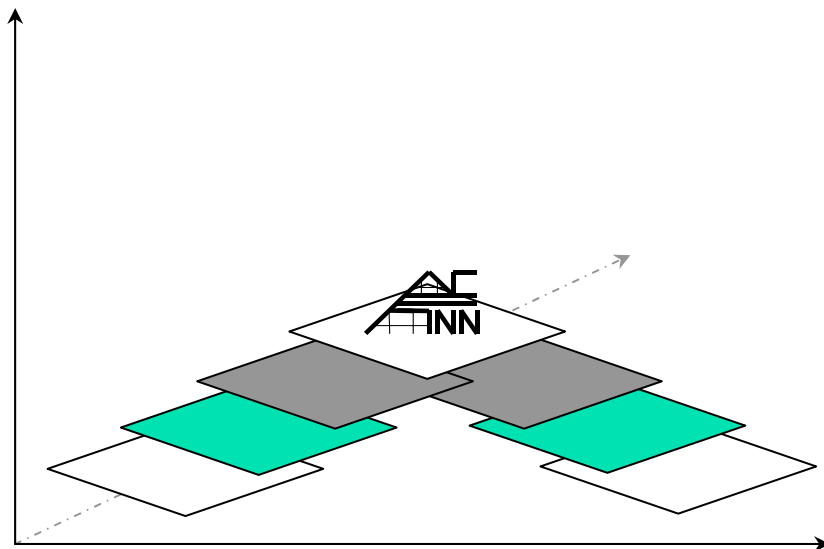


# SELECTED ASPECTS OF THE COST APPROACH IN PROPERTY VALUATION



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## INTRODUCTION

The fundamental procedure used in achieving the objectives of cost approach, as well as a comparative, and income approach, is comparative analysis.

Construction costs are comparable to the value of existing buildings, or similar property.

In this approach, it is important to search the relationship between cost and value, or increase in value due to the specific expenditures on the property in question.

Appraisers can determine costs of reproduction, or costs of replacement of existing facilities and equipment based on the analysis of direct costs, indirect costs and the average profit that could have been achieved in the local (regional) market (market standard).

They estimate accrued depreciation in relation to new objects to the date of the appraisal report.

In these calculations they must take into account their previous choices for the application of particular cost (reproduction, or replacement). Another important starting point is the relationship of property prices per building according to new costs of construction. Polish valuers still apply different rules to determine the value of accrued depreciation. The most common form of this depreciation is still physical depreciation. Changes in Polish legal rules for this approach are still being elaborated. According to Real Estate Management Act of 1997, the result of the application of this approach is the "replacement value". This value in Poland is not equal to the market value.

One can also meet the term "aggregative depreciation". However, there are some papers with reference to this term, published in Western Europe and the USA (ŻRÓBEK 2009). In Poland still dominates the cost of reproduction in the estimation of property value.

This book presents the theoretical and practical foundations of cost approach. Particular attention was paid to the rules for determining accrued depreciation.

Each chapter in this monograph contains a comprehensive review of definitions and some solutions concerning the cost approach. We hope that Poland will join the large group of countries using modern methods to determine of accrued depreciation in cost approach. In many countries value from cost approach is treated as equal to market value. This is connected with the objectives of valuation as well as limited access to market data. Important is also the specificity of the object and its function.

On the other hand the depreciated replacement cost (DRC) is the most common valuation method for the cost approach (IVS 2011). The DRC method is commonly used for the valuation of specialised assets. Specialised assets may be classified as i.e. structures, buildings and installations, as well as intangible assets. It is

important to understand that the word “depreciation” is used in a different context in valuation compared to financial reporting or tax law.

In this book some remarks about the cost approach and methods to estimate value of real estate depreciation can also be found.

**prof. dr hab. inż. Ryszard Żróbek**  
**Scientific Editor**



## **CHAPTER 1**

# **MARKET VALUE AND COST VALUE - SIMILARITIES AND DIFFERENCES**

Sabina Žróbek

## 1.1. Introduction

The aim of real estate valuation is to determine the value. The kind of this value is strictly related to particular needs of the client. People need property valuation mainly for the purpose of selling the property, updating the charges, accounting the fees connected with civil law transaction and for mortgage purposes. Nowadays, more and more aims of valuation are connected with property consulting. The type of value, as a result of valuation, must be clearly defined in contract between valuer and client. This need is an important reason for defining and interpreting different categories of value in legal acts (rules) and in professional standards in particular countries and on the European and the international arena. The most often required kind of value is market value, but both in legal rules and valuation standards other than non-market values are also described.

The examples of such types of values are: cost value (this kind of value is strongly regulated in Polish law (Real Estate Management Act 1997 named reconstruction, mortgage – lending, investment, insurance, and cadastral value) (Table 1).

Methods which can be applied to valuation are classified in valuation approach. Polish regulations distinguish four approaches to valuation: comparison, income, cost and mixed. According to international and European standards (IVS 2007, EVS 2009) all the methods of valuation are joined in the first of the three mentioned approaches.

According to International Valuation Standards (IVS), i.e. depreciated replacement cost method means applying cost approach to assess the value of specialized assets for financial reports, especially when access to direct market data is limited. For this reason also in European Valuation Standards (EVS), despite putting this term on the list of value other than market value, the interpretations of this definition state that it is rather the base for valuation than distinct value. In common use the cost approach, depreciated replacement cost, asset value or contractor's method are treated as synonyms.

It can be noticed that both in IVS and EVS the term 'replacement value' is not used for defining the bases of value, which is defined in the Act on Real Estate Management. According to the literature, in some countries this term can be used for special purposes (i.e. in Germany and Sweden to insurance purposes of construction units). (Żróbek S 2009 AGH)

According to the same standard, using cost approach to assess reconstruction value instead of market value requires specific justification. It should be indicated in valuation report that the result of valuation is reconstruction value. Moreover, assumed legal conditions, other assumptions for valuation and particular data should be presented.

Once more, for gradual adjusting valuation, the method used in Poland and in international arena, is in NBVS1 recorded that 'in special cases after taking into

consideration the type of property, valuation purpose and real estate market conditions, reconstruction value resulting from cost approach can be the substitute for market value if realization of methods and procedures designed for this approach is based on market data, both in relation to market value of land and cost of building including accumulated depreciation' (IVS 2007).

Table 1

The types of real estate values

	According to IVS	According to EVS	According to PVS
Group I	Market value		
Group II	Values other than market value		
Cat I	Investment or individual	Investment or worth	Individual or investment
Cat II	fair - special - synergistic	fair - special - synergistic (marriage)	fair
	Forced sale – the base of valuation, not kind of value	forced sale – the kind of value on condition, rather the way of valuation	forced sale
Cat III	mortgage - lending	mortgage - lending	mortgage - lending
	For tax purposes (cadastral, fiscal)		cadastral
		insurable	insurable
	depreciated replacement cost / cost approach	depreciated replacement cost / method of market value determination in the absence of better market evidence	depreciated replacement cost
			reconstruction
	alternative use – market value at other than existing kind of use	market value at alternative use	

Source: IVS 2007, EVS 2009, PVS 2009

## 1.2. The concept of market value

Market value is the most fundamental value base used for valuation in market economies. Although the definitions in particular countries can vary in details, it is commonly agreed that market value is the result of objective observations and analysis of market participants' behaviours. In Poland this kind of value has been defined in the Act on Real Estate Management in the following way: *real estate*

*market value means the most probable market price resulting from analysis of transactional prices, assuming that:*

- 1) parties of transactions were entirely independent of one another, acted without compulsion and were willing to draw up an agreement;*
- 2) time necessary to expose the real estate on the market and to negotiate the agreement had passed (proper marketing).*

In IVS is stated, that valuers should apply, if legal regulations are not against, the following definition of market value: *Market Value is the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently, and without compulsion (IVS 2007).* The same definition is accepted by TEGoVA and placed in European Valuation Standards (EVS 2009).

It should be underlined, that assessing market value with the use of the highest and best (optimal) use is the fundamental assumption for market value concept.

To assess market value, valuer should first define the best use or the most probable use of property. This use can be simple continuation of previous use or the alternative one. According to IVS, the way of use should be chosen on the base of market information, and the most common methods of assessing market value are sales comparison approach, income approach (income capitalization) including discounted cash flows analysis (income flows) and cost approach. In NBVS1 is also stated, that way of use can be also determined by the purpose of valuation. This record is important for the valuation practice in Poland, because many official decisions are made in connection with real estate market value assessed i.e. with assuming its current way of use.

Other important assumptions for market value concept include i.e. that:

- described value is equal to estimated (expected and the most probable) price, which can result from hypothetical transaction on the date of valuation;
- valuation date means the date, when value was assessed (it cannot be after the date of the report, exceptionally can be earlier); thus market value cannot be treated as long-term value, which is demanded by banks and financial institutions;
- buyer and seller as hypothetical parties of transactions were entirely independent of one another, acted without compulsion and were willing to draw up an agreement; thus the valuation client does not have any influence on its assessment;
- property was properly and sufficiently exposed on the market, and time of exposure foregoes the valuation date. This condition can be omitted in special cases, i.e. when credited party acted under pressure.

### 1.3. The concept of cost or reconstruction value

According to the Act on Real Estate Management: 'real estate reconstruction value is equal to the costs of its reconstruction with taking into consideration the depreciation'.

In the view of analysis of International and European Valuation Standard the term 'reconstruction value' does not mean the base of value (table 1). However, it can be treated as important base for assessing market value or other than market values, i.e. individual, fair or mortgage lending value. Data availability determines which valuation method is most relevant and appropriate.

This is the reason why authors of standards and real estate valuation handbooks focus rather on presentation of cost approach procedures as the basis for valuation using typical for this approach substitution rule.

In IVS cost approach is defined as comparison method, which takes into consideration the possibility that as the alternative for purchasing particular component of the modern equivalent asset with the same utility can be bought. But there are some restrictions – the time, inconvenience, risk and price, which would be paid for asset component which is assessed, cannot be higher than cost of modern equivalent.

In this approach value is assessed through estimating the cost of land purchase and building new object with the same utility or adapting old object, not including additional expenditures caused by lag. Regarding older asset's components some adjustments must be introduced that take into consideration different kinds of depreciation (physical deterioration, functional, economic or external obsolescence) to assess value which is near to market value (IVS 2007). Data used in valuation procedure relates to costs of building or development, and adjustments are also introduced in the case of qualitative or quantitative differences and real estate usefulness as a whole or its parts. Additionally, the analysis of comparison data relating to land and depreciation is conducted.

The basic assumptions for the cost value concept are as follows:

- the objects of valuation – land and improvements or the improvements only value is presented in cash amount
- it is need to account physical deterioration and all relevant forms of obsolescence (external, functional)
- valuation date means the date, on which the value was determined
- hypothetical cost of providing a similar site means its market value for highest and best use
- accounting the reconstruction cost of improvements can be based on reproduction or replacement costs
- as a rule – the improvements will be used in the future for existing kind of use
- additional taxes and fees of the transaction are not included in assessed value

- the principle of substitution is the basic to the cost approach and means that no prudent buyer would pay more for the property than the cost to acquire a similar site and construct improvements of equal desirability and utility without undue delay
- in many countries (not in Poland so far) cost value (depreciated replacement cost) is recognised as a method to address market value in the absence of better market data.

The comparison of two values – market value and cost or reconstruction or depreciated replacement cost according to some criterions is included in table 2.

Table 2

The comparison of market and cost (reconstruction) values

CRITERION OF COMPARISON	MARKET VALUE	COST VALUE
Object of valuation	Real estate as a object (site or site and improvements together) with its legal attributes	Real estates as a object (site and improvements separately or improvements only)
Possibility of valuation	When the market exist and this kind of value is needed	When there is either very limited market or no evidence of sales or this kind of value is needed
Type of market and the main sources of information used in valuation	Sale and lease property market (exchange sphere)	Sale property market for land (exchange sphere) and building construction market for improvements
Principle of valuation	Highest and best use of the property	Existing use of the improvements, highest and best use of the land
Methods of valuation	Comparison, income, cost approaches - IVS, EVS ; comparison, income, mixed approaches - Act of land management (in Poland)	Cost approach (Depreciated Replacenment cost)

Source: IVS 2007, EVS 2009, Land Management Act 1997

Literature review enables to formulate the conclusion that real estate value assessment regardless of applied approach is made through realization of procedures comparing assessed property with other comparable properties.

In this context the thesis can be advanced that each approach to real estate valuation is in fact special kind of market approach. Proper determination of bases

of value depends on quantity and quality of data collected from real estate market and its skillful interpretation.

In the cost approach there is theoretically assumed that land and its components operate separately. This type of approach is based on substitution principle and assumes that any buyer will pay more for property than the total value of land and the cost of building objects and structures. Therefore, nobody will buy or lease old buildings if is able to build new objects in more efficient system for the same price.

However, in many cases, time necessary to build new objects restrains potential buyer from building when there are properties available on the market for slightly higher prices. In such situation, the buyers prefer to pay additional money for completed buildings. Therefore, already mentioned substitution principle can have only limited influence on equalizing cost value and market value.

It should be taken into consideration that in cost approach value of land and its components including depreciation are assessed separately what can result in (The Student Handbook 2009):

1. overestimation of real estate value that derives from insufficient skills to apply fundamental concept of real estate valuation – highest and best use, which should be differently understood for developed and undeveloped land;
2. weak documentation and justification of estimated depreciation rate deriving from the fact, that methods practically used in cost approach are not up-to-date, although there is significant progress in valuation theories and application of modern technologies to collect and process data;
3. overestimation of construction objects' value in the case of existing excess, what results also from insufficient awareness and ability to estimate functional obsolescence.

The analysis of construction market indicates that expenditures on materials and labour are more stable and less prone to change then real estate market prices. It is underlined that the risk of unsuccessful valuations made with the use of cost approach, therefore also reconstruction value, increases with fast changes on the financial markets. Relying on cost of building and land purchase leads to essential differences between values resulting from comparison and cost approach. Here is the important role of the valuer – to estimate properly the rate of depreciation, especially the external obsolescence.

On the other side, cost approach and reconstruction value can be the alternative to internal analysis conducted by institutions financing property improvements; where as the base of analysis is assumed i.e. return rate on investment realization costs and calculation of minimal rent for object which allow to pay back long-term credit. If the result of calculations is equal to or lower than market rent, that means that real estate guarantees that total costs of credited investment are not overestimated. Reconstruction value can be also used as point of reference to value received from the use of other approaches, and in the case of large divergence can

indicate the necessity of checking out the valuation process or revising the level of development costs in projects' financial feasibility study (Valuation 2008).

To sum up - market value and cost (reconstruction) value, assessed on the base of sufficient amount of reliable market data and with skillful calculation of various factors' influence, including all kinds of depreciation, and prices set on the real estate market, can both be useful for the needs of many institutions.



## **CHAPTER 2**

### **VALUE IN THE COST APPROACH**

**Ewa Kucharska-Stasiak**

## 2.1. Introduction

The term “valuation approach” denotes the method used to determine value, or, the analytical procedure applied. Economists distinguish different valuation approaches. The first to use this term was Alfred Marshall, who lived at the turn of the 20<sup>th</sup> century. He described the sales comparison approach, the income capitalization approach and the cost approach. The first two approaches were meant to estimate the market value of real property while the cost approach was employed to determine its reproduction value.

The methodology of valuation is by no means fixed and constantly evolves, which is reflected in each approach. For example, the income capitalization approach used to be based on a model of constant, perpetual income flow. In the 1960s, after tangible assets, including real estate, became part of investment portfolios, valuers gradually started to use variable income flows for the assumed period of analysis.

The cost approach has also evolved. Traditionally, it was used to determine value corresponding to the so-called phase of production, *i.e.* reproduction value representing the cost of purchasing land and constructing buildings less the degree of their depreciation. In the United States, as a result of a prolonged debate whether the above definition was a description of value or of valuation methodology, the cost approach was recognized as a surrogate for market value. This was sanctioned in the seventh edition of the International Valuation Standards, where the term “reproduction value” ceased to be used (IVS 2005). Along with the sales comparison and income capitalization approaches, the cost approach was adopted as a market approach to valuation. Each approach may also be applied to determine values other than market value (IVS 2005).

Furthermore, the validity of the cost approach for estimating market value has also been recognized by TEGoVA (EVS 2000, 2009).

## 2.2. The cost approach in various systems of valuation

Valuation methodology has developed into three distinct systems: the American system, the British system, and the German system. The differences between them include the degree to which they reflect the real estate market. While the American system corresponds to the market most closely, the German school represents the most static perspective.

The cost approach is applied in all of these valuation systems, but its role varies. Under the American system, the cost approach is one of the three approaches used for appraising property, although residential property has recently been excluded from its scope (RATTERMANN 2009). In the British methodology, the cost approach is used for valuing properties which cannot be compared with similar assets or which are not in active markets. As regards the German system, the cost approach is the preferred method in the valuation process.

While the cost approach is employed to determine market value in the American and German methodologies, in the British system it had been used to determine replacement value. The British acknowledged cost-based computation of market value only after the term “replacement value” had been abandoned in the seventh edition of the IVS.

### **2.3. Duality of the term *cost* in the valuation process**

Due to some terminological confusion, it seems that clear definitions are particularly important in discussing international standards. One of the fundamental terms in the field of valuation is *cost*.

According to the traditional definition, cost is understood as the amount of money necessary to manufacture a product or provide a service. This definition corresponds to the phase of production.

Yet, cost may also be defined as the price paid for goods and services, which implies that this price becomes the buyer’s cost. This understanding reflects the expenses borne at the phase of exchange.

When these definitions refer to the real estate sector, the term *cost* at the phase of production reflects the real estate market in terms of land purchase and the construction market in terms of construction costs. In turn, these costs may or may not be partially or wholly translated into the market value of the property, depending on whether the market actors find them appropriate.

The definition of *cost* as the price paid for a property at the phase of exchange corresponds to the prices paid in the real estate primary market (developers selling new buildings) or in the secondary market. It seems to be totally justified to shift the focus from the phase of production (the construction market) to the phase of exchange (the real estate market), as the notion of value is associated with the financial aspect of a transaction, whether the latter is actually executed or not.

### **2.4. Different data sources for cost approach valuation**

The cost approach makes it possible to determine the value of a real property by assessing the price of land and improvements of equal utility, considering their deterioration (RATTERMANN 2009).

A cost estimate may be based on the assessment of reproduction cost or replacement cost. Reproduction cost is “the cost to create a virtual replica. . . using identical or, if identical materials are not available, similar materials. A replacement cost estimate envisions a modern equivalent of comparable utility, employing the design, technology and materials that are currently used in the market” (IVS, 2007). The current cost of replacing an asset with its modern equivalent less deductions for deterioration is called depreciated replacement cost (IVS, 2007).

Valuation based on the cost approach requires adjustment for accumulated depreciation, especially in the case of old buildings and structures. Depreciation involves the loss of value caused by reduced utility of a property due to damage,

advancement of technology, current trends and tastes, or environmental changes. Thus, three variables need to be taken into account in the cost approach:

- the cost of land,
- the cost of constructing buildings or structures,
- the degree of depreciation, reducing the construction cost.

All of these factors may be interpreted in a variety of ways, and also different data sources can be tapped. Diagrams 1A and 1B show the sources of information on costs used in the cost approach valuation process. According to the traditional definition of the cost approach, the cost of purchasing land reflects the real estate market, while the cost of constructing buildings reflects the construction market. However, if cost is taken to be the price paid by the buyer, the sources of data necessary for the valuation process will be different. Here, information about land value and construction costs is obtained from the real estate market. Yet, the American and British methodologies of valuation make different assumptions about the process of land valuation. In the USA, estimation of land value is always based on the highest and best use of land (RATTERMANN 2009), while in Great Britain it is based on the current manner of land use, which led to the EVS stating that in the cost approach “the value of the property (is) determined by a prudent assessment. . . taking into account. . . the current use” (EVS 2009). If the area of the land is too large “for the existing (...) improvements, the excess land should either be ignored or, if it is possible to construct upon it a separate improvement, it should be valued separately” (EVS 2000).

The construction expenses to be borne by the developer or the investor include direct and indirect costs. Direct costs, also known as hard costs, are the builder’s compensation. Indirect costs, or soft costs, are additional costs incurred by the investor or developer including architect fees, valuer fees, insurance for the period of construction, transfer of the legal title, marketing costs and costs of renting up the property (RATTERMANN 2009). The cost approach should also include compensation for the risk taken by the developer (RATTERMANN 2009).

