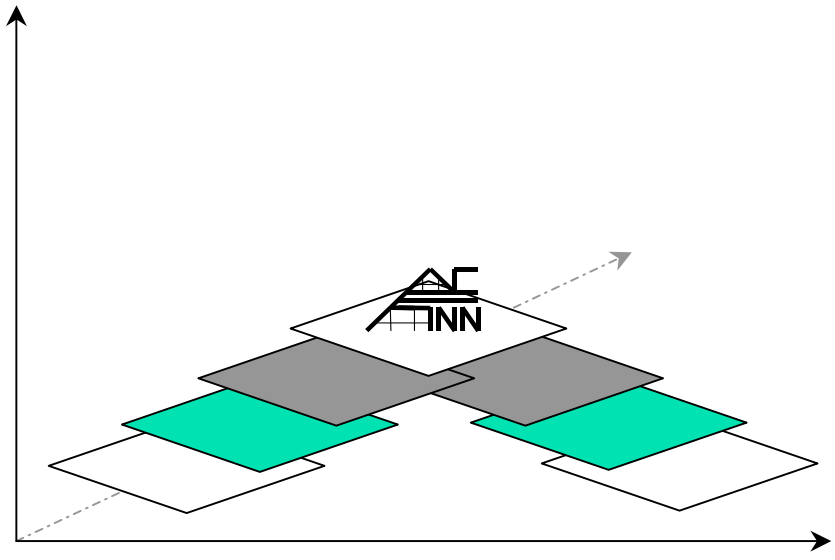
TOPICAL ISSUES IN THE VALUATION AND APPLICATION OF MARKET VALUE



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PREFACE

It is often stated that real estate is not EU policy. This is largely true as housing policy and property law are not within the EU's competence. There is a strong local aspect to much property regulation, which should be as close to citizens as possible, preferably at the local or regional level. And yet, for very important reasons, real estate is also at the heart of European politics. It is extremely timely that European Valuation Standards have made our work and our goals part of the substance of valuation practice – wrote Jan Olbrycht MEP President, Urban Intergroup European Parliament in the Preface to the Standards (EVS 2012).

Following the publication by The European Group of Valuers' Associations (TEGoVA) of a new seventh edition of European Valuation Standards, a clear difference has emerged between the interpretation of Market Value in North America and Europe. Valuers in the former are heavily dependant on highest and best use analysis whereas in Europe a less restrictive approach permitting the reflection of hope value is preferred. Such differences in the interpretation of market value will in turn impinge on the assessment of Fair Value for financial reporting purposes.

The search for proper use of the property concepts highest and best use and hope value lies at the heart of valuation. In Poland, the concept of highest and best use tends to provoke controversy and is not always well understood. This scientific monograph is thus intendeed as a contribution to the ongoing discussion on this problem (chapter 1 and chapter 2).

The Authors of the chapter 3 focus on the process of property compulsory purchase and compensation in Poland and the United Kingdom. They discusse the most problematic aspects of compulsory purchase and suggest some solutions to them. The value of the land taken is the amount it may have sold for in the open market, if sold by a willing seller. This is the highest and best use and includes the value of any planning consents granted but not acted upon, any development or change use that would be permitted, and any permitted rebuilding. The use is what might reasonably be expected in the absence of any compulsory purchase. The value can include "hope value" that at some time in the future planning consent might be granted for a more valuable use.

Determining the highest and best use and assessment of the property's potential for comparison transactions on the corporate real estate market requires finding solutions for several fundamental theoretical problems Chapter 4 focuses on this problem.

The author of the chapter 5 of this publication has proposed a method for spatial analysis of local real estate market activity, measured in terms of the number of completed property transactions, with the use of non-parametric estimation methods.

In the last chapter of this scientific monograph we can read about regional

waste-management system in Slovenia. Its author said, it is imperative from the organisational as well as economic point of view to centralise the processing and treatment of mixed communal waste. Points at issue are what is the estimated value of land invested in by the municipality, what kind of value is to be estimated, and in what manner.

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Scientific Editor

1. HARMONISATION OF VALUATION STANDARDS WORLDWIDE AND EVOLUTION OF DIFFERENT INTERPRETATIONS OF MARKET VALUE

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Key Words: *Market Value, Fair Value, Highest and Best Use, Hope Value, Special Value, Synergistic Value, European Valuation Standards.*

Abstract

For many years, internationally recognised standard setting bodies have sought to harmonise property valuation standards across the world. In this they have had some measure of success in standardising bases of value and definitions. In particular, there is now a universally accepted definition of Market Value as set out in International, European and RICS Valuation Standards and as also enshrined in EU Directive 2006/48/EC, known as the Capital Requirements Directive.

Unfortunately the interpretation of the common definition of Market Value differs from country to country. Following the publication by The European Group of Valuers' Associations (TEGoVA) of a new edition of European Valuation Standards (EVS 2012), a clear difference has emerged between the interpretation of Market Value in North America and Europe. Valuers in the former are heavily dependant on highest and best use analysis whereas in Europe a less restrictive approach permitting the reflection of hope value is preferred.

Such differences in the interpretation of market value will in turn impinge on the assessment of Fair Value for financial reporting purposes. Whereas in the case of property valuation, Fair Value is taken to be the same as Market Value for Highest and Best Use, under EVS 2012, the Fair Value of a property could differ substantially, from its Market Value.

This paper seeks to explain the worldwide differences in the interpretation of the definitions of Market and Fair Value. In addition, it draws attention to two different meanings of the term Fair Value depending on whether the valuation is for financial reporting purposes or where there is a need to estimate the price that would be fair in a transaction between two specifically identified parties, where special value or synergistic value may influence the price agreed between them.The author concludes with lessons to be drawn by the valuation profession and property owners in Poland. In particular he suggests that the Polish

Authorities should consider the wisdom of relying solely on "market value" in the disposal of state or municipal property assets. In the interests of maximising the proceeds from the sale of such assets Fair Value would seem to be a more appropriate basis of value as it would reflect any potential special or synergistic value, excluded from market value.

1. Development of internationally recognised valuation standards

1.1. RICS Valuation Standards – Red Book

The Royal Institution of Chartered Surveyors became the first standard setter in 1976 when it responded to the property crash in the United Kingdom by publishing the Red Book (originally called Statement of Asset the Red Book has been mandatory since 1991. Indeed the main purpose of the Red Book has always been "*to ensure that valuations produced by* Valuation Practice and Guidance Notes) setting out standards of valuation and professional conduct expected of valuers. Initially the Red Book only applied to valuations incorporated in published financial reports but since the 1990s have applied to virtually all valuations.

To all RICS members *members achieve high standards of integrity, clarity and objectivity, and are reported in accordance with recognised bases that are appropriate for the purpose"* In particular the standards define:

- criteria used to establish whether members are appropriately qualified;
- the steps necessary to deal with any actual or perceived threat to their independence and objectivity;
- matters to be addressed when agreeing conditions of engagement;
- basis of valuation, assumptions and material considerations that must be taken into account when preparing a valuation;
- minimum reporting standards;
- matters that should be disclosed where valuations may be relied upon by third parties.

It is important to note that whilst the RICS Valuation Standards set a framework for best practice in the execution and delivery of valuations for different purposes, they do not instruct members how to value, nor do they discuss valuation methodology or techniques.

It should also be noted that today RICS Valuation standards incorporate and claim to be compliant with International Valuation Standards published by the IVSC. To reinforce this position the RICS has recently published a new edition of "RICS Valuation-Professional Standards (incorporating International Valuation Standards) Global Edition effective 30th March 2012.

1.2. TEGoVA – European Valuation Standards – Blue Book

The RICS was also instrumental in helping to set up The European Group of Valuers' of Fixed Assets (subsequently renamed as The European Group of Valuers' Associations – TEGoVA) in 1977 to set harmonised valuation standards for valuers within the European Union. However during the 1990s the organisation

expanded rapidly to encompass the whole of Europe and today constitutes an umbrella organisation of national valuers' associations covering 45 professional bodies from 26 countries including the Polish Federation of Valuers' Associations (PFVA). Its main objectives are the creation and spreading of harmonised standards for valuation practice, for education and qualification as well as for corporate governance and for ethics for valuers. It aims to speak with a common voice on valuation to European legislators and policy makers.

TEGoVA's flagship product is its "Blue Book" European Valuation Standards now in its 7th Edition, the latest published in May 2012.

Thus EVS 2012 considers valuation issues in a European context and in particular addresses the valuation requirements and definitions of European Union legislation.

As in the case of the RICS Valuation Standards, EVS 2012 do not impose specific valuation methodologies as they are considered to be a matter for professional judgement of the valuer in each case according to his circumstances.

It should be noted that whereas RICS Valuation Standards recognise 4 different bases of value namely Market Value, Market Rent, Worth/Investment Value and Fair Value, the diversity of European valuation practice points to 9 bases of value namely Market Value, Market Rent, Worth/Investment Value, Fair Value, Mortgage Lending Value, Insurable Value, Alternative Use Value, Forced Sale Value, and Depreciated Replacement Cost (DRC).

As regards Depreciated Replacement Cost (DRC) for many years both the RICS and TEGoVA considered that market value could not be arrived at on a replacement cost basis. Market Value and Depreciated Replacement Costs were treated as two distinct bases of value contrary to North American thinking which considered DRC to be just another method which could be applied to arrive at the market value of a property. Polish law and valuation standards also to this day treat Market Value and Depreciated Replacement Cost as separate bases of value.

However several years ago TEGoVA and RICS lent support to the North American position, as well as that set out in International Valuation Standards, by conceding that Depreciated Replacement Cost was no more than a valuation method rather than a basis of value. The RICS considers that DRC should be used where there is no active market for the asset being valued – that is, where there is no useful or relevant evidence of recent sales transactions due to the specialised nature of the asset. Similarly TEGoVA in its EVS 2012 states that "*Depreciated Replacement Cost (DRC) is recognised as a method to address Market Value in the absence of better evidence*".

1.3. IVSC – International Valuation Standards

The globalisation of property investment markets was recognised as early as the 1970's and in response to a need to harmonise valuation standards not only at national or regional level, the RICS and representatives of the U.S appraisal profession commenced discussions in the late 1970s which led to the setting up of

the International Assets Valuation Standards Committee (subsequently renamed as the International Valuation Standards Council -IVSC) in 1981.

The objectives of the Committee were twofold: "*1) To formulate and publish, in the public interest, valuation standards for property valuation and to promote their worldwide acceptance; and 2) To harmonise Standards among the world's States and to identify and make disclosure of differences in statements and/or applications of Standards as they occur*"

In 2003, the IVSC became a not-for-profit organisation incorporated in the USA. The Committee, which was founded with a membership of twenty national associations, had grown by 2007 to include associations, with member or observer status, representing 52 countries.

The first edition of International Valuation Standards was published in 1985. The 9th and current edition was published in 2011.

The IVSC was originally created as a membership organization with members being national professional valuation institutes. However in 2007 it began a radical restructuring of the organization to transform it into "*a non-government, private standard setter with robust and open procedures for setting, maintaining and interpreting international valuation and reporting standards*".

Headquartered in London, the new IVSC (including changed title "International Valuation Standards Council") remains a non-profit organisation incorporated in the US. The organisation has three main bodies, an independent global Board of Trustees responsible for the strategic direction and funding, a Standards Board and a Professional Board "*to promote professional and educational standards for valuation; to assist in the development of high quality practices by the world's valuers and development of the profession in developing countries*"

Membership of IVSC is open to users, providers, professional institutes, educators and regulators of valuation services.

Perhaps of greatest significance in the development of IVSC is its aim to extend International Valuation Standards to cover all aspects of valuation, including the valuation of intangible assets, liabilities, and various equity and debt instruments.

The International Valuation Standards received a boost in 2005 with the introduction of the compulsory requirement for the adoption of International Financial Reporting Standards by all companies listed on a European Union stock exchange.

The adoption of IFRS was intended to harmonise the accounting practices of listed companies across the European Union. For companies listed on a European Union stock exchange, the new rules replaced the various domestic accounting standards under which companies had previously prepared their accounts. The intention was that comparison of companies across national boundaries would become a great deal easier.

The new rules differed significantly from the domestic accounting standards that they supplanted. In particular, the most important single innovation of IFRS was to move a step away from the historical cost principle under which accounts

had traditionally been prepared. Companies were now given an option. They could carry their long-term property and other assets based on original cost or they could carry them at the "fair values" they were currently worth, normally their market value. In the second case the figures for properties in the accounts would be based on a valuation.

At that time it was recognised that under fair value accounting the carrying figures for property assets were likely to be higher than they would have been when based on cost figures from years or decades back. This generally had the effect of increasing gross assets and therefore emphasised financial strength. It also increased the figure for shareholders' funds and therefore for net assets per share (NAV) and by decreasing the published financial gearing of the company it provided a stronger base for future capital raising. In the light of recent events following the collapse of Lehman Brothers fair value accounting has come under much criticism. Nevertheless IVSC is recognised as the leading standard setter in the area of valuations for financial reporting. In this respect it should be noted that the RICS Valuation Standards have adopted the IVSC in their entirety.

It should be noted that in common with IVSC, TEGoVA considers that the fair value requirement is, in principle, met by the valuer adopting Market Value, but Fair Value and Market Value are not synonymous as discussed below.

2. The Appraisal Standards Board of the Appraisal Foundation – Uniform Standards of Professional Appraisal Practice (USPAP)

Just as RICS Valuation Standards were originally a response to the 1970s property crash in the UK so the USA's Uniform Standards of Professional Appraisal Practice were the Federal Government's response to the 'savings and loan' crisis of the late 1980s. The latter led to the licensing of valuers in each State along with the adoption in each State of the annually revised USPAP.

USPAP were developed in 1986/87 and copyrighted in 1987 by The Appraisal Foundation. The current edition is applicable for the years 2012/21013. USPAP represents the generally accepted and recognised standards of appraisal practice in the United States. The standards are developed and amended by The Appraisal Standards Board of the Appraisal Foundation. In addition to the Standards themselves, the Appraisal Standards Board issues guidance in the form of Advisory Opinions, USPAP Frequently Asked Questions (FAQ) and monthly questions and responses "USPAP Q&A." These communications do not establish new Standards or interpret existing Standards and are not part of USPAP. They illustrate the applicability of Standard in specific situations and offer advice from the ASB for the resolution of appraisal issues and problems.

The purpose of USPAP is "*…to promote and maintain a high level of public trust in appraisal practice by establishing requirements for appraisers. It is essential that appraisers develop and communicate their analyses, opinions and conclusions to intended users of their services in a manner that is meaningful and not misleading. The ASB promulgates USPAP for both appraisers and users of appraisal services. The appraiser's responsibility is*

to protect the overall public trust and it is the importance of the role of the appraiser that ethical obligations on those who serve in this capacity. USPAP reflects the current standards of the appraisal profession".

The 10 USPAP Standards establish the requirements for appraisal, appraisal review, and appraisal consulting service and the manner in which each is communicated.

- Standards 1 and 2 establish requirements for the development and communication of a real property appraisal.
- Standard 3 establishes requirements for the development and communication of an appraisal review
- Standards 4 and 5 establish requirements for the development and communication of a real property consulting assignment.
- Standard 6 establishes requirements for the development and communication of a mass appraisal.
- Standards 7 and 8 establish requirements for the development and communication of a personal property appraisal
- Standards 9 and 10 establish requirements for the development and communication of a business or intangible asset appraisal.

3. The definition and interpretation of the Market Value

Thanks to the efforts of the above standard setting organisations including the International Valuation Standards Committee (IVSC), The European Group of Valuers' Associations (TEGoVA) and The Royal Institution of Chartered Surveyors (RICS) valuers worldwide now adhere to a single definition of market value as follows:

"*The estimated amount for which the 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"*

In some countries the wording may be different but the intent is usually the same. Furthermore, in Europe, the above definition is also enshrined in EU Directive 2006/48/EC, known as the Capital Requirements Directive.

In the USA the appraisal profession follows the Appraisal Foundation's "Uniform Standards of Professional Appraisal Practice (USPAP 2012-2013). Market Value in USPAP is defined as a general concept "*But in an appraisal assignment it is defined by a specific jurisdiction (e.g., a court, a regulatory body or public agency with legal authority) or by a client group (e.g., Fannie Mae or Freddie Mac)*." (USPAP Advisory Opinion 22 line 116).

As an example definition, USPAP Advisory Opinion 22 sets out the Market Value definition from regulations published by federal regulatory agencies as follows:

"*Market Value means the most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and*

seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1) *buyer and seller are typically motivated;*
2) *both parties are well informed or well advised and acting in what they consider their own best interests;*
3) *a reasonable time is allowed for exposure in the open market;*
4) *payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and*
5) *the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale."*

Thus it would appear that a market value arrived under the above definition at least, should not differ to that arrived under the definition adopted by the IVSC, TEGoVA, RICS and the European Union (in EU Directive 2006/48/EC, known as the Capital Requirements Directive).

Although the latter is now internationally applied, its roots lie in Britain and North America and Anglo Saxon case law.

Whilst such a common definition may give comfort to transparency seeking cross border investors, they may not realise that its interpretation may differ significantly from country to country. In North America, market value is taken to mean the value assuming the "highest and best use" of a property and in the United Kingdom valuers go further by reflecting the value of all uses which would be in the minds of willing buyers in the market. On the other hand in Poland, valuers are split between those who favour the latter Anglo Saxon approach and those who consider that market value is no more than the current use value of a property. Such lack of consistent thought does little to inspire confidence in the valuation profession.

The debate on the definition of market value is about to be enlivened yet again with the launch this year in Krakow (11th May 2011) of a new 7th edition of European Valuation Standards (EVS 2012) by The European Group of Valuers' Associations (TEGoVA). EVS 2012 will be particularly controversial in so far as they reject TEGoVA's previous thinking which was in line with that of the International Valuation Standards Council (IVSC), of equating Market Value to the value of a property in its "Highest and Best Use"

4. Highest and Best Use as the kind of the property use

EVS 2009 state at 5.4.1 that Market Value is *"… in principle based on the highest and best use of the property"* defined in 5.4.2 as "*The most probable use of the property which is physically possible, appropriately justified, legally permissible, financially feasible, and which results in the highest value of the property being valued"*

The above definition was taken from IVS 2007 (8th Edition). In the latest IVS 2011, the definition of Highest and Best Use has been somewhat modified as follows:

"The market value of an asset will reflect its highest and best use. The highest and best use of an asset is the use that maximises its productivity and that is possible, legally permissible and financially feasible. The highest and best use may be for continuation of an asset's existing use or for some alternative use. This is determined by the use that a market participant would have in mind for the asset when formulating the price that it would be willing to bid" (page 22 paragraph 33)

Whilst under International Valuation Standards the concept of Highest and Best Use is fundamental to the interpretation of the definition of Market Value, the Royal Institution of Chartered Surveyors (RICS) in its own internationally recognised standards titled RICS Valuation Standards – Global 2011 (7th Edition) makes no reference at all to Highest and Best Use. Indeed RICS seemingly disagrees with the concept, as evidenced by the following passage concerning the exclusion of *special value* when assessing the market value.

" … where the price offered by prospective buyers generally in the market would reflect an expectation of a change in the circumstances of the property in the future, this element of 'hope value' is reflected in Market Value. Examples of where the hope of additional value being created or obtained in the future may impact on the Market Value include: the prospect of development where there is no current permission for that development; and the prospect of synergistic value arising from merger with another property or interests within the same property at a future date".

The above passage from RICS valuation standards is at odds with the definition of Highest and Best Use which states that the use must be "*legally permissible*". RICS goes beyond Highest and Best use and permits consideration of a use which whilst at the date of valuation may not be legally permissible might become so in the future, provided that the market would reflect such expectation.

TEGoVA's European Valuation Standards Board in drafting EVS 2012 has also moved away from endorsing the concept of Highest and Best Use in favour a less restrictive interpretation of the definition of market value which may now reflect so called "hope value".

5. What the term " Hope Value" means?

EVS 2012 seek to emphasise that the market value of a property reflects the full potential of that property so far as it is recognised by the market place. It may thus take account of the possible uses of the property which whilst not legally permissible at the date of valuation may become so in the future. EVS 2012 paragraph 5.4.4 states:

"Hope value *(also sometimes called future value) is used to describe an uplift in value which the market is willing to pay in the hope of a higher value use or development opportunity being achievable than is currently permitted under development control, existing infrastructure constraints or other limitations currently in place. It will reflect an*

appraisal of the probability that the market places on that higher value use or development being achieved, the costs likely to be incurred in doing so, the time scale and any other associated factors in bringing it about. Fundamentally, it will allow for the possibility that the envisaged use may not be achieved. While descriptive of that uplift, it does not exist as a separate value but helps explain the market value of the property which must be judged from the available evidence just as much as any other part of the valuation. Hope value is not a special value as it represents the market place's reasonable expectations as to the opportunities offered by the property".

On highest and best use EVS 2012 state, at paragraph 5.4.6, as follows:

"*The concept of* ***highest and best use*** *is met in a number of countries and some valuers in Europe may be asked to value a property on the assumption of its highest and best use,that is the permitted use that offers the highest value based on reasonable expectations. On analysis, that excludes the hope value that the market might place on a property's potential opportunities that are not currently available. While it is an assessment of the property as it is on the valuation date it is not an assessment of the best use that the market might at that date reasonably envisage could be possible for it".*

Finally TEGoVA's position on interpretation of the definition of market value is made absolutely clear in the following paragraph 5.4.10:

"… The hypothetical seller will accept no less for his property and the hypothetical buyer will not want to offer more than he would pay for an equivalent property of similar usefulness to him. As each point of the definition of highest and best use (except the requirement for evidence) places some constraint on the definition of market value, the highest and best use assumption will not necessarily be the same as market value, albeit that it might be higher than existing use value. The most obvious common point of difference lies in the exclusion of potential permissions or other future opportunities for which the market might express hope value and in doing so judge the prospects, risks and costs of that future opportunity"

The publication of EVS 2012 will no doubt provoke much controversy and debate within the valuation profession worldwide. For over 30 years the profession has sought to harmonise its standards and methodologies as evident in a common definition of market value endorsed by all the internationally recognised standard setting bodies (IVSC, TEGoVA and RICS) as well as by the European Union. Unfortunately a common definition has not led to a common interpretation. In this respect it seems that the world is now spilt between the "American" and a newly developing "European school" of Valuation".

Whilst valuers in Poland continue to argue about whether Market Value goes beyond existing use value, the debate in the rest of the world has moved on. Such debate is not only focused on the true interpretation of the definition of market value but also on the increasingly important concept of Fair Value in connection with which there is also much confusion.

6.Definition and interpretation of the Fair Value

It is still not fully appreciated that Fair Value has two different meanings depending on whether the valuation is for financial reporting purposes (in which

case fair value will normally equal market value as interpreted by IVS) or in other cases where there is a need to estimate the price that would be fair in a transaction between two specifically identified parties, where special value or synergistic value may influence the price agreed between them. In such a case fair value would be different to market value.

Whilst up to now there has been one definition of fair value with two possible meanings, IVS 2011 sets out two separate definitions as follows:

1) *Fair value is the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties"*
2) *Fair Value is 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* (per IFRS Foundation).

