

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics**



**Bachelor Thesis**

**Economic Evaluation of Real Estate in the Czech  
Republic**

**Dmitrii Ivanov**

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# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

## BACHELOR THESIS ASSIGNMENT

Dmitrii Ivanov

Business Administration

Thesis title

**Economic Evaluation of Real Estate in the Czech Republic**

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### **Objectives of thesis**

The aim of the present bachelor thesis is to analyze the real estate market in the Czech Republic and Prague, to evaluate prices across regions, to analyze the current situation on the market and the prospects for its development.

### **Methodology**

The theoretical part is based on the inductive methods of academic research. In the practical part, the following methods were employed: the abstract-logical, the system-structural, economic-mathematical and economic-statistical methods.

**The proposed extent of the thesis**

55

**Keywords**

real estate, analysis, market, price, development

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**Recommended information sources**

- Asaul, A. (2013). Ekonomika nedvizhimosti (Real estate economics). St. Petersburg. 416 p. ISBN: 978-5-496-00057-4.
- Goremykin, V. (2007). Ekonomika i upravleniye nedvizhimostyu (Economics and management of real estate). Moscow. 345 p. ISBN: 978-5-2760-1081-6.
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- Vasilyeva, N. (2008). Ekonomika nedvizhimosti (Real estate economics). Moscow. 480 p. ISBN: 978-5-699-26391-2.
- 

**Expected date of thesis defence**

2017/18 SS – FEM

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### **Declaration**

I declare that I have worked on my bachelor thesis titled "Economic Evaluation of Real Estate in the Czech Republic" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 14.03.2018

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## **Acknowledgement**

I would like to thank Ing. Petr Procházka, Ph.D., MSc, for his advices and support during my work on this thesis.

# **Economic Evaluation of Real Estate in the Czech Republic**

## **Abstract**

The present bachelor thesis describes actual situation of the real estate market in the Czech Republic with the focus on the capital city, Prague. The thesis is divided into two main parts.

The first part is theoretical, which is focused on the general characteristics of the market: the processes of its formation, its basic terms, and the methods of valuation.

The second part is practical, and entails an analysis of the real estate market in the Czech Republic and Prague, as well as the identification factors that determine its current state and the prospects for development.

**Keywords:** real estate, analysis, market, price, development.

# **Ekonomické hodnocení nemovitostí v České republice**

## **Abstrakt**

Tato bakalářská práce popisuje aktuální situaci na trhu nemovitostí v České republice se zaměřením na hlavní město, Praha. Práce je rozdělena do dvou hlavních částí.

První část je teoretická, která je zaměřena na obecné charakteristiky trhu: procesy jeho formování, základní pojmy a metody oceňování.

Druhá část je praktická a zahrnuje analýzu trhu nemovitostí v České republice a v Praze, a identifikaci faktorů, které určují aktuální stav a perspektivy vývoje.

**Klíčová slova:** nemovitost, analýza, trh, cena, vývoj.

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# 1 Introduction

The real estate market plays an important role in the development of any state: it is an important element of the economy and the state's national wealth.

Quite significant changes have occurred in the real estate market in the Czech Republic. Year 1989 can rightly be considered one of the most global milestones in its development. During this period, there was a transition to a market economy and a change of the political regime, which gave rise to economic growth and, consequently, an improvement in living standards. As a result, there was a return to the development of business and real estate market, investments, private property.

In 2000-2008, there was a rapid increase in prices: in annual terms, they increased by several dozen percent for the real estate not only in the Czech Republic but also in neighboring countries. The demand for real estate turned out to be inexhaustible. This was contributed by the following reasons: the high demand for housing for citizens interested in housing, investors, as well as the availability of mortgage loans. At the end of 2008, after a number of years of development and growth of the Czech economy, there was a financial decline. The pace of consumer demand and construction declined, and real estate prices began to decrease.

In the period from 2010 to 2013, the Czech real estate market recovered from the failed years of the European financial crisis. The demand for apartments at that time reached a historic low.

Year 2015 was marked by optimistic predictions about the future development of the Czech economy. Due to the low interest rates, the pace of recovery had accelerated. A record number of transactions with new buildings was witnessed, and the secondary housing was actively sold. If a few years ago real estate was purchased only for personal needs, in 2015 more and more housing was purchased for permanent income and subsequent rent.

In 2015-2016, buyers from other countries returned to the Czech market. Currently, the Czech real estate market is on the rise in all directions. Depending on the region of residence, the housing price also undergoes changes.