**Diagram 1 Sources of data on costs**

Value components Approach	Land price	Construction costs	Costs of renting up to a stable occupancy level
1. Traditional approach	real estate market	construction market	---
2. Market approach	real estate market	real estate market	real estate market

Source: Own work

The third variable in the cost approach is the depreciation of buildings and structures. Compared to other assets, the rate of their depreciation is low. Yet, the characteristics of real estate such as the uniqueness of particular properties, extensive possibility for substitution at the phase of production, very long useful life, and different manners and conditions of use result in considerable differences in the depreciation rate of individual buildings, even if they are functionally similar.

As regards valuation, *depreciation* refers to adjusting the reproduction or replacement cost to reflect property deterioration and obsolescence, including (IVS 2007):

- physical deterioration due to wear and tear, action of the weather conditions, intensity of use, and the quality and timeliness of repairs and replacements,
- functional obsolescence due to changes in occupier tastes and preferences, advances in technology, and evolving market standards,
- external obsolescence related to environmental or location conditions such as the establishment of an industrial facility near a residential area.

Alternatively, in the literature depreciation is also classified into physical (technological) and non-physical, including functional and external obsolescence (CHOJECKI 1965).

According to Herzig, there are three groups of methods for estimating depreciation:

- age-life methods,
- observed condition methods,
- market methods.

Within the age-life methods, there exist 12 formulas to estimate the degree of depreciation (KUCHARSKA-STASIAK 1994). The European Group of Valuers' Associations recommends two of them (EVS 2000).

$$Z = \frac{a \cdot 100}{a + b} \quad (1)$$

where:

$a$  is the age of the building,

$b$  is the estimated remaining economic life, and

$c$  is the estimated total economic life of the building

$$Z = \frac{(c - b) \cdot 100}{c} \quad (2)$$

Source: The American literature provides similar formulas (RATTERMANN 2009).

The formulas may be applied to estimate both physical deterioration and functional/external obsolescence, as  $b$  may stand for the remaining economic life and  $c$  for the total period after which the building will cease to meet the current occupier requirements.

Polish valuers tend to apply observed condition methods, which involve estimating the depreciation of individual elements of a building. Thus, two-step analysis is required:

- Step 1 - estimating depreciation of individual elements or groups of elements of a building;
- Step 2 - estimating weighted average depreciation of the building.

The degree of depreciation of individual elements may be estimated in a theoretical manner on the basis of their typical useful life or following an inspection of a building to assess the actual technical condition of its individual parts.

The market methods method quantify both physical deterioration and functional/external obsolescence. To estimate depreciation, sales figures for the properties generating similar economic losses are compared (RATTERMANN 2009), or economic indices such as incomes generated by properties are used. This method of estimating depreciation is based on the assumption that there is a relationship between the depreciation and profitability of a building. The older and more deteriorated a building is, the lower the rental rates are. American economist G. Terbourgh presented data revealing that the average monthly rent in buildings with a useful life of over 50 years amounts to 50% of the average rent in buildings with a useful life of less than 10 years (WIETESKA 1987).

The above concept was developed by M. Tieman, who offered a formula to estimate the general depreciation of a building:

$$Z = 1 - \frac{E_t}{E_0} \quad (3)$$

where:

$E_t$  is the income generated over time  $t$ , and

$E_0$  is the income generated at the beginning of the period of use.

The controversies concerning the methods of determining physical deterioration and functional obsolescence notwithstanding, the issue remains of how to compute total depreciation. This problem has been solved in methods based on market evidence, while the other two groups of methods may produce a set of significantly different values. Theoretically, the following solutions may be considered:

- computing the mean value of the two types of depreciation,
- computing total depreciation as a product of the two types of depreciation,
- adopting the larger value.

Generally, the first method of estimating total depreciation is excluded as inappropriate. The second method is quite commonly used – the reproduction value is adjusted not only by the degree of physical deterioration, but also by the so-called marketability multiplier, which is a number from the closed interval (0, 1). As regards the third method, which predominates in the Western countries, the reproduction value is reduced by the higher degree of depreciation, because it will eventually lead to a building's withdrawal from use.

Each group of methods of estimating depreciation has its advantages and disadvantages. The age-life method represents the smallest advantages (simplicity) and the largest disadvantages (unreliability of estimations). The formulas applied under this method, which was stressed as early as in 1944, make it only possible to give a theoretical degree of depreciation. In practice, a valuer should make sure that the actual depreciation is not higher (LASZCZKA 1944). The chronological age of the building defined as the difference between the date of construction and the date of valuation may be different from its effective age determined on the basis of its actual condition.

The disadvantages of observed condition methods include the subjectivity of assessment, labor intensity, a focus on physical deterioration and the fact that such estimation is not related to the market. Therefore, methods based on market data seem to be the most appropriate. Although these methods for estimating depreciation are not perfect either, they exhibit the smallest disadvantages and provide the most accurate estimation of value loss (RATTERMANN 2009). These methods refer to market valuation and reflect total depreciation.

The methods of estimating depreciation presented in the paper reveal a multitude of solutions and the complexity of the issue. At the same time, it seems that deductions for depreciation remain largely a matter of subjective opinion (GREEN, MACKMIN 1983).

#### **4. 5. Conclusions**

The discussion above shows that cost approach valuation can be based on data from the real estate market, that is, the price of land and improvements less depreciation. Furthermore, such data reflect demand and supply in all segments of the real estate market:

- in the land market they correspond to land prices,
- in the developers' market they correspond to the prices of the developers' products, which become the buyer's cost together with the price of land,
- in the investment market they correspond to the fact that if investors are more interested in properties, this leads to increased prices and, consequently, higher costs for the buyers,
- in the users' market they correspond to demand on floor area (which affects the costs incurred at the initial phase of real estate use for commercialization purposes), by supply of properties, and by the market effects of deterioration/obsolescence.

Thus, since all the factors can be assessed based on market evidence, the cost approach can be applied to determine market value. However, if a valuation is based on data not reflecting the real estate market, then the cost approach will yield other values rather than market value.

The cost approach valuation of a piece of real estate means the estimation of the value of rights to a property. If the property is rented or leased, valuation should be adjusted for the effect of limited proprietary rights on the market value.

Cost and market value are most similar during valuation of sites with new improvements and with the highest and best use of land (RATTERMANN 2009). Valuation of a property with older improvements requires adjustment for depreciation calculated on the basis of market evidence.

The application of the cost approach to determine market value can be particularly useful in markets with poor data availability, while it seems rather inadequate in markets where data are readily obtainable.



## **CHAPTER 3**

### **SOME PRINCIPLES AND PROCEDURES OF THE COST APPROACH TO REAL ESTATE VALUE**

**Sabina Żróbek**

**Ryszard Żróbek**

### 3.1. Introduction

In the theory, the term 'cost' in real estate valuation procedure is defined as the amount needed to construct a building nowadays. Thus, value, price and cost might possibly be equal for a new property (WURTZEBACH 1995).

The fundamental idea of the cost approach is the choice of any individual to pay the price for particular property, which is based on the cost of construction, or value of production, an alternative, or replacement, property with utility that is comparable to a proposal, or existing subject (WILSON 1998).

The cost approach relies on the principle of substitution and cost should exceed the price of an existing building.

The value of built-up real estate is roughly equal to the cost of reproducing the improvements minus the amount of accrued depreciation plus market value of the land.

Market value of real estate is usually determined with the use of one of three approaches. One of them is cost approach.

The cost approach is based on the amount of money required to reproduce or replace the production capacity of the property at the time of the valuation (substitution).

The cost of building a substitute facility and the differential in operating costs between the substitute facility and the subject set the upper limit for how much the buyer will pay for the subject.

Appraisal methodology is a praxeology. This is a category of scientific inquiry based on deductive reasoning. The cost approach is premised by the principles of:

- substitution,
- supply and demand,
- balance and externalities, and
- highest and best use.

Thus, the cost approach to value is based partly upon the principle of substitution. There are two basic variations for valuation property with the cost approach:

- 1) original acquisition cost x cost trend index - accrued depreciation = real market value, and
- 2) replacement or reproduction cost - accrued depreciation = real market value.

Where the market value of an asset cannot be established, its value is determined by using a surrogate such as depreciated replacement cost (DRC). The market value basis of valuation is recognized as the most widely required and main basis of valuation for most valuation around the globe (IVSC 2010). Market value is a representation of value in exchange. The most common methods used to estimate market value include the cost approach, sales comparison approach and the income capitalisation approach. There are some non-market value components (fig. 1) according IVS.

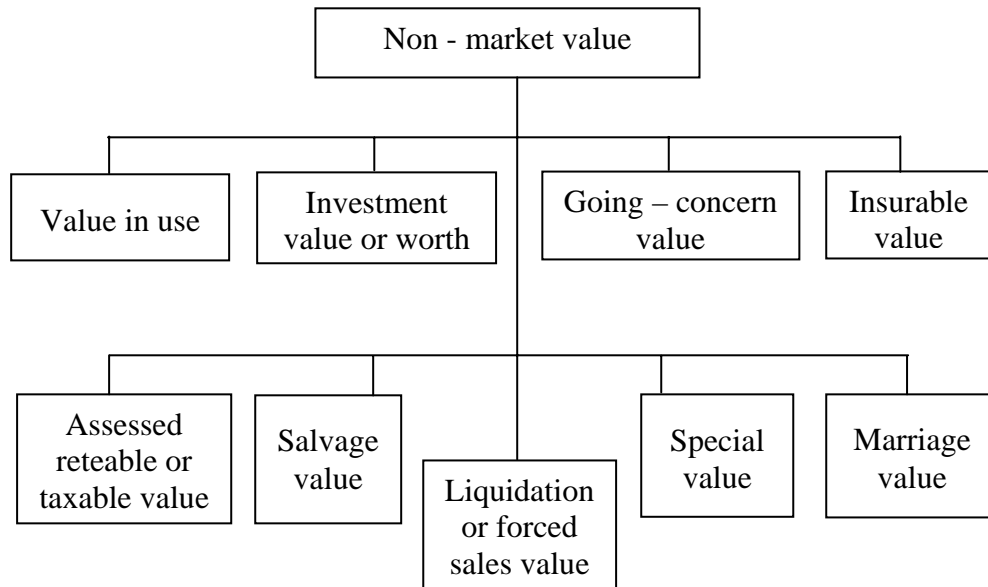


Fig. 1. Non - market value components

Source: International Valuation Standards

There are some steps in the cost approach procedure of valuation:

- 1) estimate land value as though vacant and available to be put to its highest and best use,
- 2) assessment reproduction or replacement cost of structures as of the effective date of the appraisal,
- 3) valuation accrued depreciation,
- 4) deduct depreciation from reproduction or replacement cost,
- 5) add depreciated cost (reproduction or replacement) to the value of the land.

In this procedure highest and best use is not defined in the traditional form of a first principle of deduction. According to Appraisal Institute (1996) the concept of this term is: "the reasonably probable and legal use of a vacant land or improved property, which is physically possible, and that result in the highest value".

Pilimmer and Sayce (2006) say, that "recognising that the buildings which are to be valued using a depreciated replacement cost approach are unlikely to be newly constructed, and allowance is made from the "as now" costs".

This point of view reflects the effects of age, obsolescence and the efficiency of use and thus on value.

Cost approach is erroneous estimate of many parameters (i.e. error estimates of replacement costs new, error estimated of obsolescence). The reliability of the cost approach is limited by two factors: the accuracy of the estimate of building costs and the accuracy of the estimate depreciation.

The basic formula is:

$$REV = CRN - AD + MVL \quad (1)$$

where:

*REV* - real estate value

*CRN* - cost replacement (new)

*AD* - accrued depreciation, and

*MVL* - market value of land

The average error for formula (1) can be:

$$EER = \pm \sqrt{E_1^2 + E_2^2 + E_3^2} \quad (2)$$

where:

*EER* - average error of *REV*

*E<sub>1</sub>* - average error of cost determination

*E<sub>2</sub>* - error of accrued depreciation

*E<sub>3</sub>* - error of market value of land valuation.

Analysing these average errors is very complicated because there is lack of detailed information about nature of these errors. Rough estimate is the process and it needs more detailed data about market conditions. In additional, there are different forms of accrued depreciation.

Each of above mentioned components is subject to random errors and systematic errors.

Following formula enables calculating accrued depreciation of building:

$$AD = PD + FO + EO \quad (3)$$

where:

*PD* - physical depreciation

*FO* - functional obsolescence

*EO* - external obsolescence

The average error for accrued depreciation is:

$$EEAD = \pm \sqrt{E_P^2 + E_F^2 + E_O^2} \quad (4)$$

where:

*E<sub>P</sub>* - average error of *PD*

*E<sub>F</sub>* - average error of *FO*

*E<sub>O</sub>* - average error of *EO*

Where the building easy to be replaced, it is common and acceptable practice to use standard and published building cost data. Cost data have own average error according to ways they were collected. If building is more sophisticated, the valuer may need to consult building costs with experts (i.e. calculation engineer). Calculations can be done both for the cost of reproduction and replacement cost.

Reproduction cost means the cost of construction at current prices of an exact duplicate or replica using the same materials, construction standards, design, layout, and quality of workmanship.

Replacement cost means the cost of construction at current prices of an improved building which has equivalent utility to the one being appraised, but constructed with modern materials and according to current standards, design, an layout.

Reproduction cost can be difficult to measure because some building materials or methods are not available. Thus, reproduction cost in the case of old buildings often needs to be adjusted by depreciation identified as functional obsolescence (principle of substitution).

Replacement cost new (RCN) is applicable to most classes of property and leads to a greater degree of uniformity and equity values.

The terms reproduction cost and replacement cost are not synonymous. They reflect two different ways of looking at a new structure to be built in place of the existing improvements (Appraisal Institute 1992). Each cost leads to different result. Therefore it is very important to select one of these concepts and apply it consistently throughout the cost approach procedure. This selection affects the way in which accrued depreciation is estimated i.e. if the present structure contains a superadequacy. The use of replacement cost frequently results in a building cost that is considerably lower than the one based on reproduction cost (Appraisal Institute 1992).

In cost approach some components represent the demand side of the market i.e. depreciation, the price of substitutes, location), so this approach can be characterized as a hybrid cost – market approach.

The cost approach model must be specified and calibrated. There are four methods of estimating costs:

- 1) quantity survey method (contractor's method);
- 2) unit - in - place - method;
- 3) comparative unit method;
- 4) trended original cost (index method).

The quantity survey method requires that the appraiser create a detailed inventory of every item of material, equipment, labor, and fees involved in a construction of a property. Proper application of this method requires a special knowledge of construction and familiarity with local labor laws and work rules. This method is extremaly time comsuming.

In this method direct costs are added to indirect costs to arrive at estimated reproduction cost new of each component of the improvements on the site. The

total of all components is then adjusted for local area cost differences and time. Finally, the enterprenurial profit is added to obtain the total cost estimate (ECKERT 1990).

The unit - in - place method is less detailed than the quantity survey method, but still reasonably accurate and complete. The unit - in - place segregated cost method expresses all the direct and some of the indirect costs of structural components as units.

These allow the appraiser to make adjustments for individual components for various types of structures. This approach is usually best for preliminary or cursory appraisals and where appraisal costs must be minimized.

Appraisers can also use the method to estimate costs for unusual or special - purpose structures.

The unit - in - place method is a modification of the quality survey method. This method helps the appraiser compute the cost of a building when the comparative method is not practical.

The comparative unit method is more simplified approach where an estimate of reproduction cost per square meter is derived by dividing the total known cost of similar structures by the total area of those structures in square meters.

Comparative unit costs may be obtained from cost services. These costs are arranged in schedules based on type and quality of construction, size, and perhaps shape. This method combines all the costs for a particular type and quality of structure into one value as a cost per square meter or cubic meter.

This method produces a value based on the floor area of the structure and is used when wall height varies within a building class such as warehouses or factories. In this method appraisal costs can be minimized.

The trended original cost method (ECKERT 1990) obtains an estimate of the reproduction cost of a structure by trending its original, or historical, cost with a factor from an appropriate construction cost index. This method is used for these buildings where comparable cost data are not available. Accuracy depends on knowledge of the date and original cost of construction.

Costs vary geographically and over the time. Cost schedules reflect a specific time and location.

The procedure can be expressed with the following formula:

$$\frac{\text{current cost index}}{\text{index as of construction date}} \times \text{historical cost} = \text{current cost} \quad (5)$$

Appraisers who use this method should recognize that recent cost are more reliable than older cost adjusted with an index (The Appraisal Institute 1992).

It is possible to say, that in the cost approach individuals price real estate based on the depreciated replacement cost of property. In this approach cost is defined as replacement or reproduction, cost new.

Cost approach uses principle of production for estimated replacement cost new and depreciation. Reproduction and replacement cost indicate expected pricing choices of individuals (WILSON 1998).

The appraiser selects appropriate method of cost new estimating, investigates cost sources and estimates cost - as - new of all buildings and improvements. There are some cost sources:

- a) costs of comparable buildings under construction,
- b) contractors of comparable buildings,
- c) published cost services for local areas,
- d) professional cost estimators.

The cost approach in determining value is based on the statement that the true measure of structure value is the cost of creating it. In this approach property value is derived by estimating the replacement cost of the improvements, deducting the estimated depreciation and adding the value of the land, as estimated by use of market data approach.

Applying cost approach to appraisal, the property is valued as a function of what it would cost to buy the land and construct the buildings. In general, no one would pay more for a property than the price of a reasonably close alternative which is available without undue delay. In most cases, the cost approach is used primarily to confirm the value derived through other approaches to valuation (RET 2010). There are two situations where great emphasis will be placed on the value derived through the cost approach to valuation:

- 1) in any new property, the cost approach is likely to give a true indication of value,
- 2) for special purpose properties, where the cost approach is often the only approach possible because these properties don't generate income nor do they sell often enough to provide comparable sales (eg. libraries, schools, special service properties).

The cost approach refers to an approach to estimating the value of real estate, deducting the accrued depreciation or other item due to be subtracted from the reproduction or replacement cost, based on the date of valuate report. The procedures of cost approach are as follows:

- 1) collecting data and on - site survey,
- 2) investigating, compiling, comparing, and analyzing cost and related expenses,
- 3) choosing a proper method to estimating building cost and estimating other costs and profits,
- 4) calculating total costs,
- 5) estimating accrued depreciation and calculating cost value of the building.

The following data for land and building are to be applied for and collected if necessary:

- a) the proposal of land development and construction outline,
- b) design project and relevant permission,

- c) construction plan booklet,
- d) drawing of a completed building,
- e) price level of individual construction material and labor,
- f) costs for building, construction, planning, design, advertisement, sales, management, tax, and etc.,
- g) interest rate of capital and profit rate on development or construction.

Total costs should include building or construction costs, planning and design fee, another special fees, and development or construction profit.

The construction or building costs of the subject property consist of the following items:

- a) direct material and labor costs,
- b) indirect material and labor costs,
- c) management fee and tax,
- d) capital interest, and
- e) construction or building profit.

### **Nature of depreciation of real estates**

#### **Detoriation and obsolescence**

There are some sources of value loss in real estate, as:

- 1) detoriation – loss of value due to normal wear and tear,
- 2) obsolescence:
  - a) economic (business cycles, macro – market fluctuation)
  - b) external (anything extrinsic to the building or site)
  - c) functional (anything intrinsic to the building or site).

There is not any possibility to control economic obsolescence. This obsolescence affects on consumer goods and capital goods as movement of people and goods and transformation and movement of information. There is important interaction of people, goods and information.



