one of the three methods for evaluating real estate properties and it applies to situations where there are a limited number of transactions and when market approach and income approach are not applicable. The hereby study undertakes to show the novelties attained by means of the cost approach in evaluating real estate properties.

JEL classification: M41, M42, O12

Key words: real estate; evaluation; cost approach; investment; property valuation

1. INTRODUCTION

In Romania, the International Valuation Standards have been adopted as compulsory standards for all ANEVAR members, starting with January 1st, 2004; this, on one hand, has contributed to increasing the assessors' quality of work and, on the other hand, to enhancing the credibility of valuation reports among the wide range of valuation services users.

The latest revision of the International Valuation Standards took place in 2011 and brought along a series of changes resulted from three years of intense activity of the IVSC Standard Board and of the contributions of many personalities widely acknowledged for their engagement in improving and refining the theory, the methodology and the valuation practice. These changes refer to both formal aspects (designation, numbering, extent and structure of each standard as well as to substance aspects such as the attention given by each standard to explaining the valuation principles and their applications.

The cost approach is one of the three methods of valuing real estate properties which is used in cases where there is a limited number of transactions due to the highly specialized nature of it, to the model or to the location of the real asset. The cost approach is used whenever the market or income approaches cannot be used.

The present study is aiming to bring forward the novelties brought by the cost approach in valuing real estate properties.

2. OBJECTIVES

The hereby study is aiming to bring forward the novelties brought by the 2011 International Valuation Standards; as far as the cost approach (real estate) is concerned, we will identify the specific aspects regarding cost and depreciation estimations, respectively the basic techniques used in order to obtain a convincing opinion regarding value; we will show what are the most appropriate situations for application of the method, as well as its limits. In the same time, we will bring in a few scenarios where the cost approach proves itself useful, as well as the working procedure for this.

3. METHODOLOGY

In establishing the cost for reconstruction of a building, the assessor has to estimate the cost for setting up the emplacement, that is the direct costs, indirect costs and a developer's profit by using one of the three methods: the method of the uniform comparison, the method of the segregated costs, the method of rough estimations.

Depreciation is to be deducted from this value by using for its calculation one of the fundamental methods, that is: the market taking-over method, the method of the ratio between age and life cycle, the segregation method.

The property right is established by summing up the value of the land and the cost of the building out of which you deduct depreciation.

4. ANALYSES

The cost approach method represents a set of procedures that results into an indicator of the property right value by estimating the current building cost of duplication or replacement of an existing construction, including a developer's incentive, deducting the depreciation from the total cost and adding the estimated value of the land.

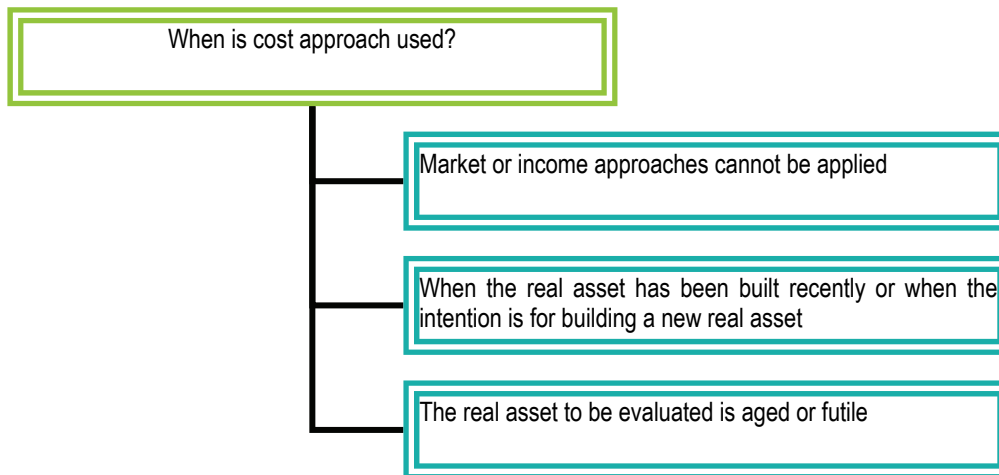
Corrections are applied to the property right in order to reflect the value of the rights pending upon the property to be estimated.

One can notice that cost approach is relevant in certain situations, such as (figure no. 1):

Market or income approaches are not applicable due to a limited number of transactions generated by a highly specialized nature of the real asset or when the real asset does not produce cash-flows;

When the real asset has been built recently or when the intention is for building a new real asset;

When the real asset to be evaluated is aged or futile. When the real asset has no workability, a buyer cannot rebuild it, therefore its value can be extremely low, respectively the value of the scrap or the recovery value, or even zero.