## **2 Objectives and Methodology**

### **2.1 Objectives**

The aim of the present bachelor thesis is to determine the features of the way the real estate market functions in the Czech Republic, to analyze the current situation on the market and the prospects for its development. To achieve the above-mentioned objectives, the following tasks are to be set:

- to consider the main reasons for the market formation and the general classification of the real estate;
- to analyze the functioning of the real estate market;
- to consider the dynamics of prices, supply and demand on the real estate market;
- to consider the characteristics of the real estate;
- to analyze the real estate market in the Czech Republic and Prague;
- to identify the prospects of the market development.

### **2.2 Methodology**

The theoretical part is based on the inductive method of academic research. The information obtained from various sources such as academic literature, textbooks, the Internet, as well as various legal acts regulating economic relations has been generalized and systematized.

In the practical part, the following methods were employed: the abstract-logical method allowed to distinguish the main characteristics of the processes and phenomena occurring in the given sphere. The system-structural method is applied to analyze the financial condition. The application of economic-mathematical and economic-statistical methods made it possible to determine the growth tendency, to assess the dynamics and predict the further development of the real estate market.

## 3 Literature Review

### 3.1 Characteristics of the real estate market

Real estate is the main element of the market economy, which is regarded as the main means of production (land, administrative, industrial, warehouse, commercial and other buildings and premises, as well as other constructions) and the object of consumption (land lots, houses, country houses, apartments, garages). Real estate is the basis of personal existence for citizens and serves as the base for economic activity, development of organizations and companies of various forms of ownership.

*"Market - an actual or nominal place where forces of demand and supply operate and where buyers and sellers interact (directly or through intermediaries) to trade goods, services, or contracts or instruments, for money or barter".<sup>1</sup>*

#### 3.1.1 Definitions of real estate

Real estate represents special goods because its characteristics are not typical for other products (such as strictly defined location). Further, let us consider the definitions of real estate:

*"Real estate - land and anything fixed, immovable, or permanently attached to it such as appurtenances, buildings, fences, fixtures, improvements, roads, shrubs and trees (but not growing crops), sewers, structures, utility systems, and walls".<sup>2</sup>*

*"Real estate - it is a name given to land, buildings, and legal rights over immovable property, especially when they can be priced for possible sale in an actual or potential market".<sup>3</sup>*

In the Czech Republic the term *"real estate"* was directly defined by the old Civil Code under § 119, paragraph 2, Act no. 40/1964 Coll.: *"Real estate is land and buildings connected with the ground by means of a solid foundation"*.

Under the new Civil Code from 01.01.2014, the term *"real estate"* is not directly defined. According to the Civil Code, § 498, paragraph 1, Act no. 89/2012 Coll., only immovable property is defined: *"Immovable property is land and underground structures*

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<sup>1</sup> What is a market?. *BusinessDictionary* [online] [cit. 2017-09-04].

<sup>2</sup> What is a real estate?. *BusinessDictionary* [online] [cit. 2017-09-04].

<sup>3</sup> PIROUNAKIS, N. *Real estate economics*. 2013, p. 1.

*with separate purpose designations, as well as the rights inherent in them, and the rights that the real estate claims the law. If another law stipulates that a thing is not part of the land, and if such a thing can't be transferred from place to place without infringing its essence, this property is also immovable".*

Having considered the definitions of "market" and "real estate", it is possible to distinguish such a notion as "real estate market" – the sector of the national market economy, which represents an aggregate of real estate objects, economic entities, operating on the market, market functioning processes, i.e. processes of production, consumption and exchange of real estate objects and market management, as well as the mechanisms that ensure the functioning of the real estate market.

### **3.1.2 Features of the real estate market**

Locality. Unlike other markets, the dynamics of supply and demand in the real estate market largely depend on the state of the regional economy. Due to the differences in the level of economic development of regions, the degree of development of local real estate markets can vary significantly. Therefore, data on the state of the national real estate market do not always reflect the real situation in the regions.

Individuality of transactions. Each object on the real estate market has many individual quantitative and qualitative characteristics, it takes much more effort to select a suitable object and conduct a transaction than on other markets. Each transaction requires a personal contact of the seller and the buyer or their representatives. The value of real estate objects is determined by the valuation process (unlike other markets where standard goods or services that are already on the market act as the objects of a market transaction, the cost of which can be learned by looking at the reference prices). In this regard, transactions in the real estate market involve higher costs.

State registration of transactions. The real estate exploitation, unlike other goods, affects the interests of other citizens and organizations. Immovable property is a special type of property, the rights to own which are different from the ownership of other types of property. State registration of real estate transactions provides protection of state and public interests.

