

CZECH UNIVERSITY OF LIFE SCIENCES  
PRAGUE

FACULTY OF ECONOMICS AND MANAGEMENT

DEPARTMENT OF ECONOMICS



DIPLOMA THESIS

METHODOLOGY OF REAL ESTATE VALUATION  
IN THE CZECH REPUBLIC AND GERMANY

Supervisor:

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# DIPLOMA THESIS ASSIGNMENT

**Klára Rysková**

specialization of the study: Economics and Management

In accordance with the Study and Examination Regulations of the Czech University of Life Sciences Prague, Article 17, the Head of the Department assigns the following diploma thesis to

Thesis title: **Methodology of real estate valuation in the Czech republic and Germany**

## **The structure of the diploma thesis:**

1. Introduction
2. Objectives of thesis and methodology
3. Literature overview
4. Analysis of real estate valuation methodologies used in the Czech Republic and Germany
5. Discussion
6. Conclusions
7. Bibliography
8. Supplements

The proposed extent of the thesis: 50 - 60 pages

**Bibliography:**

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Deadline of the diploma thesis submission: April 2011

  
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In Prague: 10th June 2010

Declaration:

I hereby declare that I have written this diploma thesis called “Methodology of Real Estate Valuation in the Czech Republic and Germany” independently and by myself using only the sources referenced in the Bibliography section at the end of this thesis.

In Prague April 7, 2011

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### Acknowledgments:

I wish to thank my supervisor Ing. Mansoor Maitah Ph.D. et Ph.D for his guidance and useful advices. I particularly wish to acknowledge the support of Dipl.-Ing. Anne-Kathrin Borowski (publicly appointed, sworn and qualified expert valuer in Dresden) who made it possible for me to follow the process of real estate valuation in Germany and shape my understanding of it. Furthermore I would like to thank the expert sworn-in valuers in Prague who let me work with them on their valuation assignments and who wished to remain anonymous. I would also like to thank the employees of the Ministry of Justice for their consultations, and last but not least my family for the support I received.

# METHODOLOGY OF REAL ESTATE VALUATION IN THE CZECH REPUBLIC AND GERMANY

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## METODIKA OCEŇOVÁNÍ NEMOVITOSTÍ V ČESKÉ REPUBLICĚ A NĚMECKU

### **Summary**

The presented diploma thesis examines the real estate valuation methodologies applied in the Czech Republic and Germany. Based on detailed analysis of the methods used to determine the market value of real property a basic phenomenon is verified – in both countries the same methodological procedures for the valuation of property are used. The basic and most widely used method to determine the market value is the sales comparison method based on a market analysis. Due to the uninterrupted economic development of the market economy in Germany in the past, reliable data in sufficient quantity are available for valuers in Germany which cannot be claimed about the Czech Republic. The current situation in the Czech Republic is moreover still burdened with a double level of property prices – with regulated prices, determined on basis of regulations of the Ministry of Finance; and by prices agreed on the real estate property market, i.e. the market value of property. According to the scope of this thesis this represents the major limitations of the current legislative situation regarding the determination of real estate prices, together with missing amendment to the law on expert valuers which has been valid since 1967 in a basically unchanged form. Given that the market value of property should indeed also serve as a basis for taxes determination, it would be desirable that the relevant professional bodies began to consider relevant legislative changes of valuation regulations.

**Keywords:** the Czech Republic, Germany, valuer, valuation process, administrative price, market value, cost approach, sales comparison approach, income capitalization approach

## **Souhrn**

Předložená práce se zabývá metodologií oceňování nemovitostí v České republice a Německu. Na základě detailní analýzy používaných metod stanovení tržní hodnoty nemovitostí je ověřen základní fenomén - využití stejných metodických postupů při ocenění majetku v obou zemích. K základním a nejužívanějším metodikám stanovení tržní hodnoty patří metoda komparační, založená na analýze trhu. Pro tuto metodu je vzhledem k historicky nepřerušnému ekonomickému vývoji tržního hospodářství v Německu k dispozici mnohem více dat, než v České republice. Tento stav je v České republice v současné době ještě zatížen dvojí úrovní cen nemovitostí – cenami regulovanými, stanovovanými dle oceňovacích vyhlášek Ministerstva financí, a dále cenami sjednanými na skutečném trhu, cenami obvyklými tedy tržní hodnotou majetku. Toto je dle záběru této práce největší nedostatek současného legislativního stavu při stanovení cen nemovitostí, spolu s chybějící novelou zákona o znalcích, který v podstatě nezměněné podobě platí již od roku 1967. Protože právě tržní hodnoty nemovitostí by měly sloužit i jako základ pro stanovení daní, by bylo vhodné, aby se v příslušných odborných kruzích začalo uvažovat o odpovídající legislativní úpravě oceňovacích předpisů.

**Klíčová slova:** Česká republika, Německo, znalec/odhadce, oceňovací proces, cena administrativní, cena obvyklá (tržní hodnota), substanční metoda, komparativní metoda, výnosová metoda

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## List of Abbreviations

<b>BauGB</b>	Baugesetzbuch (Federal Building Code)
<b>BelWertV</b>	Beleihungswertermittlungsverordnung (Regulation on Determination of Mortgage Lending Value)
<b>BGF</b>	Bruttogrundfläche (gross floor space)
<b>CZK</b>	Czech crown (currency)
<b>DAR</b>	Deutscher Akkreditierungsrat (German Accreditation Council)
<b>DIHK</b>	Deutscher Industrie- und Handelskammertag
<b>DIN</b>	Deutsches Institut für Normung (German Institute for Standardisation)
<b>EUR, €</b>	euro (currency)
<b>GewO</b>	Gewerbeordnung (Industrial Code)
<b>HwO</b>	Handwerksordnung (Handicrafts Regulation Act)
<b>IHK</b>	Industrie- und Handelskammer (Chamber of Commerce and Industry)
<b>ImmoWertV</b>	Immobilienwertermittlungsverordnung (Valuation Law)
<b>ISBN</b>	International Standard Book Number
<b>ISSN</b>	International Standard Serial Number
<b>IVS</b>	International Valuation Standards (published by IVSC)
<b>IVSC</b>	International Valuation Standards Council
<b>JVEG</b>	Justizvergütungs- und Entschädigungsgesetz (Judicial Remuneration and Compensation Act)
<b>m<sup>2</sup></b>	square meter
<b>m<sup>3</sup></b>	cubic meter
<b>MCZK</b>	million CZK
<b>NHK</b>	Normalherstellungskosten (standard construction costs)
<b>NOI</b>	Net Operating Income
<b>p.</b>	page(s)
<b>PfandBG</b>	Pfandbriefgesetz (Pfandbrief Act)
<b>PVP</b>	Average height of floor (“Průměrná výška podlaží”)
<b>PZP</b>	Average built-up area of floor (“Průměrná zastavěná plocha podlaží”)
<b>RICS</b>	The Royal Institution of Chartered Surveyors
<b>StGB</b>	Strafgesetzbuch (Criminal Code)
<b>TCZK</b>	thousands CZK
<b>TEGoVA</b>	The European Group of Valuers Associations
<b>UWG</b>	Gesetz gegen den unlauteren Wettbewerb (Act Against Unfair Competition)
<b>VAT</b>	Value Added Tax
<b>WertV</b>	Wertermittlungsverordnung (Valuation Law)



# 1. Introduction

The principles of property valuation are not an invention of modern times. On the contrary - they have been known to mankind for a long time. The way how we perceive value of material as well as immaterial items and how we assign prices to goods and services is too frequently influenced by our subconscious need to serve our own best benefit. Already in the Holy Bible it was mentioned: “And if thou sell ought unto thy neighbour, or buyest ought of thy neighbour's hand, ye shall not oppress one another” (Book of Leviticus, Chapter 25, Verse 14) [55]. This notion, however, should not be understood as the genesis of valuation, as the issues of land appraisal and land use belong to the oldest sciences of all cultures. Even in the earlier historical phases, the society needed a mechanism safeguarding the determination of fair value of land and assets to prevent fraudulent behaviour (e.g. tax avoidance) or possible property misstatements.

A good historical illustration proving the vital function of data about assets and land possession in the Czech region is the reliable and systematic register called “Berní rula” (list of tax payers). The copy of this register from the year 1653 contains an organized list of tax payers and their property. Each village had its own list of citizens and a register about their property was processed, further divided into the surface of land to be ploughed or grassed, and number of livestock kept [3]. Such registers were common throughout the history.

Today, the valuation of property represents a demanding task for appraisers and a notable part of interaction between business subjects. The determination of property value requires knowledge of technical aspects of buildings construction, knowledge of the economic environment, and the current legislation. As the results of the property appraisal influence not only the business parties involved but also give certain signals about the situation on the marketplace to other subjects, the significance of placing the fair, equitable and just values on property by the property appraisers is undisputable.

## **2. Objectives of Thesis and Methodology**

The aim of this diploma thesis is to present an extensive and at the same time comprehensive material devoted to the issue of valuation of real estate. It should enable the readers to understand the main implications involved in the real estate valuation in the Czech Republic and Germany. The economic connections between these two countries are evident and cross-border valuation assignments of real estate portfolio of organizations and individuals are becoming more and more common. Therefore, the valuation expertise regarding valuation methodologies applied in both countries is discussed in this thesis, representing a new learning potential not only for general public but also for Czech valuers who are involved in such cross-border transactions. The thesis further offers solutions for improvement of the current situation in the Czech Republic with regard to valuation of real estate. Two case studies are presented in which the valuation process of real estate in Germany and the Czech Republic is performed to demonstrate the practical application of the valuation methodologies. Based on the outcomes, the hypothesis of the diploma thesis “In both countries the same methodological procedures are used for estimation of the market value of real estate” will be either verified or rejected. Possible minor differences or improvement potential for the Czech Republic will be discussed. The intention of this diploma thesis is also to draw attention to the current duality of price levels on the real estate market with respect to determination of not only the market value (usual price which can be achieved on the market under an arm’s length transaction) but also the administrative price which is regulated by the regulations issued by the Czech Ministry of Finance. Last but not least the issue of the Czech law on expert valuers which has not been significantly amended since 1967 is commented. It follows that amendments to the current legislation and possible systematic transformation to determination of market values only would have positive effects on the valuers’ profession and enhance transparency of real estate valuation in the Czech Republic.

The methodology used in this diploma thesis was formed by analysis and critical examination of relevant documentation, publications, and legal regulations. Discussions with sworn-in valuers were conducted to gain a deeper insight into the profession. Furthermore two case studies are presented, demonstrating the full valuation process of

real estate in the Czech Republic and Germany. In the case in Germany a valuation assignment concerned with valuation of a building with commercial and residential space in the city Riesa (near Dresden) was performed. With regard to the specifics of the subject property, the market value was determined using the cost approach (“Sachwertverfahren”) and the income capitalization approach (“Ertragswertverfahren”). Additionally, the mortgage lending value was estimated. In the case in the Czech Republic a valuation assignment concerned with valuation of a building with commercial and office space in Prague 8 was conducted. The market value was estimated by application of sales comparison approach and income capitalization approach. The administrative price of the property was determined in accordance with Act No. 460/2009 Coll. Valuations in both countries were performed as at the date in 2010 and thus in compliance with the then valid legislative regulations. The results of this chapter together with other facts stated in this diploma thesis are hereafter discussed together with presentation of recommendations and conclusions.

The used methodology aims at presenting a compact document which explores the valuation methodologies, valuation process, and profession of valuers in both countries with special consideration for possible learning and improvement potential.

Following notions should be mentioned at this point to assure maximal accuracy and understanding:

- No special attention is paid to valuation of agricultural land. This topic is indeed very complex and interesting, and would deserve to be elaborated as an independent diploma thesis. The general approach to valuation of land is presented here, and in the case studies a valuation process of developed land is performed.
- The words appraisal / valuation; and appraiser / valuer are used interchangeably throughout this thesis. For better understanding and clarity of the terminology used please refer to section 8.1 for Glossary of Terms.
- As also German terms are used in this thesis I have compiled a list of them together with their translation to English. Please refer to section 8.2.

## **3. Literature Overview**

### **3.1 Situation in Germany**

#### **3.1.1 Profession of a Valuer**

##### **Sachverständiger**

The term “Sachverständiger” (expert valuer) is in Germany not legally protected. Anyone can call him- or herself an expert valuer, as long as he or she does not violate the conditions of the fair competition by using this name in a misleading manner. This would be the case if the corresponding professional education and several years of professional work experience cannot be proven. Generally, three types of valuation experts can be identified in Germany: 1) publicly appointed, sworn and qualified expert valuers, 2) certified valuers, and 3) free and generally accepted valuers.

##### **3.1.1.1 Publicly Appointed, Sworn and Qualified Expert Valuers**

###### **Public Appointment**

Responsible for the public appointment of sworn and qualified experts in technical and economic fields is the corresponding Chamber of Commerce and Industry (Industrie- und Handelskammer, IHK) in the given federal state, on the basis of §36 of the Industrial Code (Gewerbeordnung, GewO), and additional regulations on the federal state level [4]. The precondition to being appointed as sworn and qualified expert is a special expertise in the subject area. Goal of the swearing-in act is to ensure that the expert, or in this case the expert valuer, delivers his or her valuation reports impartially, independently, without instruction from other parties, and to the best of one's knowledge. For this reason, the public appointment of a valuer by the Chamber of Commerce and Industry can only take place after the valuer is able to prove several years of professional experience as a free valuer. Only then possesses the valuer the needed experience which predestines him or her to gain the seal of approval of one of the Chambers of Commerce and Industry as officially publicly appointed, sworn and qualified expert valuer. [44]

Besides the requirement for professional work experience from the field of valuation, other prerequisites are demanded from the applicant to become publicly appointed, sworn and qualified expert valuer. One of them is represented by the notion of *personal suitability* of the applicant, which should guarantee that the applicant will exercise the duties of an valuer objectively and impartially not only on basis of his or her personal qualities but that he or she will be able to fulfil these requirements after taking into account his or her aggregated environment as well. Interests in or attachments to other parties or subjects of any kind contest the personal suitability of the applicant, as it might be feared that the expert may not be acting independently, and therefore his or her objectivity and impartiality may be disputed in the eyes of the public. Already the *apprehension of bias* (“Besorgnis der Befangenheit”) is sufficient to disqualify the valuer from participation in a court case to avoid possible conflict of interests. The personal suitability of the applicant includes also his or her reputation, and credit of the applicant in the public and within his or her particular professional environment. [4]

The system of swearing-in valuers as “publicly appointed, sworn and qualified expert valuers” exists in such a form only in Germany. As already stated above, the legal basis is found in §36 of the Industrial Code (GewO) or in §91 of the Handicrafts Regulation Act (Handwerksordnung, HwO). The appointment can be carried out by Chamber of Commerce and Industry, Chamber of Handicrafts, Chamber of Agriculture, Chamber of Architects or Engineers, or by the Regional Council of the federal state. In contrast to the general term “expert” (Sachverständiger) is the term “publicly appointed and sworn expert” (in short form ö.b.v.) protected by law. The public appointment is **initially limited for a two-years period** and can thereafter be **extended by 5 years periods** until the point when the valuer reaches the **age of 68 years**. The public appointment to sworn valuer is effective in Germany nationwide (i.e. not only in the federal state where the appointment was initialized). For this reason, all Chambers of Commerce and Industry in Germany nationwide have established in their bylaws similar ordinances governing the formalities of appointment of valuers and their activities. [4] [45]

### **Meaning of the Public Appointment**

By the means of the process of public appointment of valuers according to §36 of the Industrial Code, the ideal state should be achieved in which the courts, governmental agencies, industrial subjects, as well as the general public will gain particularly reliable, credible, and in the given subject outstanding and experienced professionals, if needed. The public appointment thus facilitates a straightforward search for professionally and personally suitable experts, due to the fact that the publicly appointed valuers are continually reviewed and monitored by the appointing authority to meet special criteria. In other words, the public appointment does take place solely in the public interest and not to achieve personal goals or perceptions of the applicant. Especially, it is not to be taken as an admission to a particular profession, but rather as an adjudication of the specific qualification. The public appointment is subject to certain conditions which are set out in the corresponding paragraphs of the ordinance on valuers issued in the bylaws of the responsible Chamber of Commerce and Industry in the given federal state. [44]

The Board of the given Chamber (Chamber of Commerce and Industry, Chamber of Engineers etc.) decides about the public appointment to valuer of the applicant based on the proposal of a valuers' commission, supported by a panel of expert who have extensively addressed the skills of the applicant. The swearing-in of the valuer is then usually performed by the President of the given Chamber. Even though this procedure may differ from one Chamber to another, this is the generally accepted *modus operandi*.

### **Requirements on Applicants**

In order to be suggested for the public appointment as an expert valuer, the applicant must submit a written application to the Chamber of Commerce and Industry (or similar authorities as mentioned in the above sections). For the application, following documents and requirements are commonly compulsory:

- Age between 30 and 62 years,
- Proof of experience,
- Five to seven recent valuation reports as a work samples together with list of objects appraised in an valuation report in the last three years preceding the application,



- Curriculum vitae,
- Evidence about the hitherto career development, with special details given to support the specific expertise gained in the field of property valuation,
- Proof of adequate liability insurance,
- Certificates of passed exams,
- Extract from the police records not older than three months,
- Certificate of non-objection from competent tax authority,
- Contact for at least five persons who are willing to supply information regarding the personal and professional competence of the applicant. [44]

The application together with the required documents is then subject to a comprehensive examination. Applicants must conventionally provide a written and oral proof of their competence.

