

# METHODS OF VALUING REAL ESTATE IN GERMANY

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**ABSTRACT:** In Germany various valuation methods for non-built up and built up land are used. In essence, they can be traced back to three methods, namely the capitalized value of potential yield method, the real value method and the reference value method. Common to all is the determination of the market value of real estate. This is influenced by a variety of factors. The selection and application of the method depends on the evaluation object and is based on legal regulations. The application of the procedures is partly based on studies and results which are also explained. The valuation can be made in Germany by so-called committees of valuation experts or private experts; these are established by the state government.

## 1. INTRODUCTION

This paper cannot be comprehensive because of the complexity of the topic; it only provides a summary of the procedure practised in Germany.

Why is the valuation of real estate needed at all, and what meaning and purpose is pursued by the assessment of built-up and non-built-up properties? One answer may be that land is an economic and production factor, which cannot be increased arbitrarily. It is a scarce asset, so behaviour according to market economic principles is required. Real estate assets in the Federal Republic of Germany amount to 5 trillion euros; 50% of them are condominiums, 20% are rented apartments, and 15% each are built-up or non-built-up properties.

Furthermore, knowledge about real estate prices/values is required by private people as well as by business and public authorities for decisions, investments and public action. For this reason, an objective value for the land is needed – that is, the market value.

Figure 1 shows the main factors having an effect on the determination of market value. On the one hand, these are the actual quality of the land and the buildings and the location of the parcel; on the other hand there are legal conditions.

The valuation of land and buildings is carried out for:

- purchase, sale or mortgaging of a property,
- divorce (property acquired after marriage) or inheritance settlement,
- compensations,
- application for welfare aid, or
- compulsory auctions.

The aim and subject matter of an assessment of value is to determine the objective market value. The determination has to be founded so that it can be understood and checked by everyone. German property assessment uses so-called 'conservative' valuation methods. The application of a specific method is orientated on certain requirements. The

essential characteristics for that are stated as follows (table 1).

### Legal basis

The normative basis of the legislation in the Federal Republic of Germany is the Grundgesetz (GG; Constitution) of 23 May 1949. Article 14 stipulates:

'(1) Property and the right of inheritance shall be guaranteed. Their content and limits shall be defined by the laws.' This article ensures the security of real estate ownership and is the basis for all measures in the real estate sector.

'(2) Property entails obligations. Its use shall also serve the public good.

(3) Expropriation shall only be permissible for the public good. It may only be ordered by or pursuant to a law that determines the nature and extent of compensation. Such compensation shall be determined by establishing an equitable balance between the public interest and the interests of those affected. In case of dispute concerning the amount of compensation, recourse may be had to the ordinary courts.'

([http://www.gesetze-im-internet.de/englisch\\_gg/englisch\\_gg.html#p0079](http://www.gesetze-im-internet.de/englisch_gg/englisch_gg.html#p0079)).

The second important legal regime is the Baugesetzbuch (Federal Building Code) of 6-23-1960 (BauGB). It regulates the rules of the project planning law and influences the structure and the design and the development of all populated areas substantially. In §§ 192-198, the Federal Building Code determines further specifics concerning the valuation for parcels. They are entitled as follows: The Committee of Valuation Experts (§ 192); The Duties of the Committee of Valuation Experts (§ 193); Standardized Market Values (§ 194); Purchasing Price Data (§ 195); Standard Ground Values (§ 196); The Powers of the Committee of Experts (§ 197); The Higher Committee of Experts (§ 198).

§ 199, chapter 3 – Delegated Powers – authorises the enactment of legal provisions, such as ‘... an instruction for the use of the same principles for the determination of the market values and for the derivation of required data for the valuation...’.

Further legal provisions arise from the Federal Land Utilization Ordinance (Baunutzungsverordnung), the Valuation Ordinance (Wertermittlungsverordnung), the Valuation Guidelines (Wertermittlungsrichtlinie), the Land Board Ordinance (Gutachterausschussverordnung), the Compensation Guidelines (Entschädigungsrichtlinien), the Decree concerning Standard Building Costs (Normalherstellungskosten) and other legal bases.

