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Intangible Assets and Goodwill Valuation IDOP

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Abstract

The subject matter of this thesis is a proposal for a method of valuation of intangible effects that will impact assets prices. Special effects are in particular name, historical value, design, quality of layout, security aspects, accessibility, conflict groups of inhabitants in or near the property, location, provenience and other.European valuation standards TEGoVA have conception for valuation of intangible assets and they formed in order to be conform to International valuation standards IVS also in order to reach worldwide consensus in best practices in valuation process. The process of valuation of intangible influences was also surveyed in China, Hong Kong, USA, Canada, Japan, Germany, UK, Poland, Russia and overall in the Europe. Situation in mentioned locations is similar, valuation of intangible influences has not been determined by a concrete list of items and there has not been established concrete clear process. It deals with proposed procedures for valuation of intangible assets, and definitions of such property. Valuation of intangible assets include certain specifics compared to cost assets. The specifics should be considered in the methodology and in final price. There exists a basic consensus in the way of tangible assets evaluation, in the case of intangible assets there is not. Aim is to introduce the scientific public with a different view on the essence of valuation in system IDOP. Proposed methodology is subjective approach of an expert while valuating intangible assets, each expert can work out valuation with a different result. It is not possible to avoid expert`s personal view. Disproportion among individual experts valuating by market price will appear also in the future. These differences can only be reduced by accepting unified methodology such as proposed in this paper. Future research will therefore focus on the clarification of procedures and a detailed validation of recommended tariffs for fixed assets.

Keywords: Behavioral Finance, Market Value, Tangible Assets, Intangible Assets, Goodwill.
JEL Classification: M21, M29, M31.

Introduction and Literature Review

Valuation of intangible assets in the European Union include certain specifics compared to cost assets (Brachmann 1993, Eurostat 1998-2016). The specifics should be considered in the methodology and in final price (Seabrooke, Kent, Hwee 2004). There exists a basic consensus in the way of tangible assets evaluation, in the case of intangible assets there is not. Aim is to introduce the scientific public with a different view on the essence of valuation (Shetty 1995). New software is designed for asset valuation using the methods of cost, yield and comparative value with the special feature that allows the division of assets, including real estate on tangible and intangible parts. The software calculates enter information separately goodwill or badwill (Kulil 2015).

Problem Formulation and Methodology

Goodwill is in the European Union an economic term denoting the difference between the market value of the company and sub-stance price, less any liabilities. Indicates a value, intangible assets such as customer relationships, reputation (Horne 1989). Reflects market position, quality and especially tradition. Goodwill can distinguish two ways, on the goodwill of the original and secondary. Initial goodwill to create their own company's business activities, but not in the accounts of a company recognized because it is not reliably measurable (ČSÚ Praha 1993-2016). Secondary acquires goodwill on the acquisition of another company. Badwill is negative goodwill.

Model and Data

Software can use appraisers and forensic experts in the field of economics, valuation, which the program will be free to download. The software is available on the website of the Institute of Electronic Appraisal of the Faculty of Economics at the Technical University of Ostrava, http://www.ekf.vsb.cz/k166/cs/ (Kulil 2015). See Figure 1 for details.

Figure 1. *Development of Marketability in Period 1997 – 2016 (example of Coefficients of Marketability Kp)*
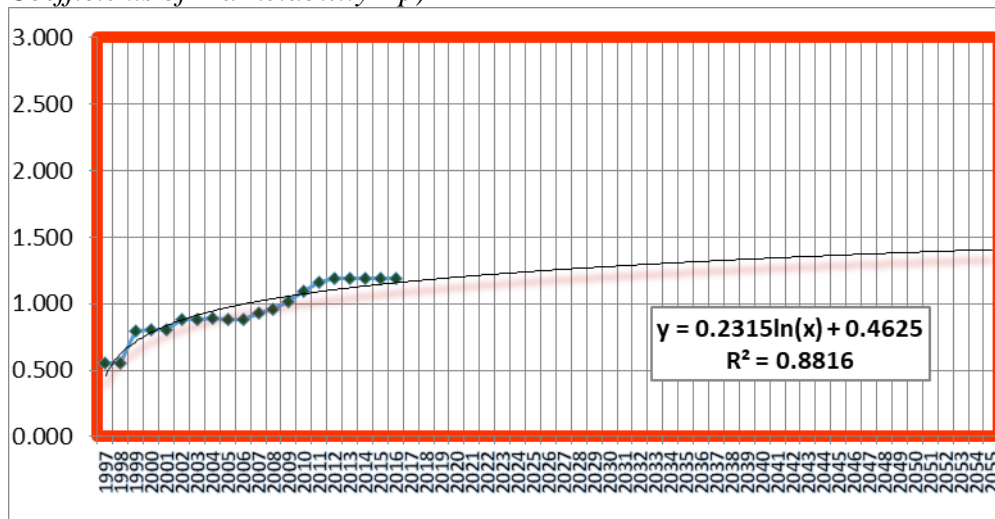
Source: Marketability coefficients according to records of the Ministry of Finance of the Czech Republics.