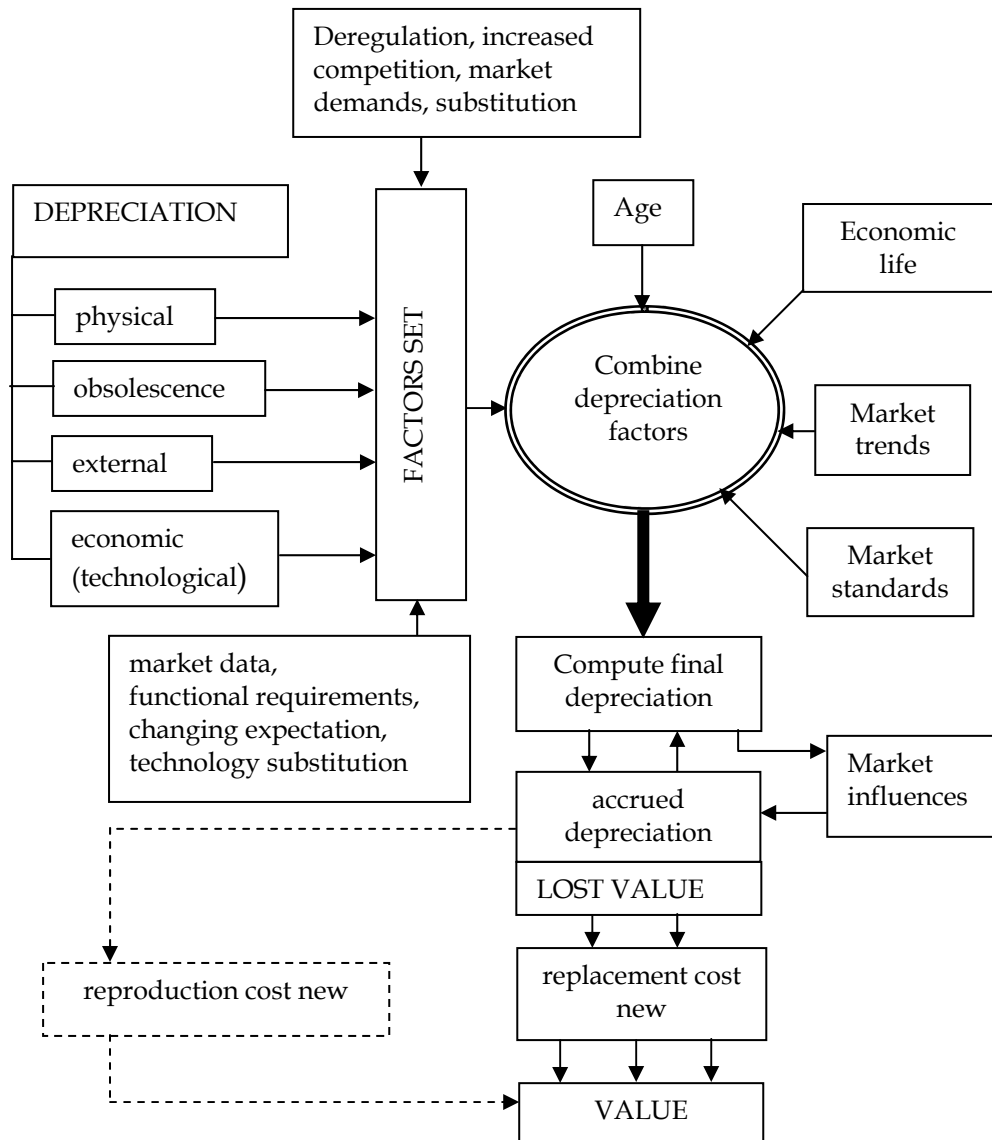


Fig. 2. Depreciation as a process in valuation procedure

Source: Own investigation based on Barreca, 1999

Obsolescence in real estate sector is fundamentally different from obsolescence in other sectors for the following reasons:

- the long life of real estate objects,
- the immobility of real estate object,
- the spatial utility of real estate objects.

There are some sources of obsolescence as market preferences, technological changes, metropolitan changes, urbanization, management decision, design ideas and government actions.

According to market preferences, it should be taken into account that most buildings are built for a specific market at a specific moment in time. Buildings can not change like the market, so without effective adaptation or a new user market, they gradually become obsolete.

Technological changes occur because mechanical, electrical, electronic and other systems are always being improved and often have shorter life - cycles. It is difficult to accommodate some changes as some parts of property can become rapidly obsolete.

Urbanization and metropolitan growth causes changes to relative accessibility of particular location. When relative accessibility declines changes of obsolescence increase.

Changes in management decisions sometimes result in incremental additions that accidentally alter strategic functional patterns and lead to obsolescence.

Design ideas and design philosophies change radically in a short time.

Government activities (forms of government activity) can easily change the physical and functional characteristics of a site or location causing obsolescence.

There are some features for monitor obsolescence. Very important are (BROWN 2008):

- a) distinguish place from property,
- b) understanding macro trends,
- c) understanding local trends,
- d) understanding building type trends,
- e) compare similar objects - examine cost / revenue variations,
- f) survey building occupants / users / tenants,
- g) develop and use benchmarking techniques.

Fig. 2 presents depreciation as a process in valuation procedures, and fig. 3 gives us the common schema of generic groups of real estate obsolescence.

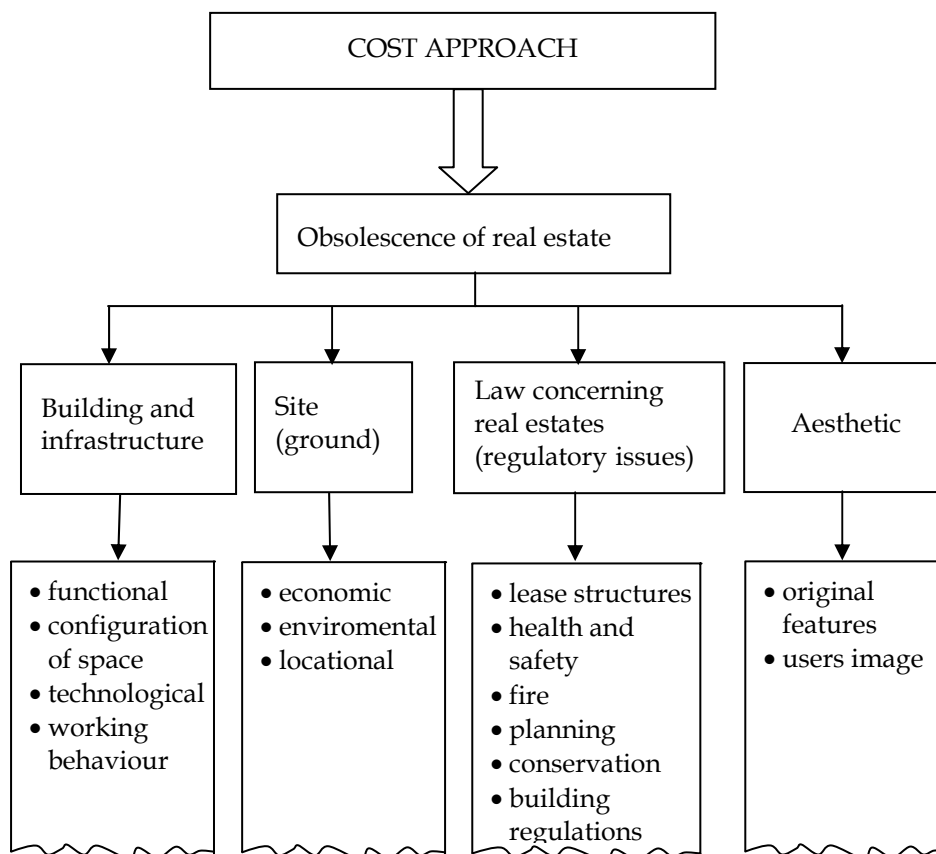


Fig. 3. The common schema of generic groups of obsolescence

Source: Mansfeld J., 2000. RICS Research Foundation

#### Nature of depreciation

The concept of depreciation is derived from economics and concerns the determination of the value of fixed assets. There is a need to distinguish the following basic concepts: depreciation, amortization and depletion.

Depreciation is, in accounting, an expense that is recorded to allocate a tangible asset's cost over its useful life. To be eligible for depreciation, an asset must meet two criteria:

- 1) it must have a useful life beyond the taxable year (it would not be capitalized);
- 2) the asset is presumed to wear out, decay, decline in value due to natural causes, or is subject to exhaustion or obsolescence.

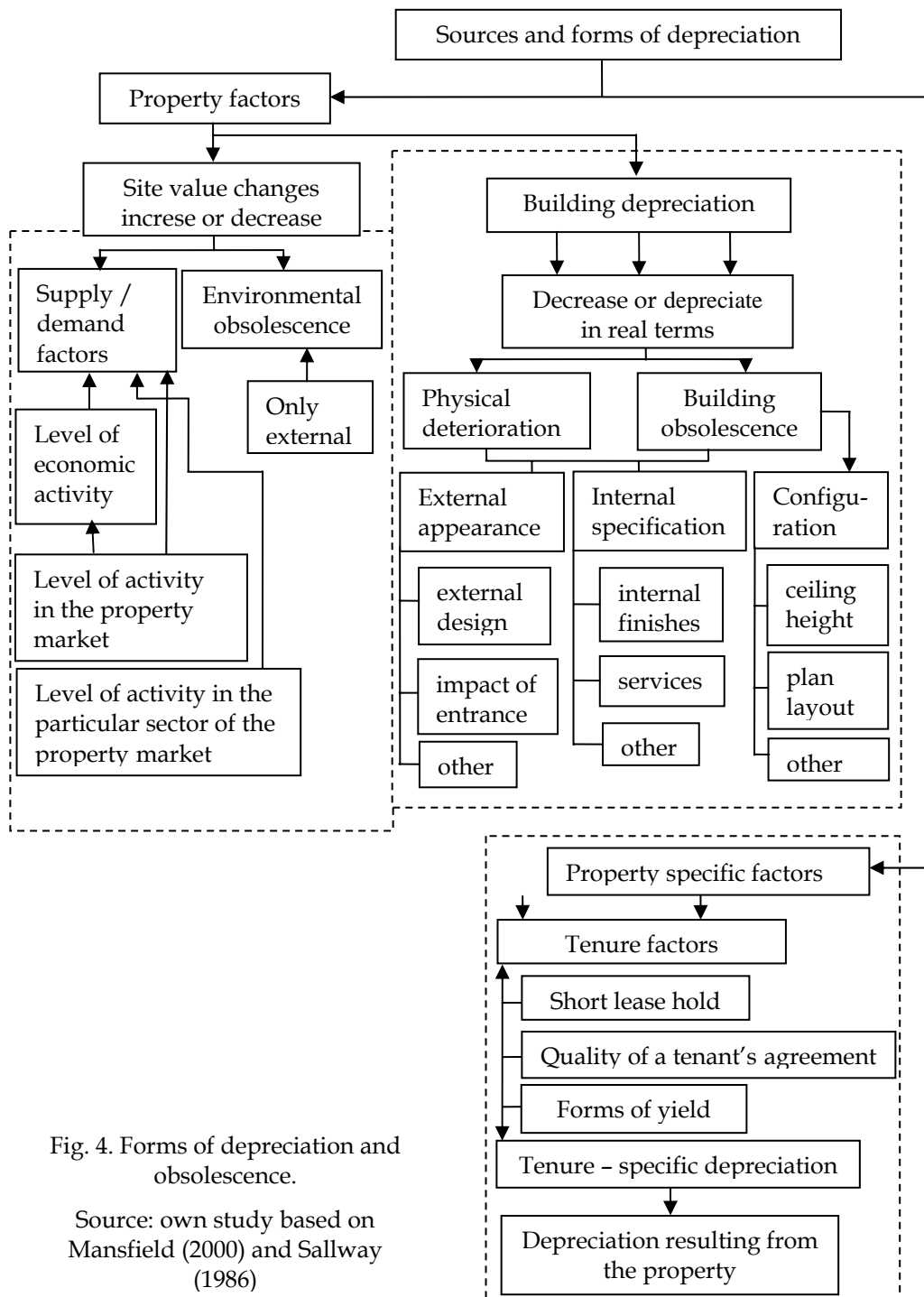


Fig. 4. Forms of depreciation and obsolescence.

Source: own study based on Mansfield (2000) and Sallway (1986)

In accounting depreciation is a non - cash expense. Depreciation prorates a tangible asset's costs over that asset's useful life (economic life).

We can identify some ways to calculate depreciation. Accumulated depreciation is the cumulative depreciation of an asset up to a single point in its life span. There are two basic methods used to calculate depreciation - straight method and declining - balance method.

Due to the new accounting standards, buildings will not be valued in the balance sheet according to its fair value.

Book depreciation is an accounting term that refers to the amount of capital recapture written off an owner's books. Book depreciation is not market derived.

The International Valuation Standards Committee (IVSC) try to harmonise Standards among the world's states (FERNANDEZ 2003). According to IVSC market value and fair value it commonly appears in accounting standards are generally compatible.

Fair value is used for reporting both market and non - market values in financial statements.

Elements of depreciation must then be considered to derive a final estimate of current value.

Measuring depreciation is the weakest part of the cost approach. This can be measured in several ways.

The application of accrued depreciation is a critical step when using the cost approach to value.

There are two general sources of depreciation in real existing use value.

Tenure - specific depreciation is resulting from the property itself (i.e. unencumbered freeholds with identical tenants) (fig. 4).

Property factors set can be divided into two parts: site and building.

The site value can increase or decrease in real terms over time as the result of a complex series of factors.

The building value must decrease or depreciate in real terms (WOFFORD 1983).

Building depreciation is the result of two distinct factors. There are physical deterioration and building obsolescence.

Building obsolescence is differentiated as a value decline not directly related to use or the passage of time. It is difficult to see how the passage of time creates deterioration other than as a result of use or the action of the elements.

Obsolescence in contrast to physical deterioration, is a value decline not directly related to use, the action of the elements, or the passage of time (elapsed time).

Sallway (1986) refers to further categorisation of building obsolescence:

- 1) aesthetic (or visual) obsolescence, resulting from outdated appearance;
- 2) functional obsolescence, the product of technological progress which causes changes in occupiers requirements, impinging upon both layout and facilities offered;
- 3) legal obsolescence, resulting from the introduction of new standards (eg. safety regulations); and

- 4) social obsolescence, resulting from increasing demands by occupiers for a controlled environment and improved facilities.

Functional obsolescence can be defined as: "... a loss in value to the structure because of an inability of the structure to perform its proper function efficiently. It is inherent in the property and is a loss from the cost new, as at the date of valuation caused by overcapacity or inadequacy".

Economic obsolescence was defined as: "... a loss in value to a building arising from diminished utility due to locational causes external to the property".

There were no publicly available guidelines or specifications with respect to functional or economic obsolescence.

The 12<sup>th</sup> edition of The Appraisal of Real Estate published by The Appraisal Institute, characterizes obsolescence as: "... one cause of depreciation representing an impairment of desirability and usefulness caused by new inventions, changes in design, improved processes for production, or external factors that make a property less desirable and valuable for a continued use".

The text notes that obsolescence may be either functional or external (economic) and speaks extensively to issues of whether or not the obsolescence is curable or incurable.

The actual measurement of obsolescence requires sophisticated modelling techniques but is crucial to the conduct of successful assessment appeals in determinations of current value. A greenfield model of an efficient plant of 100 per cent utility is one such tool to measure obsolescence based on the principle of substitution.

Accrued depreciation is "The difference between the reproduction or replacement cost of the improvements on the effective date of the appraisal and the market value of the improvements on the same date".

Accrued depreciation is divided into three basic categories: physical deterioration (which includes curable and incurable), functional obsolescence (curable and incurable) and external obsolescence.

- **Curable Physical Deterioration:** a curable defect caused by deferred maintenance.
- **Incurable Physical Deterioration:** a defect caused by physical deterioration that cannot be practically or economically corrected.
- **Curable Functional Obsolescence:** a curable defect caused by a flaw in the structure, materials or design.
- **Incurable Functional Obsolescence:** a defect caused by a deficiency or a superadequacy in the structure, materials or design which cannot be practically or economically corrected.
- **External Obsolescence:** a defect, usually incurable, caused by negative influences outside a site and generally incurable by the owner, landlord or tenant.

Common market perceptions are:

- New is better than old. This is the basis of physical deterioration.

- The correct amount is better than not enough or too much. This is the basis for functional obsolescence.
- Real estate is fixed in location and subject to external influences that cannot be controlled by the property owner. This is the basis for external obsolescence.

Factors that create value will have been identified in the neighborhood analysis. This analysis will allow the appraiser to interpret how the market reacts to the presence or absence of these value-creating factors. The neighborhood analysis also provides necessary information to make age and life estimates. Conclusions drawn from the neighborhood analysis provide the basis for the appraiser's determination of the ideal improvements in the highest and best use analysis.

In the highest and best use analysis, the ideal improvement (based upon the neighborhood analysis) and the existing improvement is accrued depreciation. The ideal improvement is typically new; if the subject improvement is not new, it is likely that physical deterioration exists. The ideal improvement will contain all features dictated by the market. If the subject does not contain these features, or it contains disproportionate quantities (deficiency or superadequacy), it is likely that functional obsolescence exists. The ideal improvement will not be subject to any negative externalities; if the property is subject to such externalities, it is likely that external obsolescence exists. After analyzing the neighborhood, and describing the ideal improvement, a complete quality and condition analysis of the subject must be done to decide if depreciation exists.

The quality and condition of a building's components have a major influence on the cost estimate, accrued depreciation estimate, the ability of a property to produce income, and the property's comparability with other properties. Quality refers mainly to construction quality and utility in the original work, without regard to physical deterioration. A complete quality survey also includes floor plan analysis, functional utility analysis, and energy efficiency analysis.





CHAPTER 4

**COST APPROACH TO REAL ESTATE VALUATION IN THE  
REPUBLIC OF SLOVENIA**

Maruška Šubic Kovač

#### 4.1. Introduction

According to the theory, the cost approach to appraisal can be used as a valuation approach for income-producing property (FRIEDMAN, ORDWAY 1989, BETTS et al 2005, WYATT 2007, KLEIBER et al 2010). Appraisers estimate the reproduction or replacement cost new of the subject property; then subtract the estimated depreciation sustained by the improvements. To the amount thus derived, the market value of the land as if vacant is added. The resulting total is one estimate of the property value.

As the value of most income-producing property is best measured by the amount of income, the cost approach to appraisal has to be employed carefully, most in a variety of applications for income-producing properties. In addition, it is very difficult to measure the depreciation sustained by a building, particularly one that is more than ten years old. In such cases, the cost approach may provide a poor indication of value, not only because of the impossibility of reproduction but also because improvements may not be the highest and best use of the sites (FRIEDMAN, ORDWAY 1989).

Such is the theory of real estate market valuation.

In the Republic of Slovenia, real estate market valuation gradually developed only after 1991. Before 1991, the administrative real estate valuation was in place, where the valuation did not incorporate the marketing elements. The administrative cost approach was applied in real estate valuation according to the Rules on the uniform methodology for the calculation of market value of residential buildings and apartments and other real estate (SRS Official Gazette, No. 8/1997). Though the administrative cost approach under the circumstances of market economy in the period after 1991 failed to produce satisfactory results and caused dissatisfaction of clients, the appraisers nevertheless formally applied it by inertia and on account of simplicity of approach up to 2003, when its application was expressly prohibited by the Real Estate Mediation Act (RS Official Gazette, No. 42/2003).

In the property privatisation period, the adapted administrative cost approach was applied for the valuation of companies, as well as apartments and residential buildings. In the denationalisation of nationalised real estate, the adapted administrative cost approach was applied as well. After 1991, and more frequently after 2003, the (market) cost approach to appraisal began to be applied in the Republic of Slovenia, at first still in conjunction with the administrative cost approach, and later, independently thereof. At present, the latter approach is rather frequently non-critically applied in practice for the assessment of all real estate.

This paper critically analyses the (administrative) cost approach according to the Rules on the uniform methodology for the calculation of market value of residential buildings and apartments and other real estate (SRS Official Gazette, No. 8/1987). Though the title of these Rules implies that real estate market value is

assessed, the assessed value according to this approach is not equal to the market value which the real estate under assessment would have reached through exchange on the market, and it is not equal to the market value, which is the estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing, wherein the parties had each acted knowledgeably, prudently and without compulsion (International Valuation Standards 2007). Hereinafter, the application of market cost approach in the Republic of Slovenia is critically analysed. In the Republic of Slovenia, the appraisers do not have available the appropriate information databases for application of market cost approach, in order to be able to adequately use market cost approach in assessing the market value of real estate under valuation.

#### **4.2. Market value of real estate and real estate value according to the Rules on the uniform methodology for the calculation of market value of residential buildings and apartments and other real estate of 1987**

The Rules on the uniform methodology for the calculation of market value of residential buildings and apartments and other real estate (SRS Official Gazette, No. 8/1987) were adopted as basis for the valuation of apartments and residential buildings in social property, for the calculation of real estate turnover tax and for the calculation of compensations for expropriated real estate in the past socio-economic system. Real estate value (REV) according to these Rules equals the sum of building land value, land development value, construction value of the facility, and expenses of external development. None of these four elements of value does take into account the situation on the real estate market, and therefore, the total sum does not represent the market value of real estate under valuation.

It is characteristic of this method that all the factors impacting the real estate value, and the levels of their respective impacts, are defined in tables in the Rules and unchanged.