High threshold investment for the transactions. The processes of construction, production of building materials and equipment are characterized by considerable costs and capital intensity. Expenses for the purchase and service of real estate objects are

considerable. This explains high threshold investments for the transactions on the real estate market.<sup>4</sup>

### **3.1.3 Features of real estate objects**

Out of all goods, real estate objects are considered the most durable and fundamental. They have specific features and characteristics, the main of which are given below.

**Durability.** In comparison with the majority of goods, real estate objects are rather durable. This feature allows to determine, besides the right of ownership to real estate objects, other property rights, for example, rent. This approach provides an opportunity for the satisfaction of a number of various interests in the same object. The next advantage of the durability of real estate is the possibility of investing in it.

**Stationarity.** The stationarity of real estate objects comes from the essence of real estate. Fixed location has an impact on the economic characteristics and the terms of object implementation.

**Uniqueness.** Each real estate object is unique, which is connected with the features of stationarity of real estate. In addition, the uniqueness is explained by a variety of demand, as well as quantitative and qualitative characteristics of the object. For example, two apartments of the same size can differ in layout, location, window orientation, etc. The formation of uniqueness is also promoted by the possibility of improving the object through investment.

**Low liquidity.** Goods liquidity on the real estate market is a result of the characteristics of uniqueness and stationarity. As a result of the object uniqueness, costs of its search and the time of its realization are increased. Stationarity also excludes the possibility of moving the object to the region with a higher demand on the given goods.

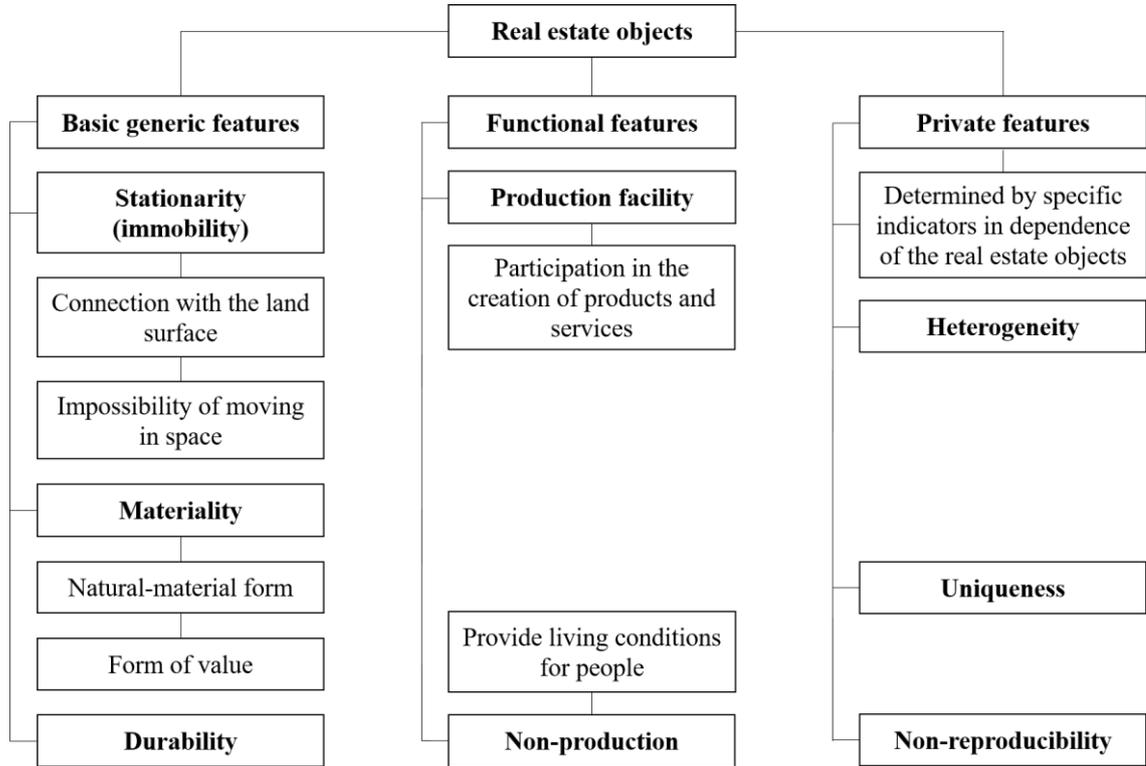
**High cost.** Investment in the process of creating real estate objects, their maintenance and realization causes the high cost of these objects. High cost allows to exploit real estate as a means of saving investments.