Here we see the automatically generated price perspective of the asset for the future at annual intervals up to 2055, when the market value of this example is estimated at the selling rate (coefficient of marketability) of 1.40 against the cost-determined price – price of substance.

Problem Solution

Following procedure for valuation of goodwill and badwill type of assets of enterprises resulting from mentioned model approaches appears as the most objective. Enterprise assets will be evaluated by comparative, yield and cost method. The price will be adjusted in each used method according to an influence of special effects, which means good or bad reputation and according to other special effects which influence usual market price. Other evaluated intangible assets of an enterprise (except goodwill) are included in the price if they really exist.

The Cost Value of Estate Valuation in the European Union

In order to calculate the current value of listed historical buildings the author recommends to count significantly higher lifespan than in the case of unprotected buildings. Other proposed life span would probably not normally be less than the age of the main volumes of construction.

- The cost of major structures - indicating processor (price regulation, budget, historic price index and other).
- Cost value of other buildings, technologies and landscaping - will insert.

- The cost of permanent growth - indicating processor.
- The price of land price map or a comparison of average quality - indicating processor.
- Current price structures in total will be calculated automatically.
- Cost value of land and vegetation in total will be calculated automatically.
- Coefficient of marketability Kp (KP) state statistical processor based on the price determined by the current price regulation or like estimate. For detail also see table no. 1
- Graf history years 1997 - 2016 and give the processor price by historical data or according to valuator data estimate. For subsequent years, according to statistical data indicate ČSÚ, Eurostat, US data.
- The development trend for the next 40 years the program generates automatically based on the logarithmic regression curve. See Figure 1 for details.

Table 1. *List of Groups and Items of Special Intangible Effects*

Nr.	*Intangible pricing influences by modifying K_p per item with detailed list itemization*	*Recommended range %*
1.	Location favorableness in the locality compared to the average of the locality	From -10 % to +10 %
2.	Estate name, prestigiosness, dominance	From -10 % to +10 %
3.	Historical value, cost of preservation of monuments	From -10 % to +10 %
4.	Architectonic rendering, the quality of disposition, view	From -10 % to +10 %
5.	Safety, users' privacy, conflict inhabitants in the surroundings	From -70 % to +10 %
6.	Danger of floods, landslides, damage from transport, bad smells, air pollution	From -10 % to +10 %
7.	Dangerous disposition and harmful material, radon	From -10 % to 0 %
8.	Transport accessibility with respect to the average standard in the surroundings	From -10 % to +10 %
9.	Impact of terraced housing, a building inside a row or at its end	From -10 % to 0 %
10.	Pricing perspective of estate and other influences	From -70 % to +10 %

Source: Author's Calculations.

The processor in the European Union will complement estimation of the percentage, and only if different from the current market situation. Span adjustment is recommended. Total intangible special effects with real estate above the threshold [%] are calculated automatically, including cost price, including land and vegetation to intangible property (Kulil 2014).

Yield Valuation

Long historical period of market economy showed that the property purchase in order to ensure a reasonable profit (under the condition of proper management) is worth. This means that the yield value should theoretically be in the performing companies and real estate standardly higher than the cost price (after redundant assets deduction). In practice, cost value is often higher, because there is usually a large surplus of production resources and real estate, they are in an inefficient structure and there may be a negative intangibles (badwill).