According to these Rules, building land value (BLV) is defined as percentage (0.6-1.2%) of the mean construction price (MCP) that had been developed in the preceding year for 1 m<sup>2</sup> of residential surface within the perimeter of a town, settlement, settlement of urban character or other zone within a particular community, and had been published by every individual community in the relevant community's decision on an annual basis by 31 March every year. This value is corrected by two correction factors: the first correction factor (F1) refers to the type of use of land (value within the interval of 0.5 to 2.0), and the other correction factor (F2) refers to functional advantage (value within the interval of 1 to 5), meaning the distance to public transport network, distance to social standard facilities, and to cultural and sports facilities. Where the surface of building plot was not known in most cases in the past, the specific land utilisation coefficient (F3) was taken into account, depending on the number of storeys of

a building (values from 1 at ground floor plus 2 storeys (G+2), up to 0.182 at ground floor plus 10 storeys (G+10) and more).

$$BLV = (0.6 - 1.2\%) \times MCP \times F1 \times F2 \times F3 \quad (1)$$

Land development value (LDV) is defined depending on the number of possible connections to public utilities (value of coefficient between 0.0 and 3.4) (water supply network, municipal sewage system, electric supply system, hot water supply system, gas supply system, telephone network, network of roads, parking spaces, public lighting, public green plots with children's grounds, and with the sports and recreational grounds, public surface wastewater drainage system, network of hydrants for fire prevention and for municipal needs), and depending on the mean public utilities costs (MPUC) of a typically developed building land, which are defined for every individual community on an annual basis and published in the relevant community's decision by 31 March every year.

$$LDV = (0.0 - 3.4) \times MPUC \quad (2)$$

In defining the construction value of facilities (reproduction cost of a building) (CVF) or parts of facilities (building) there shall be taken into account the:

- type and purpose of construction, and type of structure and of building materials,
- method of finalisation and fitting out of facilities,
- quality of construction, insulation and functionality,
- period of time required for completion of construction,
- status as regards the stability, intensity of regular and investment maintenance, and of improvements.

Based on the above factors, the common factors (Fa) are defined for the particular types of facilities. In addition, the appraisal covers also: the stability of facility as regards the anti-seismic safety, the influence of height of the premises, the influence of the number of storeys, and the area of real estate under appraisal, all of which is commonly identified by the Fb factor. Basis for calculation again is the mean construction price (MCP). The types and impacts of the above factors are shown in specific tables.

Construction value of facility (CVF) is equal to:

$$CVF = MCP \times Fa \times Fb \quad (3)$$

1. SKUPINA : STANOVANJSKI OBJEKTI – SO – IV. KATEGORIJA TABELA 4

Legenda: fa – faktor opremljenosti in finalne obdelave  
 N – verjetna doba trajanja v letih  
 A – absolutna doba trajanja v letih  
 E – etaža  
 k – koeficient površine  
 PST – podstrešje

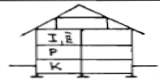


Ozn	VRSTE OBJEKTOV	fa	Doba trajanja		Površina		Opis shema objektov
			N	A	E	k	
1.	Starejše eno ali večdružinske hiše – samostojne – v strnjeni zidavi	0,85 0,82	80 – 120 80 – 120	200 – 250 200 – 250	P, I K	1,00 0,50	
2.	Večstanovanjske hiše s skupnimi hodniki brez kopalnic, WC v stanovanju, zgrajene pred letom 1940, do K+P+3	0,70	80 – 120	160 – 220	P, I K	1,00 0,50	klet po opisu SO – III/5
3.	Enostavnejši objekti iz montažnih ali polmontažnih elementov, z elektro in vodo instalacijo, s slabšo izolativnostjo – lesene izvedbe – pločevinaste lamele – plastične lamele – betonske lamele	0,60 0,60 0,65 0,70	50 – 60 50 – 60 40 – 60 70 – 80	100 100 100 150	P, I K	1,00 0,50	
4.	Vikendi z masivnim podstavkom, stene zidane ali kombinirane iz lesenih brun, bivalni del izoliran, elektro in vodo instalacija ter finalna obdelava	0,80	80 – 100	200 – 220	PST P K	0,90 1,00 0,50 do 0,75	
5.	Zidanice v solidni izvedbi	0,70	70 – 80	140 – 160	P K	1,00 0,50	

Figure 1: An example of a table for defining the common factor Fa according to the Rules on the uniform methodology for the calculation of market value of residential buildings and apartments and other real estate (SRS Official Gazette, No. 8/1987)

Diminished value on account of physical deterioration of a facility (DVPDF) is calculated according to a specific table, taking into account the chronological age of a facility, and the probable age of that facility.

Remaining construction value of a facility (RCVF) is equal to:

$$RCVP = CVP - DVPDF \quad (4)$$

Real estate value (REV) according to these Rules, taking into account the expenses of external development (EED), is equal to:

$$REV = BLV + LDV + RCVF + EED \quad (5)$$

Real estate value (REV) according to these Rules is merely incidentally equal to real estate value, as it does not include any elements, which would take into account the real estate market operations, and it:

- defines a relatively low administrative value of building land, only at the level of 0.6 % to 1.2 % of the mean construction price (MCP).

Analysis (ŠUBIC KOVAČ 1997) has shown that based on this method the value of building land in the centre of towns and settlements is undervalued, whilst the value of building land on the periphery is somewhat overvalued

- overvalues the land development value (LDV).

Land development value (LDV) is assessed neither by actual expenses nor by contribution to value on account of land development.

- construction value of a facility (CVF) is defined on the basis of the mean construction price (MCP) for typical facilities.

There was no uniform methodology in place for the definition of the mean construction price, and therefore, the mean construction price was defined by every municipality "in its own way". Analysis (ŠUBIČ KOVAČ 1997) has shown that owing to this fact the value of real estate in certain towns and settlements in Slovenia had according to these Rules been very high, though the ("real") market value of real estate in question had been much lower.

- remaining construction value of a facility is defined on the basis of physical deterioration of the facility only.

The calculation of current construction value of a facility did not take into account the economic age of a facility and the effective age of a facility, but rather the probable age of a facility and the chronological age of the facility, on account of which the remaining value of a facility was inadequately appraised.

All until 2003, when the application of this method was formally prohibited, the appraisers had been appraising real estate value according to the Rules on the uniform methodology for the calculation of market value of residential buildings and apartments and other real estate (SRS Official Gazette, No. 8/1987). First problems occurred at division (separation) of property in judicial proceedings, where the clients were entangled in lasting proceedings owing to an inadequately appraised real estate value. Later, the banks suffered under the inadequacy of the method. In order to assure mortgage loans, the appraisers assessed real estate value according to these Rules, mostly overvaluing it. Consequently, the banks stopped commissioning appraisals from appraisers, but rather obtained opinions on real estate market value from real estate agents.

#### **4.3. Cost approach to appraisal of market value in the Republic of Slovenia**

As in the beginning of the 1990'ies of the previous century, the Slovenian appraisers for the first time familiarised themselves with real estate market valuation at the American Society of Appraisers' seminars conducted in Ljubljana, Slovenia they adopted also their (market) cost approach. This approach as such and as real estate market value technique is not questionable, taking into account all its applications and limitations. Rather questionable is its application in practice on account of 1) its use in assessing value of real estate for which this approach is inappropriate, and from the point of view of 2) use of inappropriate data.

Real estate appraisers in Slovenia tend to use (market) cost approach rather frequently on account of its similarity to the (administrative) cost approach according to the Rules of 1987, as presented in the preceding Chapter. Certain appraisers understand the rule of "appraiser should select an appropriate number of methods for real estate valuation" as meaning that an appraiser should select as many methods as possible, and not only a sufficient number, for real estate

valuation. Thus, if only possible, some of them tend to use three methods for appraisal, where cost approach is more or less indispensable.

It is curious that certain appraisers on account of wrong approach selection do not seem to be puzzled by the obviously different results obtained through the different approaches. In conclusion to the report on final value estimate they may even find that the cost approach may not have been a most appropriate method for a particular case, however, they do not remove it from the report. Thus, it may be concluded that they regard cost approach as a relevant valuation approach.

Another problem is data gathering for implementation of cost approach.

The problem occurs already at obtaining the appropriate data for (replacement and reproduction) cost new. Investors decide on an investment on the basis of a feasibility analysis for new construction, where the quantitative survey method is applied for the assessment of cost new. These feasibility analyses are not publicly accessible, however, in some cases the appraisers, mostly civil engineers by profession, obtain them from investors in the form of a table containing the following elements and costs:

- A. of construction:  
(costs of excavation, concreting, bricklaying, carpentry, roofing and façade works);
- B. of tradesmen:  
(costs of plumber's, locksmith's, carpenter's, ceramist's, paver's and whitewasher's works);
- C. of installations:  
(costs of water supply, drainage, heating and electric installations);
- D. on the investor's part.

Some costs, as for instance the costs on the investor's part, are difficult to classify as indirect costs. Judgement of the structure of costs and parts of costs is within the appraiser's own discretion. Thereafter, adjustments are performed in the light of the particular facility under appraisal.

After cost new is computed, depreciation must be deducted, namely: physical deterioration, functional obsolescence and economic obsolescence.

Regardless of quality or design, all buildings deteriorate physically over the years. Since each part of a building is affected differently by age, weather, lack of maintenance etc., the loss in value is analysed component by component. Economically, physical deterioration can prove to be either curable or incurable, the assessment whereof is fully within the appraisers' own discretion and normally performed using the linear method. Functional obsolescence and economic obsolescence are established by appraisers on the case by case basis, however, there is insufficient tradition in place in Slovenia to facilitate the identification of these obsolescence types, and thus, they are rarely taken into account in appraisals.

The direct sales comparison approach is normally used in real estate market value assessment. In 2007, the Geodetic Administration of the Republic of Slovenia set up the real estate market records. These real estate market records are

a collection of data on real estate sales, and on land sales. Land data are gathered at the following developmental stages:

- agricultural land,
- building land,
- developed building land, and
- developed building land with building permit.

The Geodesic Administration of the Republic of Slovenia issues quarterly, semi-annual and annual reports on the Slovenian real estate market which, except for general data on the scope of turnover and median prices applicable to rather extensive areas, does not contain any other data relevant for an objective building land market value assessment.

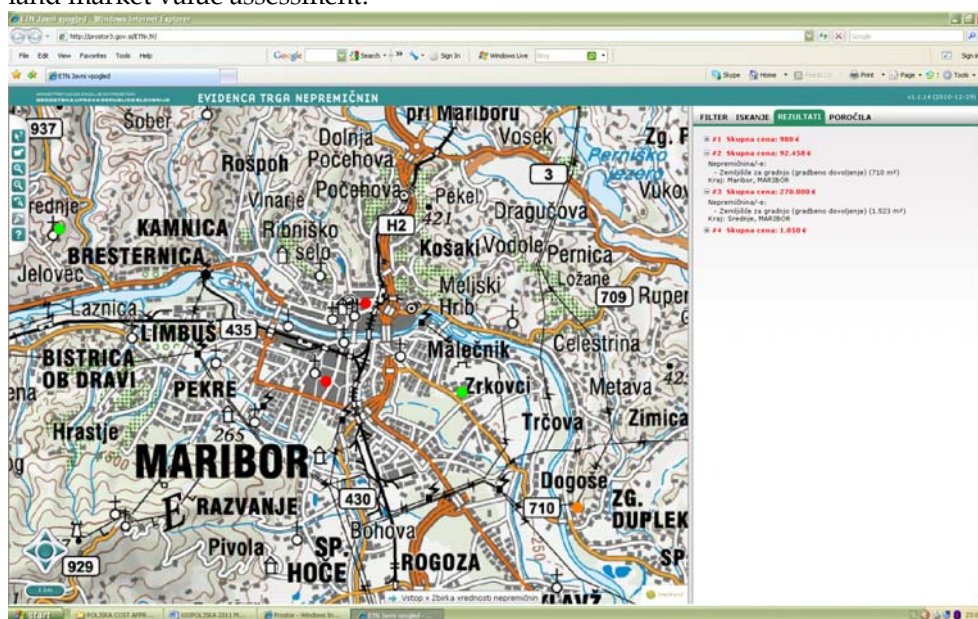


Figure 2: An example from the real estate market records: four sales of developed building land with building permit in the period between July 2010 and January 2011 in the Maribor municipality area (<http://prostor3.gov.si/ETN-JV/>)

In addition to these records, there are relatively few data available on the sales of developed building land with building permit. In the period between July 2010 and January 2011, these real estate market records contained only 42 such building plots in the entire Republic of Slovenia.

#### 4.4. Information databases for market value appraisal according to cost approach

Momentarily, appraisers in the Republic of Slovenia do not have at their disposal the required official information databases for their appraisals (ŠUBIČ KOVAČ et al 2009), but only the official data on real estate sales, which are compiled



by the Geodesic Administration of the Republic of Slovenia, in the form of Real Estate Market Records. These records are accessible at two levels: as publically accessible records with a limited scope of data shown, and as registered access with the full scope of data presented. Appraisers have access to data as registered users.

In the Republic of Slovenia, appraisers do not have at their disposal the appropriate information databases or publically accessible data required for conducting the cost approach. In part, in order to obtain the reproduction costs, they are able to apply the PEG database that is accessible via the website <http://www.peg-online.net/prva-stran>, which, however, does not contain all the required elements of costs.

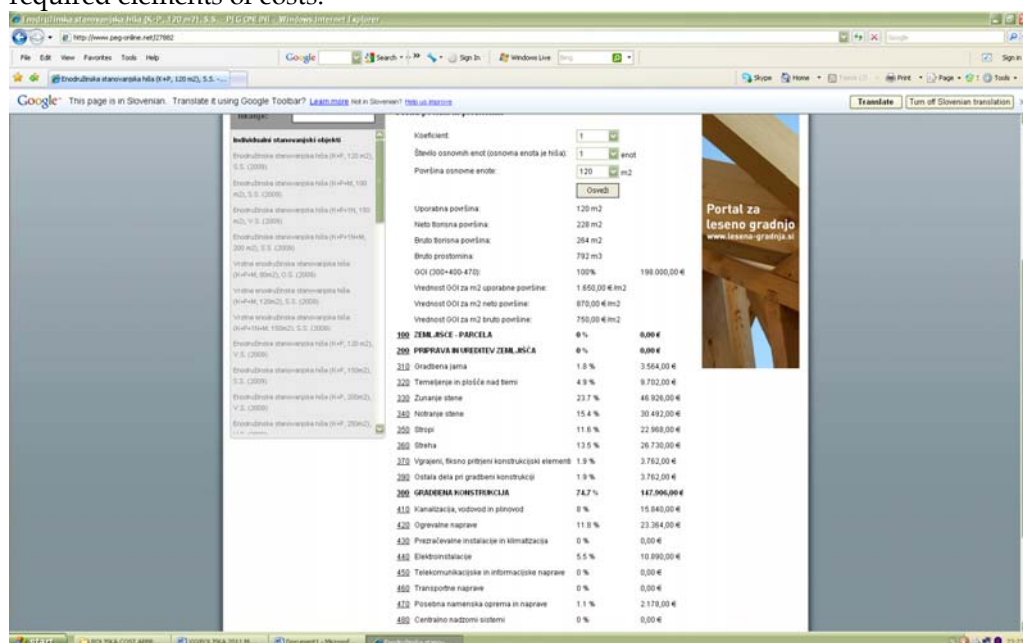


Figure 3: An example of payable private web portal, where the construction costs per particular building types are monitored (<http://www.peg-online.net/prva-stran>)

The database contains over 300 buildings which had been valuated, divided into the following groups:

- individual residential facilities,
- industrial facilities,
- public facilities,
- combined facilities,
- business premises, and
- multi-apartment facilities.

Every group is supplemented with a short description, as for instance:

- usable area,
  - net ground-floor area,
  - gross ground-floor area,
  - gross volume,
  - costs of construction and tradesmen's work, and of installations (CTI) in total,
  - value of CTI of 1m<sup>2</sup> of usable area,
  - value of CTI of 1m<sup>2</sup> of net area,
  - value of CTI of 1m<sup>2</sup> of gross area,
- and costs per groups:
- construction works,
  - tradesmen's works, and
  - installations.

Uniform methodology for defining the reproduction costs should be established in the Republic of Slovenia. In any case, the characteristics of a building (the number, type and area of rooms, and similar), to which the costs refer, should be described in more detail, and the groups of costs defined, which belong whether to the direct or indirect costs, and finally, the reproduction costs of characteristic types of real estate should be assessed and monitored in the Republic of Slovenia. In assessing physical deterioration, the average economic viability of typical buildings should be investigated in the Republic of Slovenia. It should also be defined, which factors are impacting the assessment of actual age of a building, and the resultant diminishing of costs due to physical deterioration.

Costs of functional obsolescence and economic obsolescence are rather infrequently taken into account in appraisals. Therefore, it should be investigated first, which types of functional obsolescence and economic obsolescence, which are impacting the real estate market value, do exist in the Republic of Slovenia, and how extensive is their mean impact on real estate market value. Appraisers are mostly highly subjectively and without any analyses assessing the above impacts on market value of real estate under appraisal. Thus, for instance, the arrangement of rooms in new buildings is rather frequently less advantageous, and the appraisers fail to take into account the functional obsolescence. Just the opposite applies to somewhat older buildings with possibly a more advantageous arrangement of rooms, and in such a case, the appraisers do tend to take into account the functional obsolescence. The investigation results could be used by appraisers as methodological basis only, or additionally, as basis for the assessment of functional obsolescence and economic obsolescence in the concrete appraisals.

With regard to land market-value assessment by cost approach it needs to be pointed out that the Real Estate Market Records kept by the Geodesic Administration of the Republic of Slovenia constitute an inadequate basis for land market-value assessment according to direct comparison sales approach. Within

cost approach, land sales prices are required which are at the level of “developed building land with building permit”. And such land availability on land market is rather scarce. For this reason, the directional land values should be established.

Directional land values would need to be defined in more detail within settlements. Analysis (KLEMEN 2010) has shown that price definition ranges, used by the Geodesic Administration of the Republic of Slovenia as units for the calculation of the mean real estate prices for the purposes of the Real Estate Market Report, have been defined rather too extensively. Value zones defined by the Geodesic Administration of the Republic of Slovenia for real estate taxation purposes comprise smaller spatial units, but are still too extensively defined for the purposes of individual real estate valuation as, in town centres, the value of land practically changes “with every pace”.

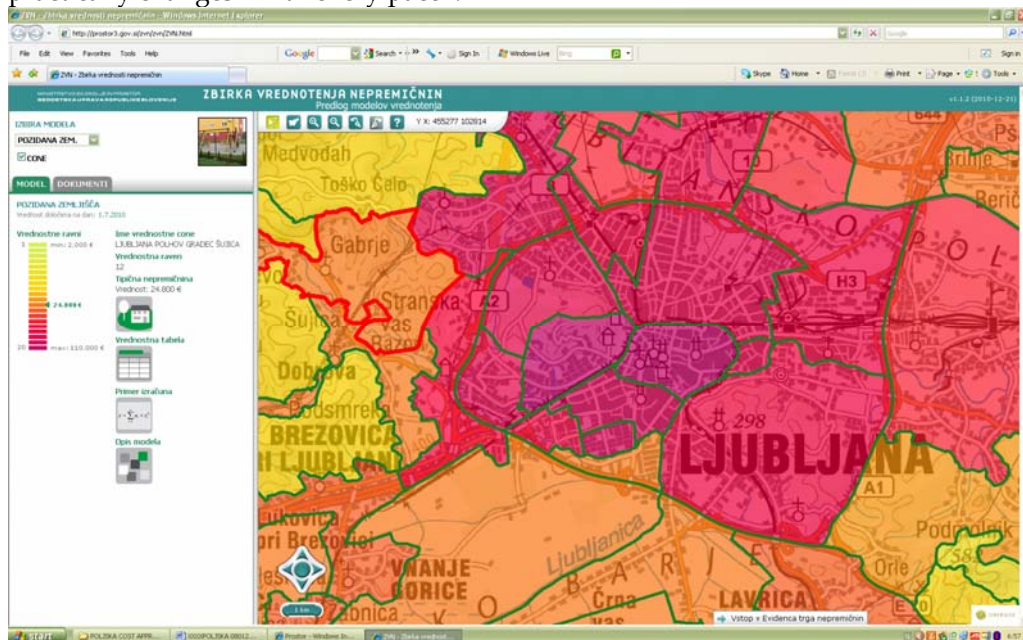


Figure 4: Division of Ljubljana into value zones of built land for the purposes of real estate taxation (<http://prostor3.gov.si/zvn/zvn/ZVN.html>)

Theoretically speaking, the appraisals according to cost approach in the Republic of Slovenia partly take into account the market elements. However, the situation in the real estate market is not taken into consideration. To be more precise: the ratio between supply and demand is not taken into account, and consequently, the diminishing of reproduction or replacement costs. Under the circumstances of a relatively small supply of real estate in the 1990'ies of the previous century, old real estate in the Republic of Slovenia, for instance, was sold at the same prices as new real estate, which should be taken into account by appraisers in the assessment of physical deterioration or, using an appropriate

factor, in the concluding section of the appraisal. Due to the non-observation of this factor, the values assessed according to cost approach markedly differ from the market value.