In addition to the main features of real estate, it is possible to identify private features (Chart 1) as well, which are determined by specific indicators depending on the type of objects.

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<sup>4</sup> MIRONOVA, N., SHUTKOV, S. *Ekonomika nedvizhimosti (Real estate economy)*. 2004.

**Figure 1: Features of real estate objects**

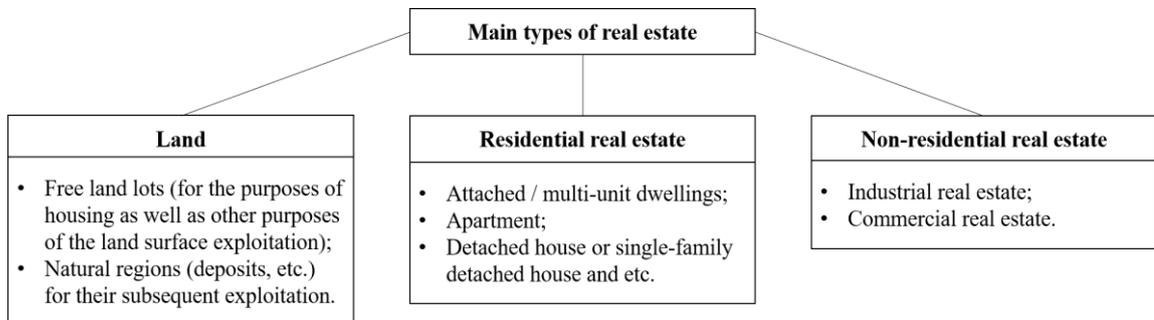


Source: Asaul A. *Ekonomika nedvizhimosti (Real estate economy)*. 2013, p. 25.

### 3.1.4 Classification of real estate objects

There are three main types of real estate: land, residential and non-residential real estate.

**Figure 2: Main types of real estate**



Source: Shcherbakova N. *Ekonomika nedvizhimosti (Real estate economy)*. 2002, p. 9.

The basic object of real estate is land as the only place of residence for all people, the main factor in any sphere of business, directly or indirectly involved in the production of all other goods. Thus, the land is a limited and non-reproducible resource. Along with the division into types, real estate is classified according to an array of features:

1. According to the purpose of use:
  - for housing: houses, cottages, apartments;
  - for commercial activity: hotels, offices, shops, restaurants, service points;
  - for agricultural purposes: farms, gardens;
  - for special purposes: schools, churches, hospitals, kindergartens, nursing homes, and administrative buildings.
2. According to the purpose of ownership:
  - for business;
  - for accommodation of the owner;
  - as an investment;
  - for development.
3. According to the degree of specialization:
  - specialized: oil refining and chemical plants, power stations;
  - non-specialized – the rest of real estate.
4. According to the degree of readiness for exploitation:
  - put in service;
  - requiring reconstruction or major repairs;
  - construction in progress.
5. According to the reproducibility in the natural form:
  - reproducible-buildings, constructures;
  - non-reproducible: land plots, mineral deposits.<sup>5</sup>

In the real estate market, there are two components: primary and secondary real estate market.

In the primary market the real estate as goods acts for the first time. The main sellers of real estate in this case are the state represented by its federal, regional and local authorities, as well as construction companies – suppliers of residential and non-residential real estate.

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<sup>5</sup> VASILYEVA, N. *Ekonomika nedvizhimosti. (Real estate economy)*. 2008.

In the secondary market, real estate acts as the goods, previously used and now owned by a particular owner who is a natural or juridical person.

### **3.1.5 Forms of ownership**

From the point of ownership, apartments are divided into:

1. Private property. The owner is a natural or juridical person.
  - Agricultural private companies.
  - Industrial and other private companies.
  - Private homeowners.
2. Cooperative property. In this case, the property belongs to a cooperative.
  - Agricultural cooperatives.
  - Land lots (buildings) owned by production and consumer cooperatives.
  - Housing cooperatives.
3. State ownership. The owner of the property is the state or a large owner.
  - State.
  - Cities and municipalities (municipal property).
  - Social organizations and foundations.<sup>6</sup>

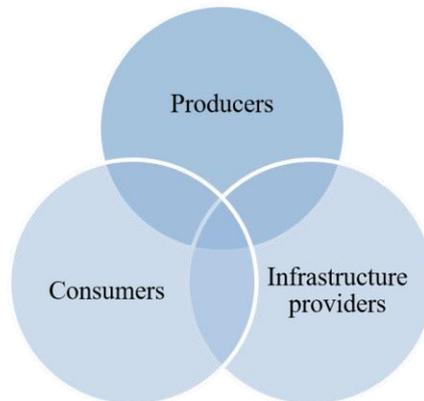
### **3.1.6 Participants in the real estate market**

There are three major groups in the real estate process: producers, consumers and infrastructure providers.