- Option is set to eternal annuity; the process can be changed for different ways of calculating the yield value.
- Complete up net annual revenue of buildings, including land and forests, assets.
- The rate of capitalization for standard conventional property - indicate the processor.
- The rate for capitalization of intangible property, including the effects will be calculated automatically as a deduction from recalculation or capitalization rates mentioned in the previous item by the coefficient sales centesimal degree - as an expression of risk premiums or deductions.
- Yield value: Net income/capitalization rate [%] - calculates automatically.

Comparative Valuation

The comparative value should be determined as the median of Gaussian curve of statistical evaluation of individual prices which are compared. For the calculation of the comparative value it is necessary to consider the fact that every property is different, there are always differences and exactly the same comparative representatives cannot be found. Therefore, the comparative value is only one of the several methods - the pillars for the determination of market prices.

- Comparison value separately calculates and give the property a normal average numerical value.
- Comparison value, including intangible effects of excess is calculated automatically by the coefficient of marketability of the cost method.

The Market Value of Property

In the European Union is calculated automatically as the weighted average cost, revenue, and by comparison, the ratio in the formula determines the processor. It can be added to the formula, the value of 0.0 to reset some of the methods of valuation. Since the market price should be deducted from the value of easements.

Price of Goodwill

Goodwill or badwill as a summary of specific intangible impacts on the market price is calculated as the difference between the market value of the property and its cost price. This rule applies generally to movable property, immovable property and businesses. Plots of land price is represented by all rights related to human activities on a land including construction and construction rights. Plot of land is to full extend intangible asset only of goodwill type.

- Coefficient of intangible assets (KP) is the share price of market value and the prices of cost value.
- When the value KP is greater than 1.00 with, a total is goodwill.
- At values less than 1.00 KP, a total is badwill.
- Estimated price perspective - complete processor awards: stagnation (moderate or fast) decline, growth.

New Findings and Special Influences Valuation

Following procedure for valuation of goodwill and badwill type of assets of enterprises resulting from mentioned model approaches appears as the most objective. The amount of goodwill (*GW*) or badwill (*BW*), is the difference market price (*CO*) and cost price (*CC*) as:

$$GW(BW) = CO - CC. \tag{1}$$

The market value *CO* is determined by multiplying the cost value *CC* (replacement cost less depreciation, or material value) by marketability coefficient *KP* according to the relationship

$$CO = CC \times KP, \tag{2}$$

it follows that

$$KP = CO / CC. \tag{3}$$

The marketability coefficient is defined as the ratio between the average actual sales values achieved and the average cost prices of a comparable type of things at the particular time and location.

Market Value CO

According to cost, yield and comparative valuation mentioned in previous parts there will be realized an appraisal of market value (International Valuation Standards Committee 2017, Czech Act on Property Valuation No. 151/1997 Coll.). The amount of price of special influences – goodwill and badwill – will be

the difference between market value of property and cost price without *KP* (cost price *CC*). Amount of harm in connection with the easement will be counted as standard yield method and subtracted from the market value of the property. The maximum discount is not determined. The net income may refer to an optimistic economic situation and the possibility of smooth application of the income valuation framework (Růžičková 2013).

Coefficient of an Intangible Asset

We have the concept of marketability coefficient *KP* or *Kp,* in German-speaking countries a similar term market hopefulness is used (Ross, Brachmann, Holzner 1993). Its fundamental as an index for determining the degree of special influences - intangible assets (*NM*) in a positive or negative amount towards the current price (*CC*) and usual market price - value of assets (*CO*) as a whole is not obvious.

$$CO = CC + NM.\tag{4}$$

Coefficient of an intangible asset (K_{NM}) appears to be more accurate term. An intangible character of valued property results from the mentioned term. And it shall not be determined as the estimated generally not well understood constant, which an expert established. This coefficient can be expressed by the following formula:

For real estate

$$KNM = (CC + NM) / CC.\tag{5}$$

For movables

$$KNM = (CC + NM) / CC.\tag{6}$$

For enterprises from the material substance (*S*)

$$KNM = (S + NM) / S.\tag{7}$$

New Methology and IDOP

Separate system of valuation tangible and intangible assets IDOP (Internal Division Of Property) for the European Union was worked out (European Valuation Standards 2016). For the field of special influences there were proposed and defined apposite terms goodwill and badwill for valuation analogically according to the terms used by economists and appraisal experts while appraising enterprises (Kulil 2015). Character and fundamental of marketability coefficients KP are clarified from the point of view of their relationship to tangible and intangible assets. Ten main areas and hundred items of intangible influences

affecting estate price are complexly defined. The use of a unit of valuation capacity provides a signal of the quality of an asset (Fishman, Parker 2015).

Author created a software NEMO-RATUS 2017 for practical use in the European Union. Proposed procedures in the whole extend of valuation including table analysis of proposed special influences for estate with logarithmic regression and including intangible assets into cost, yield, comparative and market price are applied in the computer system.

Market price of property is automatically divided into tangible and intangible part. This is basic duality (Kumar 2018). For more details see http://www.ekf.vsb.cz/k166/cs/. Proposed procedures and detailed listing of special influences represent a comprehensive, practical and unequivocal support for the valuation practice of experts.

Table 2. *List of 10 Groups and 100 Items of Special Intangible Influences*

Influence number	Intangible pricing influences by modifying C_m per item with detailed list itemization	Recommended range [%]
1.	Favourableness of the location in the locality compared to the average of the locality 1. quality of the locality - location 2. quality of public facilities and infrastructure in the surroundings 3. situation for business, 4. situation for healthcare, 5. situation for culture, 6. sport opportunities, 7. education opportunities 8. quality of the surrounding landscape 9. climatic conditions, place with exceptionally cold environment and windy areas, 10. dry areas, dusty areas, quality of environment, 11. sunlight, exceptional shade, 12. fertility of the area and land 13. recreation opportunities, tourism, 14. job opportunities, 15. construction closure and similar restrictions, 16. natural reserves, spas, national parks and protected areas 17. buffer zones of protected areas, natural formations, monuments, roads, railways, military districts, fishing areas, airport areas and natural resources, 18. possibilities of connecting to underground services, 19. underground services buffer zones.	(from -10% to +10%)

2.	Real estate name, prestigiosness, dominance 20. good reputation of real estate from the point of view of the history of using and operation, name of the building, villa, 21. established name of the area or region in relation to the priced property, 22. influence of dominance for the place and its surroundings, 23. whether the building is or was used by a prominent person, institution or company 24. the fact that a serious crime was committed in the building brought to public notice in the surroundings 25. impact of offer and supply of real estate market as for the particular type, competition, 26. impact of misinformation and price bubbles.	(from -10% to +10%)
3.	Historical value, cost of preservation of monuments 27. historical value of construction elements, 28. historical value of land vegetation, 29. impact of history on the real estate itself 30. impact of the surrounding buildings on the priced real estate, 31. area with preservation of monuments, 32. cost connected with construction-historical and archaeological research. 33. impact with respect to additional cost of historical elements upkeep and of the future operation, 34. impact with respect to longer time of construction and restoration works of the protected buildings.	(from -10% to +10%)
4.	Architectonic rendering, the quality of disposition, view 35. value of architectonic rendering, 36. impact of urbanism, 37. artistic value, 38. name - reputation of the author of the architectonic design and land finish or name of the builder, 39. undefined or unsuitable combination of various architectonic styles, 40. moral and energetic obsolescence of buildings, 41. technical disposition related to real estate profitability, model projects, 42. suitability of location of operations in the real	(from -10% to +10%)