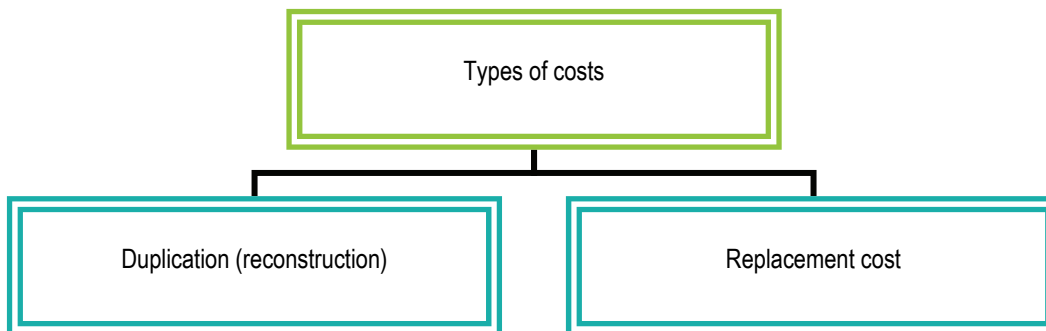


Source: adapted from IVSC, Valuation guide, cost approach for corporeal assets, IROVAL Bucharest, 2012, p.5-6

Figure no. 1 Cost approach workability

When drawing valuation reports, one must distinguish between the various types of costs (figure no.2); choosing to use one of the costs will depend on:

- Type and nature of the real asset;
- Character of the data to be compared cost-wise;
- Valuation goal.

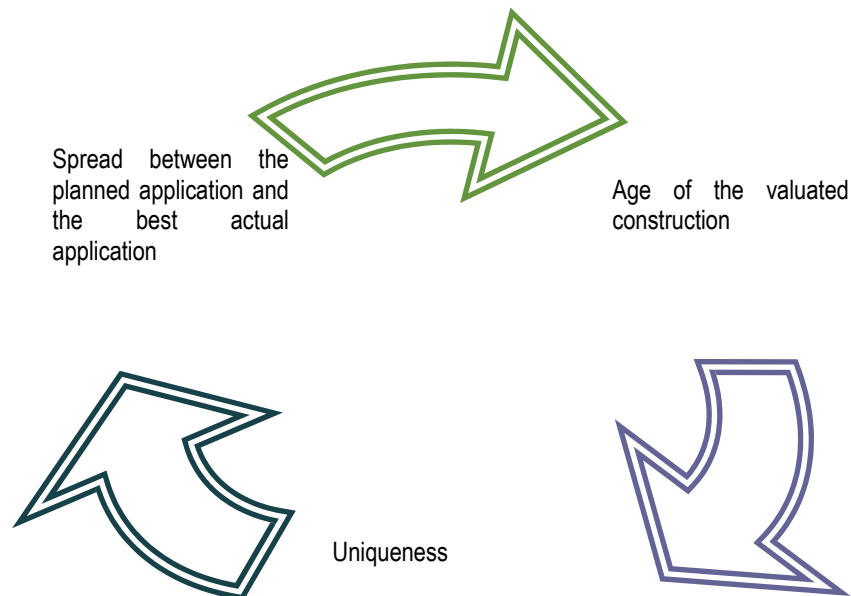


Source: adapted from IVSC, Valuation guide, cost approach for corporeal assets, IROVAL Bucharest, 2012, p.6-7

Figure no. 2 Types of costs used in valuation

The duplication (reconstruction) cost is:
 The estimated cost for a building on valuation date at current prices;
 Duplication or carbon copy of the valuated building which is done with exactly the same materials, construction standards, design, emplacement and manpower;
 Able to present the same deficiencies as the original building.

The replacement cost is:
 The estimated cost for building, at current prices and the actual date of valuation;
 A substitute for the valuated building by using actual modern materials, latest generation standards and design;
 Able to eliminate specific forms of depreciation.



Source: adapted from Stan S. V. & Anghel I. coord., *Valuation of the enterprise*, IROVAL Publishing house, Bucharest, 2007, p.56

Figure no. 3 Factors influencing the cost pick-up decision

In theory, we can come to the conclusion that, whatever the choice for the type of cost might be, this should supply the same information regarding the valuation of the studied subject, but practice proves that there are differences between one and the other

The duplication cost is a measuring ground for all forms of depreciation, if the case, but estimating the duplication cost is difficult to be done due to materials that are no longer available nowadays.

On one hand, the use of replacement cost can eliminate a series of design related deficiencies; on the other hand, the replacement cost is usually lower.

In order estimate the costs of a construction, one must take into account the direct and indirect costs.