### **Process of Public Appointment and Swearing-in**

#### ***Vocational Training***

The Chambers of Commerce and Industry are bodies that publicly appoint the valuers, nevertheless they do not train them. It is up to the individual applicant to demonstrate his or her outstanding competence, the ability to formulate a valuation report, and his or her legal knowledge. A formal request for public appointment and swearing-in makes therefore sense only after these three preconditions are met by the applicant. It is often recommended for the applicants to establish a contact with an already publicly appointed, sworn and qualified valuer, as they are frequently ready to assist the prospective new colleagues. [44]

#### ***Examination***

As a rule, each applicant is obliged to undergo a special examination in front of a panel of experts. This panel of experts is composed of experts from the given subject field, and examines on behalf of the Chamber of Commerce and Industry whether the applicant possesses the distinct expertise required by law. [44]

### ***Duration of the Application Process***

The process of public appointment and swearing-in can typically last from 9 to 12 months, from the date of submission of the application to the swearing-in (assuming that the procedure is completed successfully).

### ***Costs of the Application Process***

The Chambers of Commerce and Industry charge a fee for the public appointment and swearing-in of valuers. For the implementation of the public appointment process, a fee of 527 EUR has to be paid by the applicant (“Verfahrensgebühr”). This fee cannot be refunded if the application process was not successful. Another fee (“Vereidigungsgebühr”) amounting to 264 EUR is charged by the Chamber and is due to be paid with the swearing-in [44]. Occasionally, other costs and expenses of the Chamber (e.g. charges or travel expenses of participating expert panel members) have to be paid by the applicant separately.

### **Duties of Publicly Appointed, Sworn and qualified Expert Valuers**

Typical duties of a publicly appointed, sworn and qualified valuers are:

- Preparation of valuation (expert) reports on deficiencies and damages of buildings,
- Regular reviews and inspections,
- Development of various analysis,
- Valuation of developed (built-up) and undeveloped sites,
- Submission of expert opinion on technical building equipment. [4]

The duties connected to the public appointment are essentially the requirement for independent, impartial, and conscientious performance of duties; the obligation to preparation of valuation report; professional discretion; and requirement for continuous professional vocational education.

The remuneration of valuers submitting a valuation report to a court is a subject to the Judicial Remuneration and Compensation Act (Justizvergütungs- und Entschädigungsgesetz, JVEG). For valuation reports submitted to corporations or individuals outside the judicial area, the remuneration can be agreed freely. [45]

A list of all publicly appointed, sworn, and qualified valuers is kept by the Deutscher Industrie- und Handelskammertag (DIHK). The DIHK is an umbrella organization of the 80 German Chambers of Commerce and Industry and acts on their behalf and with their consent to represent their interests in front of the decision makers on the German national level, as well as in front of European institutions. In the DIHK German nationwide register of experts, individual valuers can be searched by name or region of residence. As at February 11, 2011, the register consisted of 8.543 entries of publicly appointed, sworn, and qualified experts appointed by German Chambers of Commerce and Industry, as well as by Chambers of Agriculture, Chambers of Engineers, and Chamber of Architects [37]. The expert valuers in this register are appointed in different fields, such as valuation of art objects, valuation of machines etc. The detailed search in this register resulted in 1184 entries found for valuers active in the field of real estate property valuation [37].

### **3.1.1.2 Certified Valuers**

Persons can be certified according to the DIN EN ISO/IEC 17024 [4]. This standard regulates the requirements for certification bodies that can certify valuers (experts). In Germany, the upper hierarchical level of certification bodies is represented by the German Accreditation Council (“Deutscher Akkreditierungsrat, DAR”). The standard DIN EN ISO/IEC 17024 defines general requirements for the certification authorities, the quality standards for the individual fields of expertise are not discussed in detail. The norm states that the training and certification of the valuers cannot occur at the same institution. The certification of the valuer is limited in time (for 5 years), and can be prolonged after submission of required documents. [4] The concept of certified valuers has gained on importance, as the system of public appointment of valuers in Germany has in such a form no counterpart in other EU member countries, and the certification represents a recognizable proof of professional expertise.

### **3.1.1.3 Free and Generally Excepted Valuers**

Persons with adequate personal and professional prerequisites, special expertise, and relevant working experience can act as valuers. The term “Sachverständiger” (valuer, expert) is not legally protected in Germany. Nevertheless, the relevant requirements of the Act Against Unfair Competition (“Gesetz gegen den unlauteren Wettbewerb”, UWG) and the Criminal Code (“Strafgesetzbuch”, StGB) have to be observed. These free valuers can

under certain conditions join an association of professional valuers. For cases discussed in front of courts, the publicly appointed, sworn-in and expert valuers are preferred. [4]

### **3.1.2 Valuation Methodologies**

In Germany, the market value of a property (“Verkehrswert”, “Marktwert”) and the mortgage lending value (“Beleihungswert”) are determined by the real estate valuers. The market value of a property represents an important foundation for the agreement and price negotiation between trading parties participating in a purchase of a real estate property, nevertheless it can be used in other cases as well. The mortgage lending value is basically the market value decreased by a given risk- or safety deduction which can be defined differently from bank to bank.

#### **3.1.2.1 Market Value**

The market value of a property is defined in §194 of the Federal Building Code (“Baugesetzbuch”, BauGB):

“The 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, the general condition and the location of the property or other object valued, without consideration being given to any extraordinary or personal circumstances.” [38] – § 194, translated into English]

The market value of a property is as a result of a market value determination an objectified concept of value [31]. It is the market-oriented, through supply and demand regulated exchange value, which is rarely identical with the price as an expression of individual value perceptions of sellers and buyers.

In addition to the definition of market value stated in the “Baugesetzbuch”, the valuer must follow the German Valuation Law (“Immobilienwertermittlungsverordnung”, ImmoWertV) while determining the market value of a property. This regulation entered into force on July 1, 2010 and replaced the older regulation “Wertermittlungsverordnung” (WertV). The latest version of the old Valuation Law WertV was adopted in December

1988 and most recently amended in August 1997 (as this amendment become effective on January 1, 1998, this version was frequently referred to as “WertV 98” to distinguish it from its earlier versions). In 2007 a board of professional experts started reviewing the WertV 98; the process of revision eventually resulted in the new regulation, ImmoWertV, being proposed to the Bundesrat in 2010 by the Federal Ministry of Transport, Building and Urban Development. The Minister Peter Ramsauer has in a few, yet apposite words summarized why this new regulation was adopted:

“The new valuation law creates a clear legal basis for the valuation of land and real estate. Through greater transparency, we contribute to the stability of real estate and land market. Already at the level of real estate value determination, we can prevent real estate crises. The lack of transparency in the valuation of property in the United States and other countries has contributed significantly to the global economic crisis.” [35] - translated into English]

From the standpoint of enhancing international comparability, some internationally accepted terms were introduced. Besides, the concept of energetic characteristics of building within the valuation practice is mentioned in this new regulation for the first time. Further, no longer relevant arrangements have been removed in the sense of reduction of bureaucracy, and new rules concerning the requirements on necessary data for valuation have been applied.

The German Valuation Law, ImmoWertV, defines three methodologies of real estate property value determination. These three approaches are analogous to the three internationally generally accepted techniques of valuation. The valuation of land is ordinarily done by indirect comparison to sales prices. The valuation of buildings is accomplished by using the sales comparison approach, cost approach, and/or income capitalization approach. A general rule states that the valuer should perform two valuation methods in the valuation report, and the final value should be concluded from the method which seems more appropriate, under the given conditions (situation on local real estate property market, availability of information, special state of the real estate, etc.).

The market value determination of developed and undeveloped land is regulated by §8 of the German Valuation Law ImmoWertV. According to this, the market value determination is done by the comparison approach (§15) inclusively the procedure for land value determination (§16), the income approach (§§17 to 20), the cost approach (§§ 21 to 23), or by more than one of these techniques together [41] - §8]. The approach is to be chosen for the particular cases based on object of the valuation, the ordinary customs of the existing course of business, or other present circumstances in the particular case. The choice of the approach is to be argued and defended [41] - §8].

### **3.1.2.2 Committees of Valuation Experts (Gutachterausschüsse)**

An important role enabling German valuers to perform their duties is played by the Committees of Valuation Experts (“Gutachterausschüsse”) which are defined in the §§192 to 193 of the German Federal Building Code [38]. Responsibilities of the Committees of Valuation Experts include forming expert opinions on the current market values of properties (especially for courts and judicial authorities) but most importantly (according to section (5) of §193) the committees shall compile data about purchasing prices which it shall further analyse to establish standard ground values and other data required in valuation. In order to enable the compilation of purchasing price data by the Committees of Valuation Experts “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 Valuation Experts” [38] §195, Section (1) – translated into English]. Furthermore, in accordance with §197, Section (2): “All courts and authorities are obliged to provide the committee of experts with administrative and legal co-operation. The tax authority shall provide information on property, where this is required for the assessment of compensatory payments and of compensation for expropriation.” [38] §195, Section (1) – translated into English]. All these powers given to the Committees of Valuation Experts by the law enable them to: “... make an assessment on the basis of the purchasing price data of average local ground values for each section of the municipal territory, taking into account varying degrees of development. In areas where building has taken place, standard ground values are to be assessed as if the ground had not been built on. Where nothing has been determined to the contrary, standard ground values are to be assessed at the end of each second calendar



year.” [38] §196, Section (1) – translated into English]. The Committees are established by the respective federal state (located usually within the local municipalities or land registry offices of the cities and counties).

### **3.1.2.3 Land Value**

The foundation for determination of market value of land is the so called standard ground value (in German: “Bodenrichtwert”). As neither the concept nor the term “Bodenrichtwert” exist in the English language it is often circumscribed with the terms “publicly registered land value” or “standard ground value”. The concept of standard ground value is defined in §196 of the German Federal Building Code [38] and is facilitated by the use of data about purchasing prices (“Kaufpreissammlung”, §193 of the Federal Building Code) compiled by the Committees of Valuation Experts. For valuation of land the standard ground value is used (as stated in §9 of ImmoWertV) as input into the comparison approach. Should there be an insufficient number of comparable purchasing prices then a deductive procedure or other suitable and reproducible procedure can be used by the valuer to determine the market value of land [41] - §10]. The standard ground value is to be given as an amount in EUR per one square meter of the land area.

### **3.1.2.4 Sales Comparison Approach (“Vergleichswertverfahren”)**

The sales comparison approach (regulated by §15 of the Valuation Law - ImmoWertV) is based on the idea of determining the market value of the subject property from sufficient evidence about contemporary sales of comparable properties. This method assumes collection of all quality components (namely location, usability and character, together with site- and use-specific assessments of influencing factors related to economic activities in the given time and place). After minor corrections and adjustments, the comparison approach in general directly leads to the market value. [31]

### **3.1.2.5 Income approach (“Ertragswertverfahren”)**

With the income approach the ability of the property to yield income is assessed. The annual potential of net rent income (“Reinertrag”) of the building is determined by

subtracting the annual non-recoverable operating costs of the building (“Bewirtschaftungskosten”) and the annual return on the land value from the gross rent income (“Rohertrag”). Experience shows that any informed buyer forms his or her opinion about the purchasing price based on benefits which he or she expects from the property (net income, value appreciation, tax advantages, etc.). The assumed benefits are calculated through capitalization of the net income, taking into account foreseeable expenses of necessary improvements of buildings and facilities required to produce the expected income. The income approach is regulated by §§17 to 20 of the Valuation Law (ImmoWertV) [41]. The concept of a special rate (called “Liegenschaftszinssatz”) is introduced in §193 of the Federal Building Code [38] §193, Section (5)]. The capitalization rate with which the market value of real estate property is charged according to its character (“Liegenschaftszinssatz”) is published by the Committees of Valuation Experts. With use of this rate the annual potential net income of the subject property can be derived.

#### **3.1.2.6 Cost Approach (“Sachwertverfahren”)**

The cost approach (regulated by §§21 to 23 of the Valuation Law – ImmoWertV) is regularly employed to determine the market value of a previously developed land for which the actual use of the land stands in foreground and the replacement costs for the land with its individual components are of key interest to the potential buyer [41]. Using this approach it is indicated that the potential buyer of the property weights the value of the land with its existing constructions and other facilities to the purchasing price of an undeveloped land with costs to construct similar facilities and constructions. This method is primarily used for determination of market value of family houses but can be considered also for administrative buildings, city halls, schools, hospitals as well as for owner-occupied factory buildings or warehouses. [31]

#### **3.1.2.7 Mortgage Lending Value (“Beleihungswert”)**

The mortgage lending value is governed by the Regulation on the Determination of Mortgage Lending Value (“Verordnung über die Ermittlung der Beleihungswerte”, BelWertV) [40] and §16 of the Pfandbrief Act (“Pfandbriefgesetz”, PfandBG) [39]. The Pfandbrief Act (PfandBG) replaced in May 2005 after more than 100 years the old version

of the act - the “Hypothekbankgesetz” (HypBankG) which entered into force in January 1990.

The value which forms the basis of the lending is the value of a property which can (independently from temporary value fluctuations on the relevant real estate market and under elimination of speculative elements during the entire duration of the loan) be presumably achieved by its sale. All of the three above mentioned valuation approaches can be used - decisive for the choice of the applicable approach should be the character of the particular subject property.

## **3.2 Situation in the Czech Republic**

### **3.2.1 Profession of a Valuer**

The profession of a real estate valuer in the Czech Republic can be principally conducted under two schemes: either on foundation of an issued Trade License (“odhadce”) or as a judicial sworn-in expert in the field of prices and valuation of real estate (“znalec”) appointed by the Minister of Justice or by the presiding judge of the regional court in accordance with the Law No. 36/1967 Coll. on experts and interpreters.

#### **3.2.1.1 Valuers Active on Basis of a Trade License**

The first pattern allowing valuation activities to be exercised on a basis of a Trade License is regulated by the Act No. 455/1991 Coll. (“Trade Act”), namely by its Appendix No. 2 where the requirements for professional qualifications are stated. Starting from June 1, 2008 the activities under the sector “Valuation of real estate” are managed as a regulated trade (“živnost vázaná”) in accordance with the amendatory Act No. 130/2008 Coll. (§§23 to 24) on changes to the Trade Act (previously these activities were organized as a license trade – “živnost koncesovaná”) [24]. The appraiser (no defined English translation for the word “odhadce” properly representing the concept is available) is a person who deals with estimation of market value of real estate property. In compliance with the Trade Act, these appraisers are delegated to the determination of market value of real estate property only in cases when the services of a sworn-in valuer are not requested. The appraiser working under the scheme of the Trade License is neither allowed to serve as a valuation expert in

cases appearing in front of courts nor to determine the administrative price of property in accordance with ordinances issued by the Ministry of Finance (only the sworn-in valuers are allowed to perform such tasks). The general professional requirements for the operation under this regulated trade are permanent residence in the Czech Republic, criminal record with no entries, ability to command the Czech or Slovak language, and minimum age of 18 years. More detailed requirements for education of appraisers can be found in the Appendix 2 of the Act No. 455/1991 Coll. [23]

### **3.2.1.2 Sworn-in Expert Valuers**

The second pattern allowing valuation activities to be exercised on a basis of an appointment to sworn-in expert valuer is more professionally demanding. The sworn-in valuer is an independent person who on the basis of his or her expertise examines, assesses and evaluates certain facts on which he or she then issues a written expert opinion (valuation report). These valuers act in proceeding which are mainly regulated by civil or criminal procedures. The conduct of valuation (and interpreting) activities lies within the scope of the Minister of Justice. Valuation experts are appointed for individual fields under the Act No. 36/1967 Coll. as amended directly by the Minister of Justice (rarely) or the presiding judge of the regional court (usually) appropriate to the place of residence of the applicant. [23] [50]

The judges are primarily lawyers and therefore the court may invite an expert to clarify professional matters. The sworn-in valuers are registered in list of valuers and interpreters of the relevant region as well as in the central database kept by the Ministry of Justice. The “judicial” connoisseurship (“soudní znalectví”) serves for a better decision-making position of judges in cases when professional assessment of events and facts is required. These assessments usually require not only deep theoretical knowledge, but also practical experience in special fields of medicine, technology, economics, etc. This is the reason why usually older valuers are entered into the list of sworn-in valuers as they have had already proven their practical experience and demonstrated outstanding professional skills. The sworn-in valuers in broader sense act as advisors or experts in a wide range of human activities, and therefore these services can also be denominated as consultancy services.

The term sworn-in valuer or judicial valuer possesses a high professional reputation in the Czech territory influenced by the historical tradition of Austro-Hungarian Monarchy [23].

The sworn-in valuers are liable to the Act No. 36/1967 Coll. on Valuers and Interpreters from April 6, 1967, as amended, and to the implementing Ordinance No. 37/1967 Coll. from April 17, 1967, as amended, published by the Ministry of Justice. The Act No. 36/1967 Coll. also regulates the function of valuation institutes (§§21 – 23) [50]. According to the above mentioned regulations, the sworn-in valuers (in the field “Economy – Sector of prices and real estate appraisal”) are appointed by the Minister of Justice or by the presiding judge of regional court (in the jurisdiction of permanent residence of the applicant). Fulfilment of conditions defined in §4 of the Act No. 36/1967 Coll. is required by the appointing authority. These conditions include Czech citizenship; necessary knowledge and experience in the field in which the valuer is to be active (completion of specialized education in the given field); personal qualities for the execution of valuation activities; consent to the appointment from the side of the applicant (in justified cases the Minister of Justice may omit the requirement for Czech citizenship) [50]. According to §6 of the Act No. 36/1967 Coll., the appointed sworn-in valuers have to take an oath in which they swear to execute their valuation activities in accordance with existing regulations and to their best knowledge, to be unbiased, and to keep professional secrecy on matters connected to their work [50] - §6]. The sworn-in valuers are also obliged (§15 of the Act No. 36/1967 Coll.) to keep a Valuer’s Journal in which records of all accomplished valuation reports have to be listed together with their subject, client’s name, amount of remuneration and date. Upon their appointment, the sworn-in valuers are provided with a special authorization to use an expert seal bearing a Lion (as the Czech national symbol), and are registered in the list of appointed sworn-in valuers and interpreters kept by the appropriate regional court (a version of this list for the aggregated region of the Czech Republic is available also at the Ministry of Justice).