	estate, 43. complicated character of disposition changes, 44. impact of location according to floor in relation to particular use, 45. intensity of use and operation (number of operational or residential units), 46. quality of facilities in the real estate for its use, outbuildings, 47. impact of the terrain configuration for the purpose of utilization, 48. size and shape of land, 49. favourableness of the kind of the plot of land (e.g. angular one), 50. view, 51. cardinal point aspect.	
5.	Safety, users' privacy, conflict inhabitants in the surroundings 52. ensuring the users' safety and privacy, limiting view of the real estate, 53. quality of building disposition, land and vegetation with respect to safety, 54. ensuring secreting of manufacturing operations, 55. quality of protecting the users from being attacked and from terrorism, 56. conflict inhabitants present in the real estate, 57. conflict inhabitants present in the immediate surroundings,	(from -70% to +10%)
6.	Danger of floods, landslides, damage from transport, bad smells, air pollution 58. danger of floods, landslides, rock slides, quakes, of falling trees, 59. danger of collapsing buildings, 60. danger of damage by means of transport crash 61. air pollution, pollutants, bad smells, 62. dust and noise from industrial and agricultural machines, 63. harmful areas e.g. with encephalitis occurrence, contaminated areas.	(from -10% to +10%)
7.	64. Dangerous disposition and harmful material, radon 65. dangerous environment in the real estate, dangerous details as potential causes of injury, 66. not complying to standards for construction and operation, missing technical and fire	(from -10% to 0%)

	safety revisions, 67. risk of decreasing floor load capacity according to the purpose of utilization, 68. risks with respect to undermined areas, 69. risks with respect to high level of underground water, 70. risks and uncertainties as for the presence of radon, 71. risk and uncertainties as for land contamination, 72. risk and uncertainties as for building contamination, 73. risk and uncertainties as for harmful materials of buildings (e.g. asbestos, formaldehyde).	
8.	<u>Transport accessibility with respect to the average standard in the surroundings</u> 74. transport infrastructure in the locality, 75. transport accessibility as for approach to the real estate for individual and cargo transport, 76. parking opportunities, 77. quality of public transport.	(from -10% to +10%)
9.	<u>Impact of terraced housing, a building inside a row or at its end.</u> 78. influence in commercial real estate, 79. influence in residential real estate,	(from -10% to 0%)
10.	<u>Pricing perspective of real estate and other influences</u> 80. the real estate development opportunities, possibility of extensions, modernization, 81. price perspective in connection with the planned changes in the surroundings, synergy, 82. macroeconomic situation in the country and perspective in connection with the pricing segment, 83. subsidy and tax policy of the country in connection with the pricing segment, 84. unclear ownership relations and other limitations, legal audit, 85. building on somebody else's land, access through non-public somebody else's land, 86. shared ownership, e.g. in blocks of flats, 87. a large number of owners, 88. cooperative ownership from the point of view of demand, 89. impact of the existence of building on the land price and on the price of other buildings, 90. rights of construction for above ground and underground part of the real estate, including	(-70% až +10%)

	water tanks,	
	91. rights for utilization of underground,	
	92. impact of planning permission, permission on area utilization,	
	93. impact of demolition assessment on the price,	
	94. impact from the point of view of atypical real estate, underground structures,	
	95. rights for mining, for drawing water,	
	96. possibilities of ship navigation,	
	97. possibilities of using water energy,	
	98. fishing, possibilities of hunting,	
	99. impact of fashion,	
	100. other special intangible influences according to an expert's opinion, which have an impact on profitability and merchantability.	

Source: Author's Calculations.

Conclusion

Aim of the paper was to work out a proposal for valuation of special influences in the European Union, that have an impact on estate price. Controllable procedures for the valuation of intangible assets were proposed. System of valuation with direct implementation in cost, yield and comparative methods from which we can estimate the market value was proposed. In case of estate special influences are defined mostly as good or bad name of locality real estate, historical value, design, quality of layout, safety aspects, transport accessibility, conflict inhabitants in the surroundings, influence of terraced house, other influences and price perspective. Terms goodwill (GW) in case of positive impact and badwill (BW) in case of negative impact were defined for each surveyed special influence.

Proposed methodology negative is subjective approach of an expert while valuating intangible assets, each expert can work out valuation with a different result. It is not possible to avoid expert`s personal view. Disproportion among individual experts valuating by market price will appear also in the future. These differences can only be reduced by accepting unified methodology such as proposed in this monograph.

Future research will therefore focus on the clarification of procedures and a detailed validation of recommended tariffs for fixed assets.

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