#### **4.5. Conclusion**

By adoption of the Installing of Spatial Arrangements of National Importance into Space Act (RS Official Gazette, No. 80/2010, 106/2010) at the end of last year, the Geodesic Administration of the Republic of Slovenia made a step in a completely wrong direction of objectivising real estate valuation in the Republic of Slovenia. By the Act, they have indirectly equalised the mass and individual real estate valuations in areas for which the adoption of national spatial plan applies. In such cases, at real estate valuation, the appraisers will need to take into account the data on real estate and on the generalised market value (taxable value) of such real estate which, according to regulations governing the recording of real estate, and regulations on mass valuation of real estate, are kept in public records. At individual real estate valuation, the appraisers will need to take into account the generalised market value (taxable value). Such an approach by the Geodesic Administration of the Republic of Slovenia is going to contribute to a less objective real estate valuation within the areas discussed, than if the State would have established an autonomous authority (which the Geodesic Administration of the Republic of Slovenia is not) for the setting up and maintaining the appropriate information databases for the real estate purposes; and for application by cost approach.

Use of cost approach and objectivity of its results is in general linked to the appropriate information databases. In the Republic of Slovenia, such information databases do not exist. Thus, the methodology of assessment should be set up, assessing typical buildings: reproduction costs, economic age, factors impacting the effective age of a building, types of functional obsolescence and economic obsolescence that impact the real estate market value, and their average impact on real estate market value, directional values of land, and the factor of adaptation to circumstances in the real estate market. Likewise, the use of cost approach should be more selective, for such real estate valuation only, for which the sales comparison approach or income approach are inadequate. Thereby, a more objective and less biased approach to market value according to cost approach would be attained.

CHAPTER 5

**COSTS APPLICATION IN A VALUATION  
OF CORPORATE REAL ESTATES IN POLAND**

**Jan Konowalczyk**

## 5.1. Introduction

Theoretical and practical bases which refer to the implementation of the costs in corporate real estates (CRE) are still arguable, they resulted in the changes concerning the ways of valuation in the field of professional standards on the national and international level. The conditions of using costs for the CRE valuation in Poland are determined by the factors of the legal practice institutionalization of a valuation which was introduced over 20 years ago, during the transformation of the economy from the communistic one into the market-driven one. Such regulations, however appear to be transitory at the moment, as the then law referring to a valuation methodology was made under pressure of breaking with the existing non-market ways of valuation which were using costs categories of buildings at the time of lack of active real estate market. Both changes on the national real estate market and the ones concerning conditions of the world economy activity, constitute the premise justifying the necessity of the reformulation of the ways involving cost while carrying out real estate valuation.

Reflections had to do with economic valuation bases as well as professional standards regulations adjusted in compliance with EVS 2009, IVS 2007 and selected foreign standards. Contemporary conditionings and possibilities of using costs have been defined while making CRE valuation for the current conditions of the real estate market development, referring to the estimation of the legal institutionalization results for the replacement value concept operative in Poland.

The presented reflections are of the general and universal kind, no matter what the valued properties are. In the article negative results of wrongly applied costs for the CRE market were mainly reviewed, particularly for the sake of the valuation concerning creditors security of receivables and the contribution to commercial companies and partnerships for the specialized CRE groups.

## 5.2. Economic bases of using costs in CRE valuation

Saying nothing of basic disputes connected with economic doctrines, concerning the costs significance in the creation of value categories (com. inter alia BLAUG 2000), it is essential to mention the contemporary practical empowerment of the valuation methodology in the economic theory. Disputes among economists concerning subjective value concept, based on market interests, could be followed beginning with A. Smith, D. Ricardo or K. Marks, however it is worth going back to the times when value was connected with usefulness from the demand point of view. This breakthrough in thinking about a value is well illustrated in the example given by R. Whately: " It is not that pearls fetch a high price because men have dived for them; but on the contrary, men dive for them because they fetch a high price". The introductions of the marginal utility term, as the price indicator, have not solved all the problems connected with a value, especially the ones related to the ways of its measurement. Views of C. Menger and W.S Jevons referring to cause relationship between costs of production and a value can be

quoted here '(...) a value cause relationship is going not from a cost to ultimate prices but in an opposite direction. Production factors are not indicators of prices but are indicated by prices." Such a view means that the prices of houses are indicated by prices of : building materials and workforce, not vice versa. Further disputes among economists rejected such one way dependency, by stating that: 'cost, demand, supply and prices are interdependent and they define each other.' (LANDRETH, COLANDER 1998).

Understanding basic economic terms by real estate appraisers has a key significance in the creation of appropriate methodological and practical basics of a valuation. As a reference we can take into consideration a contemporary American real estate valuation coursebook which, in the issues of a valuation methodological basics, refers to the universal notion of utility, which alongside with conditions concerning scarcity factors and needs existing together with efficient purchasing power, identifies and determines a property value (RATTERMAN 2008). In Poland the issues related to economic methodological basics are frequently omitted or substituted with the quotations of regulations by law in valuation books.

The basic theoretical problem refers a dual possibility of the analyzed category to the realization of production costs and providing services or to the prices connected with the market goods exchange on the real estate market where the price notion is used in principle. The cost in the economic contest and the valuation methodology is connected mainly with anthropogenic and material elements ie. things (including properties), which can be physically produced, creating supply in this way. Specific character of properties are constituted by the restrictions connected with the lack of possibilities enabling the easy solution of the land insufficiency, by stimulating the economy so that it supplies new resources. From the nowadays viewpoint, the problem of a relative shortage of land is solved mainly by the market allocation mechanisms alongside with the significant government regulatory sector intervention, which means a substantial influence on the real estate market regulation, by political and social factors. Valuation methodology accepts contemporary achievements of the economic theory indicating the relation and interdependence between supply factors, demand and the exchange price on the market, in the context of differentiated influences of those factors on the market balance creation and business cycle stages connected with it. (KUCHARSKA-STASIAK 1994). The way it is approached the cost in economy makes a fundamental market factor connected with the supply, in case of real estate it refers mainly to the costs of building given properties. A different significance of supply factors in a specified business cycle stage and the dependence on the time of the carried out analysis should be taken into consideration. Generally speaking a market significance of costs is of a lower importance in a shorter perspective, however their role connected with the creation of a market prices level is increasing while a market analysis is being made for longer periods of time.

For the practical side of a valuation it is necessary to differentiate between the notions of value resources and value carriers. Utility is connected with the exclusiveness of the owner entitlements covering the right of disposal, the right of use (including use up), and the one to derive profits including profits from rents. Assuming that a level of market prices (also a market value) depends on usefulness measured by demand in principle on the side of a buyer, as well as taking into consideration the influence of the supply factors, it is necessary to assume the following value carriers:

- market prices, covering the purchase price which gives full rights;
- market rents paid by tenants, giving them right to use a property (they are parts of the owner's income);
- market costs of building activity connected with the erection of buildings and technical costs of their maintenance and the costs covering development, repairs and modernization.

In such economic context applying a cost approach in a valuation is justified and substantiates valuation practice through the formulation of the basic valuation rules related to the anticipatory cost approach which acts as a market value carrier as well as basing on the rules of objectivation and substitution, which means that a well informed and rational investor (buyer) will not pay more for a property than the costs of the erection of a new construction of the same usefulness came to (com. The Appraisal of Real Estate 2008). Market, thus dynamic, (comp. KONOWALCZUK 2009) application of costs in CRE valuation requires a price to cover the investment feasibility analysis, with which the other rules of valuation are connected, referring to e.g: a marginal cost, an alternative cost, an additional income (Real Estate Valuation 2000), which is reflected in the valuation practice in the financial alternative analyses. Each market valuation is made with the assumption of sale, which refers such hypothetical transaction to the investment. Therefore a valuation is always connected with making use of tools which help evaluate the efficiency of the investment, which should be referred to the substantial problem of the costs effectiveness evaluation related to building objects. Such evaluation requires having the right effectiveness measurement, which in case of costs, is a market value concept. Without a clearly specified superior measurement in the form of a specified value concept (BLAUG 2000), it is not possible to apply the cost as a market value carrier in the right way. The condition of a value, as a superior definitional measurement, refers also to making use of sales and rents prices, respectively, in the comparative and income approach.

In Polish conditions, application of costs approach, as a rule, leads to a valuation of the replacement value, which do not use a typical valuation rules such as: anticipation, objectivization and substitution, as it is not possible to refer to the market sales (Real Estate Management Act art 150, act 3). Thus it cannot be a criterion for the investors in comparison and effectiveness evaluation of an investment. Moreover there is lack of a formal definition of a replacement value both in literature and legal rules, which results in lacking defined superior



measurement while a cost valuation is realized. It gives evidence, that in Poland the cost approach is applied without a required theoretical methodological concept. In case of the application of the cost in the valuation in accordance with the valuation rules and making use of a superior measurement as a market value concept, it is possible, basing on it, to make an investment evaluation for example in case of the purchase of the existing developed property or alternatively the purchase of the land in a similar location and the erection of buildings and structures (MILLINGTON 1994). It is essential to evaluate costs of the purchased land and replacement costs of buildings together with the key issue of the depreciation. Technical changes are discussed in this respect and the ones concerning terminology and the rules of cost application are discussed in a preferred in recent years DRC formula (Exposure Draft Proposed in International Valuation Standards 2010).

In case of a market cost application for the valuation, the depreciation can be described on the basis of real estate analysis, comparing the differences of the market prices of (almost) identical properties which differ only in age. According to current Polish standards of the professional real estate appraisers 'the property depreciation results mainly from the deterioration of its physical and functional features as well as the influence of other outside factors causing its obsolescence and a decrease in its usefulness. A property depreciation refers mostly to the components of the land. In case of some aims of valuation the depreciation may be also related to the value of the land'. (Common National Valuation Rules (PKZW) 2008, KSWP 1). Different reasons of a property depreciation are indicated in the home literature concerning the methodology of the real estate valuation (MAĆZYŃSKA, PRYSTUPA, RYGIEL 2004) and the detailed home rules of the valuation (Interpretation Note nr 3. NI 3 'The application of the cost approach in the real estate valuation') properly naming three of them:

- physical deterioration (in Poland also called technical) (Professional Standards of Real Estate Appraisers 1995, Standard III. 4.) connected with the deterioration of the condition or the damage of the elements of a property, which usually refers to its components;
- functional obsolescence in English literature called technical or, taking into consideration the interior decoration, equipment, flexibility of the land management plan (local zoning plan; Master plan), tenants/purchasers preferences - in comparison to a new property of the same function;
- external obsolescence - in Poland referred to a particular concept of the environmental waste (comp. Lexicon of Real Estate Appraisers, and Professional Standards of Real Estate Appraisers 1995, Standard IV. 1) meaning the decrease of the property value caused by factors external to the property (e.g. busy transit road close to the house, landfill or contaminated land close to the office premises).

Non-market formula of the replacement value and the lack of possibilities of using the valuation rules, result in misunderstanding and incorrect application of functional and economic obsolescence in practice. Regulations of professional

standards in Poland are not the obstacle for the cost application in the economically justified way. The problems are due to archaic legal regulations, institutionalizing the enclosure of the costs in a valuation in the way deprived of theoretical basics as well as deviating from market development condition.

### **5.3. Legal institutionalization of the real estate valuation and its effects in the cost application in the valuation**

Specific character of the real estate valuation in Polish conditions including the ways of using costs result from the attempt to make a detailed regulation of the methodology and some valuation rules by legal regulations in the 90s of XX century (Real Estate Management Act The Council of Ministers Ordinance on Real Estate Valuation). Such a solution was justified, and it should be evaluated in practice, as the only possible one to be applied then in relation to the needs of economy connected with a fast introduction of the new market valuation rules. Due to the lack of the tradition connected with preterlegal (common) regulations of valuation rules, a low potential of professional organizations structures, in the range of a valuation theory, weakness of scientific centres dealing with problems of real estate valuation alongside with the lack of other legal regulations, universal and common character was applied to the regulations of the real estate management act in the area of value and valuation rules. Regulations included in it were acknowledged as obligatory in all valuation objectives excluding the objective related to the consolidation and exchange of grounds (Real Estate Management Act, art. 149) Legal institutionalisation of the valuation methodology formed, also in an administrative way, a new job of a real estate valuer, which was personally based on a group of experts, making valuations in the communistic economy, which were mainly commissioned by national authorities. The most important two jobs creating a new group of real estate valuers are geodesy and civil engineers. Regulations concerning the valuation methodology were created under the pressure of the demand to break off with, dominating in previous times, non market valuation methods, which covered separate grounds valuations (by administrative methods) and the components (of buildings, structures and trees) by using in a valuation costs category only in the context of an uncompetitive building market. It resulted in the adoption of the basic division between market and costs methods (non market) by differentiating a universally understood market value from a replacement value recognized as the utterly non market one (KONOWALCZUK 2009).

Despite the adoption of the basic model of the institutional real estate appraiser, as the improvement of the job category 'experts from a governor's list', real estate appraisers, except the demands of law regulations, started to create contemporary professional norms. First home professional standards were issued in 1995 by The Polish Federation of Valuers' Associations - PFSRM (Real Estate Appraisers Standards 1995). The publication of these standards was preceded by the publication of the valuation rules by the national administrative organ Ministry of

Land use and Development (Temporary Valuation Rules 1994). This publication got a status of a basic norm for the creation of valuation law regulations, as the market value category was defined in them and the ordination of real estate valuation methods were introduced through the implementation of the classification based on the following notions: approach, method and technique of a valuation. The other regulations of temporary valuation rules were of practical kind and were mainly related to a property valuation for different aims, however, basic legal and economical issues were mentioned in them as well. Temporary valuation rules signed by government organ referred to existing, rudimentary law regulations of a valuation methodology<sup>1</sup>, and in reality they went beyond formal legal frames since they aimed to '(...) define the rules systematizing and ordering the area of property valuation', moreover they were recommended to be applied in 'real estate appraisers education during a recruitment procedure in order to get the professional qualifications and the property valuation' (Temporary Valuation Rules 1994).

A dual and hierarchical method to regulate the property valuation methodology through the law regulations and professional standards, was initiated in the years of 1994-1995, and has been continued in Poland till now, alongside with the constant increase of the significance and domination of law regulations, which is often assumed as typical for the codified law system in Poland. In Poland professional standards were dominant and independent for the creation of the valuation methodology basics for a short period of time in the years of 1995-1997. However on 1<sup>st</sup> January 1998 the regulations of real estate management act came into force, and in the omnipotent legal way, regulated the problems of valuation methodology basics as well as the legal position of real estate appraisers. PFSRM standards received however very important formal legal level as they were assigned with the obligatory character for all real estate appraisers (Property Management Act art. 175), while in the assumptions, they were to constitute professional norms of organizations members associated in PFSRM (Real Estate Professional Standards 1995).

The regulations of the real estate management act legitimated the legal position of professional standards as the third level of norms regulating the methodology of a valuation, the first ones are the regulations of the real estate management act and the second one are the regulations of the executive decree issued on the basis of the art 159 of this act. Such national professional standards lost the independent

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<sup>1</sup> Legal regulations of a valuation methodology formally referred only to national and municipal property and public aims of valuation e.g. expropriation, taxes, fees etc. comp. act of 29 April 1985 about land management, expropriated property. Apart from formal legal regulations there were valuations related to private properties turnover. In practice however due to the lack of other sources of a valuation methodology, valuation rules regulated in law regulations were commonly used also to make valuations of private properties used for other aims but not public e.g. sales, non-cash contribution, general ledger, co-ownership dissolution.

character, gaining in 'a return' a high, formal legal rank. The change of professional standards character is visible in the way of their editing made after 1997, as they appear to be superior references to law regulations, and the role of new standards (e.g II.1, III.7, V.5, V.7) is confined to detailed norms, the role of which is to develop valuation rules included in law regulations. Due to this fact professional standards get the status of a dependent regulation corresponding to the level of an instruction. In order to create the indicated legal level of professional standards, it was essential to adopt an important regulation related to a so called ' conflicting norm' determining that in case of discrepancies between the content of standards and the law regulations (...) a real estate appraiser is obliged to apply appropriate law regulations (Real Estate Appraisers Professional Standards 1995 Standard I.1. Rules of standard applications point 5). Moreover in the next change of standards the competence, in the range of updating initiative or the elaboration of a professional standard, apart from associations and statutory bodies PFSRM, was also given to the administration body (Real Estate Appraisers Professional Standards, 1995 Standard I.1. Rules of standard applications point 7). The introduction of the rule, initiated by PFSRM or at least without its protest, stating that professional standards must be agreed with an appropriate minister, brought the end to the process of real estate valuation institutionalisation in Poland and to the one of losing independence and autonomy of professional organizations.

In such a situation the way of making use of cost in a property valuation is conditioned by law regulations, the introduction of which was mainly based on practical criteria taking no consideration of economic knowledge referring to a valuation methodology. Thus, law regulations created claustrophobic space in economic practice, which in some areas is highly autonomous against economic valuation theory and for the valuation practice it means the necessity to use methodological tools not allowing to reflect the real conditions of a market exchange. It also refers to the ways of cost formulation during the replacement value definition which differ from the rules formulated in European standards (EVS 2009), international ones (IVS 2007) and the standards in particular countries e.g. the USA (USPAP 2010), Canada (CUSPAP 2007), Great Britain (The Red Book RICS 2008) and also Russia (SSO ROO 2010).

#### **5.4. A comparison of costs application conditions to real estate valuation in Poland alongside with the international standards and evaluation of results for special CRE valuations for loan and no- cash contribution aims**

In the economic literature, it is pointed that, similarly to other valuation approaches, certain limitations of cost application approach exist in practice. The main weaknesses of this approach refer to:

- for ' the ground factor', all the reservations necessary for the comparative approach, (similarities of properties and transaction prices reliability)
- assumptions referring to the way of optimal property usufruct (in Polish conditions, a current way of usufruct is usually an optimal one)

- reliability of a property wear evaluation
- the kind of the assessed value, as costs hardly ever lead to a evaluation of the market value (Ramrian 2009)

Cost approach application is simpler and more reliable in cases when building objects seated on the ground are new ones and the current way of their usufruct complies with the optimal one (RATTERMANN 2008, p.248). In such case, problems related to the definition of a value consumption, which is more and more difficult to be estimated alongside with the age of building objects, are avoided, as a natural physical wear is joined with the elements of deteriorating functionality and changes of property premises, resulting in external wear, can be caused. For CRE, hardly ever existing in the market sales, it is impossible to find value carriers in the form of the sales prices or rents from the similar properties, which urges to make use of a cost as a market value carrier, taking into account basic valuation rules: objectivization, anticipation and the others. Thus the cost approach is applied to the properties, for which there is a limited demand, such as: hospitals, schools, libraries and production properties such as: oil refineries, chemical plants, steel works, waste incineration plants, cement mills, power stations, sewage treatment plants, water treatment plants, ports and other technical commercial properties.

Table 1

Comparison of conditions for the application of cost approach to valuation in Poland with the Home Office regulations of 2007 (International Valuation Standards - IVS)

<b>CRITERION</b>	<b>HOME LAW REGULATIONS</b>	<b>IVS 2007 REGULATIONS</b>
<b>Superior Value Concept</b>	Formal it is formed by a replacement value, which is not defined	Defined market value concept
<b>Use of valuation rules</b>	Lack of valuation rules for a replacement value	Properly applied valuation rules just as for the methods using sales prices and rents
<b>Defining assumption of a property sales</b>	None	Obligatory
<b>Way of formulating costs of building objects</b>	Static	Dynamic
<b>Methods of concluding</b>	Not specified for the whole real estate, comparison only to a land component	Comparison
<b>The highest and best use analysis</b>	No	Obligatory

Source: Self study

The analysis applied to self use cost as a measure of market and replacement value of a property. Moreover it is necessary to pay attention to very important aspects of using the cost in valuation as the element of the other approaches to it, and evaluation of other types of value e.g. fair value, bank, mortgage and insurance one (KONOWALCZUK 2009). A division into valuation methods using costs is conventional, as some methods are similar to each other e.g. a cost liquidation method or residual method. It is essential to differentiate costs as property value indicator in static or dynamic conditions.