## **3.2.2 Valuation Methodologies**

### **3.2.2.1 Historical Development**

The industrial revolution brought an increase in productivity and detachment of man from nature which resulted in development of trade and a change in the value system. The technological progress repressed the perception of basic utility value of goods and replaced it with a value system of consumers in a modern society. This process caused a significant movement from the original utility value of goods and services and their prices. [23]

With the magnitude of the industrial revolution and the related economic growth since middle of the 19<sup>th</sup> century, the necessity to establish a stable and controllable method for determining taxes became obvious for the state. For this purpose, different methods for determination of income from assets and businesses were employed with special category of valuation of real property. The presence of experts by courts became necessary and concurrently initiated a system in which the opinion of experts and their reports were recognized as self-contained judicial evidence (this was regularized by the “Code of Criminal Procedure” from 1873 which was valid within the Czech territory until 1950 [5]. In 1897 the first Valuation Decree No. 175/1987 Coll. was released by the Ordinance of Ministers of Justice, Affairs, Interior and Tillage. This first valuation decree indicated instructions for appointment of courts expert valuers and ground rules of appraising. The fundamentals for determination of the property’s value was the price realized on the market, that is by the value proven by the demand and supply on the market [6]. New methods of cost-approach to real estate valuation were developed as the necessary data about market (required for the comparison-approach) were not always available.

The Second World War fundamentally interfered into the process of real estate valuation and influenced this field significantly. In 1939 the Ordinance No. 175/1939 Coll. introduced a scheme of so called stop-prices. According to this ordinance, it was prohibited to increase the price of goods and services above their price as at June 20, 1939 (similar procedure of stop-prices was also adopted in Germany which was facing an exceptionally high inflation). The system of valuation of real estate under this scheme was rather problematic as the prices of the property as at June 20, 1939 could in the majority of cases

not been discovered in any evidence material. Therefore, the price which would have been presumably agreed to that date or before it was taken as a value of the property. [23] This system was de facto used until 1964 when a valuation ordinance No. 73/1964 Coll. was published by the Ministry of Finance. Other ordinances and acts followed (a list of them is presented in the following table). The most important one for the present use is the Law on Property Valuation No. 151/1997 Coll., as amended, published by the Ministry of Finance. This Law on Property Valuation together with currently valid implementing act (both published by the Ministry of Finance) form the legal framework for valuation of real estate for today's valuers.

*Table No.1: Price orders for the determination of regulated prices of real property in particular periods*

PERIOD OF EFFECTIVENESS		PRICE ORDER	
From	Until	No.	Effect
01.08.1897	15.08.1933	175/1897 Coll.	1 <sup>st</sup> Valuation Decree
16.08.1933	19.06.1939	100/1933 Coll.	2 <sup>nd</sup> Valuation Decree
20.06.1939	30.04.1964	Act No. 208/1950 Coll.	Act on expropriation calculation
		Act No. 228/1951 Coll.	Act on expropriation calculation
		Act No. 18/1963 Coll.	Act on prices of buildings and land, and expropriation compensations
01.05.1964	31.05.1969	Act No. 73/1964 Coll.	Act on prices of buildings and land, and expropriation compensations
01.06.1969	31.12.1984	Act No. 43/1969 Coll.	Act on prices of buildings and land, and expropriation compensations
01.01.1985	31.12.1988	Act No. 128/1984 Coll.	Act on prices of buildings and land, and expropriation compensations
01.01.1989	31.10.1991	Act No.182/1988 Coll.	Act on prices of buildings and land
01.09.1990	31.12.1990	Act No. 316/1990 Coll.	Amends Act No. 182/1988 Coll.
01.01.1991	<b>Continuously</b>	Law No. 526/1990 Coll.	Law on prices
01.01.1991	31.10.1991	Act No. 589/1990 Coll.	Amends Act No. 182/1988 Coll.
21.01.1991	31.10.1991	Act No. 40/1991 Coll.	Amends Act No. 182/1988 Coll.
01.11.1991	31.10.1994	Act No. 393/1991 Coll.	Act on prices of buildings and land
24.03.1992	31.10.1994	Act No. 110/1992 Coll.	Amends Act No. 393/1991 Coll.
01.01.1993	31.10.1994	Act No. 611/1992 Coll.	Amends Act No. 393/1991 Coll.
01.11.1994	31.12.1997	Act No. 178/1994 Coll.	Act on prices of buildings and land
01.01.1996	31.12.1997	Act No. 295/1995 Coll.	Amends Act No. 178/1994 Coll.
01.01.1998	<b>Continuously</b>	Law No. 151/1997 Coll.	Law on property valuation
01.01.1998	30.06.2000	Act No. 279/1997 Coll.	Acton prices of buildings and land
01.07.1999	30.06.2000	Act No. 127/1999 Coll.	Amends Act No. 279/1997 Coll.
01.07.2000	31.09.2001	Act No. 173/2000 Coll.	Act on prices of buildings and land
01.10.2001	18.07.2002	Act No. 338/2001 Coll.	Act on prices of buildings and land

19.07.2002	31.12.2002	Act No. 325/2002 Coll.	Act on prices of buildings and land
01.01.2003	31.12.2003	Act No. 540/2001 Coll.	Act on prices of buildings and land
01.01.2004	31.12.2004	Act No. 452/2003 Coll.	Act on prices of buildings and land
01.01.2005	31.12.2006	Act No. 640/2004 Coll.	Act on prices of buildings and land
01.01.2007	12.01.2007	Act No. 617/2006 Coll.	Act on prices of buildings and land
13.01.2007	31.01.2008	Act No. 76/2007 Coll.	Act on prices of buildings and land
01.02.2008	31.12.2008	Act No. 3/2008 Coll.	Act on prices of buildings and land
01.01.2009	31.12.2009	Act No. 456/2008 Coll.	Act on prices of buildings and land
01.01.2010	31.12.2010	Act No. 460/2009 Coll.	Act on prices of buildings and land
01.01.2011	<b>Still valid</b>	Act No. 364/2010 Coll.	Act on prices of buildings and land

*Source:* [24] and extract from software program NEM3000, version 2.99.2 (computer software for real estate valuation distributed by PLUTO-OLT s.r.o.)

### 3.2.2.2 Administrative Price versus Market Value

In the Czech Republic, professional valuers have to face a challenge of dual level of prices. This issue of two price levels and thus also two differing approaches to property valuation which exist alongside each other in the Czech Republic should be accentuated before continuing further. A real estate valuation can be performed either (1) as an estimation of market value of the property (“cena obvyklá”) or (2) as a determination of the administrative, state-regulated price of the property (“cena administrativní”, “cena zjištěná”). [23]

The **administrative price** is mainly used for proceedings including taxation purposes (note that a 3% real estate transfer tax is levied in the Czech Republic), cases of inheritance and expropriation, and is used for majority of cases performed for courts or other governmental bodies in which the authorized institution requires a determination of administrative price of property. The **market value** approach is used for any other purposes (that is for cases in which the administrative price is not explicitly demanded). The results of estimation of the market value are presented in a valuation report referred to as “Tržní ocenění” (market valuation); results of determination of administrative price are represented in the form of “Znalecký posudek” (expert’s valuation report).

### 3.2.2.3 Administrative Price

The determination of administrative price is a subject to the Law on Property Valuation No. 151/1997 Coll., as amended, and to its implementing currently legitimate ordinance



published by the Ministry of Finance (for list of them please refer to Table 1), at present represented by the Act No. 364/2010 Coll., which changes the Act No. 3/2008 Coll., on execution of some provisions in the Law No. 151/1997 Coll., on property valuation and on changes to some laws, as amended. The administrative price is determined to the date when the circumstances evoking the necessity of valuation commenced (e.g. date of real estate transfer for taxation purposes; date of death for purposes of inheritance process, etc.). The administrative price is artificial, produced through income-, cost-, or comparative-approach, and influenced by present economic environment on the market for real property in the given territory.

#### **3.2.2.4 Market Value**

The estimation of a market value shall be primarily done in an adequate, clear, traceable, and comprehensible manner. The international valuation standards (mainly those published by IVSC, RICS, and TEGoVA) shall be taken into account while estimating the market value of a real estate property even though it is not explicitly required by any regulation in the Czech Republic.

The Law No. 151/1997 Coll. on property valuation, as amended, regulates the means of valuation of assets, rights, and rights and services for purposes set out by specific regulations. The law does not apply to negotiation of prices and is unenforceable for valuation of natural resource, excluding forests [52] - §1]. The negotiation of prices is administered by the Law No. 526/1990 Coll. on Prices, as amended, in §§2 to 10 [51]. Along with the §2 of the Law No. 151/1997 Coll., as amended, are services and property valued at market value (“common price”, “usual price”), unless this law defines a different method of valuation. The market value for the purposes of this Law is understood as “the price which would be achieved by sale of a similar property or by provision of a similar service in the ordinary course of trade on the valuation date in the country” (i.e. the Czech Republic) [52] - §2]. All the circumstances having impact on the price are considered. However, impact of exceptional circumstances on the market (e.g. distress of the seller or buyer; effects of natural disasters) and personal circumstances of buyer and seller (e.g. family, personal or patrimonial relationships between the seller or buyer) are not reflected

[52] - §2]. The different methods set out in this Law relevant for valuation of real estate include the cost approach, the income approach, and the comparison approach.

#### **3.2.2.4.1 The “Triad”**

The three accepted approaches developed for the real estate valuation are sometimes referred to as the “triad”. In the process of valuation each of this three approaches is considered and a decision is made whether the approach is applicable in the given case (main factors of this decision-making are the type of property to be appraised and the availability of data needed for conduct of the each particular approach). While several literature resources recognize more than 3 basic approaches to real estate valuation (which is the case especially in the U.S.A. where sometimes even up to 8 methods are described), the majority of experts agree that the quantity of applied methods is reduced to these three generally accepted and most-widely used approaches. [43]

#### **3.2.2.4.2 Cost Approach**

This method of valuation is based on the principle of replacement. The prospective purchaser will not pay more for assets taken into consideration than costs for their replacement. In this relation, the terms “substance” and “material value” are often used. The meaning of the material value represents the quantity of financial means necessary to invest in order to acquire the same or very similar property. In the event of purchase, substance has clear economical meaning. It helps to solve the question whether it is more advantageous to buy an existing real estate or whether it is better to build a new one. Mathematical model of this method can be expressed in simplified form as:

$$V = \sum_{i=1}^n \mathbf{RC}_i \times (1 - \mathbf{D}_i) + \sum_{j=1}^m \mathbf{P}_j \quad (\text{Formula No. 1.1})$$

where  $\mathbf{RC}_i$ .....reproduction cost of building,  
 $\mathbf{D}_i$ .....depreciation of building (in %),  
 $\mathbf{P}_j$ .....plot price. [8]

Information about construction costs (used for estimation of reproduction costs) can be obtained from building developers and constructors active on the market; the depreciation

of the building is usually estimated by the professional valuer during the physical inspection of the building; the plot price is determined separately [26]. This approach is often employed for valuation of family houses, storehouses or manufacturing halls, and outside adjustments.

**3.2.2.4.3 Income Capitalization Approach**

This method expresses the ability of the property to deliver continuous and sustainable yield. The basis of this approach is represented by the relation between lof of income and value. The buyer purchases future flow of income, i.e. future incoming cash flow. As the input source for this approach serves the level of rental fees common in the given location and time, which is lowered by costs connected to the ownership of the property, its operation and maintenance. In other words, the value of the real estate is specified by initial projection of the volume, reliability, and length of the duration of future flow of income, which is then capitalized by specified adequate capitalization rate to transfer the future income to its current level.

The mathematical expression of this method can be defined as:

$$V = \text{NOI} / R \quad \text{(Formula No. 1.2)}$$

implying that “the market value (V) of property equals its stabilized net operating income (NOI) divided by an appropriate market capitalization rate (R).” [33] It can be expressed more accurately in the form:

$$V = \sum_{t=1}^n \frac{\text{NOI}}{(1+r)^t} + \text{Value of Land and Facilities} \quad \text{(Formula No. 1.3)}$$

where **NOI**.....net operating income,

**r**.....required return (which is similar, but not identical, to R),

**t**.....time in years [33].

**3.2.2.4.4 Sales Comparison Approach**

This method is determined on the basis of comparison and evaluation of recent completed sales of similar real estate property. To obtain sufficient information about these sales, valuers often use data from price maps and relevant offering and demand price kept real

estate agencies. It is always necessary to analyze the location and possible future development trends.

The sales comparison method is the most frequently used in well-functioning markets with sufficient information about current sales of comparable properties as well as sufficient frequency of such sales. In the Czech domestic conditions, the information about such sales is still limited, as no relevant reliable and applicable database administered by official authority exists. The valuers therefore commonly use data obtained from real estate agencies, reports about market development, or regional statistical data and indexes published by international agencies. The method can mathematically be expressed in following form:

$$V = \frac{\sum_{i=1}^n (SP_i \times c_r)}{n} \quad (\text{Formula No. 1.4})$$

where  $SP_i$ ..... sales price of the i-th property,

$c_r$ .....represents the coefficients of comparison for the i-th property

$n$ .....number of studied cases [8].

## **4. Analysis of Real Estate Valuation Methodologies Used in the Czech Republic and Germany**

The best analysis of real estate valuation methodologies used in the Czech Republic and Germany represents their application on real world valuation assignments. These methodologies were not created as purely theoretical tools. They were developed to assist valuers in the process of real estate valuation. Therefore two case studies are presented in the following section. Both of them were performed on a real, existing real property which I have personally inspected. The valuation is then performed as at the date in 2010 and thus by application of the then relevant and applicable legal regulations in the given country.

In the Case Study 1 – Germany, the valuation process is performed on an existing and specific building in the town Riesa (near Dresden). This building offers commercial and residential space. The market value was estimated by the application of cost approach and income capitalization approach. Moreover, the mortgage lending value of the property was determined. In the Case Study 2 – the Czech Republic, the valuation process was conducted on a building located in Prague 8 with commercial and business space. Here the cost approach and sales comparison approach were applied for the estimation of market value. Furthermore the administrative price was determined, with regard to the Act No. 460/2009 Coll. For the purpose of sensitive data protection, all information leading to possible identification of both properties was removed.

A short summary and analysis of the generally implemented design of valuation report is supplied prior to the performance of value calculations in the Case Studies themselves.

The demonstrated valuation process in both countries is presented in the form of valuation reports, the sections are therefore numbered accordingly to their sequence in the valuation report. The numbering was thus not adjusted to the numbering of this diploma thesis to preserve clearness of the supplied information and coherence.

## 4.1 General Design of a Valuation Report

A general approach to design of a valuation report may be observed in both countries. This is not surprising, as the format and sequences of individual sections in the valuation report have a logical consecution.

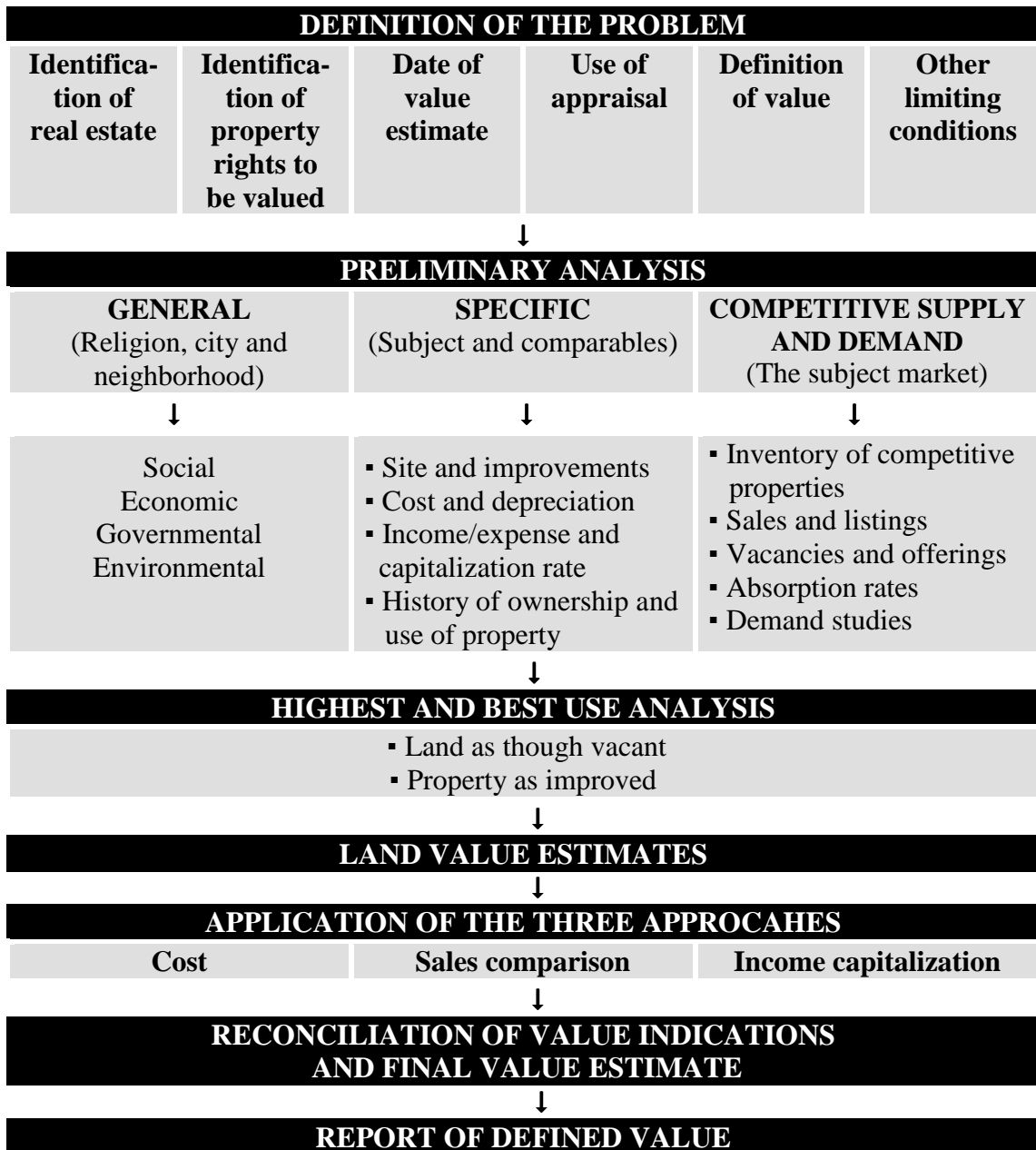
The first section of the valuation report consists of the front page and introductory part to the valuation process. The front page should always include clear and accurate information about the following:

- Surname and name of the valuer who elaborated the valuation (often also the institution which authorized him/her is stated),
- Identification number of the valuation report in the valuer's register,
- Detailed address and brief characteristics of the property to be appraised,
- Ownership rights connected to the property,
- Purpose of valuation of the property,
- Name of the client or authority who commissioned the valuation,
- Date of the valuation (and submission of the valuation report if these two dates differ).