Fair Value Definition 1) above is less specific and exacting in its assumptions than Market Value. In particular, there is no requirement to expose the property to the open market. There are many situations where it will be used to address the value of a property.

As explained in EVS 2012 at paragraph 4.2.2 "*Fair Value may generally be used as a basis of valuation for real estate as between specific participants in an actual or potential transaction, rather than assuming the wider marketplace of possible bidders. As such, it may often result in a different value to the market value of a property*".

For this purpose, EVS 2012 provides a somewhat enlarged definition as follows:

"The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between willing market participants possessing full knowledge of all the relevant facts, making their decision in accordance with their respective objectives." This definition has regard to general market transactions where an opinion of Fair Value would not be expected to be the same as an opinion provided to Market Value".

One important consequence of the less specific assumptions of Fair Value is that it allows recognition of the individual value a property may have to one bidder. This is known as special value which is an opinion of value that incorporates consideration of characteristics that have a particular value to a special purchaser who can optimise the usefulness of an asset compared to other market participants.

One particular class of special value is so called Synergistic Value, defined by IVSC as **"***an additional element of value created by the combination of two or more assets or interests where the combined value is more than the sum of the separate values. If the synergies are only available to one specific buyer then it is an example of Special Value"*

This might often be found where the acquisition of a property, often a neighbouring one, unlocks extra value for the purchaser. It may be relevant to transactions between landlord and tenant.

Fair Value definition 2) is applicable to financial reporting. In this respect IVS considers it to be consistent with its own interpretation of the definition of market value as the commentary in IFRS 13 makes reference to "*market participants, an*

orderly transaction, the transaction taking place in the principal or the most advantageous market and to the highest and best use of an asset."

This new definition was introduced by the International Accounting Standards Board (IASB), in its International Financial Reporting Standard, IFRS 13 concerning "Fair Value Measurement" in May 2011 and becomes effective from 1 January 2013.

According to EVS 2012, the Fair Value of a non-financial asset like real estate takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use, i.e. the use of the asset that is physically possible, legally permissible and financially feasible. In this non-financial context, Fair Value may differ from a valuation prepared in accordance with TEGoVA's interpretation of market value which may reflect hope value, contrary to the IVS interpretation of market value.

However in most valuations for financial reporting Fair Value will be indistinguishable from Market Value whether under IVS or EVS, albeit a company's auditor may want to exclude the effect of any development potential that does not yet have planning permission. In such case the Fair Value of a property could differ, perhaps on occasion substantially, from its Market Value. Rather, it will then resemble Market Value as assessed on the highest and best use assumption.

7. Conclusion

Whilst the internationally recognised standard setting bodies (IVSC, TEGoVA and RICS) have successfully argued for the acceptance of Market Value as the main basis of valuation with a universally agreed definition, they have failed to ensure a single interpretation.

A clear difference has now emerged between the interpretation of the definition of Market Value in North America and Europe. Valuers in the former are heavily dependant on highest and best use analysis whereas in Europe a less restrictive approach permitting the reflection of hope value is preferred. Unfortunately the exposed differences in the interpretation of the definition of Market Value do not aid market transparency at a time when the property market is becoming more global.

The differences in the interpretation of market value will in turn impinge on the assessment of Fair Value for financial reporting purposes. Whereas in the case of property valuation, Fair Value is taken to be the same as Market Value for Highest and Best Use, under EVS 2012, the Fair Value of a property could differ substantially, from its Market Value.

Also on the question of Fair Value it is important to appreciate that the term has two different meanings depending on whether the valuation is for financial reporting purposes or where there is a need to estimate the price that would be fair in a transaction between two specifically identified parties, where special value or synergistic value may influence the price agreed between them.

Whilst no doubt the international standard setting bodies will seek to iron out their differences of interpretation, at a time when the European Union is taking a greater interest in the regulation and harmonisation of real estate valuation, the "European" position on market value must be taken as that embodied in European Valuation Standards 2012.

Whilst this paper has focused on developments in the setting of valuation standards internationally, there are lessons to drawn for the valuation profession and property owners in Poland. With the increasing importance being placed on Fair Value, perhaps the Polish Authorities, should now consider whether it is wise to rely in law solely on "market value" in the disposal of state or municipal property assets. In the interests of maximising the proceeds from the sale of such assets Fair Value (if higher than Market Value) would seem to be a more appropriate basis of value as it would reflect any potential special or synergistic value, excluded from market value.

Finally with the debate internationally having moved on to whether market value should reflect a property's highest and best use as defined by International Valuation Standards or if it should also reflect so called "hope value", as advocated by European Valuation Standards, any continuing debate in Poland about whether market value is simply the same as existing use value seems futile.

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2. IN SEARCH OF THE HIGHEST AND BEST USE OF REAL ESTATE

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Key words: *value, highest and best use, internal balance*

Abstract

The search for highest and best use lies at the heart of appraisal. According to international and European valuation standards, this concept constitutes an element of interpretation of market value. The advancing process of globalization, leading to the standardization of services provided worldwide makes it necessary to adjust national appraisal approaches to the requirements of the international community. This paper puts forth the economic rationale for the adoption of the highest and best use principle and presents two approaches to the process of seeking highest and best use based on the international literature.

1. Introduction

In countries with highly developed real estate markets, appraisal is based on the highest and best use principle, also known as optimum use. The Western literature indicates that this concept was accepted as the fundamental principle for establishing value of real estate as early as in 1903. It was introduced into real estate parlance by Richard M. Hurd [MILLER, MARKOSYAN 2003]. This principle is in widespread use in developed markets. In countries that embarked on a path of systemic transformation in the 1990s, the prevailing rule for determining market value is to follow the current use of a property. In Poland, the concept of highest and best use tends to provoke controversy and is not always well understood. This paper is thus intended as a contribution to the ongoing discussion on whether and how the potential inherent in a real property should be sought and discovered in the process of appraisal.

2. Motivation for research

The objective of this paper is to provide the rationale for highest and best use, to show the process of arriving at it, and to address the issue of how strictly the evidence of seeking highest and best use should be reported. The author purposefully avoids the phrase "to determine highest and best use," as the adoption of assumptions concerning real estate use is based on the probability of that use being actually implemented. This is to say that highest and best use,

identified with the most probable use, does not mean that this use will necessarily lead to the highest value from the point of view of a given property. It reflects the highest potential seen by the market rather by a single market participant.

3. Highest and best use

Today highest and best use, also known as optimum use, constitutes a fundamental and integral part of market value estimation. It is defined as the most probable use of an asset which is physically possible, appropriately justified, legally permissible, financially feasible, and which results in the highest value of the asset valued [MSW 2007, p. 39]. This term is well understood in North America. It has also been accepted by TEGoVA, which stated that "highest and best use value is synonymous with market value." [ESW 2000, p. 64]. This concept is confirmed in the subsequent edition of the standards ." [ESW 2000, p. 20], as seeking highest and best use is thought to lie at the heart of appraisal. This use is supposed to reflect the behavior of market participants. Thus, highest and best use is the most profitable out of the most probable uses of a real property.

Seeking highest and best use may involve renovation, modernization, partial or total change of the property's function, vertical or horizontal extension, or demolition of the existing improvements.

Highest and best use may be defined as a situation where additional revenue associated with the next dollar spent for both legal and physical improvements will equal the marginal cost of these inputs, and the cost of capital ." [WILSON 1995].

4. Criteria for the application of highest and best use analysis

The highest and best use principle may apply to all real properties as long as the transactions meet the following criteria:

- the commodity criterion, whereby transactions concern real property rights;
- the economic use criterion, whereby market participants purchase real properties to gain utility during ownership and consideration at disposition;
- the private real property rights market criterion, whereby there is both supply of and demand for a given type of real estate;
- the market value definition criterion, whereby the parties are well-informed, motivated rather than coerced, and a reasonable time is allowed for exposure and negotiation [WILSON 1996].

5. Economic rationale for highest and best use of real estate

Economics is a social science concerned with the processes of economic activity. It discovers and describes certain regularities, or economic laws. The subject matter of economics is economic activity. Some of the determinants of economic activity processes are related to the scarcity of economic resources such as natural resources (including land), human resources, and resources resulting from prior economic activity [MILEWSKI et al. 2002]. Economics studies the ways society makes decisions concerning the use of these resources [BEGG et al. 1993]. An increase in

the prices of factors of production leads to a situation where the producers will seek ways to limit the use of such goods, replacing them with substitutes.

Land is a special kind of a capital good which is limited, or scarce. The characteristic feature of the land market (land being a factor of production) is the constant total supply of land. Demand for land, similarly as demand for other factors of production, is not primary demand (direct or final); it is derived from demand for the products and services produced with those factors [BEGG et al. 1993]. At the same time, land has no substitute or alternative goods. This good is characterized by low price elasticity of demand (an increase in prices leads to a less than proportionate drop in demand). Furthermore, on a global or national scale, the supply of land is inelastic (an increase in prices does not affect supply). Thus, scarce resources should be efficiently used. An increase in land prices leads to a situation where efforts are made to use the available land in the most intensive way possible.

The concept of an efficient use of resources forms the basis of determining the value of goods [KARMIŃSKA 2009]. It has been also adopted for establishing the market value of real estate.

5.1. Possibility of competitive use of land

Even though the supply of land is constant in the long term, its uses may change. Despite the fact that land has no alternatives, one can explore alternative uses of land itself to ensure maximum efficiency. Landowners will transfer supply from a market segment with lower transaction prices or rent rates to a segment commanding higher prices. These adjustments are illustrated in Fig. 1.

The total supply of land is represented by the curve St. Land is used for agricultural purposes in quantity Sa and for housing purposes in quantity Sh. Demand for agricultural land is represented by the line Da, and for housing development land by the line Dh. Given the demand for agricultural land is Da and its supply is Sa, the price of agricultural land[1] will reach a level of P1, and that of land for housing development – P2. If the demand for agricultural land increases, which is illustrated with a new demand curve Da1, its price will rise to P3. However, this will not influence the supply of land or ensure its more effective use. If the demand for housing should increase, then the demand for land will go up from Dh to Dh1. This will lead to a rise in the price of land for housing development from P2 to P4. An increase in the price of land for housing development will result in some landowners intending to convert the function of their land. As a result, the supply of agricultural land will drop from Sa to Sa1, and

[1] Price is understood as transaction price and as price representing income from land. In theoretical considerations, income gained from land was called land rent. Modern economics has rejected the theory of land rent, as land is no longer considered to be the third factor of production. It has been assumed that capital encompasses all tangible factors of production, land included. Cf., e.g., Blaug, 1994, p. 102.

the price of this land will be pushed to P5, while an increase in the supply of land for housing development from Sh to Sh1 will lower the price of land from P4 to P6. The differentiation of prices and incomes from land (land rent), as well as the various opportunities to use land in different ways, will motivate landowners to change the function of some of their land, leading to a rise of many land markets in the economic sense.

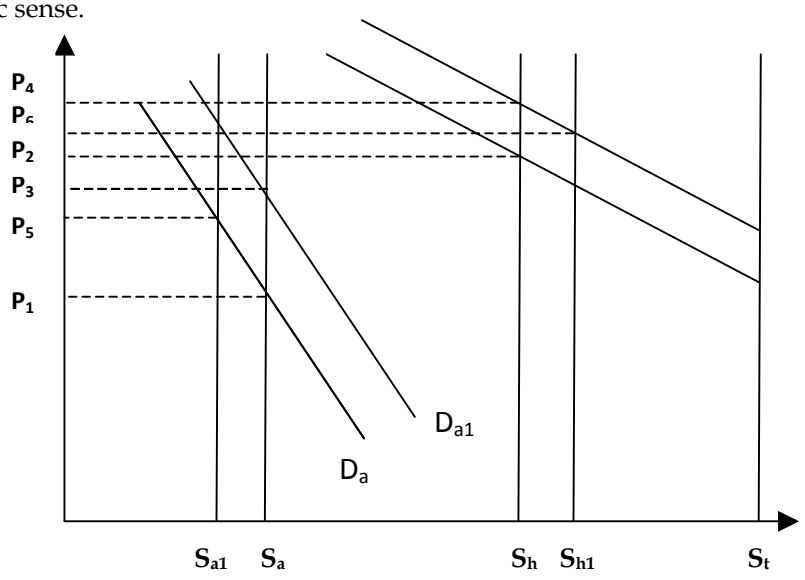

Fig. 1. Demand and supply in the land market. *Source*: own study.

In markets with high land prices and land rents, the supply of land will increase, while in markets with low prices and rents the supply will diminish. This means that even though on a global or national scale the supply of land in the physical sense is inelastic, at the level of particular market segments supply is not constant, neither is it totally inelastic thanks to the various opportunities for its economic use.

5.2. Bringing the future into the picture

Decisions concerning a change of land function must take into consideration predictions concerning the future. The slower and more difficult the rate of change (adjustment) is, the more important it is for current decisions to account for not only present, but also future, or long term, determinants [BEGG et al. 1993]. The above means that, in economic terms, value is rooted in the future. Investors buy future profits to be drawn from real estate. Also sellers take into account the potential inherent in their real properties while setting prices, even if they themselves may not take advantage of that potential. The necessity to take into

consideration the future is reflected in one of the appraisal principles, namely the principle of anticipation [WYCENA NIERUCHOMOŚCI. WYDANIE POLSKIE].

5.3. Internal balance principle

Efficient economic activity requires a rational combination of factors of production, which in this case are land and the capital needed to develop it. Let us consider here two extreme situations:

1) The value of land is disproportionately high relative to the value of developed land;
2) Market participants aim at an efficient combination of land and improvements while making decisions on land use.

In the first case, there is an excess of land value over the value of the developed property, which leads to a disturbed internal balance and indicates that balance should be restored by:

- dividing the land and selling the non-developed part of the property,
- adding more improvements.

It can be assumed that the other situation reflects the most frequent investor behavior: land is appropriately used at the stage of its development and the internal balance is initially preserved, but secondary disturbance may occur if:

- The value of improvements decreases due to technical depreciation and functional obsolescence, while the value of the land remains unchanged. If the value of buildings diminishes and approximates the value of the land, and especially if it is smaller than the value of the land, this means that the land is not used appropriately – see Fig. 2. Under the circumstances, either the existing improvements should be demolished to clear the site for new construction, or the existing improvements should be renovated and modernized to restore the balance between land and capital.

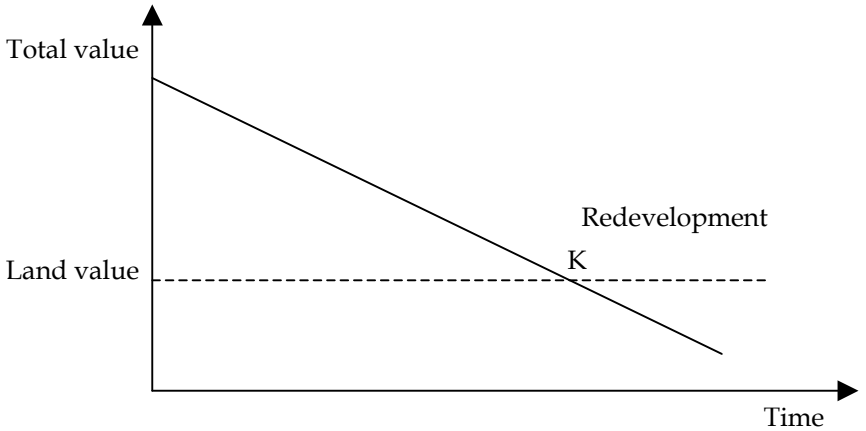

Fig. 2. Fall in the value of real estate. *Source*: Based on A. Ring, J. Dasso, Fundamentals of Real Estate, New Jersey 1977.

– Due to an increase of prices in the real estate market, the relative proportion between the value of improvements and the value of land changes. Thus the value of land may rise faster than the value of developed properties and again the proportion between the value of the land and that of the buildings becomes disturbed – see Fig. 3. The more vulnerable to technical depreciation and functional obsolescence the buildings are, the sooner the internal balance will be disturbed. In the case of office or high technology buildings, the need to undertake some actions to restore the balance will emerge more quickly. Such actions may involve renovation and modernization, often combined with a change in property function.

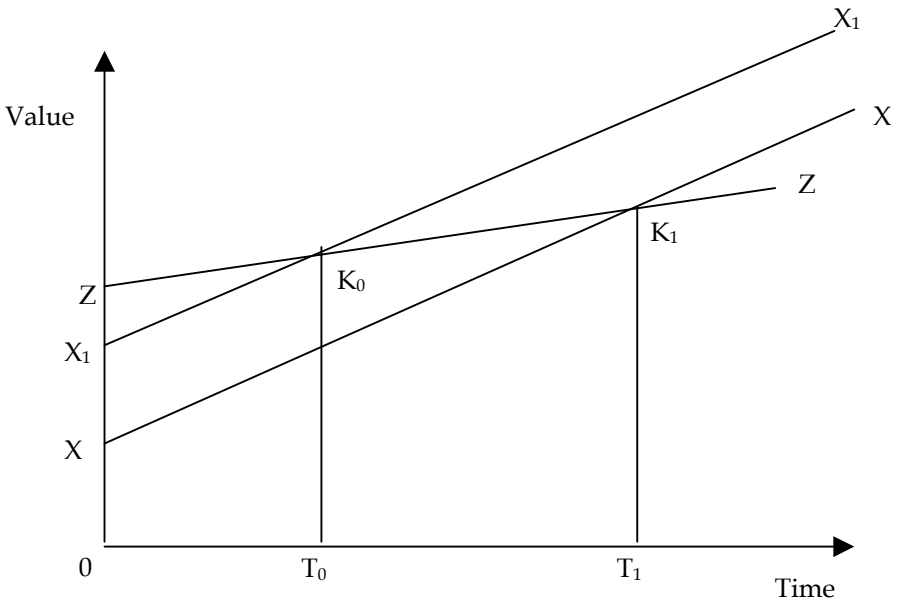

Fig. 3. Changes in real estate value over time. *Source*: Based on A. Ring, J. Dasso, Fundamentals of Real Estate, New Jersey 1977.

– The value of land increases, while the value of buildings falls due to technical depreciation and functional obsolescence – Fig. 4.

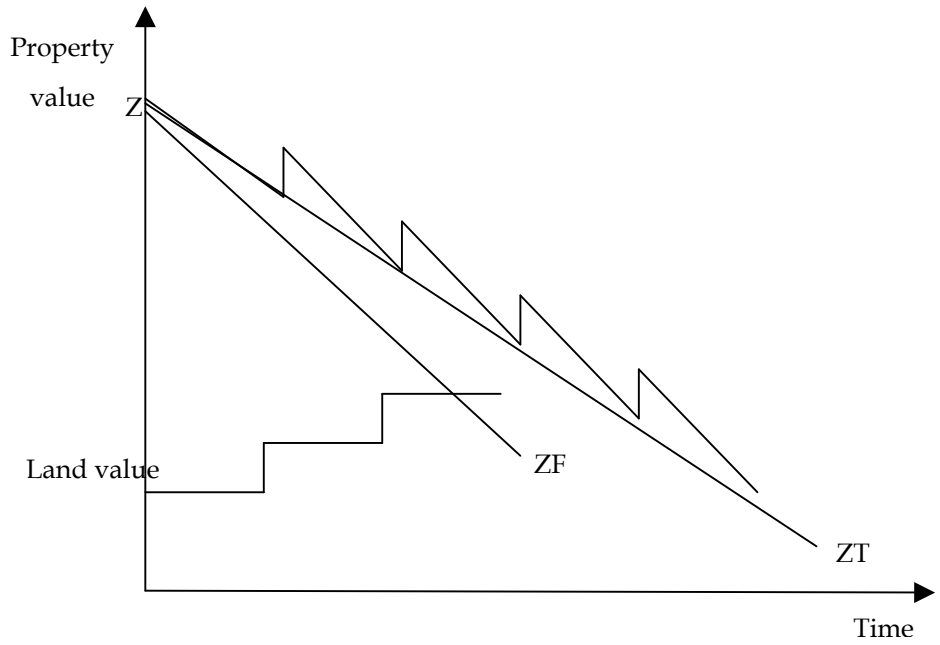

Fig. 4. Changes in the value of land and buildings. *Source*: own study.

This necessitates renovation, modernization, change of property use, or even demolition of buildings which are in good technical condition and redevelopment in accordance with the value of the land.

6. Economic theory and appraisal methodology

Every appraisal is based on some assumptions [MSW 2007, p. 46; ESW 2009, p. 47]. "Assumptions are suppositions taken to be true. Assumptions involve facts, conditions, or situations affecting the subject of, or approach to, a valuation but which may not be capable or worthy of verification. They are matters that, once declared, are to be accepted in understanding the valuation. All assumptions underlying a valuation should be reasonable" [MSW 2007, p. 46]. An appraisal may be made based on some special assumptions. Such assumptions may include making an appraisal based on an assumed planning consent which differs from the actual consent [ESW 2009, p. 47].

In accordance with economic theory, the basic assumption made at the stage of value determination is the most efficient use of assets. This assumption is also invoked by appraisers estimating the market value of real property. This corresponds to the behavior of market participants: the price paid by the buyer for a given real property depends on his or her expectations concerning the highest and best use of that property. Also the seller putting the property on the market adjusts the price to the potential of the property.

The concept of highest and best use, also known as optimum use, means, as already mentioned, the most probable use of an asset which is physically possible, appropriately justified, legally permissible, financially feasible, and which results in the highest value of the asset valued [MSW 2007, pp. 30-39]. The use for which a hypothetical transaction is assumed to be executed should be reasonable and probable, while value results from market data [ESW 2009, p. 20]. Seeking highest and best use, the appraiser may assume a planning consent differing from the actual consent [ESW 2009, p. 47]. The market justifies such an assumption because in the case of large real properties the investors will arrange for a local spatial development plan.

The literature shows that these four criteria are not sufficient. Other significant factors include:

- social forces, including the influence of business entities and institutions [WILSON 1995, SARAZEN 1995],
- the time needed to implement a new use, and
- the most probable user [LENNHOFF, ELGIE 1995].

7. Economic theory and appraisal practice

Some controversy persists among the theoreticians as to the significance and application of highest and best use analysis [WILSON 1995]. Some appraisal methodologists have expressed outright criticism – e.g., according to James Arnold Graaskamp, highest and best use is an arrogant and unrealistic term [MILLER, MARKOSYAN 2003]. There is still disagreement over how to arrive at this use in appraisal practice. Very different approaches may be adopted – from very conservative to highly hypothetical ones.

Irrespective of the force of the accepted evidence, two approaches to highest and best use decisions are considered:

- The practical, or traditional, approach, which is based on the system of the above-mentioned four criteria. It draws on the practical aspects of decision-making and is based on observation of market behaviors. Decisions may be made on the basis of some practices that are not fully understood. This approach is consistent with the guidelines of the Appraisal Institute (USA).
- Theoretical, or modern, approach, which assumes that there exists a set of rules determining the decision-making process, which may be fully explicated and justified. This approach employs mathematical models (Lagrangian functions) and requires an understanding of mathematical calculus. It aims to account for macro- and microeconomic determinants.