In case of applying simple accounting formula (replacement and substitution) one deals with static conditions, without predicting any dynamics of change in real estate, both in reference to land and improvements while ignoring issues of market features. Each time, in case of admission to the valuation any assumptions causing change in a property, we deal with dynamic conditions of cost approach application. The dynamics is caused by market demands, and its context is the efficiency of the expenditure bearing, which refers both to land and components. In Poland it relates to the liquidation cost method, which is wrongly included in the mixed approach. Including cost liquidation method to the mixed approach is worth considering, as it is the first positive attempt to use the complete cost approach in order to define market value in Poland.

The current method of legal valuation institutionalization connected with the replacement value concept causes negative results in CRE market functioning. It refers to any valuation necessary for securing debt lenders and non-cash contribution to commercial companies and partnerships for the group of specialised CRE. The agreed valuation professional standard for loans excludes the possibility of using costs in the replacement value formula (Common Home Valuation Rules (PKZW) 2008, KSWS 3, point 2.2 and 5.1}. In such case the institutionalization of legal methodology in Poland results in the fact that there is no possibility of a reliable market value description for CRE constituting specialised operational property (compare KONOWALCZUK 2008). As a result bank loan security is significantly limited and creditors risk is increased. For creditors it means limitation in access and increase in loan capital cost. The consequences of legal institutionalization of the replacement value, as a strictly non market mode of using costs in valuation, also affect a very important area connected with capital market development. It refers to CRE non-cash contributions to commercial companies and partnerships executed in Poland in accordance with a selling value concept (Code of Commercial Companies, 2000 art. 14, 65, 481). This value usually equals market value as the assumption of property sale has to be included in its valuation.

Due to formal and legal reasons the adoption of replacement value as a selling value must be excluded. In case of specialised operational property the cost approach can sometimes be the only credible way of market value valuation, the

examples include; sewage treatment plants, water supply stations, waste incineration plants, specialized departments of industry e.g. steel plants (rolling mill), refineries, (hydrotreating, department). The inability of using the cost approach for defining a selling value of specialised CRE as a market value is not justified theoretically and does not comply with the solutions provided in professional standards recognized by capital market participants. Adoption of a dynamic cost approach to the CRE valuation is the basic premise to change the perception of practical meaning of the cost approach and it will determine the possibility of bringing together the methodological principals applied in Poland to regulations agreed upon internationally. Adopting a dynamic cost approach will require taking them into account as a market factor, considered when concluding a sales transaction, (KONOWALCZUK 2009), and a formal obstacle to the introduction of this kind of methodological solutions are the archaic laws, which currently do not have any basis in economic theory of valuation and have also lost their practical justification. Presently, in Poland, because of unctemporary legal regulations, a replacement value is deprived of the required market cognitive qualities, hence the extremely rare cases when it can be used by investors.

#### **5.5. Conclusions**

1. Works on strengthening the financial system concerning also the improvement of the property valuation rules, which require transparent and coherent application of international valuation standards. This also applies to issues referring to possibilities and conditions of using the cost approach in CRE valuation.
2. With respect to a valuation theory during the creation of methodological grounds, it is assumed, that the cost in economy constitutes an important market factor, generally associated with the supply, which in respect of property is primarily referred to the cost of erecting buildings.
3. In Poland the obstacles to proper use the cost in the property valuation are not professional rules but the law regulations which institutionalise valuation issues. The law regulations introduced a sort of division between market and cost methods (non-market) by distinguishing, from universally understood market value, replacement value considered to be strictly a non-market category.
4. Due to irrelevant legal regulations, currently in Poland, replacement value does not have required cognitive qualities in case of real estate market functioning, which causes that it can be rarely used by investors, and in practice it disables CRE valuations for the purpose of loans and non-cash contribution. As a consequence it increases the risk of investing in trading specialised real estate, which even in highly developed economies are rarely found on active markets, which significantly reduces, and in many cases excludes, the use of comparative and income approach.





## **CHAPTER 6**

### **REMARKS ABOUT METHODS OF RECOGNIZING TYPES OF DEPRECIATION AND OBSOLESCENCE**

**Ryszard Żróbek**

## 6.1. Remarks about methods of real estate depreciation

There are some methods for recognizing and quantifying various types of depreciation and obsolescence.

Depreciation can be defined as a loss in utility and hence value from any cause (BARBER 1991).

There are a number of approaches by which depreciation either for accounting or valuation purposes can be estimated. Baum (1991) defines depreciation as a loss in the existing value of property and attributes the causes to:

- physical deterioration,
- functional obsolescence, and
- aesthetic obsolescence.

In the context of property, depreciation refers to the loss of investment value. This loss is a function of two distinct negative processes (MANSFELD 2000):

- 1) physical deterioration, and
- 2) obsolescence.

Rafter (1991) suggests that there is a combination of factors that make property-based obsolescence. The term "obsolescence" can be categorised into a number of distinct sub-sets.

In the real estate context, the term "depreciation" refers to the loss of a property's financial, or investment value and while it is generally discussed collectively (MANSFELD, PINDER 2008).

Depreciation can be the loss in value due to any cause (wear and tear, impairment of functional use, etc.).

The term "accrued depreciation" can be defined as: a loss in value from the reproduction or replacement cost of an improvement due to any cause as of the date of the appraisal (AIREA 1987).

Analysis of depreciation in the cost approach often introduces the question of "value in use" rather than "value in exchange".

There are a number of methods to determine the accrued depreciation in a property.

Probably the simplest method of calculating accrued depreciation of real estates (structures) is "the age - life" method. In this method depreciation is given by the formula below:

$$AD_{(1)} = \frac{AA}{UEL} \cdot RCN \quad (5)$$

where:

*AD* - accrued depreciation

*AA* - actual age of the structure

*RCN* - replacement cost new

*UEL* - useful economic life

or

$$AD_{(2)} = \frac{AE}{UEL} \cdot RCN \quad (6)$$

where:

*AE* - effective age

The name of this method is "the eye-life method".

In this method accrued depreciation is assessed on the premise that an asset will depreciate by the same amount every year (GYAMFI-YEBOAH, AYTEY 2006).

Fig. 5 presents relationship between deterioration and obsolescence, but table 1 consists "comparison box" for determining accrued depreciation of real estates.

Fig. 6 presents information about life of real estates (physical life, economic life, and actual age).

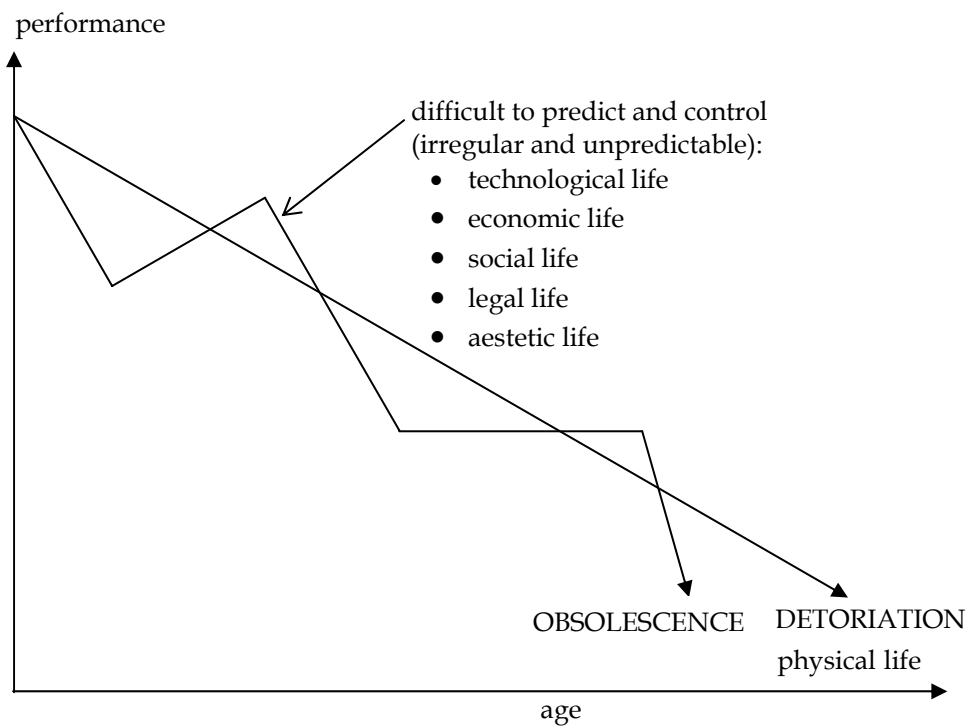


Fig. 5. Relationship between deterioration and obsolescence

Source: own studies

It is important to understand the concept of economic life, effective age and remaining economic life (fig. 6).

Economic life is the period over which improvements contribute to property value. The sum of effective age ( $EE$ ) and remaining economic life ( $REL$ ) is economic life ( $EL$ ):

$$EL = EE + REL \quad (7)$$

Economic life is always shorter than physical life of building ( $PL$ ):

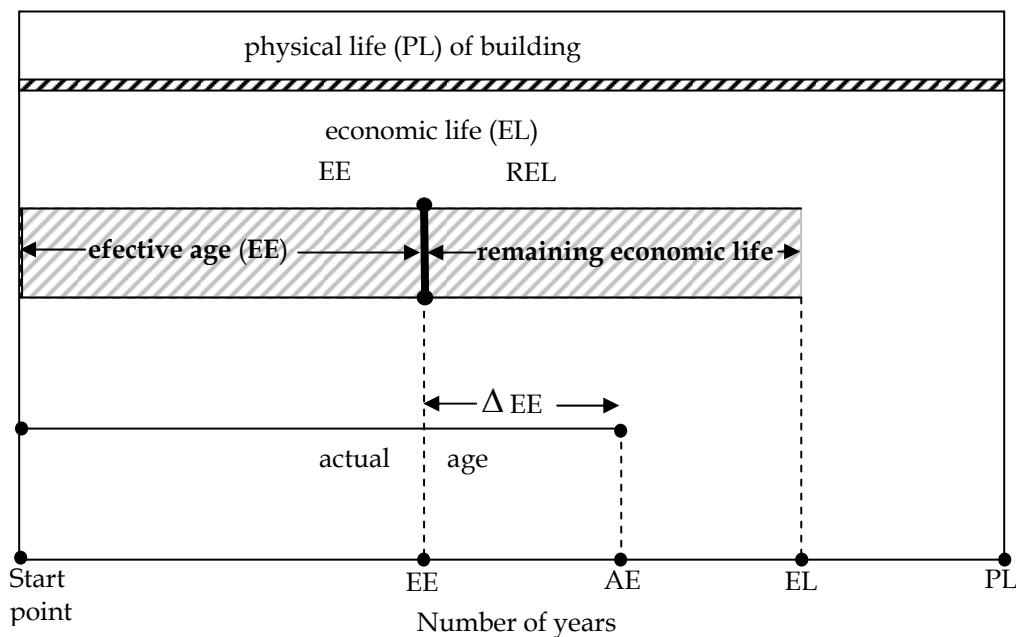
$$EL < PL \quad (8)$$

Effective age is a measure of the condition and functionality of improvement.

Remaining economic life is period of year over which the improvements can be expected to serve the purpose for which they were designed. It may be affected by the physical condition of the improvements, the extent to which the building serves the needs of users and the influence positive or negative.

Effective age may be decreased and remaining economic life increased by extraordinary good maintenance, renovation or both.

These concept of life of building are inextricably interrelated to the concept of highest and best use. Remaining economic life takes on increased importance when it is relatively short (IPVD 2009).



where:

$$\Delta EE = AE - EE$$

Fig. 6. Depreciation of real estates and time

Source: Eckert, 1990

There are some methods for determining accrued depreciation (tab. 1).

Table 1

Comparison of methods for determining accrued depreciation

Name of method	Application	Assumptions	Limitations
1) Market Extraction	Easy, requires sales, land values and construction costs	Total - no breakdown by source	Need sales with accurate site and cost estimates
2) Age - Life	Relatively easy	Straight-line depreciation only; Total - no breakdown by source	Appraiser judgment; Properties depreciate for different causes at different rates
3) Breakdown	Hard, requires sales, cost and Income data	All types and subtypes of depreciation and obsolescence (breakdown by source)	Time consuming, requires great skill and experience

Source: own study

## 6.2. Nature of functional obsolescence

Functional obsolescence may be difficult to divorce from aesthetic obsolescence. This is a highly complex area because obsolescence is a cause but depreciation is the effect. Generally functional obsolescence is the loss in value within the property as a result of the development of improved technology and changes in design, materials, or process resulting in overcapacity, inadequacy, excess construction, lack of quality, or excess variable operating costs in the subject (fig. 7).

Functional obsolescence could be described as a property in this existing form being unable to support the contemporary functional demands of occupation (KHALID 1992, HARTMAN and SHAPIRO 1989).

Functional obsolescence may also occur as the result of a decline in a demand for the building's original use. Baum (1991) considered this obsolescence as the product of technological progress.

The idea of functional obsolescence is, to a very extent, promoted from the supply side rather than the end users (MANSFIELD and PINDER 2008).

Functional obsolescence is classified as curable or incurable (BAUM 1991):

- 1) curable - where capital investment can bring the building to a state in which the degree of obsolescence is mitigated;
- 2) incurable - in which no amount of capital investment can rectify the position.

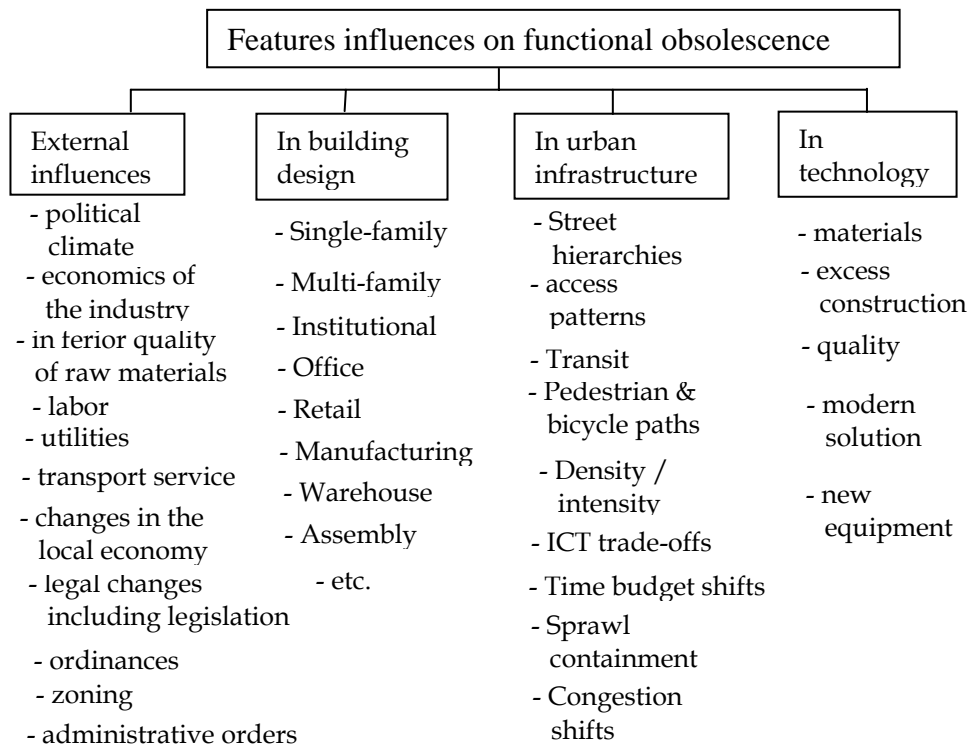


Fig. 7. Nature of functional obsolescence

Source: own investigation

Depreciation which is caused by curable obsolescence should be reflected in the estimated future life of building.

Nutt et. al. (1976) suggested that obsolescence should be viewed as a function of human decision rather than the consequence of natural forces.

Golton (1989) considered that the various components of obsolescence are not discrete and contain a complex and overlapping set of relationships which varies between individual buildings and will change over time (fig. 8).

The relationships are conditioned by the subjective views. Relative position of power of those directly involved in decisions relating to a building's life.

Functional obsolescence is essentially an economic phenomenon and the idea of this obsolescence promoted from the supply side.

It is possible to develop a definition of functional obsolescence from various perspectives.

Functional obsolescence can be grouped in three different categories:

- 1) deficiencies which require additions,
- 2) deficiencies which require substitution or modernization, and

3) superadequacies.

A superadequacy is an improvement which is too large for its neighborhood or is too high a - quality for its neighborhood.

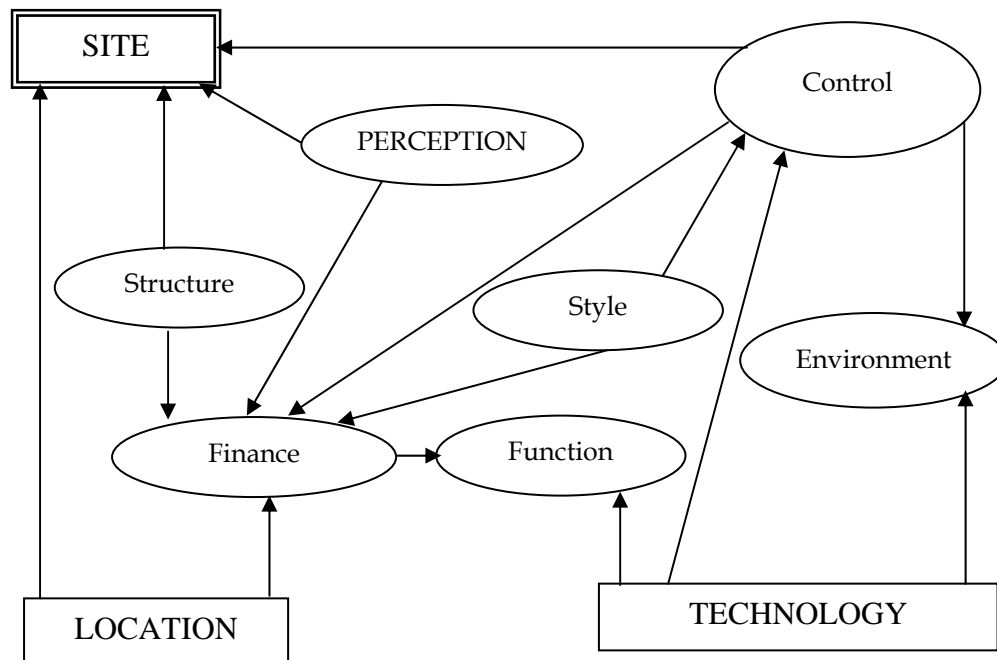


Fig. 8. Relationship linkages within obsolescence

Source: Mansfield (2000) based in Golton (1989)

Functional obsolescence is generally described as occurring inside the property lines of the subject property. It is a loss in value caused by some undesirable feature of the property itself, such as not having enough bathrooms. However it is important to understand that the surrounding neighborhood has a major impact as well. A two-bedroom home would suffer from functional obsolescence in two-bedroom neighborhood.

Functional obsolescence can be either curable or incurable. As was true in the case of physical deterioration, one must compare the cost of correcting the condition to the problem for less than the value added to the property, that problem would be curable functional obsolescence. If it costs more to fix than is added in value, the problem is considered incurable functional obsolescence.

Functional obsolescence is distinctly different from depreciation. It is intrinsic to the property. Functional obsolescence is best described by type of property. The model for addressing functional obsolescence involves the following (IPVD 2008):

- 1) identify: the problem, the components in the facility or lack components, possible corrective measure and the related cost to cure;
- 2) selected the most appropriate corrective measure;
- 3) quantify the loss caused by the functional problem, which results in added value if the problem is corrected;
- 4) determine if the item is curable or incurable;
- 5) apply the functional obsolescence procedure.

Functional obsolescence in real estate is spatial. The cost approach to value relies on several of the basic principles set. One of this is the principle of substitution. The cost approach is most reliable when accurate construction cost figures are available and little depreciation is involved.

Physical deterioration is considered to be a form of obsolescence but distinction between physical deterioration and physical obsolescence is important.

Obsolescence, in all its forms, is one of the key negative drivers of property depreciation.

Obsolescence is a discrete and complex term that contains an overlapping set of relationships.