Preferably also the summary of the determined market value, mortgage lending value, or administrative price (depending on the scope of the valuation) shall be provided on the front page for better overview together with a picture of the subject property. On the subsequent pages, the description of the subject property shall be provided and the reason for the valuation should be stated. This is followed by the highest and best use analysis and calculations for the determination of the land value and real estate property value. A reasoning explaining the choice of the applied methodologies is advisable. The results are summarized in conclusion which has to be signed (and stamped) by the valuer. A list of used literature and attachments (including pictures of the subject property) complete the valuation report.

The valuation process applied in the valuation report may be briefly summarized in the following chart.

*Chart No.1: The valuation process*



*Source: [27] [24]*

This chart represents the flow of the valuation process and the generally accepted approach to the determination of market value. This logical sequence of steps is applied in both countries (Germany and the Czech Republic).

## **4.2 Case Study 1 – Germany**

### **Market value and mortgage lending value of a building with apartments and commercial space**

#### **Introduction**

In the following case study, the valuation process of determining first the market value and subsequently the mortgage lending value of a building with apartments and commercial space is performed. The valuation process is executed in a real-world manner, just as it would be done by a publicly-appointed, sworn and qualified valuer to the given date by obeying all relevant legal regulations and professional customs. The Case Study 1 is therefore further divided in sections corresponding to a valuation report.

#### ***Identification & Introduction***

The first page of the valuation report is omitted in this case, to prevent the identification of the property in order to protect sensitive data and privacy of its owners. Nevertheless, following essential information has to be provided for better clarity and understanding of the case study:

Client: Deutsche Bank AG, Credit Risk Management  
(Order No. XY dated February 17, 2010)

Property: Building with commercial and residential space on land parcel No. XY with 890 square meters, Street XY, town Riesa

Owner: The sole owner is Mr. XY

Date of inspection: February 23, 2010



Picture of the subject property:



*Source: own archive (author: Klára Rysková © 2010)*

*(Note: This picture is only illustrative, i.e. the building represented here is similar to the subject property, but it is not the same object.)*

## ***1. General Information***

### ***Subject and Purpose of the Appraisal***

The valuation of this property falls within the scope of §1 BelWertV (Regulation on Determination of Mortgage Lending Value) – determination of collateral value of land, land-similar rights or similar rights under a foreign jurisdiction, which are subject to a mortgage or will become subject to a mortgage. All of the following considerations and calculations are based on the principles of this Act (BelWertV).

***Subject of this valuation*** in accordance with § 2 BelWertV and in conjunction with §13 (clause 1, sentence 1) of the PfandBG (Pfandbrief Act), is according to the order from client a parcel improved by building with both, commercial and residential space. From a legal point of view, the building has been divided into altogether 7 commercial and residential units. All units belong to own and the same owner. Consistent with the client's

order, the valuation of the building with commercial and residential units is performed by application of income and cost approach to value determination.

***Purpose of the valuation report*** is to determine the market value and the mortgage lending value of the property in accordance with §16 of the Pfandbrief Act.

### ***Other Arrangements of the Valuation Report***

The appraisal includes all major components of the plot of land (buildings, construction and other arrangements) pursuant to §94 of the Federal Building Code (BauGB). The mortgage lending value is determined without burden. Any burden or rights registered in the cadastral register are captured and shown separately on a value basis. Equipment and inventory are not subject to the appraisal.

The liability for incomplete or incorrect valuation due by information not disclosed by the client, and/or due to unknown value-influencing land features, and/or not detectable construction defects, is herewith excluded. The valuation is done solely for the arranged purpose. Utilization of the valuation report for other purposes requires written confirmation of the signatories.

### ***The Basics for Processing***

- Physical inspection of the property performed on February 23, 2010. Participants:
  - Owner of the property Mr. XY,
  - Valuer,
  - Assistant of the valuer.

The representative of the client (Deutsche Bank) did not arrive to the inspection.

- The following supplied documents (from the client & the owner):
  - Plan of the site,
  - Constructional layout drawings,
  - Calculation of net dwelling area,
  - Overview of rents.
- Information supplied by the Committee of valuation experts (“Gutachterausschuss”) of the region Meißen,

- Full abstract of the cadastral register (“Grundbuch”),
- The valuer’s own notes and observations gained during the inspection of the property.

## ***2. Tenancy Schedule and Floor Space***

In the subject property - residential and commercial building, there are three commercial units with a total of 543.96 square meters of floor space, and four apartments with a total of 382.22 square meters of living space. As at the valuation date, the building was completely rented (except for one apartment in the second floor).

***Table No.2: Summary of floor space and rent roll***

<b>Unit</b>	<b>Floor</b>	<b>Floor space (m<sup>2</sup>)</b>	<b>Utilization</b>
<b>Commercial unit No. 1</b>	Ground floor	152.63	Clothes shop
<b>Commercial unit No. 2</b>	Ground floor	145.08	Greengrocery
<b>Commercial unit No. 3</b>	First floor	246.25	Doctor’s practise
<b>Apartment No. 1</b>	Second floor	74.57	Vacant
<b>Apartment No. 2</b>	Second floor	37.02	Leased
<b>Apartment No. 3</b>	Second floor	73.92	Leased
<b>Apartment No. 4</b>	Third floor	196.71	Leased
<b>Sum of commercial and living space</b>		<b>926.18 m<sup>2</sup></b>	

*Source: Documentation provided by the owner of the property*

The Apartment No. 4 which is occupied by the owner disposes of additional over 100 square meters of living space on the attic floor. Due to small height of this space it is included in the determination of commercial and living space.

## ***3. Characteristics of the Land Parcel***

### ***3.1. Location***

The subject property is located in the federal state Sachsen, administrative district Dresden, region Meißen, in the town Riesa (with 36 thousand inhabitants). The town Riesa is an economic and cultural centre of the micro region. The inland port Riesa on the river Elbe is one of the largest in Sachsen and offers twenty hectares of land (out of its total 48 ha space) for settlement of trade.

The specific property to be appraised is situated in the centre of the town on the square XY. This area is centrally located on the left side of the river Elbe. The public transportation, railway-station, and pedestrian zone offering shopping opportunities are within a walking distance. To the north from the subject property is a large commercial site – the mill in Riesa. In the south-west direction is a freight railway station and industrial sites around the port. The square XY itself is a pleasant area with a small park in the middle, the immediate neighbourhood has a relatively historical character. The surrounding properties are characterized by three to four floors commercial and residential houses built mostly in a closed manner facing to the roadside. No disturbing influences were identified.

The traffic connections in the area are advantageous, the distance to exit of motorway A14 (leading to Leipzig) is 23 kilometers, to motorway A13 (leading to Berlin) 36 kilometers; the junction of state roads B6, B169 and B182 is directly in Riesa. The railway-road through Riesa runs in the direction Leipzig – Dresden.

### ***3.2. Public infrastructure***

The XY Street is covered with asphalt; paved sidewalks are on both side of the street. The subject property is connected to service connections of water, electricity, natural gas, sewerage, and telephone line. The parcel is fully developed.

### ***3.3 Development potential***

The subject property is located within a fully developed and built-up area of residential and commercial buildings. No further development is therefore possible.

### ***3.4 Parking places***

There are 6 parking spaces available directly on the parcel and 2 parking spaces in garages. Parking spaces are also available in the neighbouring streets.

### ***3.5 Preservation of sites of historic interest***

The building is listed as a single monument (“Einzeldenkmal”) in the list of heritage building in the town Riesa. According to the Monuments Preservation Office in Riesa (“Denkmalschutzamt”) is this apartment building with a brick facade listed as a historicism

construction at the centrally located square and is a subject to monuments' preservation. This means that transfer of ownership of property has to be reported to the authority concerned with monuments' protection and that all planned construction projects and adjustments must be approved by such authority.

### ***3.6 Land contamination***

No indications of contamination are known.

### ***3.7 Assessment of the location, utility, third party use, and merchantability***

The subject property is situated centrally in the town Riesa. The neighbouring buildings can be generally characterized as being of historic interest (mainly due to their exquisite facades and construction manner); the area was completed with new buildings as well. The residential area can be judged as medium, the commercial potential can be classified as good.

The central location provides achievement of good revenues in the two shops situated on the ground floor of the building. The doctor's practise on the first floor and the apartments can be easily rented due to the available parking spaces in the courtyard. The building was built around 1890 and renovated and modernized in 1996. The apartments and commercial units have moderate to good facilities. There are four apartments and three commercial units together. The location and the performed renovation and modernization of the property secure a long-term useful life. The ability of the property to be leased, the merchantability, and the overall risk are classified as normal.

## ***4. Characteristics of Construction Structure***

### ***4.1. Construction***

The parcel is built-up with residential and commercial building in a closed construction manner with cellar, ground floor, first floor, second floor, and developed attic floor. It borders on neighbouring buildings from both sides. In the courtyard there are 6 parking spaces and additional 2 parking spaces are provided in garages in neighbouring adjacent building.

#### ***4.2. Remaining useful life***

On buildings occurs a natural deterioration influenced by environment and usage. This deterioration requires at certain time intervals construction adjustments and renovations. For maintained and renovated buildings the expected useful life increases. The total expected useful life of this particular building is 80 years. The building was renovated and modernized in 1996. This lengthened the expected useful life as at the date of renovation for 50 years. Therefore, as at the valuation date, a total remaining expected useful life was identified to be 36 years.

#### ***4.3. Floor space***

According to supplied documentation there are 3 commercial units and 4 apartments in the building with total 926.18 square meters of floor space.

The gross floor space (“Bruttogrundfläche”, BGF) in accordance with DIN 277/1987 is the sum of floor space in all floor levels of a building. Excluded are only the floor space of not usable roof surfaces and construction-required cavities, such as in ventilated roofs or above suspended ceilings. Accordingly to the supplied documentation the gross floor space of the building was determined to be 1,800 square meters.

#### ***4.4. Construction specifications***

The dominating type of construction, which may differ in some minor areas, is classified. Information about hidden components is taken from available documents, notices, and assumptions made about appropriate expected construction manner, and are unbinding. The functionality of individual construction parts was not tested. Statements about structural damages may be incomplete. The following statements are therefore of informative character only.

#### ***Commercial and residential building:***

The building was built around the year 1890 and was renovated and modernized in 1996. All apartments and the commercial unit No. 3 in the first floor now offer a modern fitting. In the ground floor only the commercial unit No. 1 was fully renovated. The commercial unit No. 2 in the ground floor was improved only with modern heating and toilet facilities.

The shop window and the floor covering still have to be renovated. This should be performed with a change of tenants.

**Table No.3:** *Construction specifications of the building*

Cellar:	brickwork, vault, screed floor cover
Roof:	composite slate, rain drainage from sheet zinc
Facade:	to the street side: brick slip cladding, sandstone moldings and ornaments; rear side plastered and painted
Ceilings:	massive over the cellar, otherwise wooden beams
Windows:	plastic windows with heat insulation glazing
Balcony:	only 2 original balconies facing the street; a rooftop terrace in the attic
Staircase:	stone steps covered with linoleum, wrought iron railing, walls plastered and decoratively painted; staircase on the ground floor to the gateway closed with sliding glass door
Apartment doors:	doorframe with wood veneer
Floor covering:	parquet flooring, fitted carpet, tiling
Elevator:	not available
Sanitary:	wall-mounted toilet and washing basin, in the apartments shower or bath
Electrical lines:	appropriate
Heating:	central gas heating unit with warm water transmission; in bath room of apartment No. 4 floor heating

*Source: own notes and observations made during the inspection of the property*

#### **4.5. Outdoor facilities and improvements**

Outdoor facilities are all structural and other adjustments outside the building located on the land parcel, including the connection of water supply and waste lines to the public infrastructure network, the surface land arrangements, and fence constructions.

#### **4.6. Repairs backup**

After the physical inspection of the property following repairs and building measure were identified as required.

<i>Repairs backup</i>	<i>Time value</i>
Reconstruction of commercial unit No. 2 on the ground floor; reconstruction of part of floor covering in cellar and cellar staircase	<b>20.000 €</b>

Note that in the valuation only proportion of the necessary repair costs can be taken into account in order to identify the market value increase of the subject property after the completion of the necessary repairs. Usually, the costs are reduced by the depreciation of value.

## ***5. Valuation***

In this valuation report the income approach and the cost approach are employed to determine the market value of the subject property while obeying the statements of the Valuation Law (“Wertermittlungsverordnung”, WertV)<sup>1</sup>. The determination of the mortgage lending value is undertaken accordingly to the specifications of the Regulation on Determination of Mortgage Lending Value (“Beleihungswertverordnung”, BelWertV) and the Pfandbrief Act.

### ***5.1. Land value***

The land value is usually determined by comparison of prices. Two possible alternatives exist - the direct price comparison of purchase prices of comparable properties, or the indirect price comparison on the basis of standard ground values (“Bodenrichtwerte”). Given that according to the information supplied by the Committee of Valuation Experts in Dresden the applicable comparison prices of comparable properties were available only in insufficient quantity, the land valuation was performed within the process of using standard ground values.

The standard ground value is an average local ground value taken for a majority of land parcels that are grouped in so-called standard ground value areas and generally have similar usage to value ratio. Deviations from the general state attributes are taken into account by employing appropriate surcharges or deductions. Especially the differences regarding the specific location; usability; parcel size, shape, and depth; composition of the soil; state of development; and environmental factors are considered.

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<sup>1</sup> As the valuation is performed to the date in February 2010, the WertV is used as the relevant effective regulation. Meanwhile, it has been replaced by ImmoWertV which entered into force on July 1, 2010.



The Committee of Valuation Experts in Riesa specified the standard ground value of land with housing development in the given location to amount to 95€ per square meter (as at 31.12.2007). The size of the land parcel No. XY on the address XY is 890 square meters. The initial value of 95€/m<sup>2</sup> can be entered into the valuation as the subject property is a land parcel developed by building with residential and commercial units. Regarding the traffic noise the subject property corresponds to the area of the original standard ground value. No adjustments are therefore necessary. The land value is calculated as:

Building land parcel	95	€/m <sup>2</sup>	x	890 m <sup>2</sup>	=	84,550 €
<b>Land value (rounded):</b>						<b>85,000 €</b>

## ***5.2. Cost approach to determination of market value***

In the cost approach method is the value of construction works such as buildings, outdoor improvements and other facilities determined separately from the land value by assessment of the standard construction costs (“Normalherstellungskosten”, NHK). To the standard construction costs the usually occurring other costs have to be added as well, such as costs incurred for planning, construction works, or reviews and approvals by relevant authorities.

### ***5.2.1 Remaining useful life***

The general useful life of a mortgaged property is specified in Annex 2 of the BelWertV to be 25 to 80 years. Determination of economic useful life depends on estimation of the duration of the ability to lease the property to yield assumed income. The remaining useful life is usually considered to be the number of years during which the building construction can be operated by delivering proper maintenance and management. As already defined in point 4.2 the remaining expected useful life was set to 36 years. The general useful life of this type of property is set to be 80 years.

### ***5.2.2 Standard construction costs***

This type of building is classified in the tables of standard construction costs as type 3.21<sup>2</sup> with following attributes: detached, with cellar, ground floor, 2 upper floors, fully developed attic floor. The base prices in accord with cost groups 300 and 400 of the DIN

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<sup>2</sup> For example of the normal construction costs type 3.21 please refer to the section 8.3 of this diploma thesis.

276, including VAT, with the remaining expected useful life of 36 years with standard level facilities from construction age class 1960-1969 amounts to 630.00€ per square meter of gross floor space.

### **5.2.3 Correction factors**

The regional correction factor for the federal state Sachsen is equal to 1.00.

The correction factor for the economic development is equal to 0.97.

The correction factor for town with less than 50 thousands citizens equals to 0.95.