The common feature of both approaches is that they are based on the same, traditional definition of value, which stipulates some transaction conditions ,including the assumption that both parties act knowledgeably and prudently [MSW 2007, pp. 77-78; ESW 2009, pp. 24-25]. This means that both the buyer and the seller are well-informed as to the nature and features of the property, its actual and potential uses, and the state of the market on the valuation date; they prudently

seek the best price for a given transaction, and refer to the realities of the current market rather than to an imaginary hypothetical market which cannot be demonstrated or anticipated to exist [ESW 2009, p. 22]. In other words, market value is rooted in the assumption of rationally acting decision-makers. Rational behaviors influence land use decisions. However, from the point of view of economic theory and cognitive science (a field of study investigating brain processes), the rational behavior assumption is a major simplification.

8. Practical and theoretical approach in the process of seeking highest and best use

Each approach has some advantages and shortcomings. Thus, it is only natural that both approaches have been subjected to analysis assessing their effectiveness in the process of seeking highest and best use [WILSON 1995].

The analysis was based on many possible criteria, including:

- applicability in the appraisal process, which means that the approach should be applicable to most appraisal situations;
- adaptability, which means that the approach should be readily adaptable to the frequently unique situations met in the appraisal process;
- simulation of market participant thought processes;
- informational efficiency, which means that a highest and best use decision must be based on market information;
- communicability, which means that the adopted approach should be communicable to the client;
- cost effectiveness;
- analytical consistency, which means that the adoption of the same assumptions and market data would lead to the same results;
- recognition of firm, institutional, and market influences;
- black-box syndrome;
- ethical bias.

Each approach was scored on each criterion on a scale from 1 to 4. Very good fit was scored 4, good fit – 3, poor fit – 2, and very poor fit – 1 [WILSON 1995].Analysis results are presented in Table 1.

Table 1

Assessment of the theoretical and practical approach

No.	Assessment criteria	Assessment of the practical approach	Assessment of the theoretical approach
1.	Applicability	4	2
2.	Adaptability	4	1
3.	Simulation of market participant thought processes	3	2
4.	Informational efficiency	4	1

5.	Communicability	4	1
6.	Cost effectiveness	4	1
7.	Analytical consistency	2	3
8.	Recognition of firm, institutional, and market influences	1	3
9.	Black-box syndrome	2	4
10.	Ethical bias	2	1
	TOTAL	30	19
	Maximum possible score	40	40
	Percent score	75	48

Source: D.C. Wilson, Highest and best use analysis: appraisal heuristics versus economic theory, The Appraisal Journal, January, 1995.

The above analysis reveals that the practical approach to seeking highest and best use is superior to the other one (a 78% fit against a 48% fit). This approach has definitely more strengths: in five out of ten categories it got maximum scores. Due to the low level of analysis formalization, the practical approach may be applied in almost any situation, which indicates its usefulness. Furthermore, it can be extended to incorporate requirements following from the appraisal of individual properties (adaptability) and it may allow making an estimate based on little information (informational efficiency). The arrival at highest and best use may be easily communicated to the client (communicability) and a fast decision-making process is enabled with minimum labor inputs (cost effectiveness). The practical approach makes it possible to account for the simple and often imperfect reasoning of both transactors (simulation of market participant thought processes). Unfortunately, the approach fails to recognize the variable influence of firms, institutions, and markets[2]. The practical approach is characterized by limited consistency in atypical situations, while the belief that the parties aim at gaining the greatest possible financial profits may distort the appraiser's decisions, similarly as routine assessment of the market potential of a real property (the black-box syndrome). Wilson stresses that not all drawbacks of the practical approach are of equal significance. The problem of limited analytical consistency emerges only in respect of those real properties as to which use decisions are not very obvious. In a similar vein, the belief that market participants aim at profit maximization rarely gives rise to appraisal errors. In summary, the practical approach to seeking highest and best use has more strengths than weaknesses. The shortcomings can be eliminated, or, in the worst case, accepted [WILSON 1995].

[2] Wilson suggests that the definition of highest and best use should incorporate yet another principle, that is, economic fit. This rule means that the proposed use should recognize the impact of important firms, institutions and market changes. See WILSON, Highest and best use analysis..., op.cit.

The greatest advantage of the theoretical approach to highest and best use seeking is minimal black-box syndrome (due to the high formalization of the approach). The description of assumptions and factors influencing the decision-making process increases the appraiser's responsibility. Furthermore, the theoretical approach offers a higher, albeit still somewhat limited, recognition of the influence of firms, institutions, and market factors, as well as greater analytical consistency.

However, the analytical approach reveals a number of shortcomings:

- low adaptability, which means that it is very difficult to apply mathematical formulas to atypical appraisal situations – appraisal is a dynamic and often complex and ambiguous process, while theory is constant and precise;
- informational inefficiency, as the practical approach requires much less information than a mathematical formalization of highest and best use – this becomes a serious deficiency, especially in situations where highest and best use decisions seem intuitively obvious;
- poor simulation of transactor thought processes, as in practice neither party to the transaction uses mathematical formulas – this means that such formulas simulate abstract thought processes and represent a departure from reality;
- weak communicability, as mathematical models are not readily understood by the clients and need to be accepted on faith,
- limited cost effectiveness, as in most cases highest and best use decisions are obvious [WILSON 1995, p. 41]. – consequently, the application of mathematical formulas is relatively less cost effective, while it may be more useful in non-standard situations;
- limited applicability, as mathematical formulas may not account for all market situations – market participants in their decision-making processes often do not contribute to market efficiency, which is evidenced by recurrent cyclic periods of high vacancy;
- significant ethical bias, as rigorous mathematical formulas, being clearly detached from reality, become useless in simulating market participant behavior – theoreticians are more interested in producing elegant formulas explaining how decisions should be made rather than how they are actually made [WILSON 1995].

In summary, appraisers using mathematical formulas to represent the preferences of market participants do not have sufficient knowledge of the highest and best use decision-making process to be able to comprehensively justify the decisions being made.

Wilson suggests that the so-called decision tree could be applied in the highest and best use decision-making process, indicating two possible modes of analysis:

1) The first mode uses if-then-else rules, and thus the process of seeking highest and best use, called an expert system, would assume the following shape:

- if a use has physical possibility, then consider, else reject;
- if a use has legal permissibility, then consider, else reject;
- if a use has financial feasibility, then consider, else reject;
- if a use has greatest net return, then select, else reject.

2) The other mode allows fuzzy rules:
   - if a use has more or less physical possibility, then consider, else reject;
   - if a use has more or less legal permissibility, then consider, else reject;
   - if a use has more or less financial feasibility, then consider, else reject;
   - if a use has more or less greatest net return, then select, else reject.

The former mode of analysis, which seems to be less popular, is based on a deterministic world view, while the latter on a probabilistic one. According to Wilson, the adoption of the first approach leads to appraisers more often determining than estimating highest and best use [WILSON 1995]. In contrast to the above, Phil Sarazen provides an example showing that the adoption of a not very realistic assumption may turn out to be very risky. Both authors agree that social factors may play a crucial role, overriding the other determinants [SARAZEN 1995]. Undoubtedly, adopting fuzzy assumptions as the basis for an estimate increases the uncertainty of the result.

9. Summary

In search of highest and best use, which is an integral part of interpretation of market value, one needs to conduct simulation of market participant behaviors to date. Out of possible real estate uses, the appraiser chooses the most probable use as long as it is physically possible, legally permissible, financially feasible and leading to maximum value. Apart from these traditional criteria, the appraiser should also account for the role of firms and institutions that may influence the implementation of a given use. Highest and best use may be sought even for special purpose real properties, e.g. environmentally significant real estate, provided that the transaction meets the market criteria. Literature analysis reveals that the practical approach is the appropriate concept of seeking highest and best use. It has more strengths than the theoretical approach.

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3. HIGHEST AND BEST USE IN COMPULSORY PURCHASE PROPERTY VALUATION – ONE OF THE SOLUTIONS FOR POLISH COMPULSORY PURCHASE PROBLEMS

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Key words: *expropriation, compensation, property valuation, highest and best use*

Abstract

Property compulsory purchase is a very difficult and complex process to make fair. Because of the fact that it infringes private property rights, it should be used only in special situations in which significant benefits to the community would have to be foregone unless it was used. It can only be regarded as fair when the compensation paid is just, timely and sufficient to put the loser back in the same situation as he was in prior to the expropriation of his property. This means that the economic situation of those whose property rights are acquired or reduced in value should not change adversely as a result of the property being acquired compulsorily. Compensation should cover not just the loss of the land itself but also any losses caused to land not taken and disturbance costs, such as lost or reduced profits, businesses having to close, and the costs of relocation. This study focuses on the problems that occur in property valuation for compulsory purchase in Poland and the United Kingdom. Both countries are members of the European Union and the Council of Europe, which means that the operation of compulsory purchase is determined by the principles set out in the European Convention on Human Rights. However, each has experienced very different histories and they have different traditions in the area of compulsory purchase. It discusses the most problematic aspects of compulsory purchase and suggests some solutions to them.

1. Introduction

Public purpose investments that require the compulsory purchase of properties (also called eminent domain or expropriation) are one of the most troublesome

undertakings for public authorities. Their realization often encounters social, economic, political, and legal problems.

Social issues, frequently with political consequences, and usually emerge either at a preliminary or planning stage. Public authorities often find themselves in conflict with the communities where public purpose investment is to take place. Such communities can adopt a NIMBY stance (the acronym for "not in my back yard"), which can be understood as "organized opposition to proposed land uses proximate to existing residential communities" (WARE L., REDDING L., 2003). The problem is that for many of the opponents taking up such a position, there is no level of individual financial compensation or community benefit that is capable of reconciling them to the proposal. For them the losses will always outweigh the benefits no matter what action is taken to mitigate the consequences. They often argue that the project will cause an irreversible loss, for example, of the landscape or environment that no amount of compensation can restore. The project cannot proceed through consent and negotiation as there is no meeting of minds, only through compulsion. The issue is therefore one of how to provide a forum in which the divergences in views can be debated and the merits of the opposing positions determined in a fair, transparent and open fashion in the interests of society as a whole given that the outcome will be that either the proponents of the public investment or the opponents must lose since their positions are mutually irreconcilable.

The second controversial issue is the amount of compensation given to particular property owners, occupiers and others who suffer loss as a result of the scheme for which compulsory purchase is used. If the losers are given compensation that is not equitable, just, or is insufficient to meet their losses, they are likely to question the fairness of the procedure. They may see it as an arbitrary device through which part of their wealth is transferred to the gainers. If a project is seen as such a device, this can influence its social legitimacy and undermine trust in the public authorities promoting it. The problem that public authorities can face is that the estimate of the value of their losses by the losers may not be the same as that placed on them either by the public body undertaking the investment or society as a whole. There may not be symmetry therefore between the valuations placed on gains and losses with a given loss being accorded a greater value by the loser than the equivalent monetary amount of gain.

The critical elements in public investments usually concern their impact on the surrounding area. Such an influence can be to improve the economic circumstances of an area, address issues of social well-being, or to tackle environmental problems. Once the public investment is in place, private investments may follow to the benefit of an area but the public investment is needed to start the process. Typically many of the benefits are enjoyed by people who are not direct users of a scheme. For example, transport infrastructure investments benefit non-users who enjoy time savings and reduced congestion through traffic being diverted to the new facility provided by the public investment. When it comes to specific cases,

the extent to which the economic situation changes for those people whose properties have to be taken compulsorily is the critical issue. If they are to experience losses whilst others benefit, this raises the question of whether they ought to have a claim to a share of any improvements that the expropriation of their property has contributed to in addition to compensation for their losses.

Problems with public investments can emerge at every stage of their realization, with those adversely affected by them using a variety of legal and procedural challenges and the political process to further their cause. Planning issues concerning the sustainability of the development, procedural matters connected with property expropriation, and how the valuations of expropriated properties are determined are some of the areas in which those adversely affected may mount a challenge. Ultimately all of the main obstacles to public investments and expropriation procedures usually come down to one of the main conditions enabling expropriation – just compensation for those whose property is expropriated or whose property is adversely affected by the scheme.

The problem of what constitutes just compensation raises profound philosophical issues. Is it acceptable that a minority should be obliged to sacrifice part of their well-being in order to benefit society as a whole? In practice, governments make such decisions all the time, for example, when deciding that one group is to be taxed in order to finance expenditure that benefits another group. The problem with public investments is that the group required to make the sacrifice is spatially defined and are located in close proximity to each other. They are often easily identified and can mobilize themselves in ways that those affected by, say, the change in a tax cannot. The spatial consequences of a project may mean that those selected do not necessarily fall within what is conventionally regarded as being an acceptable group for taxation or else are seen as not being treated in the same way as their peers who happen to be located away from the affected area. If the compensation is not just, they are, in effect, pay a tax in kind through sacrificing part of the value of their property. The issue of compensation is one of how to spread the burden from the locationally specific groups, whose land just happens to be on the site of the proposed public investment, towards the beneficiaries or society as a whole. Failure to do this means a redistribution of wealth, and this may not necessarily be in ways that are perceived as being just. There is no guarantee in such circumstances that the total benefits will be greater than the losses, merely that there are benefits to the gainers and that the gainers have the power to extract these gains from the losers. Fair compensation is not merely a matter of justice for the losers but is essential if public investment is to be economically efficient. Otherwise public projects that are wasteful of resources may go ahead even though the losses outweigh the gains simply because the losers lack the power to prevent them. Fair compensation should result in the true costs of the project being factored into the calculation of its viability.

2. The basic rules of compulsory purchase compensation determination in Poland

The Polish legislation acts that determine compulsory purchase compensation are:

- The Real Estate Management Act dated 21 August 1997 (with amendments);
- The detailed principles of preparing and executing public road construction investment projects Act dated 10 April 2003 (with amendments); and
- The Directive of the Cabinet dated 21 September 2004 regarding real estate valuation and preparing the appraisal report (with amendments).

The similarities and differences in the ways of compensation determination regulated by the acts have been discussed in detail in WALACIK & ŹRÓBEK (2010) and ŹRÓBEK & WALACIK (2008). The rule that is most significant in the context of this paper is that **the basis of compulsory purchase compensation in Poland is the market value of the property**. There are many important issues that valuer has to consider when estimating that value, including the type of property, its location, infrastructure, and the prices of similar properties, but one the most significant one is **the type of property use.**

The rules concerning the property use to be taken into account in the valuations process for the purposes of compulsory purchase compensation were changed in 2011. The need for these changes resulted from amendments to *The detailed principles of preparing and executing public road construction investment projects Act*, dated 10 April 2003. The solutions adopted both before and after 11th August 2011 have proved to be very troublesome and controversial.

2.1 Before 11th August 2011

According to the rules governing property valuation in Poland, before 11th August 2011the market value of properties used or occupied for public roads had to be estimated using the comparative approach on the basis of transaction prices of properties destined or used for public roads.

The implementation of these rules conflicted with the fundamental principle of equivalence, according to which the financial situation of the owner must remain the unchanged by the compulsory purchase. In the case of the acquisition of agricultural land, the expropriated person gained considerably because, for example, whilst the average price of one m^2 of agricultural land was about 2 zł, average price of land designed or used for roads was about 20 zł. Compulsory purchase yielded an average profit of 1000%.

Equally controversial and logically inconsistent was the estimation of market value on the basis of alternative uses. In the absence of real estate transaction prices, the value of properties designated for new public roads or the widening of existing roads was defined as:

- the product of one m^2 value of land (according to the current designation) and its area. If the value of the property in its current designation was lower

than the value of roads, the value according to its' current designation was increased by 50 % (§ 36.2.1, DIRECTIVE OF THE CABINET REGARDING REAL ESTATE VALUATION AND PREPARING THE APPRAISAL REPORT, 2004),

- the product of one m^2 value of land according to the predominant designation of the surrounding land and its area. If the value of the surrounding properties was lower than the value of roads, the value according to the predominant destination of surrounding land was increased by 50 % (§ 36.2.2, DIRECTIVE OF THE CABINET REGARDING REAL ESTATE VALUATION AND PREPARING THE APPRAISAL REPORT, 2004).

Whilst the first phase of the property valuation procedure should not be problematic, the second one concerning the necessity of the 50% correction was impracticable and resulted from a logic error. The only justification for the alternative method of value determination use was the lack of road property market. The 50% correction referred to that market, but since there was no road property market, one could not justify a higher or lower value of occupied land.

The procedures for property use designation in connection with the need for the comparative approach poured additional doubt on the possibility of determining the market value of the acquired properties. The first reason for emerging doubts resulted from the specific issue of a road property market. Although determination of the market value should be based on transaction prices for similar properties in which parties were not forced to sell and had adequate time in which to market their properties, road properties transactions, if ever any took place, did so in accordance with the expropriation procedures. The implementation of the expropriation procedures meant that the condition of lack of compulsion in the transaction was absent. All parties were aware of the consequences that failure to accept the terms proposed by public administration body would to, namely expropriation. Secondly, the condition that there should be adequate marketing of the property could not be fulfilled since there in no period of marketing and no possibility of a bid for the land for this purpose by anyone other than the public body. A similar situation occurred in the negotiation stage. What the law described as the stage of negotiations, in practice, meant just one offer. Rejection of the offer resulted in the initiation of expropriation.

The above procedure for property valuation was changed through amendment to *The detailed principles of preparing and executing public road construction investment projects Act.*

2.2. After 11th August 2011

Since 11th August 2011 the market value of property for purposes of compensation is determined by:

- The condition of the property at the date of the expropriation decision;
- the prices of similar properties at the day of compensation determination; and

– the property use without taking into account the influence of the road location decision.

If the use of real estate consistent with the purpose of expropriation increases its value, the market value of property is determined as:

– the product of one m² of land taken in isolation and the area (§ 36.3.1, DIRECTIVE OF THE CABINET REGARDING REAL ESTATE VALUATION AND PREPARING THE APPRAISAL REPORT, 2004);
– the product of one m² of land according to predominant land use in the surrounding area increased, on the basis of real estate market research, by not more than 50% (§ 36.2.2, DIRECTIVE OF THE CABINET REGARDING REAL ESTATE VALUATION AND PREPARING THE APPRAISAL REPORT, 2004)

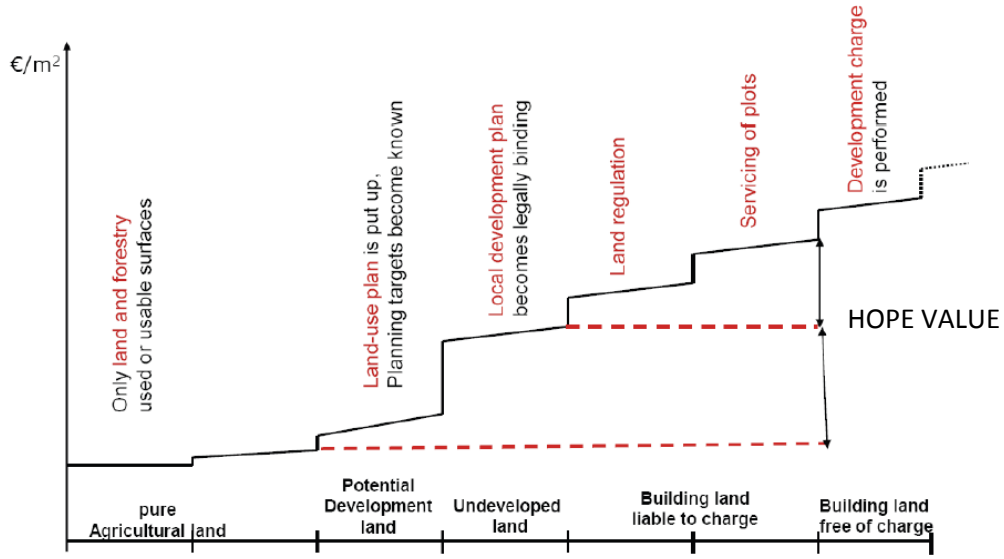
In a situation in which road property is expropriated its value is estimated on the basis of land use predominant in the surrounding area unless property valuation can be done on the basis of a road property market (§ 36.4, DIRECTIVE OF THE CABINET REGARDING REAL ESTATE VALUATION AND PREPARING THE APPRAISAL REPORT, 2004).

Amendments to the regulations governing the determination of property value from 14th July 2011 significantly eliminate the sources of doubts concerning the equity of compensation, but did not prevent from polemics on specific issues, including in the international arena. An example of such issues is the expected value (sometimes known as the hope value) resulting from the anticipation of a future change of property's designation. The hope value exists before the enactment of a local land use plan before there is infrastructure, and before the completion of the construction process (Pic. 1).

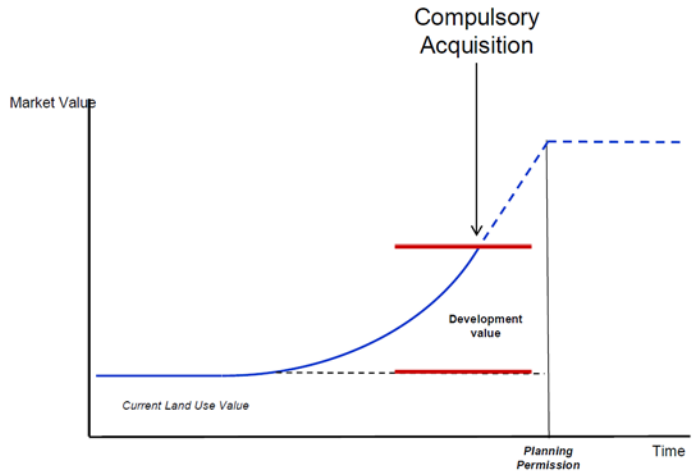
Narrowing the concept of expected value to the context of investment for public purpose, the process should be considered in two variants. The first scenario concerns the situation where:

– the increase in property's value takes place after the preparation of a local land use plan;
– the acquisition of the property takes place before the completion of this work; and
– the increase of the expected value takes place up to the adoption of the plan.

If the value of the property is determined on the date of its acquisition, that value, one could argue, should include the market value of real property according to its current use and the increase that occurred up to the acquisition (Pic. 2).



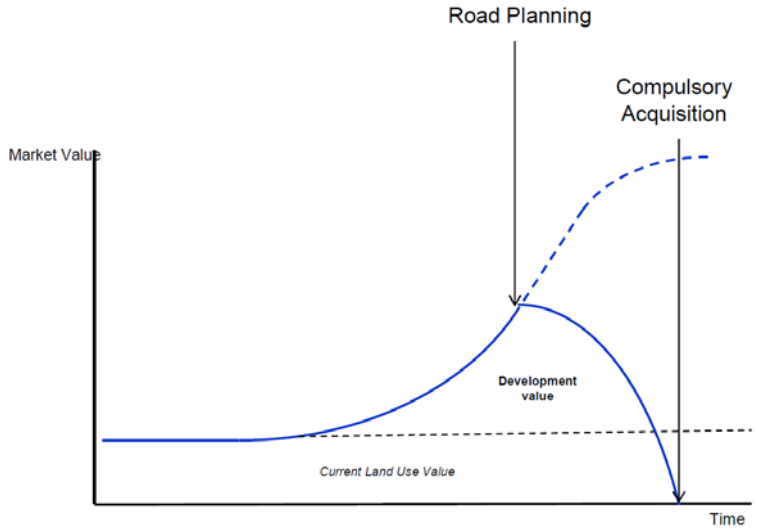
Pic. 1. The expected value of the investment process.
Source: Voss (2010).