A third comprehensive legal code that needs to be mentioned is the Civil Code (Bürgerliches Gesetzbuch – BGB) of 8-18-1896, which became effective on 1-1-1900 in the present valid version. It forms the basis of the complete civil (private) law, so also property law, family law and law of inheritance. With regard to the assessment of real estate, the Valuation Ordinance (06.12.1988 /18.08.1997; WertV) is of fundamental importance. It describes generally established rules for the determination of market values. The WertV has to be used by official authorities, but also serves independent experts as a basis for valuation.

The first of 5 parts deals with the essential regulation object, the ascertainment of the market values of properties. In § 1 it is defined that the regulation of the WertV has to be used for the ascertainment of the market values of properties, for the rights analogous to property rights, rights on these and rights on properties. In § 2 follows: ‘Object of the assessment of value can be the real estate or a part of land parcel including its components, like buildings, outer facilities and other facilities as well as accessories’. The assessment of value can also refer to a single of the objects described in the foregoing.

The second part of the WertV describes the required data for the assessment of value, which have to be derived from the purchase price records, such as:

- index series
- conversion coefficients
- property interest rate
- comparison factors for real estate.

The third part of the WertV contains the three standardised assessment-of-value methods:

- the reference value method, §§ 13-14,
- the capitalised value of potential yield method, §§ 15-20,
- the real value method, §§ 21-25.

Parts four and five contain supplementary regulations.

## Terms and definitions

In the following terms and definitions will be introduced which are of importance in the context of the assessment of value.

Real estate, property (Grundstück): Within the meaning of the Civil Code (BGB), a piece of real estate is a part of the surface of the earth set out by boundaries, which is booked on a special page of the real estate register or on a common land register under a special number of the property register list (Bestandsverzeichnis).

Parts of a piece of real estate (Bestandteil eines Grundstücks): ‘(1) The essential parts of a plot of land include the things firmly attached to the land, in particular buildings, and the produce of the plot of land, as long as it is connected with the land...’ [§ 94 chapter 1 BGB].

This includes houses, underground car parks, prefab garages and bridges, but also plants, either planted or sowed as soon as they sprout from the earth, as well as enclosure walls, fences etc. The rights and duties which are connected with the ownership of the real estate are also regarded as essential components.

Buildings (Gebäude): Buildings are independently usable, roofed structural facilities, which can be entered by people and are suitable or meant to shelter human beings, animals or things.

Parts of a building (Bestandteil eines Gebäudes): ‘(2) The essential parts of a building include the things inserted in order to construct the building. [§ 94 chapter 2 BGB]. For example: walls, doors, stairs, windows etc., as well as facilities that have been adapted to the particular building or that give the building a special character.

Outdoor facilities (Außenanlagen): Outdoor facilities are mostly defined as the structural outer facilities: enclosures, walls, paved routes, supply and disposal lines.

Standardized market value (Verkehrswert): ‘The standardized market value is defined as the price which would be achieved in an ordinary transaction at the time when the assessment is made, taking into account the existing legal circumstances and the actual characteristics, general condition and location of the property or other object of assessment, without consideration being given to any extraordinary or personal circumstances.’ [§ 194 BauGB].

Accordingly, value and price are not the same. While price refers to a singular case (subjective), market value is what can be obtained in a competitive market (in the ordinary course of business) objectively, without any enforcement, emergency situation and pressure of time. General value conditions have to be taken into account for the determination of market value.

Purchasing price data (Kaufpreissammlung): In order to enable the compilation of purchasing price data, a copy of every contract by means of which a person enters into an obligation to convey property for payment or in exchange, or to establish a lease, shall be sent by the office where this is recorded to the committee of experts...’ [§ 195 chapter 1 set 1 BauGB]. The data are evaluated and taken over into the purchase price records. Each federal state

(Bundesland) can define rules on how to evaluate and administer the purchase price data.