Adjusted standard construction costs are thereafter calculated as follows:

$$630.00 \text{ €} \times 0.95 \times 0.97 = 580.55 \text{ €}$$

### **5.2.4 Construction price index**

The construction price index (sometimes referred to as inflation factor) for apartment buildings equals accordingly to the State Statistical Office to 115.50 (as at November 2009, 2000 = 100). The appropriate calculation was accomplished in following way: since August 2008 the base of the price index has been year 2005 (2005 = 100). The State Statistical Office offers linkage factors which allow the price index to be recalculated to the basis of the standard construction costs (NHK 2000), namely to the year 2000. The construction price index in November 2009 for apartment buildings equaled to 113.10 (base 2005 = 100). Since the standard construction costs refer to the base year 2000, the relevant linkage factor equal to 0.97947 has to be applied to re-calculate the construction price index to the base year 2000:

$$\text{Construction price index (year 2000 = 100): } 113.10 / 0.97947 = 115.50 \text{ (rounded)}$$

### **5.2.5 Outdoor facilities and improvements**

Considered in the valuation of outdoor facilities and improvements are the surface land arrangements (including paved area in the courtyard and complete fence constructions) together with the inner connections of the land parcel to water supply and waste lines of the public service network.

	<b>Time value (incl. depreciaton)</b>
Surface land arrangements; paved area in courtyard; fencing	7,000 €
Inner service connections of the parcel	3,000 €
<b>Sum:</b>	<b>10,000 €</b>

### **5.2.6 Other construction costs**

Other construction costs (“Baunebenkosten”) correspond to the cost group 700 of the DIN 276 and are according to the guidelines quantified with 14% for residential buildings (located in middle of row of houses)

### **5.2.7 Cost approach to determination of market value (depreciated replacement value)**

**Table No.4:** Summary of calculation of market value using the cost approach

01	Gross floor space		1,800.00 m <sup>2</sup>
02	Price per square meter (base 2000)		580.55 €
03	Value of newly constructed building – price base 2000 (01 x 02)		1,044,990.00 €
04	Construction price index (November 2009) (base 2000 = 100%)		115.50 %
05	Value of newly constructed building as at the valuation effective date (03 x 04)		1,206,963.45 €
06	Surcharge for other construction costs	14%	168,974.88 €
07	Value of newly constructed building incl. other construction costs (05 + 06)		1,375,938.33 €
08	Remaining useful life of the building	36 years	
09	Fictive age of the building	44 years	
10	Depreciation according to ROSS <sup>3</sup>	42.6 %	586,149.73 €
11	Repairs backup		20,000.00 €
12	Residential and commercial building		769,788.60 €
13	Outdoor facilities and improvements		10,000.00 €
14	Sum of residential and commercial building		779,788.60 €
15	Land value		84,550.00 €
<b>16</b>	<b>Depreciated replacement value (“Sachwert”)</b>		<b>864,338.60 €</b>

<sup>3</sup> Please refer to the publication [22] for details about this procedure.

**Market value** (derived by the cost approach) - rounded

**864,000 €**

*Source: own calculations*

### **5.3. Income approach to determination of market value**

#### **5.3.1 Rental income / Gross yield**

##### **Residential units**

The information about rental income of residential units can be found in rent index (“Mietspiegel”) published by the town Riesa. The rent index of the town Riesa published on June 1, 2009 indicates following data for apartments buildings classified in the Category I (apartments with all following facilities: bathroom, indoor toilet, and central heating).

**Table No. 5:** *Rent index of the town Riesa published on June 1, 2009 (valid through May 31, 2011)*

<b>Apartment buildings - Category I<sup>4</sup> (as at June 1, 2009)</b>		
<b>Floor space of the apartment</b>	<b>Net rental income (€/m<sup>2</sup>)</b>	<b>Average<sup>5</sup> (€/m<sup>2</sup>)</b>
<b>A</b> < 40 m <sup>2</sup>	2.90 – 6.78	4.90
<b>B</b> 40 – 59.99 m <sup>2</sup>	2.56 – 6.13	4.85
<b>C</b> 60 – 79.99 m <sup>2</sup>	2.35 – 5.85	4.80
<b>D</b> 80 – 99.99 m <sup>2</sup>	2.35 – 5.60	4.41
<b>E</b> ≥ 100 m <sup>2</sup>	3.02 – 5.56	4.25

*Source: Mietspiegel der Stadt Riesa (as at June 1, 2009). Published by the town Riesa. PDF, 6p. Available at URL: <<http://www.riesa.de/deu/verwaltung/dienstleistungen/dokumente/mietspiegel.pdf>>*

In the subject property units of floor space corresponding to subcategories A, C, and E are rented. The rents achieved currently are positioned around 5.20 €/m<sup>2</sup> for rent excluding service charges (“Kaltmiete”); the doctor’s practise is rented for 7.86 €/m<sup>2</sup>, and the shops for 6.00 €/m<sup>2</sup>. As a consequence, sustainable achievable rents for residential floor space amounting to 4.50 €/m<sup>2</sup> were determined after consideration of the location and the above presented information.

<sup>4</sup> *Category I* is classified as apartments with all following facilities: bathroom, indoor toilet, and central heating.

<sup>5</sup> Usually achieved rental income in EUR per square meter of floor space.

### ***Commercial units***

Rents for commercial units depend on following determinants:

1. Location criteria

In descending order of significance: image of the location; accessibility by car and public transportation; dining and shopping possibilities; national transport connections; proximity to airports, proximity to town centre; proximity to employees' housing, proximity to centre of the town district.

2. Equipment and facilities criteria

Natural ventilation of the rooms; fixed installed computer wiring; parking spaces; representative entrance hall; flexible design of the floor layout and room arrangement; suspended ceilings; open communication areas.

The value in use of the commercial units to be appraised is assessed as moderate to good. The assessment of sustainable achievable rent is based on published reports such as the IVD Rent Index 2009/2010; TLG Market Report Real Estate Market East Germany 2008; Market Report Germany 2008 published by the DEGI Research; as well as own archive materials of the valuer and statements made by local real estate agents and real estate properties managers. The intervals of rents for commercial floor space with good value in use can be thereafter specified as follows:

***Table No.6: Intervals of rents for commercial floor space***

- IVD Rent Index 2009/2010:	7.50 €
- TLG Market Report 2008:	8.00 € - 10.00 €
- DEGI Market Report 2008:	7.00 € - 9.80 €
- Daily press:	6.00 € - 8.50 €

*Source: own data and archive of the valuer together with access to the above mentioned paid reports*

Based on the available and supplied data a rent amounting to 6.00 €/m<sup>2</sup> of commercial floor space seems to be sustainably achievable. This results in the following gross income:

**Table No.7:** Annual gross income from rented floor space

	<b>Floor space (m<sup>2</sup>)</b>	<b>Achiavable rent</b>	<b>Monthly gross income</b>	<b>Annual gross income</b>
Residential units	382.22	4.50 €	1,720 €	20,640 €
Commercial units	543.96	6.00 €	3,264 €	39,168 €
<b>Sum:</b>			<b>4,984 €</b>	<b>59,808 €</b>

Source: own calculations

### 5.3.2 Operating costs

According to §11 BelWertV are the not apportionable operating costs deducted from the gross income. The operating costs consist of administration costs; maintenance costs; allowances for vacancy and collection losses; not apportionable operating costs; as well as from modernization risk. As the operating costs in this case can be apportioned and in fact are, is this position not relevant.

#### **Allowances for vacancy and collection losses:**

The loss of rental income is set as percentage of the annual gross income. With consideration With respect to the micro location as well as the utilization of the building is an allowance for risk of loos of rent amounting to 3% of the gross income for the residential and commercial space regarded as sufficient.

$$59,808 \text{ €} \quad \times \quad 3.00 \text{ \%} \quad = \quad 1,794 \text{ €}$$

#### **Administrative costs:**

The administrative costs for residential buildings are based on the number of apartments; and for commercial properties are stated as a percentage of the annual gross profit. An amount of 230.00 € is set as administrative costs for each of the units in this case, based on the actual units in the subject property and the local conditions.

$$230.00 \text{ €} \quad \times \quad 7 \quad = \quad 1,610 \text{ €}$$

#### **Maintenance costs:**

The maintenance costs are determined in accord to costs for newly constructed building on the basis of standard construction costs, or more precisely on the value of newly

constructed building per square meter of floor space without considering outdoor facilities and other construction costs. Relevant parameters for this are the construction's condition, the technical equipment, and the age. The range for residential and commercial buildings with medium standard, and construction costs of more than 1,000 €/m<sup>2</sup> of floor space, are classified in the Annex 1 to the §11 BelWertV with 0.5% to 1.0%. With regard to the specifics of the subject property the value of 0.6% is considered to be adequate.

The construction costs of the building are calculated under the point 5.2.7 and achieved the value of 1,206,963.45 €. Consequently, the construction costs for square meter of floor space (in total 926.18 m<sup>2</sup>) are equal to 1,303 €/m<sup>2</sup>. Calculating with a percentage rate of 0.6%, the maintenance costs per square meter of floor space are thus found to be 7.82 €/m<sup>2</sup>, and subsequently the total maintenance costs are 7,243 €.

### ***Modernization risk***

Modernization risk represents a quantifiable magnitude which is deducted for specific construction types for the reasons of a long-term value observation. The necessary adjustment measures are covered with the help of the quantified modernization risk, as addition to the maintenance costs, to maintain a certain level of marketability which is needed to secure an initial rent level. Calculation basis for the determination for the modernization risk are the construction costs of the building without considering other construction costs, and/or outdoor facilities and improvements.

The range for residential and commercial buildings with medium standard are classified in the Annex 1 to the §11 BelWertV with 0.0% to 0.3%. With regard to the specifics of the subject property the value of 0.1% is considered to be adequate.

$$1,206,963.45 \text{ €} \quad \times \quad 0.1 \text{ \%} \quad = \quad 1,207 \text{ €}$$

***Table No.8: Operating costs for the residential and commercial building***

Modernization risk:	1,207 €
Allowances for vacancy and collection losses:	1,794 €
Administrative costs:	1,610 €
Maintenance costs:	7,243 €
<b>Sum of operating costs:</b>	<b>11,854 €</b>

Annual gross income	59,808 €
Operating costs as % of annual gross income:	19.82 %

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*Source: own calculations*

### **5.3.3. Land value interest rate / Discount rate**

The discount rate (“Kapitalisierungszinssatz”) serves as basis for the determination of the present value of future income. It is a crucial factor in the income approach to value, alongside with rent excluding service charges; appropriation for operating costs; as well as remaining useful life of the real estate property.

The Market Report 2009 of the close town Dresden declares the “Liegenschaftszinssatz” (interest rate for land-use; determined by the Official Committees of Valuation Experts) between 4.0% to 6.5% for residential real estate and 4.5% and 6.5% for commercial real estate. The most significant determinant for this interest rate is the long-term market behavior. The range of the discount rate for residential buildings is given in the Annex 3 of the BelWertV as 5.0% to 8.0%. With regard to the observed influencing factors is the discount rate of 6.0% considered to be adequate.

### **5.3.4. Multiplier**

For the computation of the multiplier (“Vervielfältiger”) following formula originating from financial mathematics is used:

$$V = \frac{q^n - 1}{q^n * (q - 1)}$$

where **n**.....remaining useful life,

**q**.....equals to 1 + p/100,

**p**.....capitalization rate in %. [18] [22]

With capitalization rate equal to 6.0% and expected remaining useful life of 36 years, the multiplier corresponds to 14.621.



### 5.3.5 Income approach to determination of the market value

**Table No.9:** Summary of calculation of market value using the income capitalization approach

Annual gross income		59,808.00	€
Operating costs	-	<u>11,854.00</u>	€
Net annual income	=	47,954.00	€
Net income splitting – land value			
Capitalization rate		6.0% (from 84,550 €)	
Land value x capitalization rate	-	5,073.00	€
Income for the building	=	42,881.00	€
Remaining useful life		36 years	
Capitalization rate		6.0%	
Multiplier		14.6210	
Income value of the building	=	626,963.10	€
Repairs backup	-	20.000.00	€
Land value	+	84,550.00	€
<b>Market value – income approach</b>	<b>=</b>	<b>691,513.10</b>	<b>€</b>
<hr/>			
<b>Market value – income approach</b> (“Ertragswert”) - rounded		<b>690,000</b>	<b>€</b>

Source: own calculations

## 6. Market value

The market value (“Verkehrswert”, “Marktwert”) is defined by the price which would be achieved in the given time in the marketplace in an arm’s length transaction, while obeying existing legal restrictions, the actual characteristics, general condition and location of the property to be valued, and that without consideration of any extraordinary or personal circumstances.

The subject property to be valued is classified as a building with commercial units and apartments, built in 1890 and thoroughly renovated in 1996. It is located in the town Riesa in a medium residential and good commercial location. The building is registered as a monument with historical interest. There are in total 3 commercial units and 4 apartments situated in the building.

**Summary:**

<b>Market value derived by the cost approach</b>	864,000 €
(“Sachwert” - depreciated replacement cost)	
<b>Market value derived by the income capitalization approach</b>	690,000 €
(“Ertragswert”)	

*The decisive method for determination of the market value is in this case the income approach (the subject property is rented and all required data for the income approach were sufficiently available and reliable).*

<b>Market value</b>	<b>690,000 €</b>
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**Plausibility check**

For checking purposes is the determined market value compared with data published by the Official Committee of Valuation Expert of the town Dresden. The yield factor of the subject property was established as:

$$690,000 \text{ €} \quad / \quad 59,808 \quad \text{€} = \quad \mathbf{11.54}$$

In the Market Report 2009 for Real Estate Market published by the town Dresden (capital of the federal state Sachsen) the yield factors (purchasing price / annual net rent excluding service charges) are specified. The yield factor is stated from 10.2 to 16.4 (usual value 13.0) for commercial buildings, and from 10.6 to 16.1 (usual value 13.0) for apartment buildings in middle residential location. It thus appears that the subject property is within the usually defined range for properties of this type.

Taking into account all influencing factors such as type, size, technical equipment, condition, location, the knowledge and experience of the valuer, as well as the overall market overview, **the market value** of the subject property, registered in the cadastral register of the town Riesa, building with commercial units and apartments on the address XY, cadastral register No. XY, land parcel No. XY of the size of 890 square meters, was as at the valuation date established as:

**690,000.00 €**

(in words: six-hundred-ninety-thousand-euro)

which is considered to be reasonable and customary in time and place.

## ***7. Mortgage lending value***

### ***7.1 General remarks***

The value which forms the basis of the loan (mortgage) is the value of property which can be presumably achieved by its sale, which should be independent from temporary value fluctuations on the respective real estate market, and free from speculations during the duration of the loan. Decisive for the determination of the mortgage lending value of the subject property in this particular case will be the income approach. The cost approach will play only a minor role. The process of determining the mortgage lending value is governed by the Regulation on the Determination of Mortgage Lending Value (“Verordnung über die Ermittlung der Beleihungswerte”, BelWertV) and §16 of the Pfandbrief Act (“Pfandbriefgesetz”, PfandBG).

### ***7.2 Cost approach to determination of the mortgage lending value***

The value of the building constructions is in accordance with §16, subparagraph 2, of the BelWertV deducted by a safety margin of minimum 10% of construction costs. Purpose of this deduction is to absorb potential decrease in prices of the construction process.

The construction price index (“Baupreisindex”) in the federal state Sachsen has been subject to rather heavy fluctuations during the past 20 years. While a positive development was observed during 1990 – 2000, a continuous drop in prices was recorded until the fourth quarter of 2001 (with low of 97.2, with base 2000 = 100). Since then, a change in the trend is identifiable. The highest increases of construction costs can be noticed on the partial market for non-residential buildings. Given the price development; the characteristics of the subject property; and the guidelines on valuation of real estate property of the Deutsche Bank; the safety margin is set down as 15%.

### ***Mortgage lending value determined by the cost approach***

***Table No.10: Summary of calculation of mortgage lending value using the cost approach***

<i>01</i>	Gross floor space	1,800.00 m <sup>2</sup>
<i>02</i>	Price per square meter (base 2000)	580.55 €
<i>03</i>	Value of newly constructed building – price base 2000 ( <i>01 x 02</i> )	1,044,990.00 €

04	Construction price index (May 2009) (base 2000 = 100%)		115.5 %
05	Value of newly constructed building as at the valuation effective date (03 x 04)		1,206,963.45 €
06	Surcharge for other construction costs	14%	168,974.88 €
07	Value of newly constructed building incl. other construction costs (05 + 06)		1,375,938.33 €
08	Remaining useful life of the building	36 years	
09	Fictive age of the building	44 years	
10	Depreciation according to ROSS <sup>6</sup>	42.6 %	586,149.73 €
11	Repairs backup		20,000.00 €
12	Residential and commercial building		769,788.60 €
13	Outdoor facilities and improvements		10,000.00 €
14	Sum of residential and commercial building		779,788.60 €
15	Safety margin	15%	116,968.29 €
16	Land value		84,550.00 €
<b>17</b>	<b>Mortgage lending value – cost approach (“Sachwert”)</b>		<b>747,370.31 €</b>

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**Mortgage lending value – cost approach (“Sachwert”) 747,000 €**  
- rounded

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*Source: own calculations*

### ***7.3 Income approach to determination of the mortgage lending value***

The assumption under the point 5.3.1 may be applied in the income approach to determination of the mortgage lending value, as the actual rents achieved are not below the level of sustainably achievable scheduled rents. The operating costs for the subject property defined for the purposes of the income approach to determination of the market value may be adopted here as well. They represent less than 15% of the annual gross income.

#### ***Land value interest rate / Discount rate***

The discount rate (“Kapitalisierungszinssatz”) serves as basis for the determination of the present value of future income. It is a crucial factor in the income approach to value, alongside with rent excluding service charges; appropriation for operating costs; as well as

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<sup>6</sup> Please refer to the publication [22] for details about this procedure.

remaining useful life of the real estate property. The higher the income- and sales risk of the real estate property is classified, the higher the discount rate. As a major determinant serves the long-term market development. The range of the discount rate for residential buildings is given in the Annex 3 of the BelWertV as 5.0% to 8.0%, for commercial real estate properties 6.0% to 7.5% are stated. With regard to the observed influencing factors the discount rate of 6.5% is considered to be adequate.