Pic. 2. Compensation for the acquisition of property and the expected value assuming growth. *Source:* Own study based on Kalbro (2008).

The second scenario concerns the situation where the growth in value of the property continues until there is a detailed designation of the future use of the property (eg road construction). After the use has been specified, the value

decreases as the hope value is lost, which means that it may be lower than market value for the existing use. If the value is determined as at the date of its acquisition, that value, one could argue, should include the market value of real property for the current use and the increase that would occur until the property's acquisition in the absence of the proposed scheme that requires the use of compulsory purchase (Pic. 3).



Pic. 3 Ccompensation for the acquisition of property and the expected value assuming a downturn once the scheme is announced.
Source: Kalbro (2008).

The value in both cases is different from the market value of the property for its current use because of the existence of hope value. The question therefore arises as to which value should be the basis of compensation and, if it is to include hope value, how should this be determined?

3. The British approach to compulsory purchase

Like the Polish system, the British approach to compulsory purchase is a statutory-based one. The relevant statutes depend on the reason for compulsory purchase. For example, the statutory basis for the compulsory purchase of dwellings that are unfit for human habitation is different from that for public purpose investment and the basis for compensation is different. Although the British system is a statutory-based one, it does take place in the context of a common law legal system. Precedent therefore plays an important role in the system and the decisions of the courts in test cases are significant. The statutes set out the principles by which compensation is to be determined but do not set out the precise methods. Within this legal system there is an important role played by

the Upper Tribunal (Lands Chamber). Although the chair of the tribunal is a lawyer, he is advised by valuers. This tribunal can adjudicate on what valuation evidence should be used as the basis for compensation and on the appropriateness of the methods of valuation used. It acts as an independent tribunal before which the basis of the acquiring authority's valuation evidence and methods for determining the amount of compensation can be tested and challenged.

Like Poland, the UK is a member of the Council of Europe and a signatory to the European Convention for the Protection of Human Rights and Fundamental Freedoms, 1952. Decisions by the UK courts can be overruled by the European Court of Human Rights in Strasbourg and the UK government invariably implements such rulings. Of particular relevance to compulsory purchase are the Court's decisions under Article 1 of Protocol 1, which states that every natural or legal person is entitled to the peaceful enjoyment of his possessions and shall not be deprived of them except in the public interest and subject to conditions provided by international law. The Court has evolved case law which interprets this article as meaning that there shall be fair compensation. In 1998 the UK through the Human Rights Act brought the European Convention into UK law so that British judges are required to pay regard to the Convention when making their judgments. The reason for this was to avoid litigants having to exhaust all British legal remedies at great expense to themselves and considerable delays before being able to apply to the European Court of Human Rights. Most cases are resolved by the British courts applying the same principles as the court in Strasbourg. Whilst the right of appeal to Strasbourg remains, relatively few cases now are accepted by the European Court as most of the issues have been resolved in the British courts in ways acceptable to Strasbourg. On of the initial consequences of the passing of the Human Rights Act was to change government guidance material on compulsory purchase so that explicit mention was made of both the Act and the Convention and a series of legal challenges in the courts by aggrieved parties to certain compulsory purchase procedures and the roles of particular parties, which were largely dismissed.

The procedures and approaches to compulsory purchase evolved out of the methods used to build the canals and railways in the eighteenth and nineteenth century. These were constructed by for-profit companies, who raised capital for their construction from private investors in the expectation that the companies would be able to pay dividends to the shareholders once the facility was operational. The building of a railway or a canal requires compulsory purchase in order to compel those owners whose land lies on the line of the canal or railway to give up their property rather than force a detour. The promoters also required protection to prevent the last few owners from holding out against selling until the market price of their land reflected the monopoly power from being the ones whose consent was essential for the canal or railway to be finally built. The solution was for the promoters to seek a private act of Parliament. The resulting statute enabled they to acquire land compulsorily, something that is not permitted

under common law. A key feature of the Parliamentary process by which a private act is obtained is the committee stage. During the committee stage of legislation, a bill is examined clause by clause by a parliamentary committee before returning to the whole house for approval of the detailed amendments. With a private bill, any person adversely affected has the right to appear before the Parliamentary committee to argue their case. Thus, Parliament had an investigative role to inquire whether private interests affected by the bill were adequately compensated. The resulting legislation contained details of the compensation to be paid to each person affected so that this was enacted into law. The compensation could be in cash or in kind. For example, it could take the form of accommodation works to mitigate adverse consequences, such as a bridge to be built by the canal company at its own expense to overcome the problems a farmer would experience as a result of having his farm cut in two by the canal.

The modern statutory system has retained some important features from its origins. The body carrying out public purpose investments can be a private for-profit company, particularly since the privatizations of the utility companies in the 1980s. Whilst there may be a public purpose behind the investment, for example a reservoir for storing drinking water, there is also private profit and a commercial motive behind the investment. This is particularly true of urban regeneration projects where a local authority enters into partnership with a private developer with the local authority using its compulsory purchase powers to assemble the site from a number of owners. The land is then leased to the developer, with the local authority typically being paid rent that varies with the profitability of the scheme. The statutory system that developed from the private acts of Parliament contains important safeguards to protect the owner of property rights being compulsorily acquired from, in effect, contributing to the profitability of any private promoters of such schemes. The way in which this can be done is to ensure that the basis of the claim for compensation is the market value of the property taken in its highest and best legal use, together with compensation for disturbance and for what is known as *injurious affection*, the adverse effects on any land not taken.

A key feature that the current British system has inherited from the private acts of Parliament is that there is a distinction between the acquiring authority and the confirming authority. The acquiring authority, such as a local authority, a water company, or the Olympic Delivery Authority, proposes the compulsory purchase. The confirming authority, a government minister, must approve the compulsory purchase. Objectors can be anyone with a potential claim for compensation. They have the right to object to the proposal and to have their objections heard in public at an inquiry presided over by an inspector appointed by the confirming authority. The acquiring authority is under the obligation diligently to seek out those parties who might be entitled to make a claim so that they can be informed of the proposal, and is obliged to advertise its proposals. Where local authorities are the acquiring authority, occupiers, freeholders, mortgagees, lessees, those receiving rent, and those managing the land or acting as letting agents can be required to

give information about the name and address of the owner or reputed owner, lessee, tenant of whatever term, or occupier, or anyone with an interest in the land. It is an offence if there is failure to comply without reasonable cause, or false information is given and it can be punished by means of a substantial fine. Claimants can include owners, lessees, tenants, occupiers, or anyone else with an interest in the land.

The inquiry must be held in public unless all parties agree to the use of written representation. It is conducted by an inspector appointed by the confirming authority. He publishes his reasoned conclusions that the confirming authority may, but is not obliged to, accept. Objectors can be legally represented and can make a claim for costs. This is quite separate from any challenges through the courts to the legality of the proposal and to the Upper Tribunal (Lands Chamber) over the proposed compensation. The system is an adversarial one in which lawyers for the appellants can cross-examine the witnesses brought on behalf of the acquiring authority, including on the rational behind the proposal, such as the traffic forecasts for a road scheme. The adversarial approach is also adopted in cases where compensation cannot be agreed and the case is heard before the Upper Tribunal (Lands Chamber) so that the valuation evidence of the acquiring authority can be challenged. The adversarial system is an important safeguard as valuations can only ever be estimates of the price a property might realize if sold by a willing buyer to a willing seller. It enables the quality of the evidence behind the valuations to be scrutinized and improve the chances that an outcome that is close to the "true" market value can be achieved. Although the system is adversarial at its heart, the reality is that most disputes are resolved by negotiation. Government policy stresses the importance of alternative dispute resolution methods. However, if agreement cannot be reached, there is a backstop of appeal to the courts or a tribunal where the evidence is subject to open scrutiny.

Once the order is confirmed, the acquiring authority may serve a notice to treat and take possession of the land or to vest itself with the land. This must be done within three years or the order will lapse. The notice to treat must be served upon every person with an interest in the land or having the power to sell, convey or release an interest in land, including freeholders, leasees and tenants with more than a year of their term left, and mortgagees. The purchase is not formally completed until compensation is paid. The date upon which the notice to treat is served determines which interests are defined as being in existence and these are the ones to be compensated. Any new interests created after this date will not attract compensation. As tenants are entitled to compensation from the acquiring authority rather than seeking compensation from the owner, it is important to prevent new interests being created that would increase the compensation the acquiring authority has to pay. As property values can rise or fall, the date of valuation is important. The date of valuation is taken as the earlier of the date on which the compensation is agreed or the date on which possession is taken by the acquiring authority. Delays in the payment of compensation are compensated by

the payment of interest on the sum due to the claimant, and not by varying the terms of the compensation. If the acquiring authority enters into part of the land, it is deemed to be taking possession of the whole and the calculation of interest starts from this date. Unfortunately the rate of interest is set by the government at 0.5% below the Bank of England's base rate. As at the time of writing the base rate is set at 0.5%, there is no interest currently being paid on compensation that is delayed!

The basic principles of compensation are set out in the Land Compensation Act 1961 which enshrines the so-called six rules of compensation. Of these, the most significant is rule 2, which states that the value of the land taken is the amount it may have sold for in the open market, if sold by a willing seller. This is the highest and best use and includes the value of any planning consents granted but not acted upon, any development or change of use that would be permitted, and any permitted rebuilding. The use is what might reasonably be expected in the absence of any compulsory purchase. Reference is made to development plans for the area. This means that the valuation must pay regard not only the current use of the property but also any planning consents that have been granted and not yet acted upon, any development that might enhance the value that does not require planning consent, the value of any uses for which the land is allocated in a development plan, and the value of any use for which the acquiring authority may be granted planning consent. The value can include "hope" value that at some time in the future planning consent might be granted for a more valuable use. What is excluded from the highest and best use is any increase (or decrease) in value that arises as a result of the scheme itself. In other words, the acquiring authority does not have to pay compensation for any increase in value it has created. Nor can it profit from any fall in value that result from the scheme. This is the so-called Pointe Gourde Principle (set out in *Pointe Gourde Quarrying Co Ltd v Sub-Intendent of Crown Lands 1947).* The particular case concerned land being acquired for a naval base and whether additional compensation might be paid because of the proximity to a limestone quarry with stone specially suitable for the construction work. The valuation has to be made on the basis of assuming that there is no scheme so that the impact of the scheme on the value of the land can be disregarded. This can create problems for those whose property is acquired compulsorily who may find that the compensation they are awarded does not enable them to buy a similar property in the locality because a scheme has resulted in an increase in the value of neighbouring properties not taken. There is provision that if the acquiring authority at a future date within ten years of the acquisition obtains consent for a more valuable use, compensation can be claimed on the basis of this more valuable use at the time of acquisition though not any increase in the market value of this use. This provision is particularly important in view of the practice of local authorities using their powers of compulsory purchase to promote urban regeneration in conjunction with private developers. It prevents them from acquiring land by paying compensation based on its existing use and subsequently profiting from granting themselves (as the local planning authority) consent for a

change to a more valuable use at the expense of the previous owners. In essence the argument is that the development would have gone ahead in the absence of compulsory purchase even though compulsory purchase may have facilitated development at an earlier date. Although the fundamental principle is that any increase or decrease in value occasioned by the scheme should be disregarded except to the extent that the development would have taken place in the absence of compulsory purchase, in the case of urban regeneration projects, this case can be made, hence the ability of those losing land being able to share in any uplift in value as a result of a change in the designated use of the land.

The valuation of the land taken is usually undertaken using the comparative approach. The Upper Tribunal (Land Chamber) will not accept claims based upon the residual method of valuation, which has been ruled to be fundamentally flawed on the grounds that it contains too many assumptions that may have a material affect on the final calculation. This prevents a claim be based upon a residual valuation of the land as development land. If a claim is based on the value of the land as a development site, then comparable evidence of the sales prices of other sites will have to be produced. Even where there is no claim for compensation that can be made, for example because the occupier's interest is not of sufficient duration to give rise to one, the acquiring authority may make a payment on a discretionary basis.

Compensation can be in kind rather than cash. For example, the acquiring authority can provide alternative land of equivalent value as compensation, which can enable a business to relocate. Tenants can claim for the loss of any unexpired term of their lease, generally on the same basis that a landlord would have to pay for terminating a lease early. Those having their property taken can claim the costs of their professional fees and other costs incurred in making their claim, such as legal, valuation and accounting costs.

The remaining compensation rules set out some important qualifications to the principles set out in rule 2. There is no additional compensation payable on the basis that the sale is compulsory and not at a time of the seller's choosing, or to compensate for any psychic loss the seller may suffer. However, there are basic and occupier's loss payments, which provide for additional compensation in addition to the land taken and which benefit small businesses, and the home loss payment for residential occupiers. These can be argued to breach the principle that there is only compensation for actual losses suffered and provide some recompense for the sale being compulsory. They can be also be claimed by occupiers who do not have a compensatable interest in the land. Any value attributed to illegal uses cannot be compensated, for example the use of a hotel as a brothel. This includes uses that are contrary to public health for example, when the owner has brought the loss upon himself by failing to maintain his property.

Not every property has a market value. For certain types of property there is no general demand, for example, churches, schools or hospitals. Rule 5 provides that if the use would have continued but for the compulsory purchase, and if there is a

bona fide intent to reinstate, then compensation can be paid on the basis of the costs of equivalent reinstatement on an alternative site, including the costs of acquiring the site and building works. This does not necessarily produce the most advantageous claim for the claimant as the value of the site for development may be higher if valued on the basis of its highest and best use.

A fundamental principle of compensation is that it should only be used to compensate for actual losses. Sometimes a compulsory purchase can result in the person losing land becoming better off. For example, suppose that a farmer loses part of his land as a result of compulsory purchase for a road and that a consequence of the scheme is that part of the remaining land is redesignated for housing development. The farmer could be in the position of the remaining land being more valuable than his entire property was before part was expropriated. There is provision for setting off any increase in value on the remaining land against compensation for the land taken.

In addition to compensation for the land taken, claims can be made for compensation in respect of land not taken. These could arise because of injurious affection where the value of the land has been diminished by a scheme. This could include, for example, the diversion of a road away from business premises as well as noise or pollution arising from the scheme. Severance of land by a scheme like a road can also diminish the value of land not taken by reducing accessibility and increasing working costs, for example, of a farm that is now split in two. Claims can also be made for disturbance such as relocation costs or the permanent loss of profits if a business has to close as a result of compulsory purchase. Such claims can be made by those occupiers who have no compensatable interest in the land itself.

Acquiring authorities have to be careful about the publication of their plans as these can trigger reverse compulsory purchase in which the person whose property is affected may demand that his property is acquired now. Owner occupiers of residential properties and smaller commercial ones can serve a blight notice requiring the acquiring authority to buy their interests if they have occupied the property for at least 6 months in the preceding 12 months, the interest is freehold or a leasehold with more than three years unexpired of the term, and the owner occupier has tried to sell his interest but either could not or could only do so at a substantially reduced price. In addition, severance and disturbance claims can be made. This provision prevents the acquiring authority from taking advantage of any fall in land values resulting from the announcement of its plans. It also discourages premature applications for compulsory purchase orders since there is likely to be significant costs to the acquiring authority even if the scheme is abandoned.

4. International solutions concerning property use for purposes of compulsory purchase compensation valuation

An international comparative study of solutions concerning property use for purposes of compulsory purchase compensation valuation, made by Źróbek and Walacik, has shown that different countries have adopted different solutions. Most of the countries though, have the principle that the property use taken in that kind of valuation cannot be influenced by the use of the investment (Pic. 4).

Country	*Property Use*	
	Before	*After*
China	✓	
New Zealand	✓	
Taiwan	✓	
Finland	✓	
Australia	✓	
Hungary	✓	
Norway	✓	✓
Cyprus	✓	
Sweden	✓	✓
Turkey	✓	
Germany	✓	

Pic. 4 The property use for purposes of compulsory purchase compensation valuation in different countries. *Source:* Questionnaire on compulsory purchase (Walacik, Źróbek, 2008).

In China, Hungary, Cyprus, Sweden and Turkey the property use taken for property valuation for compulsory purchase compensation purposes is the one that property had before public purpose investment. A similar solution has been adopted in Taiwan with the difference that the basis for compensation in that country is not market value of the property but the cadastral value. In New Zealand the market value of the property in its highest and best use is estimated, which in many situations is the use before investment but is not necessarily the case. Australia and New Zealand, like the UK, have adopted the Pointe Gourde

Principle, which means that the special value of the land for the scheme is disregarded. In Finland the purpose of the compulsory purchase must not have an influence on the amount of compensation. However, sometimes the undeveloped land has a value which is higher than agricultural land has (the possible future use has an effect on the prices) and this can be taken into consideration, if expectations of the future land use hasn't affected the market value beforehand. In Germany the law requires that the compensation has to provide an opportunity for the expropriated owner to acquire a comparable property. In the German Federal Building Code regulations to this effect are laid down in § 95 (2). The legal rules say that the land designation prior to expropriation is relevant. In Norway if the land use decided by the Expropriation Plan is only possible by the public sector – or has no market value (such as roads, schools, and graveyards) and the plan is for "building" (including roads), the former use and use expectations should be compensated. If the plan is for not "building" (such as conservation and parks), only former actual use (and not any expectations about future value) should be compensated. It is also possible to negotiate the acquisition using a higher land market value.

For the transitional countries of the former Soviet bloc, the last twenty years have seen a remarkable transformation in their approaches to compulsory purchase. The constitutional protections for private property adopted after 1990 in the countries of Central and Eastern Europe are in marked contrast to the Soviet era when private rights over real estate were largely abolished. The Second All-Russian Congress of Soviets in 1917 issued a decree on land which made all land in the Soviet Union the property of the State and the 1936 Federal Constitution placed an absolute prohibition on civil transactions relating to land. These provided the legal basis for the expropriation of private property that took place under Communism and were extended to the countries of Central and Eastern Europe after 1940, starting with the Soviet annexation of Estonia, Latvia, Lithuania, and Eastern Poland and later becoming the inspiration for the constitutions and legal structures put in place by the Communist governments of Central and Eastern Europe after they came to power between 1946 and 1949 (GROVER R.. et al, 2008). In principle private ownership of land was mainly restricted to small rural plots for personal cultivation and some residential property, with the tenure rights that existed permitting the tillage of the land and the erection of buildings. State bodies had rights of operational management. There were singificant variations between countries. Under the Soviet system, the right to use land was allocated, and could be withdrawn, by the state. Compulsory purchase as such could not take place as private property rights capable of being expropriated no longer existed. Rather the state could withdraw, resume, or reallocate occupancy or use rights. Losses that could be compensated included the value of expropriated buildings and crops, the costs of reinstatement at another location, the costs of tillage and improvement for which revenue had not been received, and damage to other buildings as a result of the expropriation. The rules for valuing compensation were generally based upon

depreciated replacement cost rather than the worth to the injured party. Thus compensation was based upon the labour embodied in the immovable and working capital lost rather than its exchange value.

Since the ending of the Communist system, the countries have seen a restoration of private ownership of property and the functioning of land markets, stimulated by privatisations and restitution policies. Constitutional and other protections of private propoerty have had to be put in place. Against this backdrop, a new policy for expropriation has had to be developed in which the notion of expropriation in the public interest rather than as an act of social policy has had to be developed. Owners of property have been granted the right to object to the acquisition, the terms, and the proposed compensation and to appeal to the courts. It is one thing to bring in systems of compulsory purchase that are transparent and open and in which the acquisition and the copmpensation offered can be challenged, it is quite another to ensure that there is a basis on which compensation can be determined. This requires not just the adoption of market value in the highest and best use as the basis for compensation but also the creation of an infrastructure capable of delivering this. Central to this are two key requirements. Firstly there should be a valuation profession whose members have the education, training and skills to enable them to estimate market value. Secondly, there needs to be a transparent property market in which valuers and their clients can discover the transaction prices at which comparable properties have changed hands. Although there have been important developments in both of these areas in Central and Eastern Europe, it is probably fair to say that there is still a gap between what has been achieved and what is the norm in Western Europe.

5. Conclusions

The past histories of Poland and the UK with respect to compulsory purchase are very different although the fundamental principles that now determine policy in this area are the same. Both are signatories to the European Convention on Human Rights. Although the EU regards land policy as an area of national competence, both countries are affected by the policies that provide for free movement of capital and freedom of establishment for enterprises. Poland's policies on compulsory purchase have been developed during the course of its transition as a reaction to the Communist land policies pursued between the 1940s and 1980s. Private property is protected by the constitution. Expropriation is no longer based on the notion that land can only belong to the state as its custodian on behalf of society and is a legitimate tool of social policy. Rather, there should be an active and transparent land market in which land can be allocated to its most efficient uses. This implies that when the state takes land for public investment purposes, it should pay fair compensation so that the losers can re-establish themselves in the land market.

The UK has historically resisted the notion of state expropriation of land, seeing it as being a device of political control to be used against the state's enemies and not against patriotic citizens. The statutory basis is because it is an act that is contrary to the common law. It is only as urbanization and the demands for urban infrastructure developed was compulsory purchase placed on a statutory basis. This was in recognition that compulsory purchase was a necessity in urbanized societies and not something that could be dealt with by an occasional private act of Parliament. Central to the idea of compensation is that the person whose property is taken must be restored to his or her previous position. This is the principle of equivalence in which the compensation should equal the loss, neither more nor less. The losses can be of land taken, the adverse impact of the scheme on any land not taken, and any disturbance resulting from the scheme, as well as the professional fees incurred in presenting and negotiating a claim. Property interests include the interests in the land of lessees, tenants and occupiers. The only basis on which the land can be valued if the principle of equivalence is to be followed is the market value in the highest and best use. This is what the property owner could sell his interest for in the open market in the absence of a scheme requiring compulsory purchase.

What lessons can a country like Poland learn from the experience of the United Kingdom? Firstly, there is no such thing as a perfect system of compulsory purchase. The UK's system has many areas which do not function particularly well and which can lead to unfairness between neighbouring property owners (PLIMMER, F, 2007). However, at the heart of the UK's system lies the belief that the only way of ensuring that fair compensation is paid is that the evidence on loss should be capable of being tested. The acquiring authority's views and the claimants' views as to what the compensation ought to be is capable of being challenged before an independent tribunal able to assess both the evidence and the valuation methodology behind it in an expert fashion. Whilst most claims are resolved through negotiation, this does provide a backstop that enable disputes to be settled in a transparent and fair manner. The existence of an expert valuation court or tribunal that can determine what is fair compensation is one of the key features of the British system. Yet the tribunal itself could not exist unless there was a well-developed valuation profession functioning in an open and transparent property market. Those buying and selling in the market can obtain expert advice as a matter of routine and this is also available to both the acquiring authority and the claimants in compulsory purchase. Although it did not become professionalized with formal membership and examination syllabuses until the latter part of the nineteenth century, it existed in a recognizable form with a written and published body of knowledge at the time of the canal and railway acts (THOMPSON, F.M.L., 1968). Neither the British government nor statute law seeks to set out the valuation methodology by which highest and best use values are determined. Statute law states that compensation is payable on the basis of market

value but it is the valuation profession that has determined how market value is to be cacluated.