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<sup>6</sup> CISAR, J. *Vybrané otázky z trhu nemovitostí*. 1996, p. 18.

**Figure 3: Participants in the real estate**



Source: JR DeLisle. *Fundamentals of Real Estate*.

*Chart 3* shows that these groups communicate with each other, forming a real estate market.

1. Producers. This group includes those who work on the construction of the building, for example, developers, contractors, designers and those who work in the financial sector, for example, lenders, investors, brokers.
2. Consumers. This group includes those who use the space, for example, owners, tenants, as well as those who pay for goods and services that are provided in a certain object, for example, clients, shoppers.
3. Infrastructure providers. This group includes those who work outside the real estate sector, but has a significant impact on it, for example, governmental entities that create a regulatory environment.<sup>7</sup>

Participants representing state interests and acting on its behalf:

- State civil registration authorities of rights to real estate and transactions with it;
- Organizations that regulate urban development, land management and land use;
- Federal and regional authorities of architecture and town-planning engaged in the approval and coordination of town-planning proposals of the territorial development;
- Expertise authorities of town-planning and project documentation, engaged in the approval and coordination of architectural and construction projects;
- Authorities of technical, fire and other inspections, which are engaged in the supervision of construction and operation of buildings.

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<sup>7</sup> JR DeLisle. *Fundamentals of Real Estate*. 2017, p. 33.

Participants working on a commercial basis:

- Businessmen, juridical or natural persons, carrying out commercial activities on the market in accordance with the law.
- Investors who invest their own, borrowed or attracted financial, intellectual and other funds in the form of investments in real estate.
- Real estate agents (brokers) engaged in the sale of the property (lease) to the consumer, providing services to buyers and sellers in transactions with a real estate object.
- Developers who develop a functional and marketing idea of the real estate object, including a business plan, functional and marketing concept of the real estate object;
- Insurance agents engaged in the insurance of objects, transactions, professional liability.
- Appraisers of real estate, providing services for independent evaluation of real estate.
- Financiers (bankers), carrying out financing transactions on the real estate market.
- Stock market participants, engaged in the creation and exchange of securities provided by real estate.
- Lawyers engaged in legal support of transactions on the real estate market.

## **3.2 Economic characteristics of the real estate market**

The real estate market has a great impact on all aspects of people`s life and activities, thus performing a number of general and special functions. One of the main functions of the market is to establish equilibrium prices at which the solvent demand corresponds to the volume of supply. At the prices below an equilibrium one, there is excess demand, and in the case of the raise of equilibrium prices — excess supply.

### **3.2.1 Functions of real estate**

The regulatory function is that the market, acting autonomously with an *"invisible hand of the market"*, as A. Smith puts it, redistributes resources over the spheres of entrepreneurship and directs its participants towards the goal, which was not included in their intentions at all.

The commercial function is to realize the value and consumer value of the property, and to profit from the invested capital.

The function of sanitization is to cleanse the economy from uncompetitive and weak market participants, bankruptcy of the inefficient.

The information function is a unique way of the rapid collection and dissemination of the generalized objective information allowing sellers and buyers of real estate to make the decision freely and competently in accordance with their interests.

The intermediary function is expressed in the fact that the market acts as a combined intermediary and meeting point for a multitude of buyers and sellers that are independent and economically isolated as a result of the social division of labor.

The stimulating function acts in the form of economic encouragement — with the profit from a productive use of the achievements of scientific and technical progress in the creation and use of real estate.

The investment function is an attractive way to preserve and increase the value of the capital.

The social function is manifested in the growth of labor activity of the entire population, in increasing the intensity of labor of citizens seeking to become owners of apartments, land plots and other fundamental and prestigious objects.<sup>8</sup>

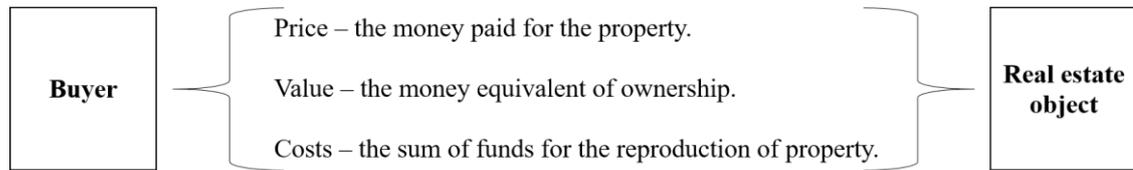
### **3.2.2 Price and value of real estate**

Like any product on the market, real estate objects have a price and value. However, as is known, there are differences between the concepts of the actual selling price and market value. In the evaluation of the property the following terms are used: "*price*", "*value*" and "*costs*".