### **Multiplier**

For the computation of the multiplier (“Vervielfältiger”) following formula originating from financial mathematics is used:

$$V = \frac{q^n - 1}{q^n * (q - 1)}$$

where **n**.....remaining useful life,

**q**.....equals to 1 + p/100,

**p**.....capitalization rate in %. [18] [22]

With capitalization rate equal to 6.5% and expected remaining useful life of 36 years, the multiplier corresponds to 13.7906.

### **Mortgage lending value determined by the income approach**

**Table No.11:** Summary of calculation of mortgage lending value using the income capitalization approach

Annual gross income		59,808.00	€
Operating costs	-	<u>11,854.00</u>	€
Net annual income	=	47,954.00	€
Net income splitting – land value			
Capitalization rate		6.5% (from 84,550 €)	
Land value x capitalization rate	-	5,495.75	€
Income for the building	=	42,458.25	€
Remaining useful life		36 years	
Capitalization rate		6.5%	
Multiplier		13.7906	
Income value of the building	=	585,524.74	€
Repairs backup	-	20,000.00	€

Land value	+	84,550.00	€
<b>Mortgage lending value – income approach</b>	=	<b>650,074.74</b>	<b>€</b>

<b>Mortgage lending value – income approach (“Ertragswert”)</b>	<b>650,000</b>	<b>€</b>
- rounded		

*Source: own calculations*

#### **7.4 Proposed mortgage lending value**

The subject property to be valued was built in 1890 and thoroughly renovated in 1996, it comprises of commercial units and apartments. It is located in the town Riesa in a medium residential and good commercial location. The building is registered as a monument with historical interest. There are in total 3 commercial units and 4 apartments situated in the building.

#### **Summary:**

<b>Mortgage lending value derived by the cost approach</b>	747,000 €
<b>Mortgage lending value derived by the income approach</b>	650,000 €
<b>Proposed mortgage lending value</b>	<b>650,000 €</b>

Taking into account all influencing factors such as type, size, technical equipment, condition, location, the knowledge and experience of the valuer, as well as the overall market overview, **the proposed mortgage lending value** of the subject property, registered in the cadastral register of the town Riesa, building with commercial units and apartments on the address XY, cadastral register No. XY, land parcel No. XY of the size of 890 square meters, was as at the valuation date established as:

**650,000.00 €**

(in words: six-hundred-fifty-thousand-euro)

which is considered to be reasonable and customary in time and place.

The valuation was compiled under the application of the BelWertV.

## 4.3 Case Study 2 – the Czech Republic

### Market value and administrative price of a building with commercial and office space

#### **Introduction**

In the following case study, the valuation process of determining first the market value and subsequently the administrative price of a building with commercial and office space is performed. The valuation process is executed in a real-world manner, just as it would be done by a sworn-in valuer to the given date by obeying all relevant legal regulations and professional customs. The Case Study 2 is therefore further divided in sections corresponding to a valuation report.

#### *Identification & Introduction*

The first page of the valuation report is omitted in this case, to prevent the identification of the property in order to protect sensitive data and privacy of its owners. Nevertheless, following essential information has to be provided for better clarity and understanding of the case study:

Client:                      Company XY  
                                    (Order No. XY dated March 3, 2010)

Property:                  Administrative building reg No. XY with facilities and land, number  
                                    of cadastre XY, street XY, cadastral region Libeň, Prague 8

Owner:                      The sole owner is the Company XY

Date of inspection:      March 5, 2010

Picture of the property:



*Source: own archive (author: Klára Rysková ©2010)  
(Note: This picture is only illustrative, i.e. the building represented here is similar to the subject property, but it is not the same object.)*

### ***Market valuation of administrative building***

#### ***Assumptions and limiting conditions for calculation of market value of the real estate***

General conditions for provision of services in the area of real estate market value determination together with limiting conditions are stated here. These contractual agreements are omitted in this case study (mainly for data and know-how protection reasons).

### ***1. Introduction***

#### ***1.1 Purpose of market valuation***

The valuer was appointed to calculate the market value of the administrative building, reg. No. XY with facilities and land, number of cadastre XY and XY in XY street, cadastral region Libeň, Prague 8, as at the date March 10, 2010. The task of valuation was to calculate the market value of the evaluated real estate in such a manner that results would be used for discussions of owner's Board of Directors with a potential buyer.



### ***1.2 Basis of the value***

The basis of the value in this valuation is the market value expressed in monetary units. This market value is defined in the principles of the Act on Valuation of the Ministry of Finance (Law No. 151/1997 Coll.): “Market value is the value which would be reached when selling the same or comparable real estate in usual business relations in the domestic country on the day of valuation according to its condition and quality when all circumstances are taken into consideration having influence on the price, but influences of extraordinary circumstances of the market, personal relations of the seller or the purchaser, or the influence of special favour are not reflected in the price”. [52] - §2, Section (1)]. This definition is practically identical with the definition indicated by The European Group of Valuer’s Associations TEGoVA [49]. The report was elaborated in accordance with recommendations by IVSC (International Valuation Standards), and in accordance with recommendation of TEGoVA (The Blue Book - Approved European Property Valuation Standards). Concerning all utilization values of the real estate, this concrete case considers only profit from buildings, facilities, and land.

### ***1.3 Scope of estimation***

The scope of this valuer’s work is derived from the fact that all relevant factors should be taken into consideration. These factors can be considered as follows:

1. History and nature of the evaluated real estate.
2. Price of building materials and works.
3. Sales and leaseholdes of comparable real estates.

## ***2. Basic data***

### ***2.1 Initial data***

Evaluated real estate:

- |                           |                                                                                                                    |
|---------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>I. Building:</b>       | Administrative building, reg. No. XY, address XY.                                                                  |
| <b>II. Facilities:</b>    | Connections to water, electricity, sewerage, gas, paved outdoor surfaces, fencing.                                 |
| <b>III. Land parcels:</b> | Land parcels in the cadastral region Libeň, Prague 8:<br>number of cadastre XY - built-up area with acreage of 641 |

square meters, and number of cadastre XZ – other area with acreage of 141 square meters.

Source materials for evaluation:

- Extract from the Register of Real Estates LV No. XY
- Copy of cadastral map (layout),
- Own photographic documentation,
- Partial drawing documentation,
- Building files in the Archive of the Building Office,
- Inspection of the subject property held on March 5, 2010.

### ***2.2 Ownership of the real estate***

According to the Extract from the Register of Real Estates No. XY for the cadastral region of Libeň, Prague 8, is the whole evaluated real estate in the ownership of the Company XY (ID: ..., Address: ...). No burden or lien is recorded for the appraised real estate.

### ***2.3 Characteristics of location of real estate***

The subject property is situated in residential part of Libeň, near entrances to metro station Palmovka. The administrative building is situated as the first corner building of XY street. This street is completely closed for cars transport, only public tramway transport is allowed. The location of the building is very attractive as it can be easily reached by public transport. The building itself is a part of block of attached houses; the entrance is directly from the street. Position of the occupancy is illustrated by the following table:

***Table No.12: Location of the subject property***

<b>Infrastructure</b>	<b>Availability</b>	<b>Accessibility / Distance</b>
Representative Authority	available locally	by walk
Parking	not in front of the building	by walk
Post office	available locally	by walk
Bank, Savings bank	available locally	by walk
Public transport	in front of the building	by walk
Police	available locally	by walk
Food store	available locally	by walk
Pharmacy	available locally	by walk
Heath center	available locally	by walk

Hospital	available locally	by car or public transport
Fire brigade	available locally	by walk
Shopping center	available locally	by walk
Repair shop	available locally	by walk
Employment opportunities	available locally	by walk
Preschool	available locally	by walk
School	available locally	by walk
Secondary school, university	available locally	by walk
Petrol station	available locally	by car
Car repair shop	available locally	by car
Culture	Theatres, cinemas	by walk or public transport
Sports	Gym, playground	by car or public transport

*Source: own notes and observations made during the inspection of the property*

Architectonic features of the building comport with development from the turn of the 19<sup>th</sup> and 20<sup>th</sup> century. The facade facing to the street is structured by shaped stuck moldings; the back-side facade is plain, without decoration, with galleries. There is one tree planted in the parcel behind the building, otherwise the garden is unused and apparently neglected. A partial reconstruction of the building was performed in 1999, maintaining the character of the building in accordance with monuments preservation. On the Ground floor there are spaces designed for merchandise and contact to clients, on the other floors the offices are located. The area can be easily reached by public transport; there is a tramway-station nearby the building and station of subway (line B).

#### ***2.4 Characteristics of the evaluated real estate***

The subject property has three over-ground floors, cellar, and unused attic floor. The roof is double-sloping with its ridge parallel to the street. The roofing under the partial reconstruction is made of burnt tiles and in parts of iron-plates. Its massive masonry construction has vault over the cellar and flat wooden ceilings on over-ground floors. Connections to all public network services are available. The inner dispositions are as follows.

<b>Sublevel</b>	Store rooms, stairway
<b>Ground floor</b>	Sales rooms, offices, store rooms, social facilities, stairway
<b>Two upper floors</b>	Offices, social facilities, stairway
<b>Attic floor</b>	Unused

Construction of the building is obvious from the following table.

**Table No.13:** *Construction characteristics of the building*

<b>Structure and Facilities</b>	<b>Way of Construction</b>
Foundations	Stone foundation
Vertical structures	Massive brick walls
Ceilings	Wooden plain ceilings, and vault
Roofing except roof cover	Wooden bounded
Roof cover	Burnt roofing tile
Metalwork structures	Zinc-coated sheet
Indoor surface treatment	Two layer lime plaster
Outdoor surface treatment	Hard plaster, footing lining
Indoor ceramic tiling	Standard facing tile
Stairs	Stone, concrete
Doors	Wooden and glazed
Windows	Wooden rabbet windows
Floor surfaces	Vinyl flooring, carpets
Heating	Local heating by electric heaters
Electric installation	Light current and power current
Lightning conductor	Yes
Indoor water conduit	Both cold and hot water
Indoor sewerage	Cast iron
Indoor gas conduit	Natural gas distribution
Hot water heating	Central gas heaters
Indoor sanitary facilities	Toilets, showers, wash-bowls
Elevator	Yes
Others	Window security bars

*Source: own notes and observations made during the inspection of the property*

Area of the real estate for valuation was taken from supplied project documentation as follows:

**Table No.14:** *Built-up area of the building*

<b>Built-up area:</b>			
1.SF:	16.70×12.60	=	210.42 m <sup>2</sup>
1.UF:	16.70×12.40+3.20×5.00-3.20×0.35	=	221.96 m <sup>2</sup>

$$\begin{array}{rcl}
 2.UF: & 16.70 \times 13.60 + 5.10 \times 3.80 & = & 246.50 \text{ m}^2 \\
 3.UF: & 16.70 \times 13.60 + 5.10 \times 3.80 & = & 246.50 \text{ m}^2
 \end{array}$$

*SF = sublevel (under-ground) floor; UP = over-ground floor*

*Source: documentation supplied by the client*

**Table No.15: Height of floors and building volume**

**Height of floors and building volume:**

<b>Floor</b>	<b>Built-up area</b>	<b>Construction height</b>			<b>Building volume</b>
1. SF	210.42 m <sup>2</sup>	×	3.15 m	=	662.82 m <sup>3</sup>
1. UF	221.96 m <sup>2</sup>	×	3.40 m	=	754.66 m <sup>3</sup>
2. UP	246.50 m <sup>2</sup>	×	3.30 m	=	813.45 m <sup>3</sup>
3. UP	246.50 m <sup>2</sup>	×	3.30 m	=	813.45 m <sup>3</sup>
<b>Total</b>	<b>925.38 m<sup>2</sup></b>				<b>3,044.38 m<sup>3</sup></b>

*Source: documentation supplied by the client and own calculations*

$$\text{Average height of floor (PVP):} \quad = 3,044.38 / 925.38 = 3.29 \text{ m}$$

$$\text{Average built-up area of floor (PZP):} \quad = 925.38 / 4 = 231.35 \text{ m}^2$$

**Building volume area:**

$$\text{Total:} \quad 210.42 \times 3.15 + 221.96 \times (4.20 + 4.75 / 2) + 246.50 \times 6.60 \quad = \quad \mathbf{3,749.11 \text{ m}^3}$$

The original construction is from 1902 (resulting in age of 108 years). Repairs and maintenance of the building and facilities were performed in rather poor quality during the past. In 1999 partial reconstruction was carried out. From the perspective of its construction is the building in good technical condition.

The real estate also includes connections of all engineering networks; water, sewerage, gas, electricity and telephone; fencing of total area of 112.40 square meters, and pavement in the garden of the length of 16.20 meters. The two evaluated land parcels have longitudinal form, and are flat.

### **3. Analysis of evaluation**

#### **3.1 Highest and best use**

The entrepreneur, as well as the valuator, permanently asks the question whether the corresponding, evaluated property could not be used better and more effectively than at present. Therefore, these highest and best use analyses are very important in the case of multi-functional real estates. In this case of evaluation of the administrative building, reg. No. XY with facilities and two land parcels, cadastral region Libeň, Prague 8, the decision about the best and highest usage is quite unambiguous. For the administrative building, reg. No. XY, *the highest and best usage of the premises is for administrative and commercial purposes*. For this purpose, the real estate was built and its construction was adapted for this purpose.

#### **3.2 Market value calculated by the income capitalization approach**

When calculating income value of the administrative building, reg. No. XY with facilities and land, cadastral region Libeň, Prague 8, the current rents realized from the commercial and office space in the building are applied.

For the income method of calculation of market value of evaluated property, the method of capitalization of profit from possible future rent was chosen. When calculating market value of the evaluated real estate by the income method, following preconditions are considered:

- a) The bases for calculation of the market value by the income approach are the possible rents (income) from rent of office and storage space in the administrative building reg. no. XY, and the expected development of market in this segment.
- b) Rent can be performed possibly by another owner, i.e. it is not influenced by the physical owner, but by the status of supply and demand for these premises in the corresponding locality.
- c) The net income from rents is capitalized to and thus the income market value of the subject property is found.

Based on available information from several real estate agents, notaries and attorneys, comparison with supply and demand on online real estate databases, and in periodicals, it

can be assumed that the currently realized rents correspond to real rents from the leased premises. The deficiency of the subject property is the local heating by electric heaters. Operating costs are due to this type of heating relatively high which also affects the price of rent. Gross rent for storage space in the sublevel floor and the space in the attic floor are considered to be 0.00 CZK per square meter per year. For office spaces the gross rent per year is assumed to be 1,600.00 CZK per square meter. This collected rent must be further reduced by the costs for maintenance, insurance, property tax, repairs, administrative management, security services, and bookkeeping. Costs for service (electricity, telephone, etc.) would be paid by the lessee.

*Table No.16: Calculation of achievable rental income*

<b>Rentable space</b>	<b>Floor space in m<sup>2</sup></b>	<b>Coeff. of Utilization in %</b>	<b>Annual rent in CZK/m<sup>2</sup></b>	<b>Annual income in CZK</b>
1. Storage space	253.92	0.50	0.00	0.00
2. Office and sale space	517.76	0.85	1,600.00	704,154.00
<b>Income from rent</b>				<b>704,154.00 CZK</b>
<b>Rounded to</b>				<b>704 TCZK</b>

*Source: own calculations*

Actually realized annual rent amounts to 673,426.00 CZK which is in relatively good accord with the above calculated achievable usual rent.

*Table No.17: Costs associated with renting of the premises*

<b>No.</b>	<b>Type of costs</b>	<b>Amount per year in CZK</b>
1.	Real estate tax	3,600.00
2.	Insurance of commercial space	15,000.00
3.	Usual maintenance, administration	10,000.00
4.	Depreciation (linear method)	165,000.00
5.	Other costs: accounting services	2,400.00
<b>Total</b>		<b>196,000.00 CZK</b>

*Source: own calculations*

Annual net profit from rent of the premises:

$$704,000.00 - 196,000.00 = 508,000.00 \text{ CZK}$$

**Rounded: NOI (net operating income) = 510 TCZK**

### ***Calculation of capitalization rate***

Calculation of discount rate can be performed according to analyses of comparable leased administrative buildings. These analyses are derived from valid interest rates in the Czech Republic and their possible changes. On the basis of the valuer's experience, for concerning the administrative building, cadastral region Libeň, Prague 8, following capitalization rate was selected as adequate - basic rate of 5.00 % plus a risk factor for leasing in the corresponding locality 4.00 % minus official inflation rate predicted by the Czech National Bank (for next periods)  $i = 2.50\%$ . The capitalization rate (R) for the net income is given by the expression:

$$R = 5.00 + 4.00 - 2.50 = 6.50 \%$$

$$\mathbf{R = 0.065}$$

$$\text{Value} = 510.00 / 0.065 = 7,846.15 \text{ TCZK}$$

**Market value of the building – income capitalization approach (rounded):**

**7.85 MCZK**

### ***Land value***

As only the space in the building is rented and thus generating income, the developed land will be evaluated using the sales comparison approach. Following land parcels are subject of the valuation (with total of 782 square meters):

- Land parcel in the cadastral region Libeň, Prague 8, No. of cadastre XY, built-up area with acreage of 641 square meters;
- Land parcel in the cadastral region Libeň, Prague 8, No. of cadastre XY, other area with acreage of 141 square meters.

In determining the comparative price of land following factors are compared: type of transaction, transaction date, and type of ownership. In addition other factors are taken into account, e.g. utilization of land according to the city plan, the existence of easements, other restrictions and obligations, location, soil contamination, availability of public transportation, traffic connections, shape of the land, need for demolition of existing buildings, availability of utilities, correction for the size of land, etc. In some literature additional factors are proposed for consideration: housing market, terrain configuration,



position relative to the center of the town, predominant buildings, available trade and services in the location, education, health, culture, sports, hotels, offices, career opportunities, environment, natural habitat, change in construction, construction type, and possibility of further expansion.