The estimation of market value also requires a transparent system of information about market prices so that the acquiring authority, claimants and their advisers have knowledge of recent comparable transactions. There needs to be a culture of making such information public, including open land registries that publish transaction prices and government departments publishing tax assessments, as well as by private bodies like mortgage banks, estate agents, and property owners. Secrecy, including the withholding of information on the grounds of confidentiality, is the enemy of fair compensation.

At the heart of compulsory purchase lies a conflict between property owners who do not wish to sell and an acquiring authority that has to compel them to do so if the scheme it seeks to promote is to be realized. These positions are irreconcilable. Whilst much can be achieved through encouraging negotiated settlements and the use of alternative dispute resolution systems, there will inevitably be situations in which the positions of the owners and the acquiring authority are irreconcilable. While it may be impossible to reconcile the two positions in many situations, procedures can be established that enable the losers to have their case heard by an independent tribunal and to challenge the acquiring authority's arguments. The existence of such systems can serve to prevent schemes that have not been properly thought through or which are premature as the acquiring authority knows that they will be subject to expert scrutiny and cross-examination. Moreover, the system of blight notices and reverse compulsory purchases that result mean that the acquiring authority knows that the abandonment of a scheme is likely to be extremely costly as compensation is likely to have to be paid to owners whose property it did not need to acquire.

The most important lessons that the British system of compulsory purchase can teach other countries are really twofold. One is that the calculation of fair compensation requires the ability to value properties on the basis of their market value in their highest and best use. This requires the existence of a valuation infrastructure, including a valuation profession and information about transaction prices being publicly available. The other is that acquiring authorities cannot be responsible for determining their own actions. They should have these approved by a confirming body, have them subject to challenge through the courts, be obliged to justify and defend before a public hearing, and have the basis of the compensation they propose to pay be subject to scrutiny and cross examination before an expert independent tribunal.

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Legislation acts

THE REAL ESTATE MANAGEMENT ACT DATED 21 AUGUST 1997 (DZ. U. 80/2003 WITH AMEND.)
THE DETAILED PRINCIPLES OF PREPARING AND EXECUTING PUBLIC ROAD CONSTRUCTION INVESTMENT PROJECTS ACT DATED 10 APRIL 2003 (DZ.U. 80/2003 WITH AMEND.)
DIRECTIVE OF THE CABINET DATED 21 SEPTEMBER 2004 REGARDING REAL ESTATE VALUATION AND PREPARING THE APPRAISAL REPORT (DZ. U. 207/2004 WITH AMEND.)

4. THE MARKET VALUE OF OPERATIONAL CORPORATE REAL ESTATE

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Abstract

Real estate used for business operating activities in companies (and occupied by the owners) is specific in terms of the conditions and opportunities of market value objectivisation. This includes determining the highest and best use and assessment of the property's potential for comparison transactions on the CRE market. This market is characterised, in the majority of cases, by oligopolic terms of competition. Owing to the fact that operational corporate real estate is 'bogged down' in the structure ofa company's assets, which is determined by the conditions of competition ofa given industry, it has no direct connection with the real estate market until the entire structure of the company's assets becomes redundant. In such situations this property is most often a significant element in the group of redundant assets and is generally sold as part of the asset restructuring process. This usually results in a change in (use). Therefore, the appraisal of operational real estate requires finding solutions for several fundamental theoretical problems being conditions for the methodology.

This article focuses on three issues. The first concerns the conditions for the objectivisation of comparison methods, including an assessment of the conditions of sale with regards to restructuring processes, as well as sales in terms of entire production facilities, including the operational units of companies with intangible assets. The second issue concerns the process of utilisation of the BEV concept in special purpose industrial real estate and the assessment of the conditions of market objectivisation with regards to loss of market value caused by external factors on the CRE market. The third issue focuses on the suitability of employing cost methods, with regards to their utilisation in a complementary manner with other cost and comparison methods in determining market value.

1. Characteristics and basic classification of corporate operational real estate

In contemporary English-language economic literature, real estate belonging to companies is commonly referred to as Corporate Real Estate (CRE). In order to remain on the market, companies must create and maintain a competitive advantage. One of the main ways in which to achieve an advantage against

competitors is to develop real estate portfolios in a manner that will increase market share and increase shareholder value [WILLS, p.40]. Assuming that the basic objectives of business activities include: maintaining liquidity, long-term ability to generate revenue and increase profitability, and increase value for the owners, companies are making strategic choices, including amongst others:

- the development of outsourcing for a variety of auxiliary functions,
- the reduction of the need for floor space (office, industrial, commercial and otherwise),
- the employment of modern strategic / financial techniques making use of property portfolios,
- allocate the largest share of investment budgets on the development of information technology.

Taking into consideration changes such as those regarding competition requires that real estate portfolios become more flexible in a physical, financial and functional manner [GIBSON, p.38-45]. This also means a need for flexibility regarding the control of CREs which is related to the choice of various rights to property on the market. This allows a portfolio to best fit the changing needs of a business entity. Furthermore, it should be necessary to formulate appropriate provisions in agreements regarding the conditions of use of real estate, with respect to obligations[3].

In considering this issue in the context of increasing globalization it can be said that many companies undergo dynamic changes in the structure of assets, including operational real estate which depend on the optimisation of the size and structure of resources and methods of control (in broad terms, the purchase or lease) to their evolving needs. On the one hand are companies focused on the growth and development of business activities aiming to achieve the objectives of geographical expansion (into new markets), which typically requires the purchase or lease of new properties. On the other hand, there are companies benefiting from economies of scale, aiming to reduce costs, including costs associated with real estate. This very often leads to a process of restructuring, including also a restructuring of assets. In a monopolistic situation in which there is an absence of effective competition or the possibility to impose high prices, a property can be kept "in reserve", but a climate of aggressive competition, low margins and high costs of maintaining property (such as rapid increase of the annual fees for perpetual usufruct) businesses cannot afford to maintain property that is redundant or unnecessary for their business activities. In such cases, operational real estate may be sold, thus regaining contact with the real estate market.

[3] These issues also relate to intra-corporation relationships, as the holding acts as a pseudo-investor, making property reserves available for its own subgroups. In such situations, the CRE functions as a profit centre not a cost centre.

A broad approach to corporate capital allows for the separation of two of its forms: physical capital and intellectual capital (intangible). Significant changes are underway in the entire process of transformation of goods in all aspects of business entities, which now tend to focus on building a competitive position mainly based on people, processes and knowledge rather than tangible resources. The prerequisite for making these changes is most commonly a search for optimal solutions in terms of value based management processes. The effect of this is the rapid development and growth of corporations, whose source is intellectual capital. These circumstances indicate that CREs in part lose economic characteristics of real estate, both traditional and fundamental, relating to for example durability (long life span) and indivisibility [KUCHARSKA- STASIAK 2004, p. 16]. This indicates a need to consider dynamic aspects. The capital of operational real estate from a static perspective is physical, first and foremost, and specifically in terms of the size and value of resources forming the physical capital. The dynamic perspective of corporate real estate is primarily a matter of measurement and evaluation of benefits obtained and transaction costs associated with market control as well as issues concerning the choice of control (including contractual rights) taking into account the risks of their operations and activities.

The complex nature of the operational corporate real estate means that this real estate can be classified using many different criteria, ranging from the simplest, such as taking into account physical characteristics, through to more complex methods of classification relating to the analysis of patterns of usage within the corporation. The CRE concept is used in a broad sense to include property owned by the company, regardless of whether it is used for operating activities or whether the property is an investment. From the perspective of the user, operational real estate includes property and property rights of debenture used for production. The subjective method of distinguishing CREs (marked as shaded area) is shown in Figure 1.

Stock of real estate					
Households		**Corporate (CRE)**		**Regulatory sphere**	**Other public entities**
Households	**Agriculture**	**Industrial and services (non-financial)**	Investment funds, financial institutions	State and municipality, county, the province) and other public entities	**Churches, associations, foundations, unions and other**

Fig. 1. The subjective manner of distinguishing CREs. *Source*: Own elaboration.

The term "Corporate Real Estate" (CRE) is a specific and at the same time complex type of real estate (separate from other types of real estate), as it combines specific features of real estate as a corporation's resources without losing perspective of the real estate market. In Poland, this term has not yet become part of the lexicon of real estate appraisal - in theory or in practice. In order for this to happen, rigorous and separate treatment of the two components of this term (real estate and corporate) needs to be dispensed with. From the perspective of the issue of market value, the most important factor is the classification of CREs using the economic criterion of business usage and accounting. This allows for three categories of property to be distinguished: operational (including the subcategories of fundamental and surplus), investment, and turnover [KONOWALCZUK, RAMIAN, 2010, pp 95-108], as illustrated in Figure 2.

Operating					**Investment**			**Turnover**	
Basic			Redundant		Rental	Capital	Under construction	Goods	Stocks
General use	**Special purpose**	**Under construction**	Permanently redundant for basic activity	Flats and social					

Fig. 2. Distinguishing of operational CRE categories. *Source*: Own elaboration.

In taking into account the criterion of independence of cash flow from other assets held by the operator, it is possible to identify properties that are not occupied by the owner of the business. This group includes:

- investment property that is regarded as a source of rental income or held with the expectation of increase in value or income potential (capital),
- real estate current assets – destined for sale in the ordinary course of business [MĄCZYŃSKA, PRYSTUPA, RYGIEL, p.96] as a commodity (purchased for resale) or inventory (real estate developed by the enterprise and destined for sale),
- permanently surplus real estate for the core business activities, including residential and social, requiring decisions to be made regarding the timing and manner of withdrawal from the investment.

In the case of operational property used for the normal (typical) business activities (and occupied by the owner), it is not possible to allocate specific (separate) cash flows to individual properties. The economic benefit of operating

properties is measured at the aggregate level for a business entity or its part. It also includes synergistic effects related to the manner in which a given business structure is organised, hence the difficulty in identifying the distinct benefits of the property itself. Operational real estate can be divided into general-purpose and specialised (designed for specific purposes). Special-purpose operational property, due to its specific physical and economic characteristics, is not sold/bought individually (separately) on the market. It is sold or encumbered with the obligations together with the operating enterprise of part thereof.

2. The CRE market and conditions of objectivisation in the process of appraisal

It is safe to say that the demand for operational properties is secondary and is linked to the performance of the core business. Utilising the theory of transaction costs [KUCHARSKA-STASIAK, 2007, pp 66-68] it should be noted that the allocation of property resources takes place through coordination within the enterprise or alternatively through transactions entered into on the market. Each of these methods of allocation has different characteristics. The market mechanism works "within itself", mainly through a spontaneous mechanism coordinated by cost, whereas coordination within an enterprise takes place within a managed, hierarchical organisation under the command of its management [GRUSZECKI, 2002, p. 209]. Companies continue to make choices as to coordination methods, which refers to the differing qualifications and costs of coordination competing against each other. Internal coordination usually refers to ownership, while external coordination does so through real estate prices - generally ensures obligations. Performing a particular activity within an enterprise and utilising operational property only makes sense where the costs of internal coordination are lower. Otherwise (very high real estate prices with very low rental rates) the pressure exists to sell operational real estate and leasing of real estate (or lease return). Figure 3 presents a division into two methods of CRE coordination.

Operational resources in the form of real estate form a part of a company's fixed capital, resulting in particular consequences associated with obtaining market equilibrium in the long and short term. Utilisation costs can be calculated as being discounted additional revenue which could be obtained in the future should the company resign from the property's current use. For calculation of the long-term supply price of products and services, across which the cost of the use of the property is spread, must include:

- all costs (utilisation and additional fixed costs),
- surplus associated with the return on capital (interest),
- risk premium.

Thus, in the long term real estate prices affect the product's cost of supply through the sum of: operating costs, additional costs, risk costs and interest costs. In the short term supply costs are related to the marginal running costs [KONOWALCZUK, RAMIAN 2008, p. 63]. This type of business model is related to factors determining the state of equilibrium on the real estate market. In a short

time, equilibrium is achieved at the level of market prices (marginal running costs). Such a model of the enterprise is a reference to the factors that determine the steady-state real estate market. In a short time equilibrium is achieved at the level of market prices (marginal running costs), but in the long run is at the level of reproduction costs [KUCHARSKA-STASIAK, 2006, p.66], which in a dynamic relationship is significantly associated with concept of cost of use.

Parameter	Stock of operational CRE	
Manner of coordination	Internal within the structure of company	External through real estate market
Manner of control	Most often ownership	Most often obligations
Type of real estate	Operational	Investment
Basis for choosing manner of coordination	Ownership costs	Market rents
Sources of information used in determining market value	Operating activity (revenue-costs) – competition on the market of products or services	Real estate market
Objectivisation	Difficult, Easier to determine use value	Easier, on the condition that there is an active real estate market and the availability of comparable data

Fig. 3. Relations between methods of coordination CRE and appraisal. *Source*: Own elaboration.

3. Conditions of objectivisation for comparison methods

The market price is a specific amount transferred by the buyer to the seller and may represent good value which is the goods being exchanged but only under the condition that the exchange occurs in a market that meets the requirements of efficiency, competition and freedom. The category of a free and efficient market is purely theoretical, as is an ideal market. In practice, economic transactions are performed in different conditions, meaning that only a part of the market price can be regarded as being a manifestation of true market value. The established practice of appraisal indicates a number of factors that restrict the use of prices in the application of a comparison approach in the valuation of operational corporate real estate:

1) A lack of similar (comparable) real estate transactions on a given market.
2) Historical transaction data, whereas the main premise of appraisal is the relationship between value and future benefits.
3) The complex nature of operational real estate with additional tangible and intangible assets often occurring in a single transaction.
4) The difficulty of being able to present reliable estimates on the property's wear affecting the value of the property.

5) The often difficult to identify relevant conditions of the transaction, which translates into a difficulty in determining whether a transaction is considered to be a market transaction (the problem of transactions between related parties in a forced sale, special buyer incentives, etc.).
6) The influence of the method and terms of financing transactions in the shaping of the transaction price [MARTIN, 1987, pp 30-31].

The two main problems of employing a comparison approach is the similarity of properties (with respect to market characteristics) and the appraisal of the property being the subject of the transaction. In terms of CREs, apart from the property itself, the subject of the transaction may also include: Specialised group of assets (SGA), the real estate business and the operational unit of a company. Another problem is the reliability and prevailing prices of transactions for similar properties. The issue of similarity refers to all relevant aspects of real estate. This means that comparable real estate properties should be appraised in terms of: highest and best use, location, the size of the land and its components, the physical and chemical properties of the land, age, wear, local land plans and all other aspects affecting value.

The transaction of sale of CREs is essentially unambiguous with regards to the fact and date of the transaction and the property itself, and the sale price may be used to as an appraisal after having determined an assessment of similarity and the conditions under which the transaction was entered into. The transaction data from sales is historical and archives are searched for those properties for which there was strict compliance in terms of the market conditions, or those in which appropriate adjustments could be made. Analysis of market conditions for sale transactions is based on similar criteria as those formulated for the accepted definition of market value [UOGN, Article 151], however they relate to the assessment from the date of the contract. It is understood that if the transfer of ownership took place in market conditions, then the price reveals and can provide a market value of the right to the property. However, a "discovery" of this fact is necessary, because not all data from the past is known and interpreted. An adnotation of the fact that the transaction of sale was performed, is not enough as a description of the conditions is necessary to reach the correct conclusion in terms of using the principles laid down for a sales comparison approach. [KONOWALCZUK, 2009].

Not all historical transaction data is necessary for an appraisal, only the data that is referred to as transaction prices[4]. The indirect and relative nature of comparison methodology is effective when taking into consideration the archived and historical transaction prices of similar (comparable) properties, whose prices

[4] The market price which shows no sign of the transaction price, is called the price entered into in non-market conditions and may not be used for comparisons.

are adopted as being their market values. Direct and absolute valuation would rather be regarded as being experimental and would be applied in the case of the sale of property undergoing appraisal in market conditions – where the current and non-adjusted transaction price would illustrate the market value. The indirect and relative nature of appraisals is connected with the necessity of applying conclusions as an indirect methodology, requiring an assessment and adjustment of the conditions of the transaction agreement. The relative nature of appraisals means that in using transaction prices it is necessary to revise (make amendments) relating to:

- bring the transaction prices (historical) from transaction dates to the date of valuation – to reflect current market conditions,
- take into account differences in market characteristics (physical, economic and legal) and transaction conditions between comparable properties and the property undergoing appraisal.

A sales comparison approach allows adjustments to be made in relation to the basic elements relating to comparative analysis, which also includes terms and conditions of financing and sale [WYCENA NIERUCHOMOŚCI, 2000, p. 263]. This is used when information is available regarding similar properties reasonably close in character to that of the real estate properties under appraisal, even though sometimes the comparability of the property taken under consideration is far from ideal [ESW 2000, p.288].

The use of transaction prices for comparable valuations in Poland is different, as according to UOGN, comparison is performed in terms of the features of the property, and the terms of the transaction are excluded by law for use as an element of comparison and in relation to which adjustments could be possible. Regulations formulated in this manner and which are applied in the sales comparison approach in Poland come down to a comparison of physical, economic and legal features of the property, and no methodological reasons preclude the possibility of comparing the conditions of trading.

The following problems requiring significant changes in the methodology of appraisal have been noted in the application of a comparison approach to operational CREs in Poland:

1) It is unnecessary to separate comparative elements into individual features of the property and the character of the transaction, as appropriate corrections, both of features of the property and characteristics of the conditions of the transaction, can be gleaned from necessity of identifying the property use from the from the aspect of demand.
2) The definition of similar properties (comparables) is incorrectly formulated [UOGN, Article 4], which in practice, results in limiting adjustments to aspects of the property without the terms of the transaction. The adjustments relate to the physical dimensions, legal and economic properties, and ignore the conditions of entering into transactions of sale of the property.

3) The CRE market with limited activity and oligopolic conditions of competition, it is not possible to meet the legal requirement of having a portfolio of real estate with unshakable market conditions regarding the conclusion of the transactions. This significantly reduces and often precludes comparisons being made due to restrictions regarding holding portfolios of similar properties.
4) There are no methodological reasons related to the valuation of good practice that would indicate that making adjustments to the terms of financing and other terms of transactions would be less reliable than a correction related to the basic market features of the property eg. location or condition of the property.
5) The use of a comparison approach in Poland is incorrectly limited to only the comparison of market features of a property. In the classic form, the comparison relates to real estate transaction prices for market-specific features contained in concrete (not always model) circumstances and the effect of comparison involving characteristics and conditions of the transaction is becomes the hypothesis on which the transaction price of the property is estimated.
6) With regards to operational CREs, the assessment of the conditions of sale should in addition also include issues related to the situation of corporations, as buyers and sellers (development strategy, going through a process of restructuring) as well as with regards to the subject of the transaction, which apart from being a property, could also relate to production units or the operational unit of corporations with intangible assets.

4. Conditions for using the concept of the Business Enterprise Value (BEV) for the valuation of special-purpose real estate of corporations in Poland

4.1. The BEV concept in the valuation of special-purpose property

The BEV concept applies to indirect methods of the valuation of special-purpose property using a profits method, leading to an estimate of the market value of the business itself, and not the market value of the property. This is the main drawback limiting its practical usefulness for property appraisals, not only in Poland [KONOWALCZUK, 2009, p. 164]. In each case, the value as a result of capitalisation includes a specialised group of operating assets (SGOA), hence the need to separate the market value of real estate and other remaining assets, including intangible assets (i.e. goodwill). The general scheme of indirect methods of the valuation of operational property is presented in Figure 4. The estimated value of the specialised group of operational assets is, in the USA and Britain referred to as the going concern value. The GE (going concern) formula is [CLARK, KNIGHT 2002, p.54]:

$$GC = RE + FF \;\&\; E + BEV \tag{1}$$

FF&F – Furniture, Fixtures and Equipment,
RE – Real state,
BEV – intangible assets (this is sometimes referred to as BV (business value) [BENSON 1999].

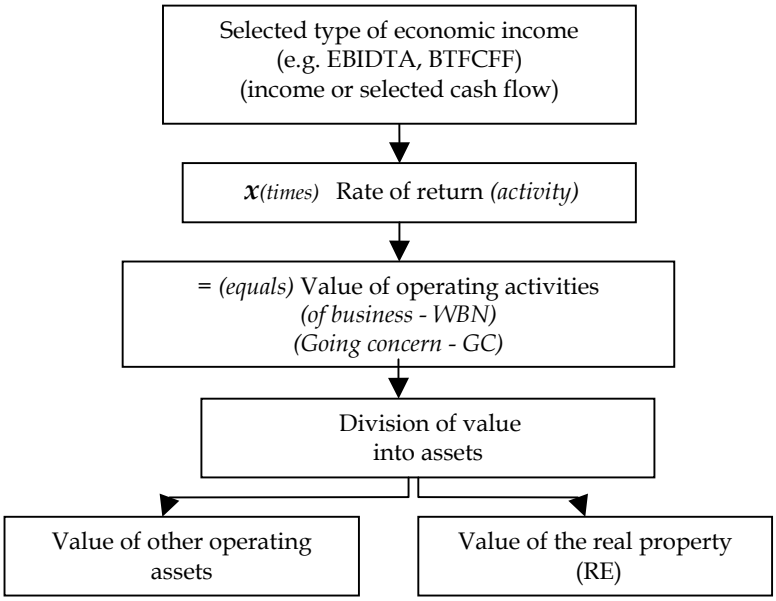

Fig. 4. Operational CRE Valuation – indirect methods. *Source*: Own elaboration.

For the purposes of business practice (such as taxation, secured debts, accounting records) it is often necessary to divide the estimated GC value into individual assets or their particular groups. Isolating the value of the property is a secondary step, having first estimated the value of the company's activities (GC). Using direct methods, the valuation of property occurs at the level of determining net operating income (NOI), which is why the valuation includes property, because the capitalised NOI is attributable to its owner [KONOWALCZUK, 2009, pp. 150 et seq.]. Indirect valuation methods assume that in certain situations and for certain practical purposes this will be possible and necessary, after assessing the value of GC and having extracted the value of the property, which usually is the most important component of the group of assets.

On one hand, research indicates that there are many doubts about the very possibility of precise separation of GC assets in order to determine a separate goodwill estimate. On the other hand, intangible assets are growing in importance in terms of the success of business in a competitive market as well as is the desire to reflect the value of such assets in the balance sheets of companies, making it necessary for the development of their valuation methodology [DUNSE, HUTCHISON, GOODACRE,p.254]. The GC concept

refers to the total value of the property, including tangible items and intangible assets. It is debatable as to whether these business elements are non-transferable - some authors argue that as long as they can not be removed, or sold separately, remain part of the property, regardless of the title they are given [LENNHOFF, 1999, pp 427-428].

The category linking GC with the company is TAB - total assets of the business, which a company has and has had at its disposal for an indefinite period of time, and are treated as a specific group of GC assets. The TAB market value is the value of all tangible and intangible business assets (operating), which are sold in total (aggregated), as the GC. Using the terminology associated with TAB, real estate value is estimated as the difference between the aggregated value of all assets and all the remaining elements appraised earlier. The manner in which a separate value of a property sold/bought on the market with the aggregated TAB is presented in Figure 5.