Index series (Indexreihen): Index series are used to represent changes in the general value conditions on the property market (figure 2). Land price index series consist of index numbers which result from the average ratio of the land prices of an assessment period to the land prices of a basic time period with the index number 100. The land price index numbers can also be related to a specific point in time of the elevation and basic time period. [§ 9 chapter 2 WertV]. The index numbers of the land price index series are derived for real estate with comparable locations and conditions of use types from suitable and evaluated selling prices for non-built-up real estate in the assessment time period [§ 9 chapter 3 set1 WertV]. The land price index series allow to translate ground values or selling price data to another point in time.

Conversion coefficients (Umrechnungskoeffizienten): Conversion coefficients reflect the influence of the building on the land value. Conversion coefficients represent factors by which value differences of uniform plots of ground, which differ in status with regard to a certain status characteristic, can be covered. As a requirement for the derivation of conversion coefficients, there must be a sufficient number of suitable and evaluated selling prices. The conversion coefficients are primarily applied to convert standard ground values to a real estate property which is different, for example as far as the level of building coverage is concerned.

Property interest rate (Liegenchaftszinssatz): The property interest rate is the average interest rate usually paid on the market value of properties. [§ 11 chapter 1 WertV]. The property interest rate represents a rating of the profitability of real estate investments and usually stays below the level of the normal interest rate for capital assets, which is due to the stability of the value of a property. According to § 11 chapter 2 WertV, the property interest rate ‘...has to be calculated on the basis of suitable selling prices and the corresponding pure yields of properties with equal buildings and use in consideration of the remaining useful life of the buildings applying the income approach valuation method (Ertragswertverfahren)’. All selling prices which are not influenced by unusual or personal conditions are to be regarded as suitable selling prices.

Comparison factors (Vergleichsfaktoren): ‘In order to determine comparison factors for built-up real estate, the selling prices of similar real estate parcels have to be used. Similar real estate properties are defined as comparable especially in terms of their location, style and level of building coverage as well as the size and age of existing constructions’ [§ 12 chapter 1 WertV]. The selling prices have to be related to comparison factors, i.e. yield factors and building factors. The building factor is indicated by the value of the land (€), divided by living area (m<sup>2</sup>) and formed from by a large number of purchases of

equal-type real estate. The building factor is used for the rough assessment of value mainly for owner-occupied flats.

Standard ground value (Bodenrichtwert): ‘An assessment shall be made on the basis of the purchasing price data of average local ground values for each section of the municipal territory, taking due account of varying degrees of development; as a minimum requirement such assessment shall be made in respect of building land which has either been exempted from recoupment charges for public infrastructure or in respect of which such charges are due (standard ground values). In areas where building has taken place, standard ground values are to be assessed as if the ground had not been built on.’ [§ 196, chapter 1 sets 1 and 2 BauGB].

Standard ground values are mostly determined for zones. A standard ground value is an average land value for a certain zone in a municipal area (figure 3). The zones should more or less show the same characteristics with a view to their location and usability. Standard ground values refer to fictitious real estate which shows certain attributes that are distinctive for this zone – i.e. level of development, style and degree of the building coverage, size and lay out should be characteristic for this zone.

‘Standard ground values shall be published and notification made to the relevant tax authorities. Information on standard ground values is to be made freely available to the public from the offices of the committee of experts.’ [§ 196 Abs.3 BauGB]. Free-of-charge information is also available in the internet provided by the standard ground value information system (Bodenrichtwertinformationssystem - BORIS).

### **The committee of valuation experts**

‘In order to determine property values, and for valuation of other types, autonomous and independent committees of experts in valuation shall be formed.’ (§ 192 (1) BauGB). Additionally: ‘(2), The committees of experts shall consist of a chairperson and of other experts working in an honorary capacity. (3) The chairperson and other committee members shall have both expertise and experience in determining property values and in valuation of other kinds, and shall not be otherwise involved on a full-time professional basis with the management of property in the territorial entity for which the committee of experts has been formed. In order to determine standard land values, an official from the competent revenue authority with experience in assessing property for tax purposes is to be made available as an expert.’ (4) Committees of experts shall have the use of staffed offices. ‘As a rule the latter will be located in the Land Registry Office.