Based on the above presented overview it is obvious that the determination of market value of land by the use of sales comparison approach is always an expert opinion which is constructed on comparison of available data and the expert knowledge of the valuer. The capital city Prague has a valid price map of land. As at the date of valuation the price for the subject land was given as 5,650.00 CZK per square meter. In the given location the sales price of land circulates in the interval from 8,000.00 CZK/m<sup>2</sup> to 12,000.00 CZK/m<sup>2</sup>. For the use of valuation of this subject land the arithmetic average will be used, which results in amount of 10,000.00 CZK per square meter.

$$\text{Land value: } 782.00 \text{ m}^2 \times 10,000.00 \text{ CZK} = \underline{\underline{7,820,000.00 \text{ CZK}}}$$

***Summary - Market value determined by the income capitalization approach***

<b>Market value of the building (income capitalization approach)</b>	7.85 MCZK
<b>Land value</b>	7.82 MCZK
<b>Proposed market value (income capitalization approach)</b>	<b>15.67 MCZK</b>

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This is the market value of the administrative building, reg. No. XY with facilities and land, number of cadastre XY, street XY, cadastral region Libeň, Prague 8, specified by the method of income capitalization as at the date of March 10, 2010.

***3.3 Market value calculated by the sales comparison approach***

In the current system of economic development, this method is conditioned by permanent classification and storage of input data - i.e. prices really applied on the market of comparable real estates in similar locations. This methodological procedure requires long-term systematic records. According to the available information from several real estate offices, notaries and lawyers, based on comparison of offer and demand available on the

Internet and in daily and non-periodic press, it is possible to use the following occupancies, which were really sold in the past or which were offered for sale, as the comparative data (the prices are for buildings, facilities and land – therefore individual valuation of land is not needed in this case).

**Table No. 18: Sales of comparable properties**

No.	Built-up area in m <sup>2</sup>	Land in m <sup>2</sup>	Usable space in m <sup>2</sup>	Price in TCZK	Location, source	Price for 1 m <sup>2</sup> of usable space in TCZK
1.	460.00	621.00	1,403.00	41,600.00	Libeň – Prague 8, Apollo	29.651
2.	171.00	970.00	507.00	32,950.00	Prague 8, Maxima	64.990
3.	470.00	837.00	500.00	17,900.00	Prague 8, Vreality	35.800
4.	260.00	452.00	1,300.00	33,800.00	Prague 8, Maxima	26.000
5.	450.00	634.00	700.00	48,000.00	Florenc – Prague 8, Apollo	68.571
<b>Weighted average</b>				<b>34,850.00</b>		<b>45.002</b>

*Source: own archive of the valuer and websites of the individual real estate agencies*

Current offering price of comparable properties based on the preformed comparison, amounts to 45,002.00 CZK for square meter of usable area. This is the offering price indicated by real estate agencies. Given the conservative approach in the present overall recession on the real estate market, this offering price is reduced by 10%. The calculation of the market value derived by the comparison approach is thus as follows.

$$\text{Value} = 45,002.00 \times (1.00 - 0.10) = 40,501.80 \text{ CZK/m}^2$$

$$\text{Rounded to: } \underline{40,500.00 \text{ CZK/m}^2}$$

$$\text{The usable area of the subject property is: } 517.76 + 253.92 = \underline{771.68 \text{ m}^2}.$$

Current sales price of the subject property thus amounts to:

$$\underline{\text{Value} = 771.68 \text{ m}^2 \times 40,500.00 \text{ CZK/m}^2 = \mathbf{31,253.04 \text{ TCZK.}}$$

**Rounded to: 31.25 MCZK**

***Summary - Market value determined by the sales comparison approach***

**Proposed market value (sales comparison approach)**

**31.25 MCZK**

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This is the market value of the administrative building, reg. No. XY with facilities and land, number of cadastre XY, street XY, cadastral region Libeň, Prague 8, specified by the method of sales comparison as at the date of March 10, 2010.

***4. Conclusion***

For the estimation of the market value of the administrative building, reg. No. XY with facilities and land, number of cadastre XY, street XY, cadastral region Libeň, Prague 8, the sales comparison method is better applicable as it corresponds to the current exchangeable value achievable on the market. Therefore the market value of the subject property as at the date of March 10, 2010 amounts to:

**31.25 MCZK**

(in words: thirty-one-million-two-hundred-fifty-thousand-Czech-crowns)

***Determination of administrative price for the subject property in accord with the Regulation of the Ministry of Finance No. 460/2009 Coll.***

In normal practice, the valuation report on determination of administrative price for the subject property would be submitted separately from the report containing market value estimation. However, for the purposes of this case study, the first introductory section of the valuation report on determination of administrative price of the subject property may be omitted. The characteristics of location and construction of the building, floor space of individual floors, and total built-up area may be taken from relevant sections of the market value determination for the subject property above. Thereafter, only the calculations of the administrative price together with the conclusion will be demonstrated here.

***Administrative price of the administrative building –  
in accordance with the Act No. 460/2009 Coll.***

As the subject property is currently completely leased, the determination of the administrative price is done in accordance with §22, clause (1): “If the whole building is

leased, eventually with facilities and land, whose price is determined according to the cost approach method specified in §3, it will be evaluated using a combination of cost and income approach method.” [53]

**Cost approach method – §3**

**Classification for the purposes of valuation:**

Building: F. buildings for administrative purposes  
 Vertical construction: Massive brick walls  
 Code CZ - CC: 122

Average height of floor (PVP):  $= 3,044.38 / 925.38 = 3.29 \text{ m}$

Average built-up area of floor (PZP):  $= 925.38 / 4 = 231.35 \text{ m}^2$

**Building volume area:**

Total:  $210.42 \times 3.15 + 221.96 \times (4.20 + 4.75/2) + 246.50 \times 6.60 = 3,749.11 \text{ m}^3$

**Calculation of coefficient  $K_4$  (Coefficient of building’s equipment):**

(S = standard, N = above-standard, P = substandard, C = does not occur)

**Table No.19: Calculation of coefficient  $K_4$  (Coefficient of building’s equipment)**

Construction, Equipment	Valuation of standard	Share on volume [%]	Part [%]	Coefficient	Adjusted share on volume
1. Foundations:	S	8.20	100.00	1.00	8.20
2. Vertical structures:	S	17.40	100.00	1.00	17.40
3. Ceilings:	S	9.30	100.00	1.00	9.30
4. Roofing except roof cover:	S	7.30	100.00	1.00	7.30
5. Roof cover:	S	2.10	100.00	1.00	2.10
6. Metalwork structures:	S	0.60	100.00	1.00	0.60
7. Indoor surface treatment:	S	6.90	100.00	1.00	6.90
8. Outdoor surface treatment:	N	3.30	100.00	1.54	5.08
9. Indoor ceramic tiling::	S	1.80	100.00	1.00	1.80
10. Stairs:	S	2.90	100.00	1.00	2.90
11. Doors:	S	3.10	100.00	1.00	3.10
13. Windows:	S	5.20	100.00	1.00	5.20
14. Floor surfaces:	S	3.20	100.00	1.00	3.20

15. Heating:	P	4.20	100.00	0.46	1.93
16. Electric installation:	S	5.70	100.00	1.00	5.70
17. Lightning conductor:	S	0.30	100.00	1.00	0.30
18. indoor water conduit:	S	3.20	100.00	1.00	3.20
19. Indoor sewerage:	S	3.10	100.00	1.00	3.10
20. Indoor gas conduit:	S	0.20	100.00	1.00	0.20
21. Hot water heating:	P	1.70	100.00	0.46	0.78
23. Indoor sanitary facilities:	S	3.00	100.00	1.00	3.00
24. Elevator:	S	1.40	100.00	1.00	1.40
25. Others:	S	5.90	100.00	1.00	5.90
Sum of adjusted shares on volume:					98.59
<b>Coefficient of building's equipment K<sub>4</sub>:</b>					<b>0.9859</b>

*Source: own calculations based on [53]*

#### **Valuation:**

Basic price (according to Annex No. 2):	=	2,807.00 CZK/m <sup>3</sup>
Coefficient of construction K <sub>1</sub> (Annex No. 4):	*	0.9390
Coefficient K <sub>2</sub> = 0.92+(6.60/PZP) :	*	0.9485
Coefficient K <sub>3</sub> = 0.30+(2.10/PVP) :	*	0.9383
Coefficient of building's equipment K <sub>4</sub> (calculated):	*	0.9859
Coefficient of location K <sub>5</sub> (Annex No. 14 – significance of municipality):	*	1.2000
Coefficient of change in building prices K <sub>i</sub> (Appendix No. 38):	*	<u>2.1450</u>

<b>Adjusted basic price</b>	=	5,952.90 CZK/m <sup>3</sup>
Full price: 3,749.11 m <sup>3</sup> * 5,952.90 CZK/m <sup>3</sup>	=	22,318,076.92 CZK

Calculation of depreciation: linear method

Age of building: 108 years

Expected remaining useful life: 42 years

Expected total useful life: 150 years

Depreciation: 100% \* 108 / 150 = 72.00%

- 16,069,015.38 CZK

**Determined price**

**= 6,249,061.54 CZK**

***Income approach method – §23 [53]***

***Classification for the purposes of valuation:***

Type of building: building for administration and business  
Rate of capitalization: 7.00%  
Group: C) Stabilized location without significant changes  
with development potential

**Annual income from rented space:** (stated above) **704,154.00 CZK**

**Valuation:**

Total income from rented space: = 704,154.00 CZK

Deduction of costs by percentage of determined rent:

704,154.00 \* 40 % = 281,661.60

Calculated total deduction: - 281,661.60 CZK

Annual income from rent adjusted accordingly to § 23, clause (4): = 422,492.40 CZK

Capitalization rate 7.00 % / 7.00 %

**Determined price** **≡ 6,035,605.71 CZK**

***Valuation by combination of cost and income capitalization approach method***

Group: C) Stabilized location without significant changes  
with development potential

Valuation by cost approach: VC = 6,249,061.54 CZK

Valuation by income approach: VI = 6,035,605.71 CZK

Difference: D = 213,455.83 CZK

Calculation according to Annex 17, Table 2, Group C):

VI + 0.20 D = 6,078,296.88 CZK

***Summary:***

**Administrative price determined by combination of cost and income approach method** **6,078,296.88 CZK**

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### ***Land value***

The land value is estimated in accordance with the Act No. 460/2009 Coll., specifically §27 – price map of land. As at the date of valuation the price for the subject land was given as 5,650.00 CZK per square meter. Following land parcels are subject of the valuation (with total of 782 square meters):

- Land parcel in the cadastral region Libeň, Prague 8, No. of cadastre XY, built-up area with acreage of 641 square meters;
- Land parcel in the cadastral region Libeň, Prague 8, No. of cadastre XY, other area with acreage of 141 square meters.

Land value:  $782 \times 5,650,00 = \underline{\underline{4,418,300.00 \text{ CZK}}}$

### ***Summary – Administrative price<sup>7</sup>***

<b>Administrative price of the building (combination of cost and income capitalization approach)</b>	6,078,296.88 CZK
<b>Land value</b> (§27 of the Act No. 460/2009 Coll.)	4,418,300.00 CZK
<b>Total</b>	<b>10,496,596.88 CZK</b>
<b>Determined administrative price – rounded</b>	<b>10.497 MCZK</b>

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The administrative price of the administrative building, reg. No. XY with facilities and land, number of cadastre XY, street XY, cadastral region Libeň, Prague 8, specified in accordance with Act no. 460/2009 Coll. amounts as at March 10, 2010 to

**10.497 MCZK**

(in words: ten-million-four-hundred-ninety-seven-thousand-Czech-crowns).

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<sup>7</sup> The outdoor facilities and vegetation should also be part of this valuation. However, as these would sum up to only a small value they are omitted for the purposes of this case study.

## 5. Discussion

Resulting from the analysis of the valuation methodologies in Germany and the Czech Republic in the preceding chapter by applying these valuation approaches on real-world valuation assignments, following issues can be observed and discussed (not necessarily in the order of their importance).

- The concept of normal construction costs in Germany (“Normalherstellungskosten”) has been criticized in the past by the German experts. Nevertheless, the cost approach (“Sachwertverfahren”) cannot be abandoned. It forms one of the triad of globally accepted and used approaches to valuation. In the German valuation practice there are definitely numerous cases in which the cost approach can be reasonably applied and serves the purpose of valuation better than the other two approaches (i.e. sales comparison approach and income capitalization approach). Due to this fact it is correct that the German Federal Ministry of Transport, Building and Urban Development (“Bundesministerium für Verkehr, Bau und Stadtentwicklung”) plans to reflect current situation in an updated version of normal construction costs, referred to as NHK 2005 [19]. This updated version of normal construction costs represents a possibility to recover this approach by (a) actualization of normal construction costs which would correspond to the actual level of construction costs, and (b) by solving the problem of depreciation so that the mindset of the market would be correctly expressed. Even though a research report about the new updated normal construction costs has already been published, the German valuers should wait with their practical application until these proposals are officially accepted by the authorities.
- The valuation of real estate in Germany followed (until July 2010) the German law “Wertermittlungsverordnung” (WertV) which was adopted in 1988. In the past more than 20 years the conditions on the German property market have changed radically. New legal and political conditions (caused e.g. by the accession of new federal states, urban development, demographic and economic changes etc.)



together with increasing internationalization of the real estate industry necessitate a reform of the German valuation law. Therefore in 2007, the Federal Ministry of Transport, Building and Urban Development (“Bundesministerium für Verkehr, Bau und Stadtentwicklung”) summoned an expert panel to review the valuation law (WertV). As an outcome the expert panel agreed that the provisions of the valuation law (WertV) have in principle proven in practice, and that two decades after its adoption it needs to be fundamentally revised to correspond to the current situation on the real estate market. As a result of the expert panels consultations a report for further discussions was published in April 2008 which contained individual suggestions for the formulation of a new real estate valuation law – “Immobilienwertermittlungsverordnung” (ImmoWertV). The ImmoWertV came into force on July 1, 2010 and replaced the original valuation law from 1988 (which was lastly amended in 1998 and was thus sometimes referred to as WertV 98). Through this new ImmoWertV a modern, practice-oriented basis for valuation of property was achieved which further contributes to the current requirements for supportable valuation of real estate. Most importantly, it increased the quality and coherence of real estate valuation in Germany and made this field of business activities more transparent for foreign investors.

- In the Czech Republic a new amendment to the Law regulating the profession of expert valuers is urgently needed. Even though the Ministry of Justice of the Czech Republic (in whose administration the appointment of expert sworn-in valuers takes place) plans to amend the Law No. 36/1967 Coll., on expert valuers and interpreters, the proposed amendments are not sufficient. They merely deal with minor issues (e.g. remuneration of valuers; renunciation of the requirement for Czech citizenship; stricter adherence to the bound of secrecy; new requirements for setting-up of valuation institutes; possible punishments of valuers for delayed or poor quality work; etc.). Another problem is presented by the fact that this amendment should have originally been approved by the authorities in 2008 already. However, due to delays it has been sent by the Ministry of Justice to other institutions for comments in November 2010. As at March 2011, this amendment to the Law 36/1967 Coll. has not yet been approved. However this time delay is not

the main problem. Even if this amendment in its current wording is approved, the main issue is still not resolved. As the Ministry of Justice claims, the aim of the amendment is to reinforce the state supervision over the valuers. However, the main aim should be to assure quality and corresponding and ongoing qualification from the side of sworn-in valuers. In Germany, for example, the publicly appointed, sworn and qualified valuers have to pass an examination every five years to be allowed for practicing the profession. The same situation is given by the legislation in France where the expert judicial valuers have to undergo an examination every five years (the law regulating the profession was established in 1970s and currently amended in 2004) [47]. Also in the United Kingdom reassures a regular re-examination of the valuers that their professional knowledge is on an adequate level. Therefore I believe that the requirement for regular re-examination should be part of the new amendment to the Law No. 36/1967 Coll., on expert valuers and interpreters. This would achieve not only a certain high-level of the current sworn-in valuers but also higher quality of applicant appointed to valuers.

- An interesting issue is also connected to the Czech Law No. 151/1997 Coll., on property valuation. According to §1, section (1) the Law “regulates the methods to be used in the valuation of things, rights and other property values and services, for the purposes laid down in certain statutory provisions and regulations (Note 1).” [52] – §1]. The Note 1 then has following wording:
  - “§18 (2) of Investment Companies and Investment Funds Act, No. 248/1992 Coll., as amended;
  - §5 (2) of the Real Estate Tax Act, No. 338/1992 Coll., as amended by the Act No. 242/1994 Coll.;
  - §33 of the State-contributory Supplementary Pension Insurance Act, No. 42/1994 Coll.;
  - §2 (1) and §3 of Decree on Compensations for the Expropriation of Structures, Plots of Land, Vegetation and Rights Thereto, No. 122/1984 Coll.;
  - §3 of Decree on Notary Fees, No. 612/1992 Coll.;

- §2, §§4-9 of Decree on Computing the Detriment or Damage Caused to Wood-Producing Functions of Forests, No. 81/1996 Coll.” [52] – Note 1]

From this it results that for example for real estate transfer between two business corporations, this Law theoretically does not apply. Nevertheless, the valuers use the notions of the Law No. 151/1997 Coll. in process of market value determination even in such cases (which are not implicitly included in the Law No. 151/1997 Coll.), and support their opinion of market value by the use of international valuation standards published by IVSC (International Valuation Standards), RICS (The Red Book), and/or TEGoVA (The Blue Book).