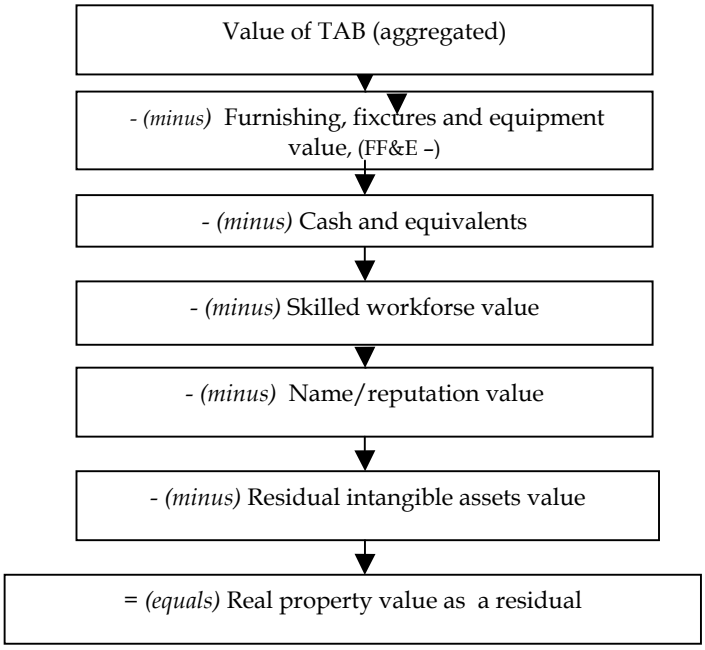

Fig. 5. The Real estate residual model - manner of separating value of a property with the aggregated TAB. *Source*: Own elaboration on the base of [WOLVERTON, LENNHOFF, VERNOR, MARCHITELLI, p. 50].

The procedure to separate property values in the TAB raises several questions concerning the appraisal of individual assets. It is only possible to apply this method if the individual valuation of assets, other than real estate, is found to be sufficiently reliable. This is particularly applicable in particular intangible

assets, whose valuation is at least as difficult as that of special-purpose operational property. Thus it seems that the premise for the application of this procedure may be the small share of intangible assets in the TAB.

The concept of differentiation of rates of return for real estate components and other elements of GC, depending on the difficulty of conversion to alternative use, is utilised in extracting the value of property [CLARK, KNIGHT 2002, p.209]. In the case of special-purpose real estate, the level of risk and the expected rate of return is inversely proportional to the ease with which it is possible to change the property's utilisation. It is understood that the housing market allows for the possibility to transform (for other uses), and therefore it is less of a risk for the owner than for the conducting of business. In such cases, the expected rate of return for real estate is relatively low and the share of RE in the GC is high. On the other hand, in terms of real estate for which a change of use is very difficult if not impossible, these are "doomed" to their current use. The value of these properties depends on the maturity of a narrow segment of the market in which they operate. By varying the rates of return for the real estate component, depending on the difficulty of conversion to alternative use, it is possible to separate the estimated value of the property from GC transfer.

The main risk factor associated with the ability to transform the function of real estate is the demand and marketability of the products / services provided by it. The probability of having to change the function of the property is a key factor in determining the risk level of a business. Thus, the greatest risk occurs in cases of real estate functioning in declining sectors, where changes in the function are highly likely (eg, traditional brickworks). In "healthy" sectors where changes in technology and production processes are not necessary, and the likelihood of their occurrence is slight, the presence of risk in terms of the difficulty to change its function is disputable [CLARK, KNIGHT 2002, pp 212-213]. The ability to change the function and the probability of having to change should be considered together, as shown in Figure 6.

The issue of change focuses, first and foremost, on the function of operational real estate, but has no material impact on investment property. The difficulty of changing function for a industrial CRE can be represented in the form of a three-stage, linear scale: 1 - the easiest to change, 3 - the most difficult to change. The scale reflects the relative difficulty or cost of the change in utilisation. Despite the subjectivity of such an evaluation in the appraisal of a particular property, market information held may allow for an objective application of the proposed scale. Table 1 presents a proposal involving the inclusion of the rate of difficulty of changing of use by the rates of return, in the appraisal.

Table 1

Difficulty in the change of use of real properties and rates of return in the real property market

Lowest	Average	Highest
1	2	3
Warehouse	Shipyard	Sewage treatment plant
Typical production	Winery	Paper-mill
Truck terminal	Railway equipment	Power plant
Stockyard	Slaughterhouse	Refinery
Rate of return 9% - 12%	Rate of return 13% - 16%	Rate of return 17% - 20%

Source: [CLARK, KNIGHT 2002, p.211]

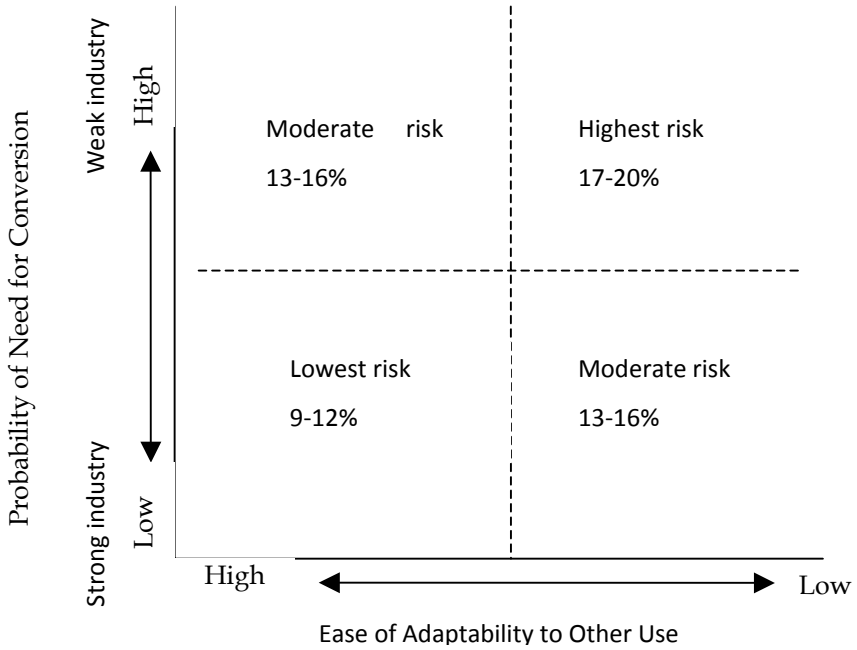

Fig. 6. The ability to change the function and the probability of having to change as a risk factor. *Source*: [CLARK, KNIGHT, p.213].

Properties at the bottom of the scale have a much lower level of risk, due to their higher potential for change in use, at a relatively low cost (in relation to the cost of new construction). At the other end of the scale includes highly-specialised real estate with a very complex structure, often specially designed to perform a specific manufacturing process. In the case of highly-

specialised production equipment, designed for a specific manufacturing process construction works are only a "protective shell" (eg, paper mill). In practice, these have no alternative except the modernisation of the production process, which usually refers to machinery and equipment and not to the property itself. In this type of specialised CRE, there is no one separate value, different from that of the business. Therefore, the rate of return is closer to the rate of return for businesses, rather than the rate of return on the real-estate market.

4.2. Appraisal of the conditions of market objectivisation in relation to loss of market value caused by external factors on the CRE market

Whether the use of indirect income capitalisation methods is acceptable needs to undergo assessment with regards to the extent to which definitions of the conditions of the market value are achieved. In practice, the appraisal is verified by the use of the definitions and interpretations of the market value [PKZW 2009, KSWP 1]. In addition, accuracy in the context of good practice as applied to measurement principles is also appraised, with particular focus on the basic principles of objectivity and anticipation [WYCENA NIERUCHOMOŚCI 2000, pp 55-65]. What is essential, however, is the assessment of the market in terms of the existence of effective demand for this type of real estate. Therefore, it is possible to specify the conditions under which it would be possible to determine the market value of the property using the profits method in an indirect manner. These conditions include the following assumptions for the valuation:

1) The real estate business functions and historical data regarding revenues and operating costs is available. This data together with the available premises and forecasts allows for a reliable estimation of the stable or variable operational income.
2) It is possible to conduct a risk assessment of the real estate business, particularly in assessing the stability of its operations, taking into account macroeconomic and competitive conditions.
3) Current utilisation of real estate is the highest and best use possible (optimal) and there is no evidence on the market for the need to adopt changes in this respect. This includes both the pressure of the real estate market to change its utilisation (eg, resulting from the high value of the land) and the pressure resulting from the conditions of competition in the industry (eg technical obsolescence resulting in lower operating revenue).
4) The state and purpose of the property, being a component of the estimated SGOA, determine the type and amount of benefits from the business activities performed.
5) Significant capital expenditure is not necessary.
6) Business activities using a specialised group of operating assets (SGOA) are conducted on a competitive (active) market. Hence, it is possible to determine the size of stable income that a typical, average effective purchaser of GC would achieve.

7) Apart from real estate, the SGOA is mainly made up of tangible assets for which there are active markets, and it is possible to determine their market prices.
8) The intangible assets of the SGOA do not have any essential meaning for the type and level of turnover and income derived from the GC, or there is a separate reliable manner in which to estimate their market value.

The result of the indirect measurement of profits method apply to real estate businesses which require allocations stemming from splitting the market value of the property on which business is carried out and the market value of other assets. With indirect methods of measuring income it is assumed that after assessing the business value of real estate it is possible to extract a reliable value of the property, which should be the most important element of the SGOA. Examples of corporate or real estate, which can be considered under the profits method may include hotels, brick factories, mines such as sand or gravel pits, sewage treatment plants, cement plants, steel mills, refineries, biogas plants, wind farms, waste incinerators, fishing ponds, tree nurseries, orchards , seedling plantations, petrol stations.

5. The usefulness of cost methods in determining the market value in a manner associated with the comparative and profit methods

In Poland, replacement costs are related to the replacement value of the property, which through the use of market comparisons and the substitution principle can form a category for the objectivisation of the real estate market [KONOWALCZUK, 2009, pp. 85 et seq.]. An important limitation for the use of cost and replacement value for the purposes of market transactions are in Poland legal requirements governing the principles of appraisal. They incorrectly show and focus on the autonomous and antagonistic nature of the market value and replacement value. Replacement value is determined for properties that are not (and can not be – Authors' note) traded on the market, in a manner antagonistic to the market value, which is used for properties that are, or may be, traded on the market. Analysis of the methods of real estate appraisal lets us show the tools linking the cost method with comparison, income or residual method (together with a variation of the cost of liquidation). It is also possible to indicate the widespread use of elements of the cost approach in real estate appraisal, which is shown in relation to CRE in Table 2.

In addition to the issue of associating tools linking market methods and cost methods, it should be noted that the strict separation of categories of market value and replacement is characteristic of unstable real estate markets, those going through a process of transition, where most property is not utilised in a manner consistent with current requirements, ie the corresponding the highest and best use. Markets in this kind of state of development are also characterised by low efficiency. With the property market functioning under such conditions, the replacement value may be of limited utility [KONOWALCZUK, 2006]. It should be

recognised that at present there is no evidence supporting the need to keep to a specific methodological solution and it is necessary to adapt to the methodologies used in developed real estate markets.

It should be noted that a number of operational CRE have such a specialised application, particularly in terms of production, that an inactive trading market results in the lack of possibility of any alternative reasonable economic use. In such cases, with the absence of reliable information regarding prices and rents on the market, it is suggested that a method of allocating the estimated value of GC on individual assets be adopted, using associated costs of replacing the property and the differing rates of return for individual assets making up the GC. In the case of properties with highly-specialised uses, the cost approach to valuation of the property may be the only solution, due to the lack of comparative information [CLARK, KNIGHT 2002, p.53].

Table 2

Use of elements of the cost approach in CRE appraisal (comparison, income and mixed approach)

Approach	Method/technique	Use of costs
Sales comparison	Pairs comparison	Calculation of weights of property's market features by costs, for example infrastructure or (technical) condition of the building or equipment
	Average price' correction	
	Statistical analysis of market	Not applicable
Income capitalisation	Investment method – simple (direct) capitalisation	Calculation of renovation costs included in operational expenditures (OE), for example on the base of replacement value. Determining insurance value in relation to OE, calculation of periodic renovation expenditures.
	Investment method – discounting cash flow	Calculation of costs of renovation, reconstruction, modernisation based on building replacement value. Determining insurance value in relation to OE.
	Profits method	as for Investment Method
Mixed	Residual method/ All techniques	Cost of construction works including of construction, reconstruction, extension, superstructure, installation or renovation of a building
	Replacement value method liquidation / All techniques	Costs of liquidation of improvements affixed to the land. Calculation of salvage value of the improvements
	Land value estimation indicators	Not applicable

Source: Own elaboration.

It is essential then that indirect methods for profit are used in order to determine consumption in the cost approach, the economic depreciation with regards to the effects of their operations must be taken into account. This requires the use of the cost approach in such a manner so as to illustrate market conditions, thus leading to the possibility of investigating the surrogate market value. For the appraisal, the sector to which the operational CRE belongs, requires the determining of the value of wear and the length of time the property has been used. The required rate of return for these types of buildings is also more concerned with machinery and equipment and not just property.

In this context, in relation to the appraisal of operating CREs, a method that becomes particularly important is that of depreciated replacement cost (DRC), which uses a cost-specific manner to determine fair value. The depreciated cost of the replacement cost approach is applied when determining the value of specialised assets using the substitution principle [MIĘDZYNARODOWE STANDARDY WYCENY 2005, p. 233]. In Polish conditions, the issue with using the DRC method is that it requires the evaluation of significant differences in concepts related to the classification of the types of values and approaches to valuation used by the Ministry of the Interior and the national principles of valuation [KONOWALCZUK 2009, pp. 196 et seq.]. Use of the DRC method for determining fair value is restricted to specialised assets when the amount of direct market data (sales and rental rates) is limited. In order to determine which assets belong to the specialised group, it is necessary to carry out a complete classification of the entity's assets with a separate division of the basic assets: operating, investing , and stocks. Depreciated replacement cost can only be used for the valuation of operating assets. The DRC method is the most useful in determining fair value for property shaded in Figure 7, which is based on the principles of appraisal by substitution and anticipation.

Operating	Basic	General use
		Special purpose
		Under construction
	Redundant	Permanently redundant for basic activity **(special purpose)**
		Flats and social

Fig. 7. Usefulness of DRC for CRE appraisal. *Source:* [KONOWALCZUK, RAMIAN 2005, p. 473].

DRC in the CREO should be treated only as an acceptable and not the primary method of appraisal. However, the relationship with the hypothetical assumption of transactions between willing parties acting in a rational manner requires the implementation of specific activities closely related to the determination of depreciation, which involve the following issues:

- optimisation, leading "to determine the least cost to replace [..]", reflecting that "it may be outdated from a technical standpoint, too complicated or the technology may have more potential than required." In determining the depreciated replacement cost, „optimization is used in relation to the excess capacity of the asset and its features testifying to obsolescence "(MSW 2005, 2006, WI8 point. 3.8);
- the profitability threshold, determined by performing the test, "which should be used by the operator to check whether the asset can be valued using the depreciated replacement cost" (MSW 2005, 2006, WI8 point. 3.4).

Moreover, in taking into account the value of the land for current and alternative usage together with the concept of modern equivalent means, an algorithm is obtained for a method of indicating a reasonable estimate of fair value. Therefore, in the absence of known risk factors, the changes in use resulting from:

- pressure on the real estate market pointing to better use,
- a loss of competitiveness in the business' activities,
- a strategic decision to terminate the current business within the corporate structure,

the DRC method can independently or in a manner associated with the indirect profits method, be used to determine the market value of a CREO. In the case of CREOs in Poland, there are problems in applying the cost approach, requiring significant changes in the appraisal methodology as.

In the case of CREOs in Poland, there are problems in applying the cost approach, requiring significant changes in the appraisal methodology as:

1) Not suitable for the development of laws implementing the division between market methods and cost methods on the CRE market leading to the replacement value, which has been found to unquestionably be an absolutely non-market category.
2) Indisputable connections between cost and market methods is accompanied by more pressing issues concerning the requirement for co-use of associated valuation methods in attempting to estimate CREOs on less active markets.
3) If DRC is used then associated comparison methods must be employed as well as indirect profits method with regards to land as well as indirect methods in determining depreciation. In this case, the DRC procedure satisfies the DRC requirement to check the current usage, as the highest and best use and the result of the appraisal is objecti.

6. Summary and conclusions

With reference to the issues presented in this article for determining the market value of CREOs, it can be concluded that the basic issues concern:

1) The reliability of comparative data in relation to the trade of real estate, SGOA, GC (which includes terms of the transaction).

2) The issue of objectivisation by using other aspects to measure value other than prices, rents, ie income from operations and costs.

The examples presented in Table 3 relate significantly to sales transactions, but valuation parameters such as rent and lease terms, operating income, rate of return, costs can be treated similarly. The lack of suitability of some of the prices indicated in Table 3 applies only to direct use of prices for appraisals, under the present conditions of legally-institutionalised appraisal process in Poland. This does not mean that "redundant" costs cannot economically provide reliable market value, because with modifications relating to the subject and marketing conditions, they could, in many cases be used for comparison. This is a formal obstacle, yet in Poland, ie regulations including a definition of similar (comparable) property. In addition, an essential element of CREO appraisal should include variants determining usage. In accepting the premises for appraisals referring to the continuation of operations at a stable level of revenue, without the need for large capital investment, is associated with low business risk but requires reference to the alternative ie. change in function through the real estate market.

Table 3

Suitability of sales prices for comparative determining market value of CREO in Poland

Subject of sales	Conditions of transaction	Suitability for determining market value of CREO
Operating /operational real estate	Market	Yes
Operating/ operational real estate	Forced sale (eg by a trustee in bankruptcy, liquidation of redundant assets)	No
Operating / operational real estate	Sales price includes non-market settlements	No
Specialised group of operating assets (SGOA)	Market	Limited. Useful for comparative valuation of SGOA.
Specialised group of operating assets (SGOA)	Non-market due to conditions of coercion or settlement in transaction price	Not useful
Real estate business (in the form of operational unit of enterprise)	Market	Not useful. May form a starting point for residual method of valuation by BEV extraction
Real estate business (in the form of operational unit of enterprise)	Non-market	Not useful
Financial interests in the company (or its	Market Non-market	Not useful

Subject of sales	Conditions of transaction	Suitability for determining market value of CREO
operational unit), where operating real estate is the main		

Source: Own elaboration.

In taking into account real estate market pressures causing changes in functions, it should be noted that the indirect profits method should be employed with regards to properties with a low or medium risk and low ability to change function. In the absence of an indirect profits method, it is necessary to use methods based on production costs, requiring the use of DRC procedures that could meet the requirements of objectivisation. The present research indicates that current solutions in the methods of appraising CREOs create institutional and legal barriers limiting the development of this segment of the market.

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5. SPATIAL ANALYSIS OF LOCAL REAL ESTATE MARKET ACTIVITY - THE EXAMPLE OF THE CITY OF OLSZTYN

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Key words: *real estate market, market activity, kernel density estimation*

Abstract

The main aim of this study was to propose a method for a spatial analysis of local real estate market activity, measured in terms of the number of concluded property transactions, with the use of non-parametric estimation methods. The paper discusses basic principles of modeling the density of point phenomena using kernel density estimators, and it analyzes the correlations between selected market factors and market activity in the spatial context. Special emphasis was placed on the spatial distribution of the number and density of property transactions in various periods of time. A correlation was determined between the activity of the real estate market and the rate of price change indicator. A geographically weighted regression model with a temporal variable was used. The outcome was a map illustrating the activity of the local property market. Attempts were made to determine factors that influence market activity.

1. Introduction

Information about real estate prices and values is one of the key factors that determine effective decision-making in property management. Nonetheless, such information cannot be used to diagnose the market situation because prices and values are the outcome of complex processes that shape demand and supply on the property market. The results of spatial analyses of market processes which are characterized by various intensity in space are crucial to understanding the specificity of local property markets. Such results can be represented in cartographic form to illustrate market activity in terms of the number of transactions in time and space. Information about the spatial diversity of market activities supports evaluations of more complex phenomena, such as location-driven demand patterns or local determinants of price trends.

The main aim of this study was to propose a method for the spatial modeling of local market activity with the use of kernel density estimators, and to analyze the correlations between selected market factors and market activity in the spatial context on the example of the city of Olsztyn.

Real estate markets are characterized by non-homogeneity which is expressed by generic, spatial and qualitative variability. Variations in demand, supply, prices,

rents and market activity, including the number of transactions, are observed on every market which is identified based on the adopted criteria [KUCHARSKA-STASIAK 2005]. The condition and functioning of local property markets are largely determined by the economic resources of the region, including sociological and demographic factors, growth indicators, the achieved level of development and future prospects, as well as non-economic factors that shape the demand for and supply of real estates [TROJANEK 2009]. Development trends on the property market are conditioned by local factors as well as changes in the external environment. The specificity of the relationship between supply and demand, which is rarely balanced over longer periods of time, should be taken into account. This short-lived balance can result from the characteristic attributes of real estate (low liquidity, indivisibility, permanence in place and time) and the property market (market cycles, low effectiveness, high degree of government intervention). On the macro scale, market changes can also result from political and economic transformations, the availability of mortgage loans, Poland's accession to the European Union or the global financial crisis [BEŁEJ 2011].

In the spatial context, variations in market activity are associated mainly with social and economic factors that affect living standards, incomes and local economic performance. On local markets, spatial variations result from local factors such as planning requirements, location trends, individual preferences, security concerns, prestige of an area or estate. Market activity is measured not only in terms of the number of completed transactions, but also in terms of sold property area. The area and the price paid for property can be indicative of a given region's investment potential.

2. Materials and Methods

The determination of a given phenomenon's density in space is often fraught with problems because such phenomena may take on the form of points or they can be identified only in selected measurement points. If this is the case, the density of a given phenomenon would be defined as the number of points relative to a given unit of area, e.g. an area limited by administrative boundaries. A similar solution proposes to divide the investigated area into basic fields and to determine density separately for each field. In this case, however, the end result would be largely influenced by the division method (size of the basic field and its boundaries). If the density of a given phenomenon (in this case – the number of transactions per unit of area) is not discreet, interpolation methods can be applied. The difference between density estimation and interpolation is that interpolation procedures recreate the value of a continuous variable based on a limited set of measurement points, whereas estimations of distribution density fit a continuous area to a set of data describing discreet objects [LONGLEY ET AL. 2005]. Distribution density can be determined by kernel density estimation which openly accounts for spatial resolution. This estimation technique models a smooth surface where

density is represented by the concentration of points in the surrounding area [PORTA ET AL. 2009].

A kernel probability density estimator is defined by the basic formula of [SILVERMAN 1986, KULCZYCKI 2005]:

$$\hat{f}(x) = \frac{1}{mh^n} \sum_{i=1}^{m} K\left(\frac{x - x_i}{h} \right) \tag{1}$$

where:

m - size of random sample

h - positive real number (smoothing parameter)

K - function that satisfies the following requirements:

$$\int_{IR^n} K(x)dx = 1 \tag{2}$$

$$K(x) = K(-x) \quad \forall \quad x \in \mathrm{IR}^n \tag{3}$$

$$K(0) \geq K(x) \tag{4}$$

The above function has to be symmetrical in relation to zero, and the global maximum should fall at this point. Kernel density estimation of a one-dimensional variable (m=5) is presented in Figure 1.