Direct costs refer to manpower and raw materials; generally, these elements do not take part in a construction contract. The category of indirect costs is made up of (figure no. 4):



Source: adapted from *The Appraisal of Real Estate, 13th Edition, Edition in Romanian language, Bucharest, 2011, p.17.11*

Figure no. 4 Indirect costs

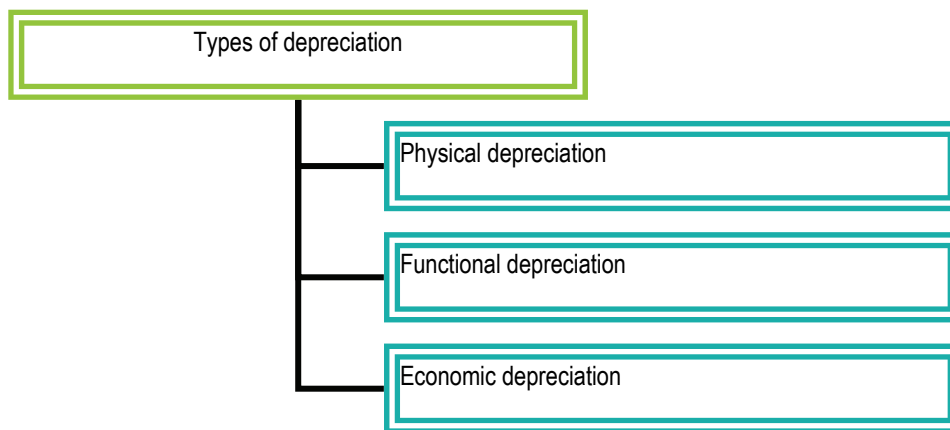
Steps¹ to be taken in order to get the relevant information for the calculation of value based on cost approach are:

- ✓ Value estimation of the land considered available, free for construction, at its best application;
- ✓ Choosing the type of cost – reconstruction or replacement;
- ✓ Estimating the direct and indirect costs on the actual date of the valuation;
- ✓ Estimating the developer's profit or incentive (the developer's profit is the most commonly word used; this is calculated as the spread between the total development and marketing cost and the market value of a property, after finalizing it and reaching a stabilized occupancy level; the developer's incentive, a recent term used by assessors stands for the amount that the investor is expecting to gain for his contribution to carrying out the project and the undertaken risk).

¹ Appraisal Institute, *The Appraisal of Real estate, 13th Edition, Edition in Romanian;* Bucharest 2011, page 17.8

- ✓ Summing up costs (direct, indirect, developer's profit or incentive) and establishing the total cost of the constructions;
- ✓ Estimating the extent of the depreciation (wear) of the buildings: physical, functional, economic depreciation;
- ✓ Deduction of the estimated depreciation and establishing a net calculation of the construction;
- ✓ Establishing the contribution value of the buildings on the emplacement;
- ✓ Adding the emplacement value to the net cost of all constructions in order to establish the market value of the property;
- ✓ Adjusting opinion regarding the value of the property.

As far as cost approach is concerned, depreciation² refers to corrections of the estimated cost in order to produce a real asset of equal utility (figure no. 5). Depreciation term differs from the amortization term used in the financial revenue field.



Source: adapted from IVSC, Valuation guide, cost approach for corporeal assets, IROVAL Bucharest, 2012, p.11

Figure no. 5 Types of depreciation

Physical depreciation usually appears when maintenance works have not been done in time and it is caused by regular use, by the action of atmospheric phenomena or by breakdowns. The construction value diminishes as a result of losing workability, as an effect of age and ordinary wear and tear. The causes of physical depreciation can be retrievable (these can be corrected by repair works), or at least some of them, when the cost for remedying the physical depreciation leads to an increase equal in value or higher than the remedying cost; the causes of physical depreciation can also be irretrievable, when the degradation cannot be remedied. The quantification elements of the physical depreciation are the total life cycle and the actual, already consumed life cycle of the real asset. The functional depreciation occurs due to a deficiency of the construction, of the design, of the materials used to build the real asset and can be quantified by the updated value of the exceeding operation costs as far as labour and the inefficient consumption of materials are concerned.

² IVSC, Valuation guide 2, Cost approach for corporeal assets, IROVAL Bucharest, 2012, page 11

The economic depreciation is caused by economic factors, respectively by changes in the demand and offer of the real asset or for the products generated by the real asset.

Scenario: The studied real estate property has around 5 hectares of land which values 5,000,000 measurement units and also an office building with 2 floors, with a surface of 25,000 square meters, 10 years old, that needs repairs at the roof amounting to 500,000 circulating mediums. The inside lighting system is short and the air conditioning system is inefficient.