- Due to low transparency of the Czech real estate market and insufficient information about previously executed sale prices of comparable real estate in given location, the sales comparison method which issues from these real data does not have such weight as in case of developed and stable markets. It would be therefore beneficial to learn from the example of Germany or France for instance where the notaries, cadastral offices, and other authorities contribute with their data about current sales to a central database which is usually administered separately. After a relevant payment, the valuers then can request an access to the database or only an extract from it for their actual valuation assignment.

Regarding the Czech Republic, it can be observed that the current situation is not beneficial for any party involved. The duality of real estate valuation (estimation of market value on the one side and determination of administrative price on the other side) causes misunderstandings and ambiguity among investors, owners of real estate properties, and even the general public. Additionally, it also creates an increased level of costs for administration on the side of the state. An amendment to the current legislation should be made both regarding the Law No. 36/1967 Coll., on expert valuers and interpreters, and the Law No. 151/1997 Coll., on valuation of property. This would send a clear signal that the profession and the practices of real estate valuation finally correspond to the current situation on the real estate market and would additionally create transparency that would be so welcomed by foreign investors.

## 6. Conclusions

The players in the real estate industry, including developers, investors, construction companies, property managers and tenants, are facing challenging times. Exactly in these days, when the availability of financing is limited due to the economic recession, the need for accurate and reliable information about the value of a real estate property has become more visible than ever. The real estate market players will have to develop their skills in the areas of conceptualising, locating, and analysing real estate opportunities. A supportable opinion of market value of a given property can be of significant assistance in this process. A greater awareness of possible business risks connected to a purchase or sale can be achieved, as well as a potential change of strategies, including expansion to new markets or redesign of assets portfolio.

The motto cited by Gottschalk [15] can be understood as a good clarification of the general practice applied in the field of valuation of real estate property:

*“The value of property results from its classificatory, comparative, and quantitative categorization. The utilization of mathematical methods forms an indispensable base for correct investigations, as well as for determination of quantitative and deductive probabilities. **In this process, however, it should always be noted that in the real economy an absolute accuracy does not exist.**”* [15] – translated into English]

The presented diploma thesis elaborates the topic of determining the prices on the market for real estate property. The performed detailed analysis clearly demonstrates the complexity of the process; its significance in terms of transparency in today’s globalized world is thereby rather obvious. Price is an essential instrument of investors in their decision-making process about feasibility, profitability, or inadvisability of their investment. In the current economic climate in the Czech Republic, investors have to face pricing inconsistencies in the real estate market, which manifests itself in two different price levels. Prices dictated by the market and achieved in the exchange on the market – market values (“usual prices” – “ceny obvyklé“), and prices dictated by the implementing

regulation of the Czech Ministry of Finance – administrative prices (“determined prices” – “ceny zjištěné”) which are used mainly as a basis for calculation of real estate transfer tax.

This duality of prices on the real estate market is yet more complicated by the regulated price of real estate property for purposes of property tax. This uneven level of price of one property for different purposes resulted in distortion of the market environment which is rather far from the classical definition of ideal market by the founders of economics.

On basis of the performed valuation process in the two presented case studies under circumstances in both countries, the Czech Republic and Germany, the valuation methodologies applied in these two countries were demonstrated and compared side by side. This revealed that the coherence of the German laws and regulations on real estate property valuation to the real market conditions is much narrower than in the Czech Republic. Due to this, the real estate market in Germany can pride itself on high transparency and thus attractiveness for foreign investors – which is a situation desirable to achieve also in the Czech Republic.

Foreign investors and international companies active on the Czech real estate property market clearly prefer the usage of market value over the administrative price determined by regulations published by the Czech Ministry of Finance. This has a direct impact on the profession of valuers which is managed by the Law No. 36/1967 Coll., on experts and interpereters from the year 1967, a period of centrally planned economy. The Czech expert sworn-in valuers usually determine the administrative price of real estate properties and are thereby losing immediate contact to the factual real-world real estate market in which prices are determined by the law of supply and demand. Existing different levels of prices of real estate properties in the Czech Republic furthermore do not respect even the classical assumption of tax creation; the basic principle of “ad valorem” defining the amount of taxes to be paid according to the value of the property.

A clear conclusion can be made based on the above mentioned findings: if the political situation in the Czech Republic will allow to transform the tax burden on citizens according to property, then consistent with the “ad valorem” principle, only one way for

determination of the price of real estate property should be legalized – that is by its real market value. It is obvious that the state may not reflect the immediate situation on the market for real estates in the tax base. This issue can be very easily mastered by regular revaluation of property (usually after five years), and possibility to submit tax declaration with and annual postponement, as is the situation for example in the neighbouring Australia.

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### Other sources

Beside the sources enlisted above, I have also used valuation reports and supporting documentation for these valuation reports (e.g. extracts from cadastral register; lists of realized rents; construction plans of individual properties, etc.) on which I was working during my work practical placement in the valuation office Bewert s.r.o., in Prague, and in the valuation office of Dipl.-Ing. Anne-Kathrin Borowski, in Dresden – Germany.

Although I cannot give precise reference of these valuation reports, as I am bounded by the obligation of secrecy to secure the sensitive information of the valuers' clients, I have to acknowledge the fact that I have used these sources. I made every effort to use them in such a way that would not make it possible to trace the information to the original valuation assignment and thus the client.

## **8. Supplements**

- |     |                                                        |         |
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# Glossary of Terms

## ***administrative price***

Term used in the Czech Republic for price of real property determined in accordance with the Law No. 151/1997 Coll., on property valuation, together with the actually valid Act issued by the Czech Ministry of Finance (as at 2011 this is the Act No. 364/2010 Coll.). The valuation of the subject real estate is performed in accordance with these regulation in cases defined in the law (usually for valuation assignment to be submitted in front of public authorities, e.g. tax authorities, cadastral office etc.). Many equivalent terms for this concept are in use in the Czech Republic (mainly “cena zjištěná”, “cena administrativní”, “cena úřední”, “vyhlášková cena”).

## ***ad valorem***

“According to value (Latin); generally used to refer to real estate taxes that are based on assessed property value.” [28]

## ***allowance for vacancy and collection losses***

“The percentage of potential gross income that will be lost due to vacant units, collection losses or both.” [28]

## ***arm’s length transaction***

“A transaction in which both buyer and seller act willingly and under no pressure, with knowledge of the present conditions and future potential of the property, and in which the property has been offered on the open market for a reasonable length of time and there are no unusual circumstances.” [28]

## ***cost approach***

“The process of estimating the value of the reproduction or replacement cost of property improvements, less depreciation, to the estimated land value.” [28]

## ***highest and best use***

“The legally and physically possible use of land that is likely to produce the highest land (or property) value. It considers the balance between site and improvements as well as the intensity and length of use.” [28]

“The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum profitability.” [27]

The determination of the highest and best use of the subject property usually works with two scenarios: (a) vacant land, and (b) improved land at its current conditions.

## ***income capitalization approach***

“The process of estimating the value of an income-producing property by capitalization of the annual net operating income expected to be produced by the property during its remaining economic life.” [28]

***price***

“The amount a particular purchaser agrees to pay and a particular seller agrees to accept under the circumstances surrounding their transaction.” [27]

***market value***

“The estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently and without compulsion.” [49]

“Market value (“cena obvyklá”) is the value which would be obtained when selling an identical or similar asset, or when rendering an identical or similar service, in the usual commercial relationships prevailing in the Czech republic at the day of valuation, while at the same time taking into account all circumstances influencing the price, and disregarding the influence of extraordinary market circumstances, the personal situation of the seller or the buyer and influence of any special preference.” [52] – §2 (Section 1)

In the Czech terminology following equivalent terms may be used: “cena obvyklá”, “cena obecná”, “cena sjednaná”, “cena tržní”.

***real estate (often used synonymously with the term “real property”)***

“Land; a portion of the earth’s surface including fixtures permanently attached thereto by nature or by man, anything incidental or appurtenant to land and anything immovable by law; freehold estate in land.” [28]

***real property (often used synonymously with the term “real estate”)***

“The right of ownership of real estate, often called the *bundle of rights*; for all practical purposes, synonymous with real estate.” [28]

“The interests, benefits, and rights inherent in the ownership of real estate.” [27]

***remaining economic / useful life***

“The number of years of useful life left to a building from the date of appraisal.” [28]

***sales comparison approach***

“The process of estimating the value of property through examination and comparison of actual sales of comparable properties; also called the *direct market comparison*.” [28]

***subject property***

The subject of the valuation assignment; the property to be appraised.

***valuation / appraisal***

“An estimate of quantity, quality or value; the process through which conclusions of property value are obtained.” [28]

***valuation methods***

“The approaches used in the appraisal of real property (cost approach, income capitalization approach, sales comparison approach).” [28]



***valuation principles***

“Factors that affect market value, such as the principle of substitution, highest and best use, supply and demand, conformity, contribution, increasing and decreasing returns, competition, change, stage of life cycle, anticipation, externalities, balance, surplus productivity, opportunity cost, and theory of distribution.”

***valuation process / appraisal process***

“A systematic analysis of the factors that bear on the value of real estate; and orderly program by which the problem is defined; the work necessary to solve the problem is planned; the data involved are acquired, classified, analyzed and interpreted into an estimate of value; and the value estimate is presented in the form requested by the client.” [28]

“The act or process of estimating the market value, or other properly defined value of an identified interest or interests in a specific parcel or parcels of real estate as of a given date.” [27]

***valuation report / appraisal report***

“A valuer’s written opinion to a client of the value sought for the subject property as of the date of appraisal, giving all details of the appraisal process.” [28]

“A written or oral communication of an appraisal; the document that is transmitted to the client upon completion of an appraisal assignment.” [27]

***value***

“The power of a good or service to command other goods or services in exchange; the monetary worth of property, goods, services, etc.; the present worth of future rights to income and benefits arising from ownership.” [28] [27]

***valuer*** (synonymous with the term “appraiser” and/or “surveyor”)

“One who is qualified to estimate the value of real estate.” [33]

## 8.2 List of Used German Terms with English Translation

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Allowance for vacancy and collection losses	<i>Mietausfallwagnis</i>
Apprehension of bias	<i>Besorgnis der Befangenheit</i>
Borrower	<i>Kreditnehmer</i>
Capitalization rate applied in the German income approach	<i>Liegenschaftszins</i>
Committee of Valuation Experts	<i>Gutachterausschuss</i>
Comparables	<i>Vergleichsobjekte</i>
Comparison approach	<i>Vergleichswertverfahren</i>
Construction price index	<i>Baupreisindex</i>
Correction factors	<i>Korrekturfaktoren</i>
Cost approach	<i>Sachwertverfahren</i>
Database of purchasing prices	<i>Kaufpreissammlung</i>
Depreciated replacement value (market value derived by the cost approach)	<i>Sachwert</i>
Developed / improved site	<i>Bebautes Grundstück</i>
Discount rate	<i>Kapitalisierungszinssatz</i>
Effective rent	<i>Effektivmiete</i>
Expert, appraiser, expert valuer	<i>Sachverständiger</i>
Federal Building Code	<i>Baugesetzbuch, BauGB</i>
Floor space	<i>Wohnfläche</i>
Gross annual income	<i>Jahresrohertrag</i>
Gross floor space	<i>Bruttogrundfläche</i>
Gross income (yield)	<i>Rohertrag</i>
Handicrafts Regulation Act	<i>Handwerksordnung, HwO</i>
Chamber of Agriculture	<i>Landwirtschaftskammer</i>
Chamber of Handicrafts	<i>Handwerkskammer</i>
Income approach	<i>Ertragswertverfahren</i>
Inflation factor	<i>Teuerungsfaktor</i>
Judicial Remuneration and Compensation Act	<i>Justizvergütungs- und Entschädigungsgesetz, JvEG</i>
Land value	<i>Bodenwert</i>
Lender	<i>Kreditgeber</i>
Linkage factors	<i>Verkettungsfaktoren</i>
Maintenance costs	<i>Instandhaltungskosten</i>
Market adjustment	<i>Marktanpassung</i>
Market value	<i>Verkehrswert (Marktwert)</i>
Modernization risk	<i>Modernisierungsrisiko</i>
Monuments Preservation Office	<i>Denkmalschutzamt</i>
Mortgage	<i>Hypothek</i>
Mortgage lending value	<i>Beleihungswert</i>
Mortgage lending value valuation	<i>Beleihungswertgutachten</i>

## 8.2 List of Used German Terms with English Translation

Multiplier (used in the German income approach)	<i>Vervielfältiger</i>
Net annual income	<i>Jahresreinertrag</i>
Net rent income	<i>Reinertrag</i>
Operating costs	<i>Bewirtschaftungskosten</i>
Law on valuers	<i>Sachverständigenordnung, SvO</i>
Other construction costs	<i>Baunebenkosten</i>
Outdoor facilities and improvements	<i>Außenanlagen</i>
Pfandbrief Act	<i>Pfandbriefgesetz (PfandBGg)</i>
Property loan	<i>Immobilienkredit</i>
Property management costs; administrative costs	<i>Verwaltungskosten</i>
Publicly appointed, sworn and qualified expert	<i>Öffentlich bestellte und vereidigte Sachverständige</i>
Remaining useful life	<i>Restnutzungsdauer</i>
Rent arrears	<i>Mietrückstände</i>
Rent excluding service charges	<i>Kaltmiete</i>
Rent index	<i>Mietspiegel</i>
Rent roll	<i>Mieterliste</i>
Rental income	<i>Mieteinnahmen</i>
Repairs backup	<i>Reparaturrückstau</i>
Residual land value	<i>Residualer Bodenwert</i>
Service charges, other costs	<i>Nebenkosten</i>
Single monument	<i>Einzeldenkmal</i>
Standard construction costs	<i>Normalherstellungskosten (NHK)</i>
Standard ground value	<i>Bodenrichtwert</i>
Tenancy schedule	<i>Mieterliste</i>
The Industrial and Trade Chamber	<i>IHK</i>
Time value	<i>Zeitwert</i>
Total expected useful life	<i>Gesamtnutzungsdauer</i>
Industrial Code	<i>Gewerbeordnung, GewO</i>
Valuation date	<i>Bewertungsstichtag</i>
Valuation law	<i>Wertermittlungsverordnung (WertV); Immobilienwertermittlungsverordnung (ImmoWertV)</i>
Value added tax	<i>Mehrwertsteuer</i>
Value in use	<i>Nutzungswert</i>
Valuer	<i>Sachverständiger</i>
Yield	<i>Zinssatz, Rendite</i>
Yield factor	<i>Ertragsfaktor</i>

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*Source: own experience*

## 8.2 List of Used German Terms with English Translation

### Mehrfamilien - Wohnhäuser

Typ 3.21

Normalherstellungskosten (ohne Baunebenkosten) entsprechend Kostengruppe 300 und 400 DIN 276/1993 einschließlich 16% Mehrwertsteuer, Preisstand 2000

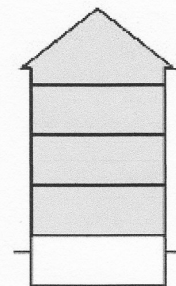
**NHK 2000**  
**WERTR**

Ausstattungsstandards, Baunebenkosten und Gesamtnutzungsdauer für diese Gebäudetypen siehe Tabelle "Ausstattungsstandards"

#### KORREKTURFAKTOREN

bezüglich der Grundrissart und der durchschnittlichen Wohnungsgröße

Grundrissart	- Einspänner			1,05
	- <b>Zweispänner</b>			<b>1,00</b>
	- Dreispänner			0,97
	- Vierspänner			0,95
	-			
Wohnungsgröße	von 50 m <sup>2</sup> BGF/ WE	= 35 m <sup>2</sup> WF/ WE		1,10
	<b>von 70 m<sup>2</sup> BGF/ WE</b>	<b>= 50 m<sup>2</sup> WF/ WE</b>		<b>1,00</b>
	von 135 m <sup>2</sup> BGF/ WE	= 100 m <sup>2</sup> WF/ WE		0,85



Typ 3.21 Keller-, Erdgeschoss, 2 Obergeschosse, voll ausgebautes Dachgeschoss

#### KOPFHAUS

Kosten der Brutto-Grundfläche in €/m <sup>2</sup> , durchschnittliche Geschosshöhe 2,95 m							
Ausstattungsstandards	vor 1925	1925 bis 1945	1946 bis 1959	1960 bis 1969	1970 bis 1984	1985 bis 1999	2000
einfach	510 - 540	540 - 550	555 - 595	600 - 625	625 - 670	670 - 730	730
mittel	535 - 565	565 - 580	580 - 625	625 - 655	655 - 705	705 - 765	765
gehoben	580 - 610	615 - 630	630 - 680	680 - 715	715 - 765	765 - 830	830

#### MITTELHAUS

Kosten der Brutto-Grundfläche in €/m <sup>2</sup> , durchschnittliche Geschosshöhe 2,95 m							
Ausstattungsstandards	vor 1925	1925 bis 1945	1946 bis 1959	1960 bis 1969	1970 bis 1984	1985 bis 1999	2000
einfach	505 - 530	535 - 545	550 - 590	590 - 620	620 - 660	665 - 720	725
mittel	530 - 560	560 - 575	575 - 620	620 - 650	650 - 695	700 - 755	760
gehoben	575 - 605	605 - 620	625 - 670	670 - 705	705 - 755	755 - 820	820

#### FREISTEHEND

Kosten der Brutto-Grundfläche in €/m <sup>2</sup> , durchschnittliche Geschosshöhe 2,95 m							
Ausstattungsstandards	vor 1925	1925 bis 1945	1946 bis 1959	1960 bis 1969	1970 bis 1984	1985 bis 1999	2000
einfach	520 - 545	550 - 560	565 - 605	610 - 635	640 - 680	680 - 740	745
mittel	545 - 575	575 - 590	595 - 635	640 - 670	670 - 715	720 - 780	780
gehoben	590 - 625	625 - 640	640 - 690	695 - 725	730 - 775	780 - 845	845

Source: [36] – page 20]