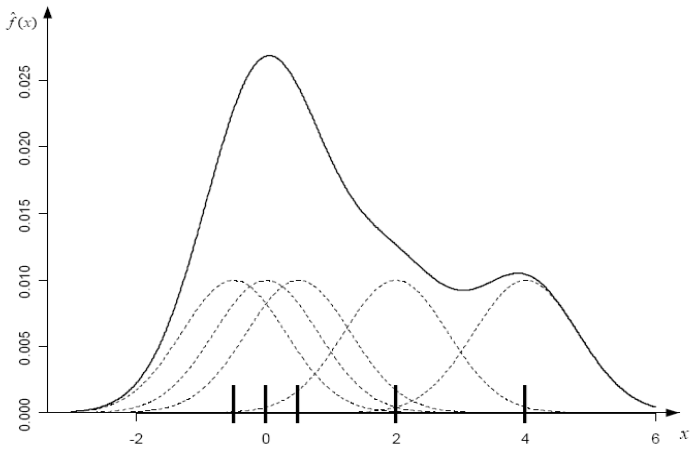


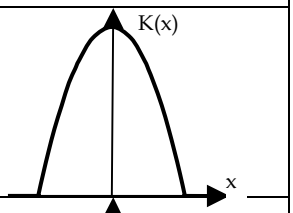
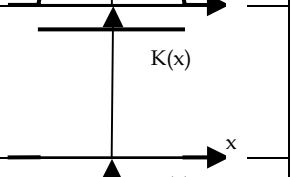
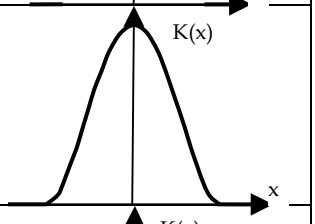
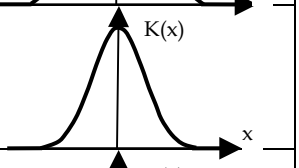
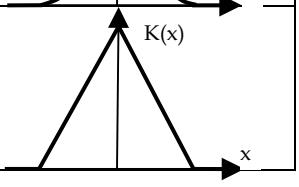
Fig. 1. Graphic illustration of the density function on the example of a one-dimensional variable. *Source*: own study based on STĘPIEŃ [2010]

The density function is determined by the distance parameter. An increase in distance flattens the function curve. In density estimation, every measured object is replaced by the value calculated with the probability density function, and values of the function are added to produce the aggregated area of a continuous density field [LONGLEY ET AL. 2005].

Various types of kernel functions, such as Epanechnikov (optimal), uniform, biweight and normal functions, are used, subject to the research objective, type of data and expected results. The most popular types of kernel functions are shown in Table 1.

Table 1

The most popular types of kernel functions

Kernel type	K(x)	Curve
Epanechnikov	$\begin{cases} \frac{3}{4}\left(1-x^2\right) & \text{for } x \in [-1, 1] \\ 0 & \text{for } x \in (-\infty, -1) \cup (1, \infty) \end{cases}$	
Uniform	$\begin{cases} \frac{1}{2} & \text{for } x \in [-1, 1] \\ 0 & \text{for } x \in (-\infty, -1) \cup (1, \infty) \end{cases}$	
Biweight	$\begin{cases} 3\pi^{-1}\left(1-x^2\right)^2 & \text{for } x \in [-1, 1] \\ 0 & \text{for } x \in (-\infty, -1) \cup (1, \infty) \end{cases}$	
Normal	$\begin{cases} \frac{1}{\sqrt{2\pi}} \exp\left[-\frac{x^2}{2}\right] & \text{for } x \in [-1, 1] \\ 0 & \text{for } x \in (-\infty, -1) \cup (1, \infty) \end{cases}$	
Triangle	$\begin{cases} 1 - \lvert x \rvert & \text{for } x \in [-1, 1] \\ 0 & \text{for } x \in (-\infty, -1) \cup (1, \infty) \end{cases}$	

Source: own study based on Kulczycki [2005].

The kernel function can be flexibly selected, and the above is of great practical significance in solving complex applicational problems [KULCZYCKI 2005]. Although the kernel function is often associated with a normal distribution function, it is only an estimation of the latter in many applications (e.g. ArcGIS, SAGA GIS). A normal kernel function is expressed as:

$$K(x) = \frac{1}{\sqrt{2\pi}} \exp\left[-\frac{x^2}{2} \right] \tag{5}$$

When x is greater than 3, the above function takes on very small values, and its curve is practically flat. A kernel function with the above properties can be approximated with the use of a biweight kernel, also known as a quartic kernel, as proposed by Silverman [1986]:

$$K(x) = \begin{cases} 3\pi^{-1}\left(1\text{-}x^2\right)^2 & \text{for} \quad x \le 1 \\ 0 & \text{for} \quad x > 1 \end{cases} \tag{6}$$

where x is the distance from the "kernel", i.e. the point at which density is estimated.

As a result, the kernel density estimator takes on the following form:

$$\hat{f}(x) = \frac{1}{mh^2} \sum_{i=1}^{m} 3\pi^{-1} \left(1 - \left(\frac{x}{h} \right)^2 \right)^2 \qquad \text{for} \quad \text{x} \le \text{h} \tag{7}$$

and

$$\hat{f}(x) = 0 \qquad \text{for} \quad \text{x} > \text{h} \tag{8}$$

In this case, smoothing parameter *h* is also the radius of the range in which the value of the elementary function is greater than zero. The value of the smoothing parameter has a decisive impact on the quality of the kernel estimator. The density distribution of property transactions determined by different values of the smoothing parameter is visualized in Figure 2.

Very low values of the smoothing parameter can produce a significant number of local extremes which contradict the attributes of real populations. When parameter *h* takes on very high values, the estimator is excessively smoothed, and it masks the specific features of the analyzed distribution [STĘPIEŃ 2010].

Kernel estimation has been used for many years, in particular in system analyses [KULCZYCKI 2005], but very few studies discuss its use in spatial analyses of the property market. The discussed method can be deployed to estimate population density and structure [GIBIN ET AL. 2007], the access to shopping centers [PORTA ET AL. 2009] and public health care facilities [SPENCER, ANGELES 2007]. The process of modeling the density of spatial phenomena supports the determination of mutual correlations between those phenomena, for example the relationship between the spatial configuration of the transport system and various social and economic indicators characterizing the local community [PENN, TURNER 2003].

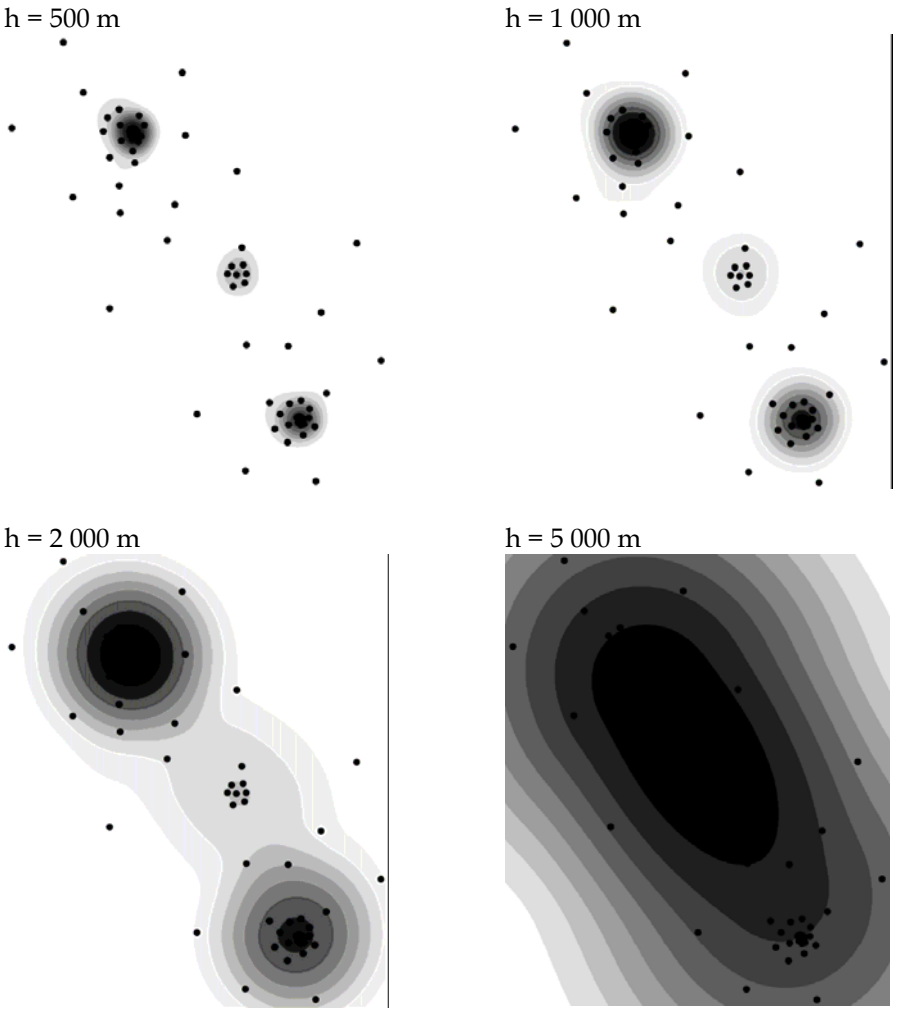


Fig. 2. Visualization of density distribution of property transactions, subject to different values of the smoothing parameter. *Source*: own study.

The use of kernel estimation methods in spatial analyses of the real estate market also supports evaluations of the intensity of the analyzed phenomena. The discussed method facilitates the development of maps that document the number of transactions, road traffic intensity, development intensity and ownership changes in a spatial approach.

3. Results

The activity of the property market was surveyed in the city of Olsztyn based on analyses of 1400 transactions involving undeveloped land plots which were

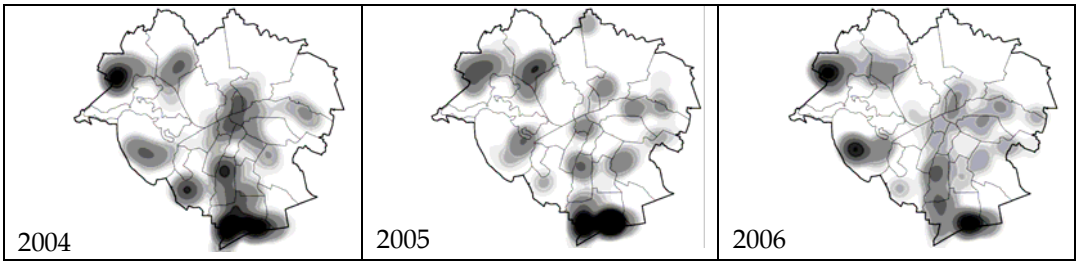
concluded in 2004 – 2010. Olsztyn has a relatively complex spatial structure owing to its natural features (abundance of lakes and forests) and local history. The predominant types of residential construction in the city center are high-rise apartment buildings dating back to the 1960s and 1970s and single-family housing estates. Olsztyn's urban space is a relic of state intervention and central planning. The complex character of urban space significantly affects planning and investments on the real estate market. The activity of Olsztyn's property market in the analyzed period is shown in maps in Figure 3.

A preliminary analysis revealed that the number of property transactions in Olsztyn decreased gradually from more than 300 in 2004 to less than 100 in 2010. The spatial distribution of market activity was analyzed by kernel estimation with the quartic kernel function and a search diameter of 1 km. The highest level of market activity was observed in the southern part of the city (estates of Jaroty and Generałów) as well as in the estate of Gutkowo in north-eastern Olsztyn. Areas where a relatively high number of transactions were concluded have a high growth potential because they are covered by local zoning plans. The number of transactions per area unit largely reflects the demand for land in each of the surveyed locations, and it can be a significant determinant of trends and directions in the city's spatial development.

The number of transactions alone is not always an accurate measure of real estate market activity due to significant differences in property area or the prices paid. For the above factors to be included in a density analysis, the kernel density estimator has to take on the following form:

$$\hat{f}(x) = \frac{1}{mh^n} \sum_{i=1}^{m} P \cdot K\left(\frac{x - x_i}{h}\right) \tag{9}$$

where P is the value of the "population" at a given point, i.e. an additional parameter describing the area of sold property or the price paid for that property.



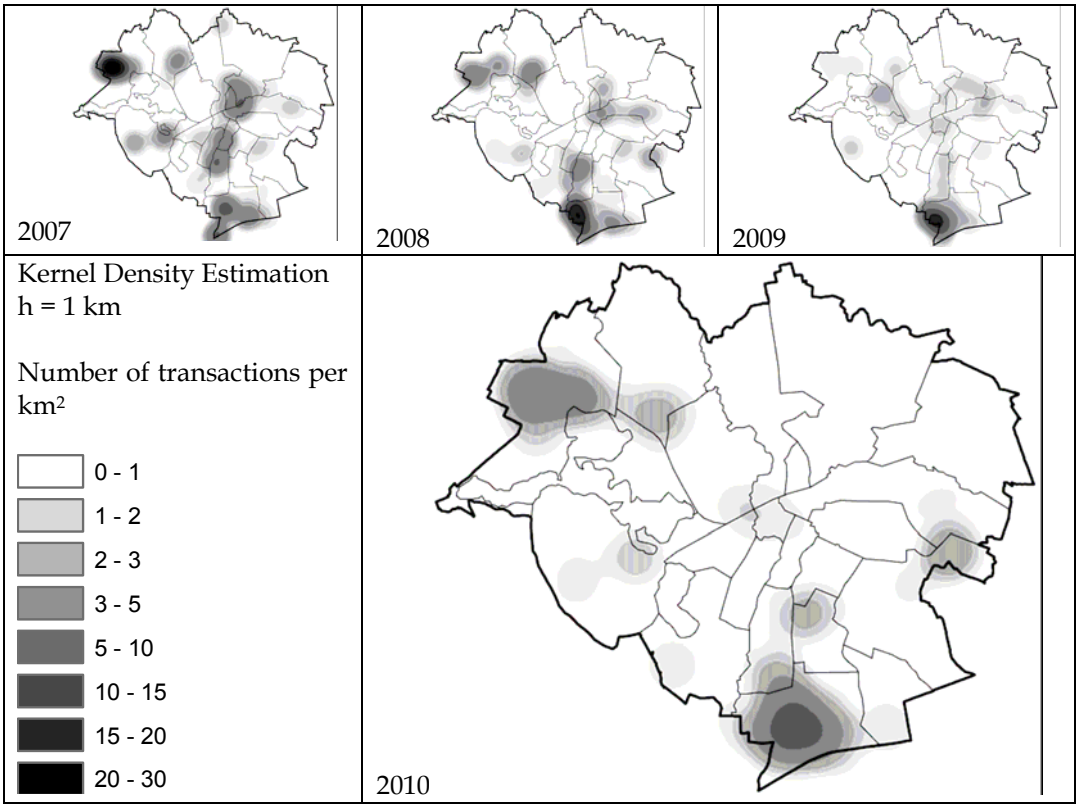


Fig. 3. Activity map of Olsztyn's market of undeveloped land property in 2004 – 2010. *Source*: own study.

The spatial distribution of the total area of sold property and transaction prices per 1 km², determined based on formula (9) with the quartic kernel function, are shown in Figures 4 and 5. As previously, the search diameter was adopted at h = 1 km.

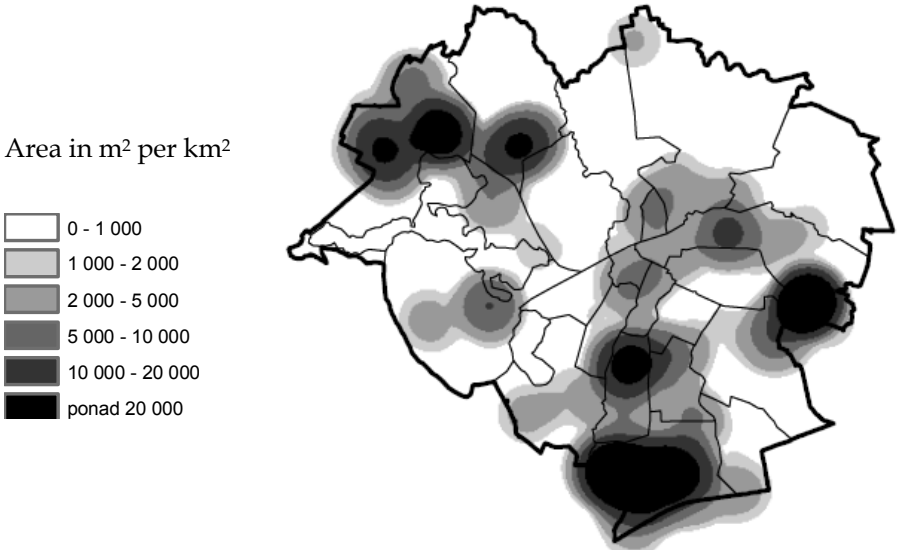


Fig. 4. Activity on the market of undeveloped land plots in Olsztyn in 2008 – 2010 based on the area of sold property. *Source:* own study.

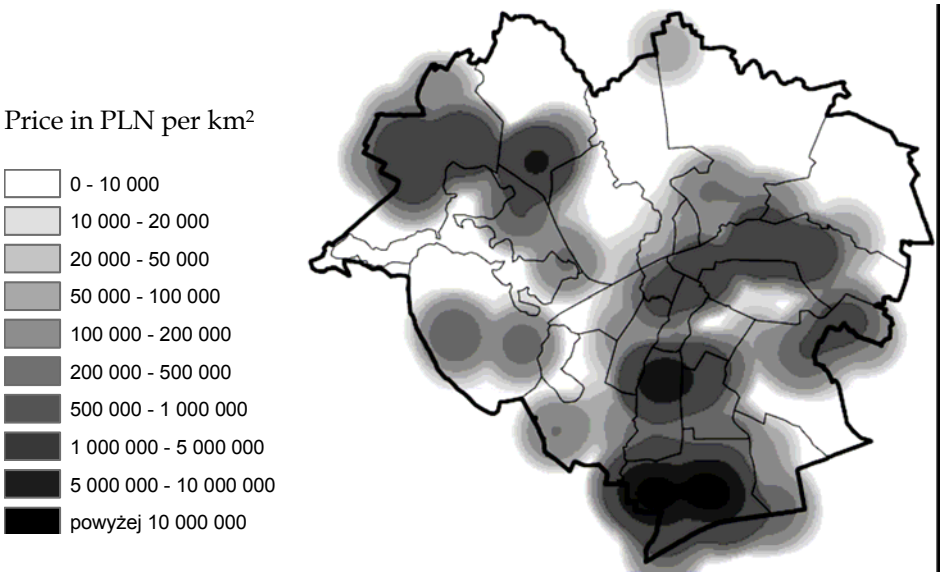


Fig. 5. Activity on the market of undeveloped land plots in Olsztyn in 2008 – 2010 based on the prices paid for property. *Source:* own study

Information about higher levels of market activity in certain areas could suggest the presence of new local factors that affect the demand for (or the supply of) property. Whereas the relationship between demand and supply on the local market is shaped by economic, legal and demographic factors, spatial variations in demand and market activity in that area result mainly from the physical attributes of property [FANNING 1994]. This implies that the activity of the local property market is influenced by local changes in attributes that determine the attractiveness of a given location (such as infrastructure improvements). In consequence of those changes, local transaction prices could increase at a faster rate than the prices in other areas. Therefore, it can be assumed that the activity of the market of land property measured in terms of the number of transactions should be significantly correlated with the rate of change indicator in the prices of land property over time. To validate the above hypothesis, spatial variations in the rate of price change indicator were determined and compared with transaction density calculated by kernel estimation. The rate of change indicator in property prices was determined by geographically weighted regression. The applied methodology was described in the author's previous work [CELLMER 2010]. The spatial distribution of the rate of price change indicator in 2008 – 2010 is presented in Figure 5, and the correlations between the rate of price change indicator and the activity of the land property market measured in terms of the number of transactions per unit of area are shown in Figure 6.

Fig. 5. Spatial distribution of the rate of price change indicator on the market of land property in 2008 – 2010. *Source*: own study.

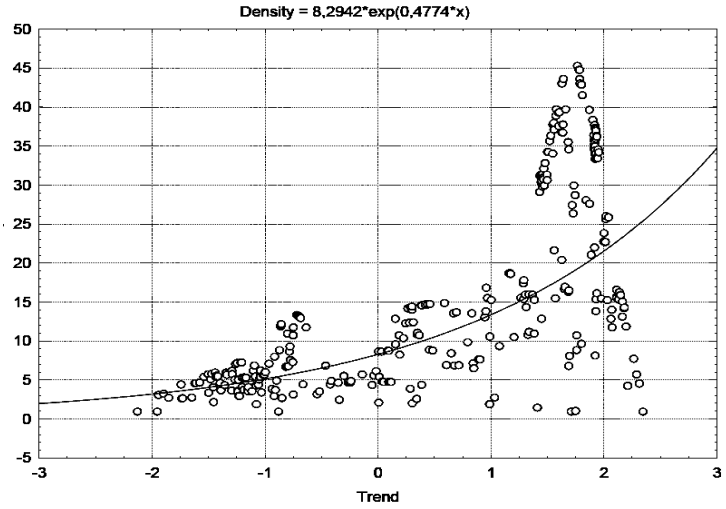


Fig. 6. Evaluation of correlations between the rate of price change indicator on the land property market and market activity measured in terms of transaction "density". *Source*: own study.

Pearson's coefficient of correlation between the rate of price change indicator and transaction density reached 0.68 at a significance level below 0.001 (but the resulting correlation was not linear). In areas with the highest number of transactions, the monthly price change indicator reached nearly 2%, while in areas where few transactions were completed, the value of the analyzed indicator was low.

4. Conclusions

A map illustrating the activity of the property market constitutes a vital source of information in the process of creating a municipality's development strategy and planning studies. The resulting information is also highly useful for property valuation experts and real estate agents. The discussed analytical method supports the modeling of spatial phenomena on the real estate market, in particular in the process of developing property value maps.

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6. SPECIAL VALUE OF LANDFILL LAND

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Key words: m*arket value, non-market value, landfill land*

1. Introduction

A two-phase study of the "Inventorying of communal objects of regional significance within the Goriska statistical region" and of the "Expert bases for the setting up of a regional waste-management system" (2009) has shown that the existing processing equipment of the sanitary landfills within the Goriska statistical region has been dispersed and uneconomical. Thus, it is imperative from the organisational as well as economic point of view to centralise the processing and treatment of mixed communal waste, segregated from the collected fractions, and of the slush generated by the communal purifying plants. To this end, a site for a new waste-management regional centre within the Goriska statistical region encompassing 13 municipalities had to be found and pinpointed.