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<sup>8</sup> GOREMYKIN V. *Ekonomika i upravleniye nedvizhimostyu (Economy and management of real estate)*. 2007, p. 130.

**Figure 4: Price, value, costs**



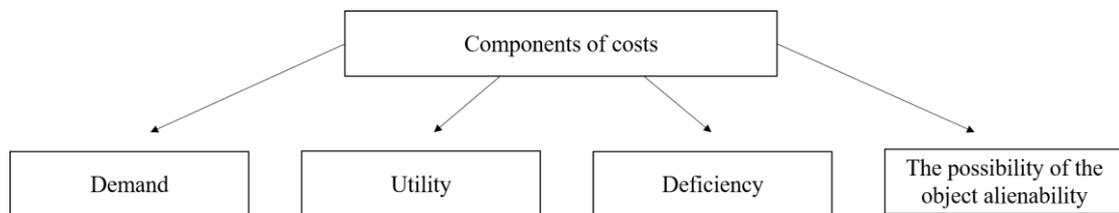
Source: Asaul A. *Ekonomika nedvizhimosti (Real estate economy)*. 2013, p. 258.

The price of the real estate object is the actual sum of a particular transaction of purchase and sale. Since the price in any real and prospective transaction is associated with the value of the property, these terms are often used as synonyms. Real estate prices are divided into a seller's price, buyer's purchase price and selling price.

- A seller's price is the sum, which they receive as a result of transaction.
- A buyer's price is the total of all their costs for the purchase of an apartment.
- A selling price is the sum that the buyer gives to the seller for the immovable property.

The cost of the real estate object depends on the impact of environmental factors, the life cycle of the property and effective exploitation. There are four components that affect the value of property:

**Figure 5: Components of the costs of real estate**



Source: Shcherbakova N. *Ekonomika nedvizhimosti. (Real estate economy)*. 2002, p. 28.

Demand is the quantity of given goods or services which is on the market of solvent buyers. The biggest potential demand is on the housing market.

Utility is the ability of the property to meet certain human needs, inducing the desire to acquire a certain thing (for example, the utility of housing – comfort of residence; for investors operating in the real estate market, the greatest utility will be contained in a land plot without restrictions on the use and development).

Deficiency is limited supply (while increasing the supply of certain goods, the price of this product starts to fall, while with decreasing supply, it grows).

The possibility of the object alienability – the possibility of transferring property rights, which allows real estate to pass from hand to hand (from the seller to the buyer), i.e. to be goods.

The same property may have a different value depending on the purpose of evaluation. There are several types of cost of real estate objects:

- The market value is the most likely price at which it can be sold on an open market in a competitive environment. The market value can rise and fall.
- The consumer value reflects the value of the property for a particular owner who is not going to put it on the market.
- The insurable value of real estate objects is calculated based on the replacement cost or the replacement cost of the object that is at risk of destruction. On the basis of the object's insurable value, insurance sums, payments and interest are determined.
- The collateral value is determined for the objects provided as collateral – the value of the property that the creditor expects to receive when selling the property on the market in the case of non-repayment of the loan.
- The investment value is the price of the property, determined with a regard to its profitability for a particular person for a given investment purpose. The investment value is calculated based on the income expected by the investor and the specific rate of capitalization and can be either higher or lower than the market value.
- The liquidation value is determined upon liquidation of the company by the decision of the owner or the judicial authority. The liquidation value is the price of selling the property that is forced upon the owner in a deadline less than sufficient for the acquaintance with the object of all potential buyers in the market.<sup>9</sup>

Thus, different real estate transactions correspond to several types of value. Depending on the needs of the real estate market participants, the amount of different types of value of the same object may vary significantly. The most common valuation is the market value.