Table no. 1 Indicators

| | Percent | Value (measurement units) |
|---|---------|---------------------------|
| Cost of replacing the building | | 25.000.000 |
| Fees for occupational services | 8% | 2.000.000 |
| TOTAL COST | | 27.000.000 |
| Postponed repairs (the roof) | | 500.000 |
| BALANCE COST | | 26.500.000 |
| Physical depreciation (to be applied to the remaining cost) | 25% | 6.625.000 |
| Functional depreciation: | | 1.600.000 |
| - Exceeding operation costs (heating inefficiency) | | 1.100.000 |
| - Inefficient lighting | | 500.000 |
| Economic depreciation | 10% | 2.500.000 |
| TOTAL DEPRECIATION | | 10.725.000 |
| NET COST FOR REPLACING THE BUILDING | | 15.775.000 |
| Value of the land | | 5.000.000 |
| TOTAL VALUE | | 20.775.000 |
| TOTAL VALUE (rounded) | | 21.000.000 |

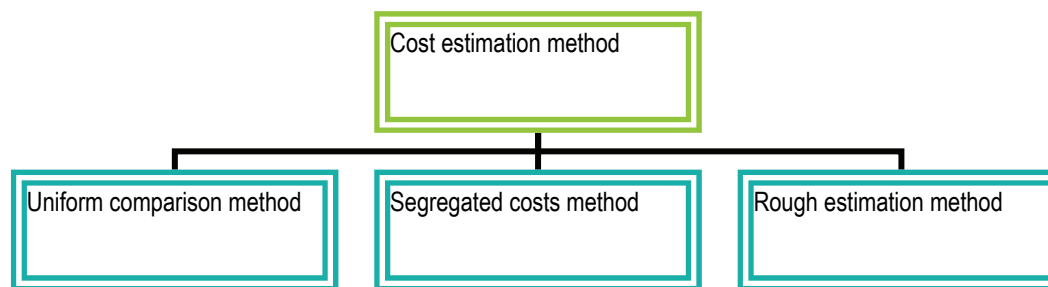
Source: Own calculations

Analyses: Generally speaking, office buildings have a 50³ years life cycle, but most of them end up being demolished after 40 years due to not meeting the requirements of actual occupants. Therefore, the total economic life cycle is of 40 years, and the pending economic life cycle for the studied building is of 30 years. Physical depreciation can be established at 25% from the replacement cost. Based on the investigations carried out, the cost for replacing the building amounts to 25,000,000 lei. This cost does not include the value of the land and the occupational fees. Given the fact that the building is less efficient from a heating point of view, there's a supplementary cost of 100,000 measurement units per year, and these expenses will stretch all throughout the 30 years. By using a 6 % representative updating rate, the result is an updated value of these supplementary expenses of 1,146,992, rounded to 1,100,000 measurement units. For the inappropriate lighting, the amount there's a decrease of 500,000 measurement units. Functional depreciation can be calculated by summing up these values. Depreciation is set to 2,500,000 and it results from the fact that they have allocated around 20% of governmental subsidies when building it.

The cost estimating services give out information regarding the forecast for the current cost of the building. Information refer to current costs and a part of the indirect costs. In such situations, the assessor must carry out investigations in order to identify what

³ **Idem, page 25**

indirect costs have not been considered, depending on the actual situation to be valued. Generally speaking, demolition costs do not appear in these manuals or in the released sites. There are three methods of estimating costs as shown under figure no. 6:



Source: adapted from The Appraisal of Real Estate, 13th Edition, Edition in Romanian language, Bucharest, 2011, p.17.10

Figure no. 6 Cost estimation methods

The uniform comparison method is used for estimating cost by volume or area, based on the costs calculated for similar constructions which are corrected with time and space differences. The segregated costs method is based on estimating total costs by starting from summing up the uniform costs of the various construction elements. The Rough estimation method is the most accurate because bill of quantities indicate the quantity and quality of all materials used and the manpower categories.

5. CONCLUSIONS

Following the above mentioned aspects, the conclusion is that cost approach is extremely important when market does not offer sufficient information with regard to comparable properties and the income approach is not relevant (e.g.: single family buildings). Cost approach is equally used in situations where the valuation is done for public buildings, properties with special or specialized destinations, where construction additions or renovations are considered as well. This approach ensures the separate valuation of land and constructions and it is useful for insurance valuations where it is used for estimating the depreciation. However, cost approach has its own limits, too, that is the valued constructions have a considerable age. From an investor's perspective, new constructions are available immediately on the valuation date.

REFERENCES

- | | |
|--|---|
| 1. Appraisal Institute | The Appraisal of Real Estate, 13th Edition, Edition in Romanian language, Bucharest, 2011 |
| 2. IROVAL -Valuation research | IVSC, Valuation guide, cost approach for corporeal assets, IROVAL Bucharest, 2012 |
| 3. Ișfănescu, A., Robu, V., Anghel, I. | Valuation of the enterprise, Economic Tribune Publishing house, Bucharest 2001 |
| 4. Stan, S.V., Anghel, I., coord., Bădescu, Gh., Crivii, A., Gheorghiu, A. | Valuation of the enterprise, IROVAL Publishing house, Bucharest, 2007 |