Regarding the duties of the committee of valuation experts (§ 193 BauGB) stipulates:

‘(1) The committee of experts shall produce expert opinions on the current market values of properties

both with and without buildings, and of rights to property, where this is requested by

1. the authorities charged with enforcing this Act in the execution of their duties under this Act,
2. the authorities responsible for assessing the value of a property, or the level of compensation due in respect of a property or a right to a property, on the basis of other statutory provisions,
3. the owners or persons with equivalent rights, holders of other rights to the property and persons entitled to a compulsory portion, where the value of the property is significant for assessing the value of the portion, or
4. courts and judicial authorities.'

Application rights according to other legal provisions remain unaffected.

'(2) In addition to producing expert opinions on the level of compensation due in the case of loss of a right, the committee of experts may produce opinions on levels of compensation in respect of property loss of other types.(3) The committee of experts shall compile data on purchasing prices, which it shall analyse to establish standard ground values and other data required in valuation.

(4) The expert opinions are not binding where nothing has been determined or agreed to the contrary.(5) A copy of the expert opinion is to be sent to the property owner.'

The following attributes characterise the committee of valuation experts.

Committees of valuation experts were introduced in 1960 when the Federal Building Code became effective. At the same time, the freeze of property trade prices which had been in force since 1936 was abolished. The committees of valuation experts have been established to ensure property market transparency. The committee of valuation experts is an autonomous, independent, non-party and sovereign cooperative committee and is predominantly active in district free towns and districts (Kreisfreie Städte und Kreise). The committee of valuation experts is a federal state authority (§ 199.2 BauGB) according to § 1 of the administrative procedure act (Verwaltungsverfahrensgesetz - VwVG); it acts on behalf of the sovereign and has a seal of the Federal State (Landessiegel). The committee of valuation experts is appointed by the regional administration for a five-year period. The committees of valuation experts are made up, according to requirement, by members of the following professional groups: surveyors, brokers, bankers, civil engineers, housing industry, tax consultants, economy auditors, agricultural and forestry engineers.

### The experts

An expert is a competent person with technical knowledge who is able to present difficult facts in an intelligible way. The title 'expert' is not protected legally, i.e. everybody may call himself an expert as long as this person does not violate the rules against

unfair competition. Professional regulations for experts do not exist. Experts can be accredited (by authorities and institutions) for a certain scope of responsibility.

An expert should have the following characteristics: Special professional knowledge, objectivity, independence. He should be able to recognise limits and to function as a sort of translator. Below, these are described more precisely.

Special knowledge means technical/professional competence. Such special knowledge can be attained through: theoretical education in the subject area, practical experience during and in the first years after education, continuous further education, i.e. always being up to date (particularly concerning changes in legal regulations and law interpretations).

Objectivity means judgement of buildings on the basis of facts only: that is, the expert must proceed without being influenced by personal feelings, prejudices, parties or committees. Reports must not be customized to clients' ideas and wishes (courtesy), but have to be correct and verifiable without any doubt.

Independence: An expert has to be independent in economic, personal and intellectual terms. E.g. the expert should not be subject to any influence by political interest groups or economic lobbyists.

Limits of specialised knowledge: The expert should recognise when his own knowledge is insufficient and other experts are needed.

Moral and time limits: Whenever these would be exceeded, the report will have to be declined (i.e. reports for family members, time pressure due to ill health).

The skill to work as a translator: Reports must be comprehensible and generally intelligible. The facts must be self-explanatory, well structured and supported by a sufficient number of pictures/graphics.

The valuation experts are subdivided into several groups with specific denominations and qualifications. The following are the most frequent groups:

- Certified experts (DIN EN 45013)
- Publicly appointed and sworn experts (IHK)
- Chartered Surveyors (RICS).

Further experts may be:

- Association members or association-authorized experts
- Free experts
- Employed experts (with banks, building and real estate companies, etc.)

Apart from the mentioned before: The committee of valuation experts (of administrative districts and towns).

The majority of experts in Germany are certified according to the rules of the German organisation of standardisation (DIN EN 45013) through the German Accreditation Board (Deutscher Akkreditierungsrat – DAR). The latter is a joint committee of federal and

state (Länder) authorities and the industry which was established in 1991.