Functional obsolescence results from flaws within a property that limit its market appeal. Buildings that have been converted from one use to another frequently suffer from functional obsolescence.

This obsolescence is caused by the absence of a feature that is standard in comparable properties, measuring obsolescence becomes more complicated.

Both external and functional reduce property net income (market value of real estate).



## **CHAPTER 7**

# **DEPRECIATION IN THE APPRAISAL OF SPECIALIZED INDUSTRIAL REAL ESTATE**

**Tomasz Ramian**

## **7.1. Introduction**

The main feature of the property is its durability, noticeable especially when compared to other less durable economic goods, like cars, machinery or equipment. The effect of durability is a slow depreciation of the individual components of property – according to exaggerated claims of many authors, the land is "eternal" and solid buildings and structures can be of use dozens, hundreds or even thousands of years. In this context, the property is depreciated with time, due to the forces of nature and as a result of being used. Part of the depreciation is reversible and can be impeded to a large extent by current repairs and maintenance, and even removed through overhauls and renovations. The feature of the property related to its fixedness in a place, the economic result of which is a great sensitivity of the property value to changes in its surroundings, usually because the owner has no impact on them, is essential for the depreciation evaluation. Changes of the surroundings can refer both to the surroundings of its location – changes in the immediate vicinity and further away, as well as the economic environment of both local market and the economy. They can positively or negatively affect the value of the property. In case of negative changes a drop of value caused by external and functional obsolescence is observed. The negative effects of the property physical stability may be diminished by the relative "mobility" of its uses, however these possibilities are smaller, the more specialized its function is.

## **7.2. Depreciation as part of the cost approach in valuation**

In American literature it is stressed that there is a theoretical division of property into a land and construction component in the cost approach. This division, however, has only a theoretical nature, because they are the rights to the property which are traded, not land or buildings, in a physical sense. It creates many issues that would not be relevant in the other approaches. Attributing depreciation to building objects caused by external factors, which does not occur in the sales comparison and income capitalization approach can serve as an example (Appraisal 2008). It is worth noting that the cost approach is of a market type and as well as a comparative and income approach – is based on market comparisons. The cost approach reflects the market, as market participants refer the market value to the cost in the economy. Buyers compare the value of existing buildings, not only to prices and rents for similar properties, but also the cost of erection of new buildings, which from the perspective of a buyer's needs will be technically and functionally optimal. International Valuation Standards also characterize the cost approach as a comparative method (Home Office 2007). In the cost approach the appraiser estimates how the market perceives a difference between a valued building and the newly built buildings of the optimal utility, so called ideal improvement.

The ideal land improvement should be characterized by:

- maximum use of potential demand over the property,
- compliance with current market standards and the nature of the local market,
- the most appropriate selection and valuation of components (Appraisal 2008).

Comparison of the existing buildings with an ideal improvement is part of the analysis of how best to use real estate (highest and best use)(1). It should be emphasized that thorough and detailed analysis of highest and best use is a key element of cost approach, since the comparison of existing improvements to an ideal improvement, allows you to identify all forms of depreciation of a valued property (Appraisal 2008). As a result of this analysis we can determine whether to continue the existing use patterns or to change them, for example, partially modifying the improvements or completely demolishing the existing ones rendering the land usable again.

- See Chart 1

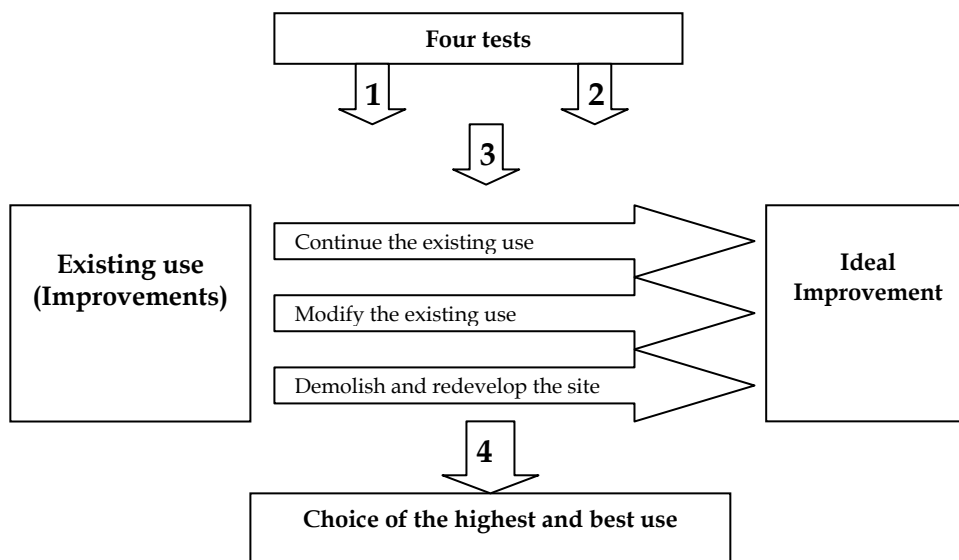


Chart 1. Test of the four criteria for the analysis of highest and best use of the improved property

Source: (RAMIAN 2009)

Test of four criteria is designed to check whether the proposed solutions: 1) comply with the law, are 2) physically (technically) feasible, 3) financially feasible (profitable), and 4) maximum productive. Incurring the costs, the investor expects that they will be compensated by anticipated income growth or the increased sales price. A proposed way of development (use) is financially feasible if the market value of real estate is higher than the costs (including developer's

market return). The maximum productivity means such a way of development that gives the highest residual land value. In case of a continuation of the current use it is usually legally permissible and physically possible. If the existing use is still financially viable and is more profitable than a modification or redevelopment, it remains the highest and best use. Continuation of the existing use the best competitive position in the market. In case of modifications to the current use, the range of changes is greater – it is transformed into an alternative use. The purpose of this modification is usually to improve the competitive position and increase the rate of return. If these changes are technically possible and comply with the law, then a modification of the current use would constitute an optimal manner, in which case the difference between the value after the modification and the modification costs will be higher than that of continuing and demolition. Demolition of existing buildings and redevelopment is an extreme case of modification. If the alternative use of the property will meet the criteria of legality, financial and technical feasibility, it may be the optimal solution, as long as the difference between the value in this state and the costs of demolition and redevelopment is bigger than for the continuation of the current use. From the perspective of investment appraisal, the weakness of the cost approach is the assumption that the property is ready on the date of valuation. Therefore, we cannot directly compare options to purchase an existing developed property, the purchase of land and the realization of the development process (expansion, reconstruction, construction). Time and risk of the design and realization phase are the indispensable elements of valuation.

### **7.3. Determining the property depreciation**

Depreciation is the loss of value – usually gradual, although it may be immediate, for example, as a result of natural disasters or economic slumps. In American literature, depreciation is defined as the difference between the market value of the improvements and their depreciated replacement or reproduction cost on the valuation date (Appraisal 2008). Depreciated cost of improvements is also called Contributory Value, which can be understood as specified added value – the value of improved property is higher than the value of the land itself. Improvements "contribute" to an increase in property values. There are three basic reasons for depreciation (the loss of value) that may occur alone or in various configurations:

- Physical deterioration - resulting from depreciation during use, damage, failure, etc.,
- Functional obsolescence - defects in design, materials, outdated decor, which reduce the functionality, usability and value of building objects (non-standard height of rooms, layout of the rooms, corridors, etc.). "Loss of value due to changing tastes, preferences, market standards and technical innovation" (LING, ARCHER 2010),

- External obsolescence - a temporary or permanent deterioration in the utility or merchantability of buildings (or property) due to negative external influences (e.g., adverse market conditions, negative changes in the neighborhood). The owner / user of the property usually does not have any impact on them. It relates to the issues of localization and economic conditions.

The total of these three elements is **overall depreciation**.

The analysis and a detailed description of the elements that occur for each kind of consumption are presented by R. Żróbek. (ŻRÓBEK 2009). The author, which can be also found in other Polish sources, uses the terms physical depreciation, functional depreciation and the external depreciation. However, it can be concluded that there is some ambiguity (diversity) in the definition of the term depreciation (see Table 2, Chapter 4) - but in American literature, the word *depreciation*, translated in Polish literature, as “*zużycie*” means the loss of value.

Theoretically, depreciation can occur at any stage of development of the property, from the design phase. If the project does not meet market standards, the property may be functionally obsolete before it is built. During the implementation, you can make some adjustments to the project, but generally these elements of technical depreciation remain for the rest of use. Depreciation increases over time, both in the very property as well as the market environment. In the U.S. there are three main methods of depreciation estimation: a market extraction, the economic age-life, and the breakdown method (Appraising Residential). Market extraction method is based on an analysis of similar properties which were the subject of the trade. Based on the data and estimates (the transaction price, the market value of the land, the current cost of buildings in new condition) the depreciation can be determined in amount and percentage. Depreciation estimated for the most similar property is assumed as a basis for the estimation of the appraised property. It is a simple method that leads to the estimation of the total depreciation. As it is based on market comparisons, it has all the advantages and disadvantages of a comparative approach. It is market-based, the presence of a sufficient number of similar properties is a condition of a reliable valuation. The greater the differences between the comparative properties (physical and functional features and the surrounding), the greater the risk of an incorrect valuation. The relation between the effective age of the valued property development and the total estimated economic life for similar properties is used in the “age-life” method. Economic life is the time in which improvements /development increase the value of the land - can bring some additional value. This time is shorter than the useful life, the time in which improvements can perform the functions for which they were erected. Effective age of buildings may be lower than the current age - calculated from the opening date to the valuation date. Since the level of buildings maintenance, carried out repairs and upgrades are taken into account. (ŻRÓBEK 2009, Appraising Residential 2008). This is a very simple method for estimating the total depreciation - it does not allow separate

valuation of the physical, functional and external depreciation. It assumes that each building depreciates linearly during the economic use. Furthermore, it is based on market data relating to similar properties - hence, it has the same conditions of use (particularly the similarity of properties). The breakdown method is the most complicated analytical procedure which allows the separate valuation of the physical, functional and external depreciation. This method is used in those cases where there is a need for a separate valuation of different types of depreciation and where you cannot use the market extraction and the age-life method. It usually happens when there are many different forms of depreciation in a valued property, and it is not possible to find a similar property.

Figure 2 shows the elements of the breakdown method.

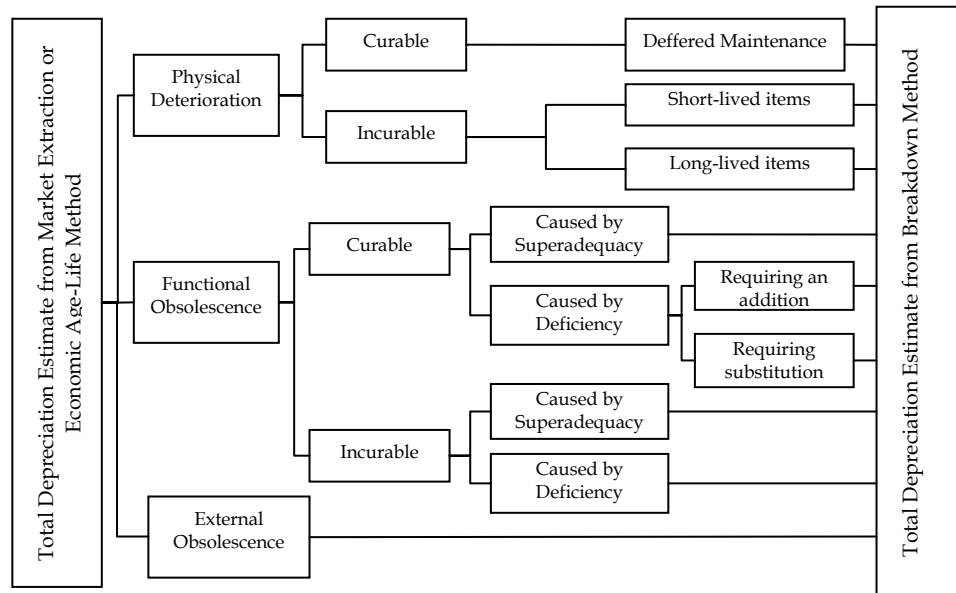


Figure 2. Components in the breakdown method

Source: (Appraisal 2009)

In Figure 2 the link between total depreciation, estimated by the extraction of market or "age-life" method and the total depreciation estimated by the breakdown method, means that each method, properly applied, should lead to similar results. In practice, there are differences in the results obtained during the application of different methods, which can mean for example not taking into account some forms of depreciation and the wrong choice of parameters. Appraisers carry out an extensive study of the valuation parameters resulting in detection of the reasons for the receipt of the divergent results and as such it affects the measurement reliability. Any method used should reflect the reaction of the informed and reasonable buyer on the status and quality of the property and the condition of the

market. The purpose of the analysis of depreciation is to identify all common forms of depreciation of a property, which are recognized by the market as lowering the value, and then value the amount of the reduction. Some basic calculation techniques for various types of depreciation are used when the division method is applied (Appraisal 2008, ŽRÓBEK 2009):

- estimation of repair costs - which applies to the curable physical degradation and the curable functional obsolescence deterioration-resulting from depreciation during use, damage, failure, etc.,
- application of the age indicator to economic life - which is used for all types of physical depreciation (curable, incurable, short and long term),
- application of procedures of determining the functional obsolescence- all types,
- analysis of market data (comparative) - used to estimate the functional depreciation caused by the presence of elements beyond the standard market and sub-standard market, as well as external obsolescence,
- capitalization of losses in income or operating costs increase, which is used to value the irreversible functional and external depreciation.

In the context of the analysis Table 1 presents the synthetic comparison of depreciation methods with an indication of their suitability for the valuation of specialized industrial properties.

Table 1

Synthetic comparison of depreciation valuation methods

Method	Type of valued depreciation	Conditions of application	Suitability for the specialist properties
Market extraction	Total	As for the sales comparison approach	Unsuitable
Age - life	Total	As for the sales comparison approach	Unsuitable
Breakdown	Each depreciation individually	Various	Suitable

Source: Own research

Suitability of the decomposition method for the depreciation estimation in the valuation of specialist properties is confirmed in the literature. M. Derbers maintains that this method, using basic costing methods will be applicable in the valuation of large special-purpose properties (churches, schools, public buildings) as well as the industrial properties and research centers (DERBES 1998). At the same time the author points out that in the case of older industrial properties, unusual

factors of functional depreciation and the changes in preferences of potential buyers may appear.

#### **7.4. Problems in determining the depreciation of specialized industrial properties**

In case of specialized groups of assets often found in the structure of industrial properties, there are several problems that need attention in the depreciation valuation. Firstly, this is a problem of a unique structure, built according to individual requirements of the owner. Therefore, rarely can we find substitution properties (ELLSWORTH 2000, p. 35). The value of these assets is affected by specific internal factors, such as unique technology, technical specifications, use and maintenance by the owner. The value of such properties is also influenced by the specific external factors such as supply and demand of manufactured products, the prices of basic raw materials, environmental and other regulations that affect the economics of the manufacturing plant. In such cases the higher external depreciation will be the harder it is to change the function of property and the more declining market segment the company operates in. (KONOWALCZUK 2009, cf RAMIAN 2009). The value of property depends on the consumption of the highest and best use of the valuation date (see DERBES 2002, LIPSCOMB 2002, FINCH 1996). The value of property depends on its highest and best use on the valuation date (see DERBES 2002, LIPSCOMB 2002, FINCH 1996). Further existence to unchanged significantly extent can be assumed for some industrial properties, for others, however changes in market conditions may require an alternative use. Such a change may cause that some components for potential buyers will not be useful, which results in the occurrence of hidden functional depreciation (rothermich, 1998). In case of industrial properties a factor of potential overall depreciation (combined) may be a complicated structure and interrelations between particular elements of buildings. This may be a specific system subordinated to technology, where the entire production process is arranged in an organized way, from supply through production to shipping the goods. Modernization in one element may involve the need to adapt other objects (DEBRES 1998). In case of valuations, especially of older industrial properties, a proper selection of substitutes to estimate the replacement cost is extremely important. This applies to the property as a whole, but it also applies to all the main elements of technology, especially in the context of increasingly stringent environmental regulations. For example, for the old coal plant with certain parameters, today's relevant equivalent might be gas installation rather than the coal one (with specific construction costs and strict environmental requirements). This example is illustrated by the fact, that in case of cost estimation and depreciation of industrial properties, a thorough knowledge of engineering may be needed, as well as knowledge of market conditions of a given industry. Two more problems are connected with the depreciation of industrial properties however, they are only briefly mentioned in this publication. The problems are:



1. Pollution (contamination) of industrial properties, as a result of running business, which may be visible or hidden, so may potentially occur in the future. Present contamination may concern the ground itself causing its depreciation (eg, restoration costs, additional operating costs, damages, etc.)
2. Estimation of land properties with deposit, the specificity of these properties means that, at least in terms of accounting - this is a special case, where the soil is being used up and depreciated.

#### **7.5. Depreciation of property in national and international valuation standards**

In national standards of professional property appraisers the issue of property depreciation appears in several places. First of all, the concept of depreciation is part of the definition and interpretation of the replacement value and is defined as follows: *"the property depreciation results in particular from deterioration in its physical and functional features, and the influence of other external factors, which cause its obsolescence and reduction of its usefulness. Property depreciation refers mainly to the components of the land. For some purposes of the valuation, depreciation may also affect the value of the land (Common National Valuation Principles (PKZW) 2008, KSWP1). Problems of property valuation are included in detail in NI 3. Application of cost approach in property valuation (Interpretative Note No. 3 NI 3 2009) but it should be noted that this draft is presently being consulted and the "old" Standard III.4 is still used. Rules for determining the depreciation Professional Standards Real Estate Valuers 1995).*

Standard III.4 defines depreciation as "loss of value of the valued property arising from its technical (physical), functional (utilitarian) and environmental depreciation." Unlike, the NI 3 depreciation is defined as "loss of property functional characteristics caused by physical, functional and external depreciation. "A separate term *"depreciation value"* was introduced in this note. In international standards of valuation, depreciation is defined as "replacement costs or replacement adjustment which is reflected by the physical deterioration and functional (technical) and external (economic) obsolescence (MSW 2007). Additionally, problems of industrial properties depreciation were described in the WI 8 interpretation guidelines (guidance notes). Cost Approach in valuations for financial statements. Table 2 presents the comparison of the recognition of problems of industrial properties depreciation in the light of Polish and international valuation standards regulations. As for the characterization of reasons (sources) of depreciation, the smallest differences occur in case of technical depreciation. With regard to the functional depreciation, Standard III.4 exposes utility technical issues and modern solutions, whereas in the other two standards market issues and preferences of customers (users) are exhibited. Standard III.4. differs most significantly from the others in the characterization of external depreciation, which herein is called environmental, and actually relates to changes in external, physical determinants of property functioning. NI 3 and MSW 2007, as well as foreign literature analyzed in this article, point to location factors (changes

in the surrounding of property) and in particular to economic factors (economic) associated with the business. Pointing to these differences we must remember that the Standard III.4 arose at the early stage of the property market development in Poland, so some of its solutions are obsolete.

Table 2

Comparison of basic elements of depreciation in Poland with International Valuation Standards

Element	Standard III.4	PKZW NI.3	MSW WI.8
<b>Depreciation definition</b>	Loss of property value	Loss of utility features of property	Loss of value
<b>Kind of (Source) depreciation</b>	Technical (physical) – Functional (utilitarian) Environmental	Physical Functional External	Physical – Functional (technical) Economic or external
<b>Ways of valuation</b>	No specific procedures. Percentage of depreciation, outlay, remaining life of use reduction of profitability	All permitted; samples formulas and procedures. Costs, age indicators, loss of income, value	All permitted; Lack of detailed procedures. Comparative market data: costs, income, value, age
<b>Specialized industrial properties</b>	Universal standard	Universal standard	Relates to specialized industrial property

Source: Own research

In terms of depreciation valuation methods general base is similar, ie, valuation is based on the analysis of costs, loss of income, comparison of property values, age and period of use. Standard PKZW NI 3 contains the most detailed formulas and possible ways of valuation, described in contemporary literature (see Appraisal 2008; cf. ŻRÓBEK 2009). Of the three analyzed standards only the 8 MSW refers to specialized industrial properties, and the universal principles of cost approach and taking into account depreciation are scattered throughout the content of standards. It is difficult to determine whether you need a standard for valuation of specialized industrial properties, which are relatively rare subject of valuation. However, appraisers should be aware that in such cases, there are many specific issues that must be included in the analysis of the state, the highest and best use and property depreciation valuation.

