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determination of the level of development profit in residual method of real estate valuation

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Abstract

The article is focused on the problematic of determination of the level of development profit and his impact to property valuation. Development profit is essential in residual method of valuation. The residual value is in many cases the only possible way how to determinate market value of the property which is important for investors, financial institutions, auditors or regulators. The methodology of calculation for residual method is described in several valuation standard. These standards are usually very general so they can be applied in different markets. The aim of the article is to illustrate the possible method of calculation of the level of the development profit and how is realized in time.

Keywords

Development profit, Development property valuation, Residual method, Profit realization,

Introduction

Valuations of real estate are widely used and relied upon in financial and other markets. The main valuation purposes are to support secured lending and transactional activity, inclusion in financial statements or for regulatory compliance. Valuation methodology is based on the workings of a free market economy. In real estate valuation is essential to understand the modelling of the dynamics of the price mechanism of supply and demand that influences market pricing.

There are three basic and generally accepted valuation approaches used for valuation of real estate; the market (comparative) approach, the income approach and the cost approach. The use of basic valuation approaches is particularly appropriate for objects that are in accordance with their best and highest use, generating adequate returns and are commonly traded on the market.

Basic valuation approaches are not appropriate for valuation of development properties. The international valuation standard define the development properties as interest where redevelopment is required to achieve the highest and best use, or where improvements are either being contemplated or are in progress at the valuation date [1].

For development property where work on improvements has been commenced but is incomplete, the application of basic valuation approaches is problematic. Within the three basic approaches of valuation, there are a number of valuation methods that are used, depending on how property pricing developed in the relevant market. One of the alternative method of development property valuation is a residual method.

The residual method is used in practice for the valuation of development projects at various stages of construction. For the correct determination of the residual value is necessary to consider a significant amount of valuation assumptions. One of the key input is to determinate a developers profit. The knowledge of the level of developers profit is essential for correct determination of residual value.

Market practice will normally indicate the most appropriate option to determinate the development profit. The level of development profit depends on the type of property and is related to the amount of risk associated with achieving the expected return or capital value after the physical completion of the project. The level of developer profits is among the know-how of developers operating in the real estate market. Appraisers usually use for their valuation the level of the developer´s profit based on the information provided by the developer and have only limited ability to assess its adequacy.

Literature review

There are several valuation standards that deal with real estate valuation issues. As a basic one can be considered:

* International Valuation Standard (“IVS”)
* European Valuation Standard (“EVS”)
* RICS – Global standard (“the Red Book”)
* IFRS13 – Fair Value Measurement

Many other publications that have been written about this issue are based on these generally accepted standards.

Different valuation standards are used to determine value for different valuation purposes. In order to provide a generally agreed common basis for real estate valuation the IVS, EVS and Red book use the definition of “Market value”.

Market Value is defined as “*The estimated amount for which the property should exchange on the valuation date 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 being under compulsion.*”[1]

Whereas the IFRS13 valuation standard use the definition of “Fair Value”

Fair Value is defined as *“The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date“.* [3]

The terminology of Fair Value is use mainly for financial reporting. Fair Value requires any advantages that would not be available to market participants generally to be disregarded. This is the different from Market Value. For the purposes of this work, the term Market Value will be used.

The procedure of residual method is described in detail in IVS and EVS standard. The IVS states that the development profit is usually determined as a percentage of the anticipated value of the project on completion, a lump sum or a percentage return on costs incurred. However, these valuation standards are rather general and do not mention any ordinary level which can be used in calculation. The knowledge of the development profit is necessary to determinate the residual value of the property.

Methodology

The following text describes the methodology of future research and presents the procedure of possible determination of the level of development profit used in residual method of real estate valuation.

The residual method combine all three basic valuation approaches. The calculation is based on the completed “Gross Development Value” (the IVS use term “Value of Completed Property”) and the deduction of development costs and the developer´s profit to arrive at the residual value of the development property. The residual method is so called because it indicates the residual amount after deducting all known or anticipated costs required to complete the development from the anticipated value of the project when completed after consideration of the risk associated with completion of the project. This is known as a residual value. The residual value, driven from the residual method, may or may not equate to the market value of the development property in its current condition. [1]

The residual method is based on the following equation:

Gross Development Value

Development Costs

Development Profit

Value of

Undeveloped Property

Figure 1: Logic of residual method calculation (source: author)

One of the possibility how to determinate the ordinary level of developer´s profit is to modify the calculation procedure.

We can determine the Development profit by a simple consideration:

Development Profit

Gross Development Value

Development Costs

Value of

Undeveloped Property

Figure 2: Calculation of development profit (source: author)

The obtained information about the level of development profit will be compared with the ordinary level of development profit used in development properties valuations by the biggest valuation companies operation on the Czech market.