The appointment of public and sworn experts is based on § 36 (1) of the trading regulations (Gewerbeordnung – GewO) and the exemplary expert ordinance (Mustersachverständigenordnung – MSVO) of the chambers of industry and commerce (IHK). The Chartered Surveyors are members of the Royal Institute of Chartered Surveyors based in London (RICS), Germany section.

### Value assessment methods

Figure 4 gives an overview of the valuation methods that are used in Germany.

The assessment of value for non-built-up real estate is mainly aimed at determining the land value, and in the majority of cases the reference value method is used. Only in very few cases, when no reference values are available for the land value, the residual value method will be used.

Land value reflects broadly the value of the land and soil in most different conditions, particularly development conditions. The term ‘development condition’ refers to the four (most frequent) development phases of a plot up to becoming building land (value percentage in reference to ripe building land):

1. areas of the farming and forestry industry,
2. land ripe for development (a zoning classification is to be expected; value share of ~ 25-65%),
3. raw building land (a zoning classification is fixed; value share of ~ 50-90%),
4. ripe building land (a zoning classification is possible at any time; value share = 100%).

In the immediate reference value method, the market value is formed by calculation of the mean value (applying statistical methods) of contemporary selling prices (purchase price collection) of a sufficient number of comparable real estate properties. Comparative prices that were presumably influenced by unusual or personal matters must be sorted out.

The indirect reference value method is based on standard ground values which have been determined and published by the committee of experts on real estate value. This method is applied if no immediate selling prices are available. Either method does in most cases require to use conversion coefficients in order to adapt plot characteristics in terms of location and utilization. The calculated mean value is the so-called reference- or land- value.

The land value of a non-built-up real estate can also be determined by the residual value method. This method, which is not standardised, is based on investment considerations. However, the land value is not equivalent to the maximum price acceptable to an investor. Therefore the residual method is used only in exceptional cases for real estate assessment.

The method is carried out in steps as follows:

1. Determination of the prognosticated selling price after completion of the buildings (capitalised value of potential yield/reference value).
2. Consideration of all costs in connection with this construction.
3. The difference between the prognosticated sales price (1) and the costs (2) is the residuum.
4. The residuum, which also contains all additional costs of land acquisition, is discounted over the construction time. The resulting value reflects the land value without recoupment charge for infrastructure.

An assessment of value of built-up real estate is usually carried out to determine the market value. In Germany, three ‘standardised’ methods are used:

- the capitalised value of potential yield method
  - the liquidation method (as a special case of the capitalised value of potential yield method)
- the real value method
- the reference value method.

§ 7 WertV stipulates that one or several of these methods be applied to determine the market value. The expert has to justify his choice. ‘Where more than one method have been used, the market value has to be formed from the results of the applied methods in consideration of their informational value’ [§ 7 Abs.1 Satz3 WertV].

The capitalised value of potential yield method is orientated to the expected profit of the building to be assessed, i.e. the determined value indicates the future earning power of the object. This method is applied mainly in cases of income property, e.g. for the valuation of real estate with rented flats or commercial property or land of mixed utilisation.

Characteristic attributes of the profitability assessment are:

- the limited economic life time of the buildings,
- the unlimited economic life time of the ground,
- the sustainable annual surplus in revenues that can be achieved after deduction of the costs,
- the property interest rate.

As a rule, the market value corresponds to the capitalised value of potential yield, since a ‘market adaption’ is carried out in the method (via the property interest rate).

In case that

- the capitalised value of potential yield of the real estate corresponds to the land value,
- interest yields that are adequate to the land value cannot be gained,
- a different method than the reference value method is required (§ 20 WertV),

this means:

- if the capitalised value of potential yield corresponds to the land value of the parcel, the land value still has to be reduced by ordinary costs (e.g. demolition costs).

If adequate interest yields cannot be gained for the land value because e.g. restoration or clearance of a plot in the foreseeable future is barred by legal or

other reasons and the value of an adequate real estate use cannot be determined, the duration of these existing limitations in land use must be taken into account and the land value reduced accordingly (liquidation method).