## 7.6. Conclusions

- 1) Valuation of specialized industrial properties depreciation needs to determine their highest and best use, what is needed both to define ideal improvement of the valued land at given market conditions, and to select similar properties. This applies to the use of any valuation approach. Determination of the highest

and best use can also lead to the disclosure of hidden types (sources) of depreciation - physical, functional and external.

- 2) In case of specialized industrial properties there are specific elements of external depreciation, which concern not only the changes in the property market but changes in the industry, which the company using a given specialized industrial property operates in. The result is that the valuation and estimation of the use of such properties requires knowledge of enterprise market. In some cases, there is an additional problem - it is difficult to separate property operational activities and real estate business - which makes it difficult to estimate the value of the property.
- 3) To value depreciation of specialized industrial properties simple methods based on market comparisons are of little use (due to the complicated structure it is difficult to maintain comparability.) Furthermore such real estate transactions are few and additional transaction prices apply also to the elements of the enterprise. Among analyzed procedures the most appropriate one for the valuation of properties depreciation is the breakdown method - which includes many procedures taking into account the specific costing, valuation of revenue loss and market comparisons. The new draft of national standard contains recommendations, which are in accordance with this method.
- 4) Comparison of national and international valuation standards reveals many similarities and some differences. In the draft NI 3 depreciation is treated as a change in state and not loss of value. In addition, the project takes into account MSW 2007 solution for functional and external depreciation, as it introduces more elements of "market", such as changes in preferences, tastes, innovations and changes in the economy.



CHAPTER 8

**LAND BANKING AS A TOOL FOR THE  
DEVELOPMENT OF THE LAND MANAGEMENT  
SYSTEM IN LITHUANIA**

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### 8.1. Concept of land banking

Land management professionals tend to agree, that, taking into consideration the results and effects of land reforms (land fragmentation, abandonment of land, etc.) in different CEEC and CIS countries, there is an increasing recognition of the need to perform a “second wave” of land reform in the said countries, supporting the “rational use of rural areas through appropriate land management tools and mechanisms” (Tonder Report 2004).

One of such land management tools is land banking, which is defined by J. Damen as “*the structural acquisition and temporary management of land in rural areas by an impartial State agency, with the purpose to redistribute and/or lease out this land with a view to improve the agricultural structure and/or to re-locate the land for other purposes with a general public interest*” (DAMEN 2004). For the purpose of this article we will basically adhere to this definition of the said concept.

In the key international workshop on land banking in 2004, Denmark, organized by the Danish Ministry of Food, Agriculture and Fisheries and the Food and Agriculture Organization of the United Nations (FAO) it was pointed out that “land banks are used to play a catalytic role in the land market, assembling and providing better shaped plots and parcels to farmers in land consolidation projects, implementing and facilitating early retirement schemes, and enabling other types of ‘land demanding’ projects providing nature and environmental protection, afforestation and infrastructure” (Tonder Report 2004).

The said concepts are fully applicable to Lithuania, which is terminating the process of land restitution and prepares for the second stage of the land reform, involving advanced land management techniques. Lithuania already has certain experience in land consolidation as first field projects are accomplished, the National Land Consolidation Strategy is adopted (Government Resolution no. 81, dated 23 January 2008) and the legal framework for land consolidation is functioning. Thus, following the example of other European countries, the effective land banking system would be an important complement to the land management system in Lithuania.

As it may be seen from the study on land banking in Lithuania, the Lithuanian land bank or fund could have the following main objectives: (i) create a more competitive farm structure by reducing fragmentation and scaling up of mainly small and medium size commercial farms (5-50 hectares); (ii) address abandonment of agricultural land by revitalising of farming or reassigning of function depending on soil quality and location of the land and (iii) tune the land use structure in an integrated way to future and present infrastructural needs on local, regional and national levels (VAN HALL LARENSTEIN 2009)

## 8.2. Preconditions for land banking in Lithuania

### 8.2.1. Economic preconditions

Agriculture is an important economy sector in Lithuania, thus efficient use of agricultural land is a key aspect for the country. According to the Statistical Yearbook of Lithuania 2010, 3361,6 thousand hectares (ha) of Lithuanian land was agricultural land (as of 1<sup>st</sup> January 2010): 2708,8 thousand ha of it was private land and 652,7 thousand ha was State owned land, while 0,1 thousand ha belonged to municipalities. The majority of forest land (1311,9 thousand ha) belonged to the State, while private forest land made about 658,4 thousand ha (Statistical Yearbook 2010).

According to the 2007 EU Farm Structure Survey (FSS), performed on sample basis, there were 230 000 agricultural holdings in Lithuania and 44% of the agricultural area was owned by farmers (more than 70 % in the holdings with less than 20 hectares) (FSS 2007).

As regards land abandonment, there is no clear consensus on what area of Lithuanian agricultural land should be considered as abandoned. However, the urgency of this problem is recognised in point 443 of the Program of current Government, approved by the Seimas (Lithuanian Parliament) Decision no. XI-52, dated 9 December 2008.

It is considered, that after the accomplishment of the process of restitution of land, which, according to point 872 of the Government Resolution no. 189, dated 25 February 2009, is planned to be achieved in the IV quarter of 2012, about 300.000 – 400.000 ha of agricultural land will remain in the hands of State (VAN HALL LARENSTEIN 2009). Practitioners tend to agree, that part of this resource should not be introduced into the market via a simple privatization, but should be rather used to fuel advanced land management techniques such as land consolidation and land banking. This could help solving more efficiently issues related to fragmentation of land, land abandonment, wide spread co-ownership of land, etc.

### 8.2. Legal preconditions

As regards legal preconditions for land banking in Lithuania, its roots naturally emanate from the Constitution. The Constitutional Court of the Republic of Lithuania declared in its Ruling, dated 25 September 1996, that the “land is estimated as a universal value the main social function of which is to serve the welfare of the nation” and that therefore “it is especially important that this value were used rationally and effectively”.

With regard to the *State owned property* in general, the Constitutional Court stressed that, *inter alia*, “State-owned property is not an end in itself, it must render benefit for the society. (...) the laws must protect the rights of all owners, therefore also the right of ownership of the state as the organisation of the entire society”. State owned property must be “treasured, not wasted and rationally possessed” (RULINGS 2003-2010) (President Decrees 2010).

In point 409 of its Program mentioned above the current Government of Lithuania declared an objective to establish the State Land Fund (Lith.: *Valstybės žemės fondas*), which would manage the State owned land.

The establishment of the State Land Fund coincided with the reform abolishing the posts of county governors. As county governors were, *inter alia*, main trustees of the State owned land, a strong political debate arose on the issue of which institution(-s) of the national and/or municipal level would be entitled to pursue State owned land management functions.

Applying Art. 128 par. 2 of the Constitution, stating that “the procedure for the possession, use and disposal of State property shall be established by law” and following the said Governmental Program, amendments to the Law on Land (Law on Land no. I-446, dated 26 April 1994) and other relevant laws were made.

Initially, the Seimas adopted a model splitting the State owned land management between the *National Land Service under the Ministry of Agriculture* (management of the State owned land in rural areas) and the municipalities (management of the State owned urban land). Following the President's veto (President Decrees 2010) and the final voting in the Seimas, the final version of the laws provided for a centralized State owned land management system with the National Land Service as a major trustee of the State owned land.

The President noted, *inter alia*, that the proposal to split the management of the State owned land between the National Land Service and the municipalities (60 municipalities to this date) would not create preconditions for the effective and rational management of the State owned property as well as it would not ensure best the interests of the State as of the owner of the property. It was also emphasized that the most important aspect in managing State owned land was transparency and efficiency and that it was State's duty not to ease but prevent ways to abuse State owned land, which could be the case if municipalities were vested the right of management of the said asset. Besides, it was also indicated that the decision not to split State owned land management would correspond best to the 25 November 2009 Government Resolution no. 1597, regarding the 2009-2016 Government Strategy of centralised management of the State property. (President's office 2010)(President Decrees 2010)

With the same law amendments the *State Land Fund* was established, meant to become an entity, performing land banking activities in the country. Close ties between the activities of the National Land Service and the State Land Fund were established by the said laws and other legislative acts. On 19 October 2010, the articles of association of the State Land Fund were respectively modified to correspond to the new tasks assigned to this entity.

Also, on 15 December 2010, by its Resolution no. 1824, the Government adopted new rules on land consolidation, which regulate the implementation of land consolidation projects with the participation of the newly established State Land Fund.



### 8.3. Institutional framework and mechanism of land banking

#### 8.3.1. Institutional framework

Different countries provide for different examples of institutional structure for carrying out land banking activities. For example, entities carrying out land banking activities may have a legal form of State institutions (case of the *Dienst Landelijk Gebied* (DLG) in the Netherlands) or State owned enterprises (case of the *BVVG Bodenverwertungs- und -verwaltungs GmbH* (BVVG) in Germany). In Poland, county governors are the main trustees of the State owned land, whereas the Minister of Public Administration is responsible for properties designated for important State offices. In order to manage special kind of properties, particular public bodies/agencies were formed, such as ANR (*Agricultural Property Agency*), AMW (*Military Property Agency*) and others.

As to Lithuania, the study on land banking (VAN HALL LARENSTEIN 2009) favoured the model, where the State Land Fund would be established on the basis of the existing *public institution* the National Land Service under the Ministry of Agriculture. However, Lithuanian legislatures chose another option and created the State Land Fund on the basis of the existing *State enterprise* the State Land Survey Institute.

The Law on Land, while enumerating the trustees of the State owned land, indicates that the *National Land Service* manages *all the State owned land* of the Republic of Lithuania, *except* for the land, which is entrusted to other subjects, according to the provisions of the Law on Land and other laws. One of such “other subjects” is the *State Land Fund*, which is entitled to manage under the right of trust: (i) the State owned land lots, which are assigned to the territory of a *land consolidation* project, except for the said State owned land lots, which were assigned to other trustees of the State owned land; (ii) the land lots, acquired into State's ownership from private persons, which are needed for the implementation of measures, administrated by the State Land Fund and financed by the State budget and EU funds and meant to improve *structures of landholdings* and diminish the area of *abandoned land*. (Law on Land see Art. 7)

According to Art. 32 par. 5 of the Law on Land, the *functions of the State Land Fund* in regulating “land relations” are the following: (i) preparing data on the state of stock of land of Lithuania; monitoring use of land resources; (ii) managing land information system of Lithuania; (iii) implementing State and EU funded measures, designed to improve structures of landholdings and diminish the area of abandoned land; (iv) organizing the preparation of land consolidation projects and ensuring their implementation; (v) acting on behalf of the State in acquisition/inheritance of private land lots, assigned to the territory of land consolidation project, also acquiring private land lots into State ownership, needed for the implementation of measures indicated in point (iii); (vi) organizing sale and lease auctions of State owned land lots.

The Ministry of Agriculture is entitled to exercise the rights and obligations of the State as of the sole owner of shares of the State Land Fund. This means that the Ministry of Agriculture controls the State Land Fund via the shares and its board of directors. According to point 17 of the articles of association of the State Land Fund, the Ministry of Agriculture is entitled, *inter alia*, to define the strategy of the State Land Fund and approve its profit distribution plan. One of the recent State Land Fund targets that the Minister of Agriculture defined in his 30 December 2010 Order no. 3D-1133, is the obligation to organize 40 land consolidation projects during the 2011-2013 period.

Also, the National Land Service will have a substantial control over the activities of the State Land Fund. For example, the National Land Service will make decisions on whether to assign particular State owned land to the land consolidation projects, organized by the State Land Fund.

The State Land Fund is cut off from the direct access to the disposal of the State owned land remaining after restitution, which could provide material and financial resources (at least in the beginning) for its land banking activities. However, the State Land Fund could also be involved in other types of land banking activities, which would not necessarily concern State owned land, such as the lease and re-lease of private land in the effort of diminishing land abandonment (following such examples as Galician *Banco de Terras de Galicia*).

The Explanatory note no. XIP-1555, dated 10 December 2009, to the amendments on the Law on Land indicates that the amendments, introducing the State Land Fund into institutional framework of State owned land management, would allow the State Land Fund to *progressively* take over land management functions (...), beginning with the most important objectives to this date (listed in Art. 32 of the Law on Land). Dynamic nature of the introduction of land banking mechanism and its understanding expressed in the said Explanatory note allow to presume, that current distribution of powers and obligations between the National Land Service and the State Land Fund may shift in the future. The practice will show, what should be the most effective balance of rights and duties between these entities.

Another important aspect is the right balance of *objectives* fixed for the State Land Fund. On one hand such entity may be required to contribute to the solving of issues of public interest, on the other hand, it might be required to generate profit.

As the State Land Fund is cut off from the pure privatization of land and has no direct access to the State owned land but via the National Land Service, it carries no intrinsic risk to become a simple privatization agency oriented exclusively to the money flow from such activity.

Art. 11 of the amended articles of association eliminated profit generation from the objectives of the State Land Fund (as it was the case for the State Land Survey Institute). However, current trends indicate that the State is willing to impose certain profit requirements to State enterprises, therefore, the Government should

be prudent in defining profit requirements for the State Land Fund. If the balance of objectives shifts towards profit generation, there is a risk that the State Land Fund will lean towards most profitable activities which might appear to be other than land banking.

### **8.3.2. Financial mechanism of the State Land Fund**

The experience of other countries proves that land banking is an expensive activity, which requires adequate and long lasting, strategically managed financial mechanism, saved from frequent political and budgetary turbulence.

As it was already mentioned, a part of the State owned land remaining after the restitution could be used as a resource to launch land banking activities in Lithuania. Also, land prices having a general tendency to rise, such remaining State owned land stock could allow saving public money in future projects. Having a lesser need for direct project financing from the budget, budgetary restraints on the continuum of the strategic land management goals would also be diminished.

However, current legal acts do not provide for such a model. The State Land Fund has no direct access to the State owned land resource and has no capacity of accumulating funds generated from it (for example, from its sale or lease) in order to use them later on. Taking into account the sensitivity of the issue of privatisation, in order to have direct access to the funds originating from it and powers to use such assets in land banking, the “*impartial State agency*” must yet prove its trustworthiness.

Currently, three major sources of financing of the State Land Fund activities or projects include the State budget, EU financing and self-financing through profit generation. As to the latter, it presupposes that the activities of the State Land Fund were profitable to the level, which would permit to efficiently finance land banking activities. Thus, for now, the State Land Fund remains under quasi-total dependence of funds, assigned from the budget or other external sources. It could be questioned if the current financing mechanism of the State Land Fund will be sufficient to allow this entity to perform land banking activities in the most *efficient way and scale*.

In this respect, Lithuanian situation is twofold. On one hand, the chosen legal form of the State Land Fund (“State enterprise”) is flexible enough to allow more effective budgeting (accumulation and use of funds) for land banking activities. On the other hand, this enterprise is not given direct access to the resource, which could fuel its activities and it is strongly dependent on the State budget or other external financing. Inability of the State Land Fund to preserve its activities from the State budget fluctuations may influence its capacity to ensure stable, long lasting and strategically planned land banking. It should be pointed out that land bank is supposed to act in the market and any encumbrances in planning or taking decisions creates a disadvantage.

However, the said disadvantage of the State Land Fund could be relatively compensated if the National Land Service was given efficient legal tools to

preserve a certain part of the State owned land stock from immediate privatization and direct such land, as well as the financial resources generated by (or from) it, towards land consolidation and land banking projects. Saving a strategically defined part of the State owned land from immediate privatization would provide an excellent resource for land management in the future.

### **8.3.3. Transparency and accountability**

Transparency is considered to be one of the guiding principles of land banking (Tonder Report 2004). In case of the Lithuanian State Land Fund, which is a State enterprise and not a public institution, it is most likely that the greatest transparency emphasis will be put on the transparency of specific activities of the State Land Fund, rather than focusing on the entity as such.

For example, one of the key areas of the work of the State Land Fund is organization of land consolidation projects, where Lithuania has already proved its success in tackling transparency issues. Current rules on land consolidation provide, for example, for ways on how the information on the initiation of the projects must be spread (incl. Internet and local newspapers), requires organization of meetings of wide range of all interested parties (incl. local rural community), imposes keeping of written minutes of the said meetings, etc.

Also, for example, in land consolidation projects the State Land Fund will have to receive an approval from the National Land Service as to the limits of the territory of the land consolidation project. Other related public institutions, such as municipality administrations, departments of the Ministry of Environment and the Ministry of Culture, will have to be addressed to by the State Land Fund in order to obtain relevant planning conditions for the project, etc. Furthermore, the information on land consolidation projects is to be spread by the Ministry of Agriculture and the National Land Service in accordance with the objectives fixed in 30 December 2010 Order no. 3D-1133 of the Minister of Agriculture.

Thus, it could be considered, that the requirements imposed on the activities of the State Land Fund, its control by the Ministry of Agriculture, obligatory external auditing, specificity of relationships with the National Land Service, as well as other relevant measures will ensure the proper transparency and accountability standards of the activities of the State Land Fund.

### **8.3.4. Land banking tools**

Art. 5 par. 2 of the Law on Land provides that State owned land can be disposed of by *conveying it into the ownership without compensation*, by *selling, leasing or transferring it for gratuitous use* and by concluding *contracts of land consolidation* and contracts on *easements* in accordance with the the Civil Code, the Law on Land and other laws. *Swapping* of the State owned land was abolished by legislatures due to anti-corruption concerns.

Thus, with the visa of the National Land Service, the State Land Fund will have a possibility to use the relevant forms of disposal of the State owned land, while

exercising land banking activities. However, the possibility to use swapping of the State owned land for purposes other than land consolidation is eliminated, which is an additional restraint for land banking. To relatively substitute swapping, other tools such as sale and purchase could be used instead (Conclusion 2007).

Until the land is privatized or used for other purposes (incl. land consolidation), such land may be leased out (usual current practice) by the National Land Service on the basis of the short-term land lease contracts, which allows to avoid abandonment of the State owned land, permits to keep it in the market and provides a possibility to dispose of it in a comparatively short time.

While dealing with the private land, the State Land Fund will have bigger freedom and will be able to use the necessary market tools in acquiring and disposing of such land. In this case, without a need for the visa of the National Land Service, the State Land Fund, as a State enterprise, will have the necessary reactivity in its decisions. A signature of the director of the State Land Fund will suffice for the acquisitions not exceeding 75.000 litas (~21.721 euro). In other cases the decision of the board of directors will be required.

The State Land Fund has no specific rights in the market (such as, for example, pre-emption rights for the acquisition of agricultural land), as it is the case in some other countries, such as Poland, where the State agency ANR (*Agricultural Property Agency*) is entitled to influence rural estates market by, among many, its pre-emption right. This right gives the ANR a possibility to enter into the transaction as a willing buyer on the conditions (e.g. price) settled between the seller and the buyer.

In their activities, the National Land Service and the State Land Fund should also consider recommendations to use the so called “active grouping of parcels” in direct or indirect privatization of the State owned land (VON ARNIM and LANGHOLZ 2009).

#### **8.4. Conclusions**

Lithuanian land banking system is in its initial phase of evolution and it is understood, that the best ways for the development of this tool are to be defined by further practice and gathered experience. The earlier the threats of malfunctioning of the mechanism are identified, the easier it will be to prevent or solve them.

Referring to the preceding analysis, several conclusions could be drawn regarding the current situation and the future development of land banking in Lithuania:

- 1) Lithuania has a substantial State owned land stock, which could provide necessary resources to the launching of the land banking system in the country.
- 2) Initial legal framework for land banking has been created. However, certain concerns (such as budgetary constrains, threat of corruption, etc.) currently prevent introduction of a more flexible land banking mechanism.

- 3) Institutional framework for land banking is in place. Land banking being a new activity to the relevant entities, a know-how and inter-institutional cooperation experience must be acquired.
- 4) Public trust in land banking mechanism and in institutions carrying it out is yet to be gained. Efficiency of the involved entities and institutions will strongly influence the developments of the mechanism.
- 5) Adequate financing mechanism for land banking activities is a key factor. Practice will demonstrate if current financial mechanism is viable in ensuring efficient land banking. Saving a strategically defined part of the State owned land from immediate privatization and using it for future public needs is essential as a resource.
- 6) Eventual pressure on the State Land Fund to generate profit may cause this entity to lean towards the most profitable activities, while leaving out other important issues it should deal with.
- 7) The fact that land banking activities will be directly influenced by two entities (the National Land Service and the State Land Fund) may additionally encumber the flexibility of the mechanism. However, this may also increase public trust in the land banking mechanism.

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