Likewise, the operative waste-removal programme with the objective of decreasing the quantities of biologically degradable components (for the periods 2004-2008 and 2008-2012) defines the Goriska statistical region as a uniform waste-management region within the Republic of Slovenia. Analysis results (Eligibility and feasibility study, 2003) have shown that the existing sanitary landfill of Stara gora at Nova Gorica has been the only one in the entire region with a long-term satisfactory depositing capacity, i.e. >1.500.000 m^3, and has been disposing of ample space, adequate for the installation of non-hazardous waste processing and treatment facilities.

The existing sanitary landfill of Stara gora has been pinpointed as the site for the envisaged waste-management centre also on account of its relative proximity to areas within the region that do not dispose of a properly managed waste-removal and -depositing system. Furthermore, the site pinpointed for the envisaged waste-management centre is relatively cost-effective and advantageous also from the point of view of transport logistics, given the new highway connections.

Thirteen (13) municipalities have been involved in developing the investment project of the waste-management centre. The Municipality of Nova Gorica has been investing into the investment project of the new waste-management centre the existing land, including all the improvements. Point at issue is: what is the estimated value of land invested by the Municipality into the project of construction of the waste-management centre on the date of 15.9.2011 and, to be

more precise, which value is to be evaluated, and in what manner shall it be substantiated and assessed.

2. Basis of valuation

2.1. Market and non-market values according to International Valuation Standards (IVS)

In deciding on the value for valuation we are going to lean on the International Valuation Standards (hereinafter referred to as: IVS) (2011). IVS recognizes that a basis of value is a statement of the fundamental measurement assumptions of a valuation. It describes the fundamental assumptions, on which the reported value will be based, e.g. the nature of the hypothetical transaction, the relationship and motivation of the parties and the extent to which the asset is exposed to the market. The appropriate basis will vary depending on the purpose of the valuation.

A basis of valuation can fall into one of three principal categories (IVS, 2011):

The first is to indicate the most probable price that would be achieved in a hypothetical exchange in a free and open market. Market value falls into this category.

Market value under IVS is the estimated amount for which an asset should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

The second is to indicate the benefits that a person or an entity enjoys from ownership of an asset. The value is specific to that person or entity, and may have no relevance to market participants in general. Investment value and special value as defined in these standards fall into this category.

Special value is an amount that reflects particular attributes of an asset that are only of value to a special purchaser. A special purchaser is a particular buyer for whom a particular asset has special value because of advantages arising from the ownership that would not be available to other buyers in the market.

Special value can arise where an asset has attributes that make it more attractive to a particular buyer than to any other buyers in the market. These attributes can include the physical, geographic, economic or legal characteristics of an asset. Market value requires the disregard of any element of special value because at any given date it is only assumed that there is a willing buyer, not a particular willing buyer. When special value is identified, it should be reported and clearly distinguished from market value.

The third is to indicate the price that would be reasonably agreed between two specific parties for the exchange of an asset. Although the parties may be unconnected and negotiating at arm's length, the asset is not necessarily exposed in the market and the price agreed may be one that reflects the specific advantages or disadvantages of ownership to the parties involved rather than the market at large. Fair value as defined in the IVS falls into this category.

Fair value is the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties. Fair value requires the assessment of the price that is fair between two identified parties, taking into account the respective advantages or disadvantages that each gain from the transaction. It is commonly applied in judicial context. In contrast, market value requires that any advantage, which would not be available to market participants generally, should be disregarded.

2.2. Influence of parties on selection of estimated value

Focus of the definition of market value is on the fact that "an asset should be exchanged between a willing buyer and a willing seller".

According to IVS, a willing buyer refers to one who is motivated but not compelled to buy. This buyer is neither overeager nor determined to buy at any price. This buyer is also one who purchases in accordance with the realities of the current market and with current market expectations, rather than in relation to an imaginary or hypothetical market that cannot be demonstrated or anticipated to exist. The assumed buyer would not pay a higher price than the market requires. The present owner is included among those who constitute "the market".

A willing seller is neither an overeager nor a forced seller prepared to sell at any price, nor one prepared to hold out for a price not considered reasonable in the current market. The willing seller is motivated to sell the asset at market terms for the best price attainable in the open market after proper marketing, whatever that price may be. The factual circumstances of the actual owner are not part of this consideration because the willing seller is a hypothetical owner.

In addition, the estimation of market value excludes any element of special value. Therefore, stress is on "an arm's length" transaction, the one between parties who do not have a particular or special relationship, e.g. parent and subsidiary companies or landlord and tenant, which may make the level of the price uncharacteristic of the market, or inflated because of an element of special value. The market transaction is presumed to be between unrelated parties, each acting independently.

References in IVS to market participants are to the whole body of individuals, companies or other entities that are involved in actual transactions or who are contemplating entering into transaction for a particular type of asset. The willingness to trade and any views attributed to market participants are typical of those of buyers and sellers, or prospective buyers or sellers, active in a market on the valuation date, rather than those of any particular individual or entity.

In undertaking a market-based valuation, matters that are specific to the current owner or to one particular potential buyer are not relevant because both the willing seller and the willing buyer are hypothetical individuals or entities with the attributes of a typical market participant. These attributes are discussed in the conceptual framework for market value. The conceptual framework also requires

the exclusion of any element of special value or any element of value that would not be available to market participants generally.

2.3. The most appropriate basis of valuation

The purpose for which the valuation is being prepared shall be clearly stated, e.g. the valuation is required for loan security, to support a share transfer or to support an issue of shares. The purpose of the valuation will determine the basis of value. In addition, it is important that valuations are not used out of the context or for purposes for which they are not intended.

The valuation basis must be appropriate for the purpose. The source of the definition of any basis of value used shall be cited or the basis explained.

Consideration shall be given as to the relevant and appropriate valuation approaches. The most appropriate approach or method will depend on having considered the:

- adopted basis of value, determined by the purpose of valuation,
- availability of valuation inputs and data,
- approaches or methods used by participants in the relevant market.

More than one valuation approach or method may be used to arrive at an indication of value, especially where there are insufficient factual or observable inputs for a single method to produce a reliable conclusion. Where more than one approach and method is used, the resulting indications of value should be analysed and reconciled to reach a valuation conclusion.

3. Landfill value as input by municipality into investment project

Landfill as such generally constitutes a specialised property. Specialised properties are properties that are more heterogeneous than homogeneous. That is, the nature of the property is such that the type concerned does not transact sufficiently to be able to determine value by comparison of previous sales. In such circumstances the valuer needs to resort to valuation model that addresses the underlying fundamentals of that property so that its value can be determined by reference to the purpose of valuation and the type of seller and buyer involved in the process of transaction.

In our particular case, the valuation refers to land constituting an input by the Municipality into the investment project of developing a regional waste-management centre. According to IVS, the valuation involves a special value of land as the buyers – the other municipalities within the Goriska statistical region – have been known. Preceding studies have shown that, save for this particular site, the municipalities within the Goriska statistical region do not have a better site for a landfill at their disposal.

Land intended for landfill, as asset in this case, has special value also because of advantages arising from the ownership that would not be available to other buyers in the market. The estimated special value of land may exceed the market value of

that same land under current use. According to IVS, the difference between the estimated special value and the market value shall be appropriately substantiated.

It may be asserted then that the special value of land equals the sum of:

- land value per se,
- non-depreciated portion of investments into improvements to be used in the new waste-management centre, and
- external costs to be incurred upon the Municipality by the new waste-management centre.

3.1. External costs as part of special value

External costs are to be incorporated into the creation of the input evaluation model. HIRSHFELD et al (1992) find that many landfill owners significantly underestimate the total cost of landfill disposal by considering only land and operating costs, ignoring external physical and social costs associated with landfills.

Physical impacts are those resulting directly from the products generated by the landfill (HIRSHFELD et al, 1992). Contamination of ground waters and surface waters by landfill leachate, migration and atmospheric release of landfill gases and fires are all physical impacts associated with landfill. Ideally, physical impacts on the surrounding environment could be eliminated by sealing the entire landfill structure with a perfectly impermeable material. However, this is an ideal case only.

Costs of physical impacts are evaluated as the costs of the best reasonable technologies available for containing, collecting and treating the potential pollutants. Costs to the environment that are difficult to quantify monetarily are calculated using the costs for the existing environmental control system.

Social impacts are those inflicted upon society by the landfill, regardless of whether the landfill produces any physical impacts. Such impacts include the increased traffic, visible air pollution, noise, aesthetic degradation and limited land utility.

Social impacts' cost has three components, including (HIRSHFELD et al, 1992):

- cumulative decrease of surrounding property values,
- cost associated with land utility effects, known also as "opportunity cost", and
- "hastening cost".

It may be assumed that the impact of a landfill on surrounding property values reflects the local effects of altered traffic patterns, air pollution, visual unattractiveness and noise pollution. Thus, if property values prior to the landfill's existence are well known, the cumulative cash value of most landfill social impacts (i.e. traffic, air, noise and aesthetics) may be calculated by measuring the decreases in property value.

Opportunity cost is the value of goods or services foregone by the production of some other goods or services with the same resources. Thus, any reduction in

property value caused by a landfill's presence is an opportunity cost. Land utility effects may be represented by opportunity costs. Landfill opportunity cost has two components, including:

- landfill site as such, and
- any surrounding area whose future use is somehow affected by the presence of the landfill.

Typically, a government must either purchase or condemn (and then purchase) the land on which it builds a landfill. Once the government owns the property, no property taxes are collected on it for the entire duration under public ownership. The first component of the landfill's opportunity cost is the sum of the annual property tax revenues that the government will fail to collect for the land as long as it is publicly owned. The costs of surrounding areas may be evaluated similarly to the site opportunity cost.

A landfill imparts a *hastening cost* on its owner, because each ton of waste deposited in the landfill hastens the moment at which a new landfill must be opened. The hastening cost is defined as the interest that could be earned on the initial investment required for a replacement facility, over a period by which the disposal of a current ton of waste hastens that investment.

Only the most significant external costs that may affect the landfill operation costs are enumerated here. In every particular case, the impacts of the above factors on the value of property under evaluation need to be analysed. Numerous analyses of landfill impacts on the surrounding property have been presented in relevant literary sources.

3.1.1. Landfill impact on property value

Property value has invariably been impacted, whether positively or negatively, by the surrounding land uses. One such externality is a landfill. Public concern has been raised that close proximity to a landfill has a negative impact on property values. Modern laws, restrictions and modern techniques, however, make it possible to reduce or remove the negative impact of a landfill during its useful life (BLEICH, 1991).

In theory, FREEMAN (1979) surveys the issues involving the hedonic price models used to estimate the impact of environmental factors on housing prices.

There is a significant amount of literature dealing with a theoretical framework for analysing the neighbourhood effects of an externality such as a landfill. Results of applicative work show differing results. CARTEE (1989) reviewed several unpublished studies examining the impacts of sanitary landfills on property values. As the findings were not entirely consistent, the general conclusion appears to suggest that sanitary landfills do not have a large impact on property development and prices. However, in a single case, developing a sanitary landfill required a sufficiently large investment into infrastructure improvements, so that an increase in property values actually took place. BLEICH (1991) finds that a landfill, provided that it is well designed and managed, can be a good neighbour

and have no statistically measurable negative impact on the surrounding property values.

From the theoretical point of view, presence of a landfill can impact property values from the side of supply, as well as demand. On the demand side, buyers who are aware that a landfill exists in the area and who are concerned about the potential nuisance and health problems will either avoid these properties or be induced to purchase them only at significant discount. Whether the health problems are real or imaginary, cannot be considered a critical issue, as persons frequently tend to act on the basis of perceptions, rather than facts.

MCCLELLAND, SCHULZE and HURD (1990) analysed the effects of risk perceptions on property values surrounding a hazardous waste site. They found that housing prices would have been higher if the landfill had never been built. It was interesting that distance from the landfill did not prove to be a significant predictor.

A study of REICHERT, SMALL and MOHANTY (1991) concludes that landfills are likely to have adverse effects on housing values, where landfills are located within several blocks of expensive housing areas. Negative impacts on market value depend on the factual distance from the landfill. For older and less expensive areas, the impact of a landfill is considerably less pronounced, and essentially non-existent in the case of predominantly rural areas. Various research studies, examining the impacts of landfills on property value, have produced most differing results. Consequently, every particular case should be examined individually.

To date, no extensive analysis of landfill impacts on the surrounding property values has been performed in the Republic of Slovenia. Within the analysis of impacts of construction for public benefits on the property values, the impacts of proximity to cemeteries, highways, primary schools, dementia patient institutions, homes for the aged, and sanitary landfills, have been analysed (PREJAC, 2011). On account of incompleteness of relevant data in the property market records, a survey was undertaken among the inhabitants of the municipalities of PTUJ, ORMOŽ and LJUTOMER, including in total approximately 55,000 inhabitants. Involved in the survey were 95 inhabitants of these municipalities, including owners of property situated in the proximity of a landfill, as well as owners of property more remote from landfill sites.

Survey results were as follows:

- none of the participants in the survey would have purchased land intended for construction of a residential building or apartment in the proximity of a sanitary landfill ,
- none of the participants in the survey would have been ready to pay a higher price on account of the proximity to a sanitary landfill,
- 94 % of participants in the survey would have required a lower price on account of the proximity to a sanitary landfill,

– 96 % of participants in the survey would find it inconvenient if a sanitary landfill were to be constructed in the proximity of their property,
– 89 % of participants in the survey find it irrelevant that a sanitary landfill is situated in the proximity of the settlement of their permanent residence,
– 73 % of participants in the survey would not have purchased even an agricultural land or wooded land in the proximity of a sanitary landfill,
– 77 % of participants in the survey would have required a lower price than the land market price for comparable land on a different location.

Considering the above results, we presuppose that participants in the survey, residing in the area as stipulated above, have perceived the direct proximity of a sanitary landfill as a negative impact on property value. Here, one should consider that inhabitants of another area might perceive the proximity of a sanitary landfill in a different manner.

4. General model of estimating special value of land as input by municipality into a waste-management centre

Based on analysis of external costs, a general model of estimating special value of land as input by municipality into a waste-management centre may be created.

Special value of land (SVL) in the above case is estimated as:

$$SVL = LV + VNI + \sum_{i} TL_i\,(1+p)^{-i} + \sum_{i} DTS_i\,(1+p)^{-i} \qquad (1)$$

where:

SVL - *special value of land,*
LV - *land value,*
VNI - *value of non-depreciated portion of improvements,*
TL - *tax level at landfill site in the year i,*
DTS - *differences in tax scope in the surroundings in the year i,*
i - *number of years of operation and of revitalisation of landfill (from 1 to n),*
p - *discount rate.*

Land value is evaluated as opportunity cost, representing the value of an improved unbuilt building land on the date of evaluation. This is not the market value of a particular landfill land, but of certain hypothetical land to be intended for residential construction. As defined in the spatial plan that this particular land is to be intended for a landfill, the Municipality has renounced the possibility of residential/housing construction in the particular area.

Value of non-depreciated improvements represents the non-depreciated portion of the existing investments by the Municipality into the sanitary landfill, provided that these are still in use and that they are going to be deployed for the purposes of the new waste-management centre, estimated on the date of assessment.

Owing to the waste-management centre's activity, no property tax shall be payable for this particular land at least as long as the centre remains in operation. The tax level is estimated as the existing value of a sum of taxes within the operation period and revitalisation period of the centre.

The waste-management centre's activity may affect the value of property situated in the proximity, and thus, the estimated taxable values may be lower, and consequently, taxes on property may be lower. The evaluation covers the existing value of the sum of differences in taxes in the period of centre operation, i.e. in the period of operation of the centre and within the period of revitalisation of the centre.

At the time of value estimation (and to date), the tax on property has not been instituted in the Republic of Slovenia. Therefore, in this particular estimation of special value of land on the date of 15.9.2011, the two lattermost articles are not taken into account:

$$SVL = LV + VNI \tag{2}$$

SVL - *special value of land,*
LV - *land value,*
VNI - *value of non-depreciated portion of improvements.*

Land value represents the mean value of unbuilt building land in the region on the date of estimation, and the value of the non-depreciated portion of improvements into the sanitary landfill on the date of estimation.

Mean value of unbuilt building land in the region on the date of estimation may be estimated on the basis of data on the prices of improved unbuilt building land in the relevant pricing range according to the data presented by the Geodesic Administration of the Republic of Slovenia, or based on the individual data taken from the property records or from property market reports within the Republic of Slovenia.

5. Evaluation of special value of land in this particular case

5.1. Features of land

The particular landfill is situated in the midst of an extensive flysch area. On account of a low permeability coefficient of the flysch layers and of their thickness of several thousand metres there is no risk of the landfill leachate penetrating into the depths and reaching the underlying water basins.

The landfill site has been assessed as extremely advantageous in the light of the hydrological situation (Ecological Engineering Institute, 2009). Links of technical infrastructure to the surrounding areas have already been performed. Technical infrastructure in the landfill area has been found compliant and of sufficient capacity.

– The landfill site has already been connected to the water supply system.

- Landfill leachate is purified at the site before being released into a natural efflux, and it is not released into the sewage system
- Landfill is connected to the telecommunications-network. No capacity increase is required.
- Landfill is connected to a 20 kW network, where the connection of a gas generator to the network has been envisaged.

A spatial implementing act has been adopted for a new access road to the landfill, and technical documentation for road construction has been prepared. Through a new access road, the quantity of dust and noise generated within the residential area and immediate surroundings will have diminished.

Thus, no new interventions in areas outside the landfill perimeters shall be required. However, it may be necessary to provide for the usufruct rights of networks already in place outside the landfill perimeters. Land within the landfill area is currently fully improved, and therefore, the spatial acts (Location plan for the Nova Gorica waste-management centre, 2009) do not envisage any other connection requirements.

Within the landfill site, improvements of communal conduits will be necessary after the expansion of the landfill itself, which is irrelevant for our particular case, which deals with the existing investments by the local municipality into the existing landfill site.

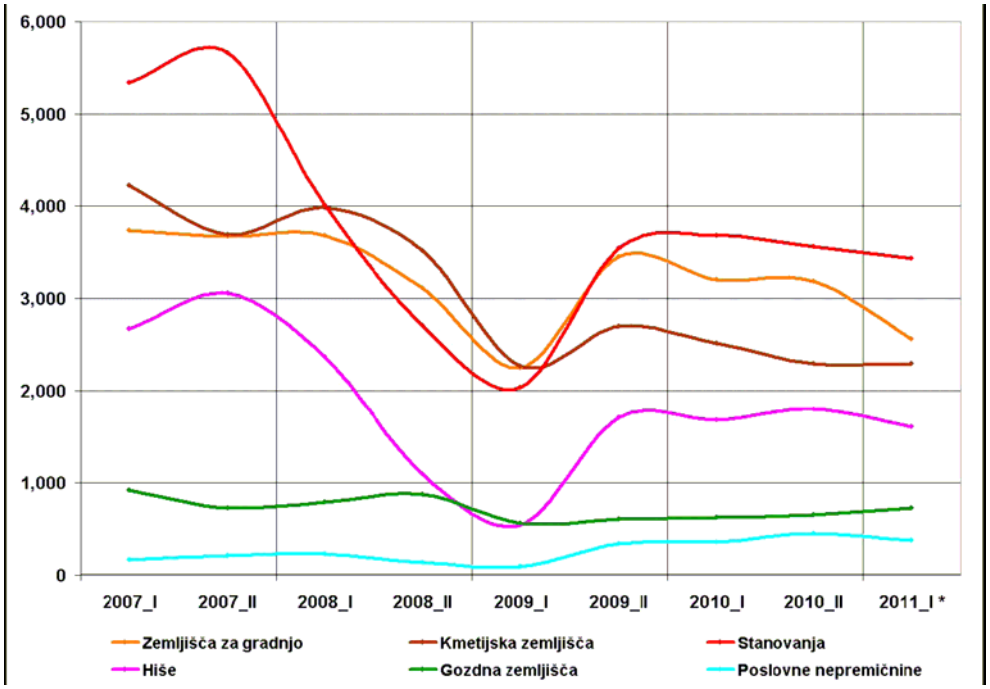
5.2. Estimated special value of land under estimation

In the first half of 2011, 20 % less sales transactions in unbuilt building land, as compared to the first or second half of 2010, were recorded in the Republic of Slovenia (Graph 1). The mean sales contract price of unbuilt building land intended for residential/housing construction, sold in the first half of 2011 amounted to EUR 60/m^2, which is 10.3 % less than in the second half of 2010, and 5.3 % more than in the first half of 2010. The mean price (the median price) amounted to EUR 40/m^2, and was by 11.1 % lower than in the second half of 2010, and by 17.6 % higher than in the first half of 2010.

Prices of land intended for construction were highest in Ljubljana. On the average, they still exceeded EUR 200/m^2, but showed a strong downward trend. Offer of appropriate land is not substantial, and therefore, the turnover recorded is rather low, as usual, and likewise showing a downward trend.

In general, as compared to 2010, the turnover and prices of land intended for construction have been on the downward trend, whilst ratios between the different price ranges have more or less remained unchanged.

According to data by the Geodesic Administration of the Republic of Slovenia (2011), the mean price of unbuilt building land intended for construction in the Goriska statistical region amounted to EUR 53/m^2 in the third quarter of 2011. The surface of all plots of the landfill site amounts to 350,000 m^2 (land surface cited for information purposes only). Value of land under estimation amounted to EUR 18,550,000 (value is cited for information purposes only).



Graph 1. Semi-annual quantity of property sales recorded in the Republic of Slovenia in the period 2007 – 2011. *Source: Geodesic Administration of the Republic of Slovenia, Semi-annual report 2011.*

Based on records of improvements that include also the purchase values, the portion of value of improvements could be estimated, which have as yet not been depreciated, taking into account the fact that the value of improvements that are still in use at the end of duration period, is at 20 % of their purchase value (Decrease in property value, 2011). Their value is estimated at EUR 4,200,000 (value is cited for information purposes only) on the date of 15.9.2011, which is approximately a quarter of the value of the land in question. The estimated special value of the land under estimation amounts to EUR 22,750,000.

6. Conclusion

According to the law applicable in the Republic of Slovenia, the Municipality shall dispose of its assets as a good manager. Thus, in the case where the Municipality wishes to invest the land of the existing landfill as portion into the investment project of the new regional waste-management centre, the land value shall be estimated as special value, i.e. a value that is higher than the market value of the existing land of landfill.

The difference between the market value and the higher special value needs to be substantiated. This article presents an estimation model of special value in this

particular case. Higher value was substantiated by estimating the value of land that constitutes the opportunity cost of missed opportunities for the particular land to be intended for residential/housing construction, by estimating the non-depreciated value of improvements, by estimating the external costs on account of untaxed portion of land of the landfill and on account of lower taxation of the surrounding property. These external costs may be taken into account only if taxes on property are in fact collected and in cases where the proximity of a landfill affects the value of the surrounding property.

A greater problem in using the model constitutes the acquisition of appropriate data, including the data on improvements as well as data on sales prices of land at different development levels.

The model presented may be extended by including the advantages for other municipalities involved in the investment project of waste-management centre construction. However, it needs to be pointed out that the estimated special value may be regarded as a starting-point only for an agreement between the municipalities on the division of costs of investment project of waste-management centre construction.

7. Literature

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