Key inputs determination

For the correct determination of level of Development Profit is necessary to accurately calculate the key inputs of the equation. The residual method of valuation is very sensitive to changes in key inputs. Small changes in variables such as sales volumes or build costs will have a disproportionate effect on residual value.

Source of Information

To proper determination of the key inputs of equation is necessary to have a considerable amount of a property valuations and transactions. As a main information source for research will be used:

* Data from internal database of the author
	+ As a source of information will be used only valuation reports and transaction realized since January 2014. The internal database of the author contains around a thousand of valuation reports to determinate the market value or fair value of the properties and around two hundreds of realized transaction of commercial properties. The valuation reports was processed mainly to support secured lending and for financial statements. The residual method of valuation is used approximately in 120 reports.
* Information from the cadaster
	+ On the webpage [www.cuzk.cz](http://www.cuzk.cz) operated by State Administration of Land Surveying and Cadastre are recorded the information about real estate transaction executed since 2014
* Information from the real estate advertising
	+ As a supplementary information source will be used the commercial real estate advertising. This information source is commonly in used in valuation practise to verify the current level of market condition.

Valuated Properties

Residual method of valuation is used predominantly for valuation of properties under construction. In order to properly data analysis the properties will be divided into two groups based on their use after development. The division is based on the breakdown of the internal database of the author. The distribution of projects will be as follows:

1. Residential properties
	* Around 70% of author database, with using of residual method, is focused on residential property valuation
2. Offices
	* Around 70% of author database, with using of residual method, is focused on residential property valuation

There are other groups of properties such as retail parks, hotels or industrial properties. These objects are usually very specific and there is insufficient information on the market to determinate appropriate level of the development profit. Therefore these types of properties will not be included in to the research.

Gross Development Value

At the beginning is necessary to determinate the gross development value. Based on the fact that the property will be in the state of the best and highest use we can use the basic valuation approaches. Used valuation approach to determinate gross development value depends on the type of property. For residential properties is appropriate to use market comparison and for commercial properties is better to use income approach.

Development Costs

Development costs always depend on the type of developer's intention and are unique for each project. The following basic elements require consideration in any application of the method to estimate the market value of the development property.

* Construction cost
	+ The costs of all works required to complete the project to the defined highest and best use. The construction costs depend on the type and the phase of the construction project and include the construction cost (new object, reconstruction, utilities, landscaping, etc.), costs for ecological, demolition, disposal of ecological loads, off-site enabling work. The best possibility how to determinate the construction costs is a valid construction contract. If the contract is not available, the price indicators can be used to determine construction costs.
* Architect and engineering
	+ These represent the cost of project studies, stages of the project documentation and the costs obtaining statutory premises and approvals.
* Management fee
	+ These include the professional a project management costs that would be reasonably incurred by a participants at various stages through to completion of the project
* Marketing
	+ Proper marketing is a part of the Market Value definition. It is normally to be appropriate to allow for the costs associated with appropriate marketing
* Contingency
	+ To cover the risk connected with the additional cost is necessary to calculate the contingency fee.
* Disposal fees
	+ Disposal fees include the costs of legal services associated with the sale and services of real estate agents who provide for the sale (or lease) of the future property.
* Project financing
	+ These represent the cost of finance for the project through to the completion of the project, including any period required after physical completion to either sell (or lease) the property.

The approximate ratio of Development costs of residential project is shown in the following graph. The ratio is only indicative. The exact amount will be the subject of research.

Figure 3: Approximate ratio of Development costs (source: author)

Value of Undeveloped Property

Getting the value of the undeveloped property would be the most problematic part of the procedure. The value of undeveloped property is usually the unknown obtained by using of residual method. However, this type of real estate is also traded on the market and the value could be determined by using the comparative approach. These are mainly the unconstructed land intended for development or brownfields with possibility of conversion to other uses.

Conclusion

The aim of this research is to find the reasonable level of development profit. The level of development profit is essential part of residual method to determine residual value which is in many cases the only way how to determinate the market value as is defined in IVS. The research conclusion can be used for verifying of the key inputs used in valuation to support secured lending or inclusion in financial statements.

Another investigated unknown will be the timing of the development profit realization. During the development project there are several important milestones. Once these milestones have been reached, the value of the property increase significantly. This increase of the value is caused by the cost and profit transformation (and the associated decrease in risk) in to the value of the property. As the main milestones are generally considered the obtaining of building permit and the sale (lease) of the property.

The author is aware that real estate is a specific kind of asset and is unique in many ways. There can be considerable differences between real estate, especially in the locality, size, standard of the property, demand and supply and other key factors which have a significant impact on the level of the development profit.

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