### **3.2.3 Supply and demand on the real estate market**

*"The classical laws of supply and demand apply to real estate to a certain extent".<sup>10</sup>*

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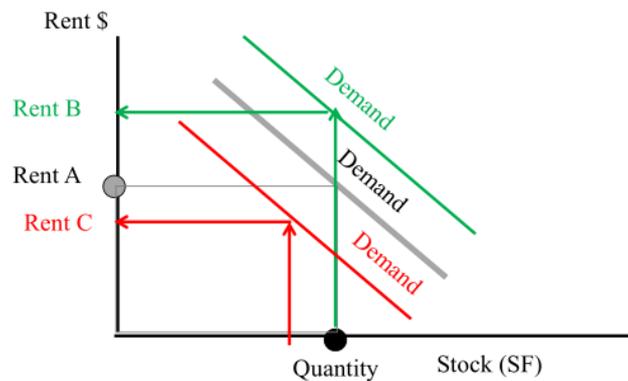
<sup>9</sup> Shcherbakova N. *Ekonomika nedvizhimosti. (Real estate economy)*. 2002, pp. 29-31.

<sup>10</sup> JR DeLisle. *Fundamentals of Real Estate*. 2017, p. 237.

The demand for immovable property is subordinated to the general laws of functioning of market economy. At the same time, it is in reverse dependence on the price factor, in other words, the higher the price, the lower the demand for this real estate object is, and vice versa.

The supply of real estate in the short period is not flexible, that is, the number of offered objects remains unchanged when prices change. This is due to the length of the process, the inability of instantaneous construction and reconstruction of immovable property or its destruction in response to changes in demand. Thus, in the short term supply of real estate does not depend on the price at which certain objects are sold.

**Figure 6: Changing demand**



Source: JR DeLisle. *Fundamentals of Real Estate*. 2017, p. 238.

The *Chart 6* shows that the sloping demand line will find an equilibrium point in which demand and supply will be balanced. In case of the increase in demand, the line will shift up and the rents will rise due to the fact that in the real estate, supply is inelastic. In case of the decrease in demand, the line will shift down and the rents will fall because the market has an excess supply of space.

### 3.2.4 Factors affecting the real estate market

Following factors influence market:

- macroeconomic parameters;
- political and general economic situation in the country;
- situation in the financial market;
- microeconomic situation in the financial market.

Factors affecting the value of demand:

- solvency of the population;
- population dynamics based on past and future trends;
- the level of migration, the ratio of different segments of the population;
- the availability and terms of financing.

Factors affecting the value of supply:

- reserve of available real estate objects on the market;
- volume of construction, construction costs, including the intensity of construction, the situation in the industry, changes in technology, the ratio of costs and sales prices of facilities, expenses of improvement.

Thus, the ratio of supply and demand factors is an important indicator of the development of the real estate market.

### **3.2.5 Real estate appraisal**

Real estate appraisal is a special field of professional activity aimed at establishing a market or other value in relation to the objects of evaluation, as well as requiring high qualification of the appraiser, understanding of the principles and methods of evaluation, free orientation in the real estate market, knowledge of the conditions and trends of demand and supply in different market segments.

Real estate appraisal is usually performed for the following reasons:

- change of ownership;
- financing or lending;
- valuation of market value of property by court decision;
- accounting matters;
- tax issues;
- deciding on the investment.

The subjects of appraisal activity are professional appraisers whose activity is regulated by the legislation of the Czech Republic.

There are several methods for the real estate appraisal:

- The income approach is a method of property valuation based on determining the current value of future income from its use. The income approach is based on the fact that the value of the property in which the capital is invested must correspond to the

current assessment of the quality and amount of income that this property is able to bring. The main prerequisite for calculating the value of real estate on the basis of this approach is considered to be its lease.<sup>11</sup>

- The cost approach is a set of assessment methods based on the determination of costs required for the recovery or replacement of an object, taking into account accumulated depreciation. It is based on the assumption that the buyer will not pay more for the finished object than for the creation of an object of similar utility. However, it is necessary to bear in mind, that expenses for the creation of real estate object are not equivalent to its market value.<sup>12</sup>
- The sales comparison approach is based on the analysis of market sales and is used to assess the majority of real estate in the market economy. It is based on easily accessible market information for the appraiser and allows to receive simple, logical judgment of the real estate object price.<sup>13</sup>

In addition to these three methods, other valuation methods are used, often in the connection with the specific character of the property or while supplementing other methods:

1. Land valuation methods:
  - comparative method;
  - index method;
  - Naegeli method;
  - residual method;
  - valuation according to the price map.
2. Methods of valuation of buildings:
  - factual value method;
  - budget method;
  - method of aggregated items;
  - method of technical-economic indicators.
3. Property valuation methods as a whole:
  - comparative method;
  - revenue-based methods:

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<sup>11</sup> SHCHERBAKOVA N. *Ekonomika nedvizhimosti (Real estate economy)*. 2012, p. 64

<sup>12</sup> TSYGANENKO V. *Ekonomika rynka nedvizhimosti (Economy of the real estate market)*. 2008, p. 55.