The liquidation value is the result of the overall capitalised pure yield and the land value discounted over the remaining economic life time.

The real value method is applied if the yield is only of secondary interest and the yield-independent owner usage is of primary interest. Therefore this method is predominantly used for the assessment of one- and two- family homes.

The value is determined by the production costs that arise in the ordinary course of business. The real value method starts out from a theoretical model according to which the value of every building at the time of erection is the sum of the land value of the non-built-up real estate plus the construction costs of the building. Over time, as the building gets older and its substance deteriorates, the value decreases.

The production value of the building at the valuation date is determined in a four-step procedure, namely the ascertainment of the production costs 1. of the buildings, 2. of the special facilities, 3. of outdoor installations and 4. of additional building costs. A so-called 'market adaption' of the real value gives the current market value.

The reference value method is regarded theoretically as the best and safest method, since it is orientated on the current prices at the present time. This is defined by the WertV: 'when using the reference value method the selling prices of such real estate properties are to be taken into account that have a sufficient number of equal value-influencing characteristics in common with the real estate to be assessed' [to § 13 chapter 1 set1 WertV]. The method is predominantly used for the valuation of owner-occupied flats, terraced houses, semi-detached houses and uniform settlement houses, as well as blocks of flats owned by property companies, since these are most likely to have a sufficient number of comparative characteristics. The reference value method for built-up land uses two different models: the immediate reference value method and the indirect reference value method.

For assessment of the market value by the immediate reference value method, only the prices of built-up land with the same status characteristics are taken into account, i.e. the location, the usability and the buildings must be equal. The last mentioned characteristic comprises the year of construction, execution of the construction work and size of the buildings, as well as equipment and standard of upkeep.

Abnormal and individual conditions must be left out of consideration; only the comparability of the market situation is taken into account. The market value can be derived as a reference value, if sufficient comparative prices are available and a conversion factor for the almost identical assessment properties does exist.

The indirect reference value method uses comparison factors instead of prices. The committee of valuation experts determines these comparison factors from many individual sales and subdivides them into building categories, such as single family house, multiple dwelling, owner-occupied flats, etc. The comparison factors are published in the market report.

The indirect reference value method on the basis of comparison factors is carried out in three steps:

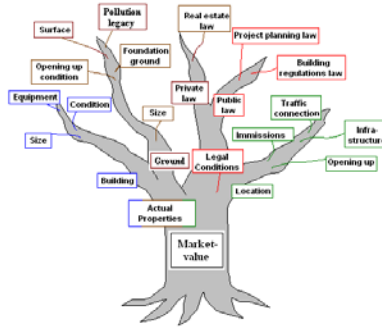
1. Classification of the assessment building into one of the predefined categories.
2. A comparison factor for the respective building category being made available by the responsible committee of experts on real estate value.
3. Adaptation of the comparison factor, which is formed from numerous individual sales, if the assessment building cannot be described as 'average'.

For example, this is the case if considerable upkeep neglect is obvious or if there is a particularly high standard of equipment. As a rule the corresponding conversion coefficients can only be estimated roughly, since there are hardly any published values available in this respect.

Since in most cases no conversion coefficients are available, and the average value possibly does not contain any specifications for the building category (e.g. size, condition etc.), comparison factors are used mainly for rough assessments of value or for plausibility control. The comparison factors which are most commonly used are yield and building factors.

## **Current situation**

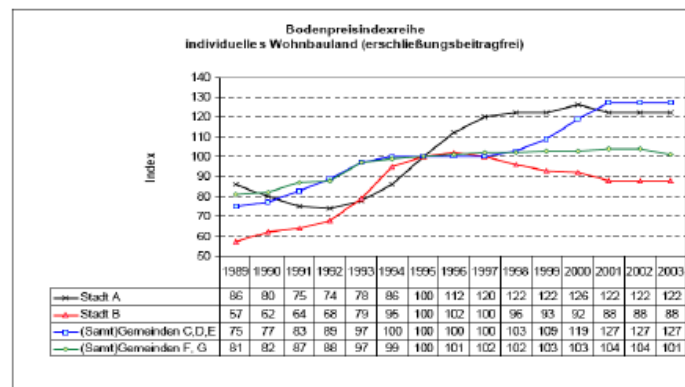
Assessment of market values in Germany is carried out predominantly by means of 'standardised methods'. These are described in the property valuation ordinance (WertV of 6-12-1988). It is obvious that these standardised methods for built-up real estate are providing a reproducible and compliant valuation practice due to the fact that they are based on published data (i.e. reference values, multiplier, property interest rate, standard ground values and/or normal production costs). The required data are derived and made available by an independent nationwide committee. A comparison between the different standardised methods reveals that the capitalised value of potential yield method is increasingly being accepted. The reference value method is indeed regarded as the most exact and safe method in theory; however, in practice it is rarely used, because comparison prices are frequently not available. The real value method is only used to a limited extent. Apart from these standardised methods, there is also minor use of anglo-American valuation methods in Germany, such as the investment, residual value or discounted cash flow (DCF) methods.



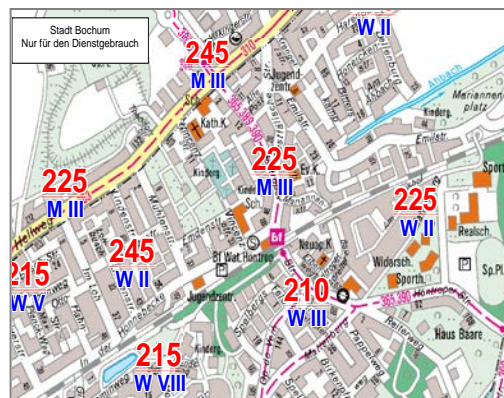
**Fig.1.** Factors of influence on the assessment of the market value

**Table 1:** Characteristics of evaluation methods

Orientation	Time Base	Method
Yield expectation	Future	Capitalised value of potential yield method
Accrued (erection) costs	Past	Real value method
Paid prices	Present	Reference value method



**Fig.2.** Example of a real estate price index series [individual building land for living (adoption costs free); Samtgemeinde – association of several communities]



**Fig.3.** Extract standard ground value map Bochum

(<http://www.boris.nrw.de/borisplus/portal/BRW.do?sitenav=searchproduct>)

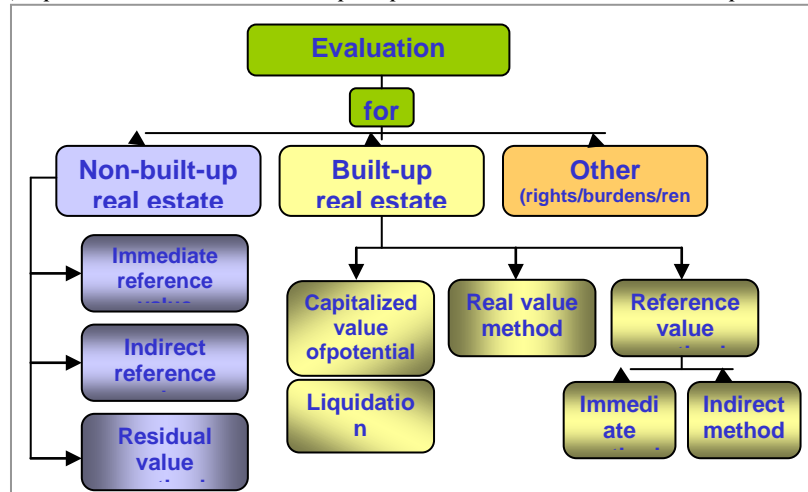


Fig. 4. Methods for the assessment of value

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[15]. **Richtlinien für die Ermittlung der Verkehrswerte (Marktwerte) von Grundstücken**

(Wertermittlungsrichtlinien 2006 – WertR 2006) in der Fassung der Bekanntmachung vom 1. März 2006.

[16]. **Verordnung über Grundsätze für die Ermittlung der Verkehrswerte von Grundstücken** (Wertermittlungsverordnung – WertV vom 6. Dezember 1988 geändert durch Art. 3 Bau- und Raumordnungsgesetz 1998.