<sup>13</sup> GOREMYKIN V. *Ekonomika i upravleniye nedvizhimostyu (Economy and management of real estate)*. 2007, p. 97.

- yield method with perpetual annuity;
- yield method with temporary annuity;
- discounted cash flow method.<sup>14</sup>

### 3.2.6 House price index

The housing price index is a broad indicator that measures changes in the average price of residential buildings and premises, while this index does not reflect the price of a particular apartment, but determines the value of a measurement unit in the housing market, i.e. if it is multiplied by the total number of residential square meters in the city, it is possible to detect the total value of the housing stock.<sup>15</sup>

In addition to monitoring the current level of prices, the housing price index is considered as an improved analytical tool for studying the mechanisms of the market functioning and for more accurate forecasting of the dynamics of prices, i.e. the housing price index is an indicator (macroeconomic indicator) that reflects the state of the national economy. The growth of the indicator has a positive impact on the prices of the state's official currency, as the increase in housing prices is a feature of high demand and is manifested in the growing economy.

**Figure 7: Czech Republic house price index**



Source: Trading economics

<sup>14</sup> DUSEK, D. *Základy oceňování nemovitostí: oceňování a právní vztahy*. 2010, p. 143.

<sup>15</sup> Housing price index. *Economic-definition* [online] [cit. 2017-09-20].

The *Chart 7* demonstrates the changes in the Czech Republic house price index since 2008. *"In the long-term, the Czech Republic house price index is projected to trend around 106.12 Index points in 2020, according econometric models"*.<sup>16</sup>

### **3.3 Cadastre of real estate**

The main authority of the state administration of cadastral services is the State Administration of Land Surveying and Cadastre. Cadastre of real estate is regulated by Act no. 256/2013 Coll., which defines it as a public list containing a set of data on immovable property defined by law, including their inventory, description, geometric and location designation and registration of rights to such property.

*"Cadastre of real estate is a source of information serving for protection of rights to real estates, for tax and fees purposes, for environmental, agriculture and forest land protection, for protection of natural resources, cultural monuments, for urban planning, for evaluation of real estates, for scientific, economical and statistical purposes so as for creation of further information systems"*.<sup>17</sup>

The meaning of the cadastre of real estate is defined by the following functions:

- Cadastre of real estate should provide an overview of what properties are located in the Czech Republic.
- What the material rights to such property are, who is entitled and who is liable for these rights and what kind of land it is.

### **3.4 Real estate and taxes**

The tax system of the Czech Republic is similar to that of other European countries. As a rule, taxes are divided into direct taxes related to the subject's income, and indirect taxes related to the consumption or purchase of goods and services.

Each type of tax is defined in a specific legislative act. The administration and collection of taxes are maintained by the Ministry of Finance of the Czech Republic and its subordinate administrative authorities, primarily the local tax authorities.

Real estate tax, unlike other taxes, is recognized and paid in advance. For example, tax return for the year 2018 is necessary to be submitted by the end of January. Real estate tax consists of taxes on land and taxes on buildings and units.

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<sup>16</sup> Czech Republic House Price Index – Forecast. *Trading economics* [online] [cit. 2017-09-20].

<sup>17</sup> CUZK - Cadastre Objectives. *Cuzk* [online] [cit. 2017-10-07].

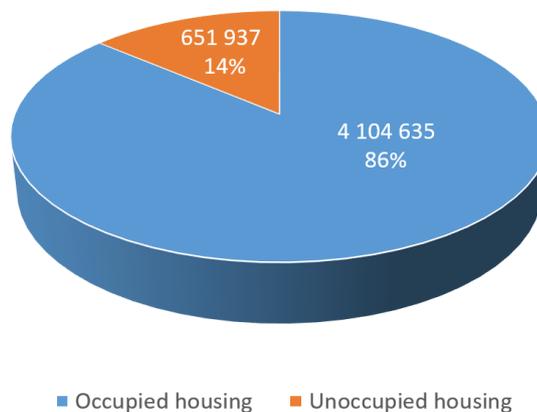
The subject of the tax is lands registered in the cadastre of real estate, taxable construction (buildings and engineering constructions listed in the appendix to the Real Estate Tax Act) and units (residential or non-residential real estate).

## 4 Practical Part

### 4.1 Analysis of the real estate market in the Czech Republic

The most important source of data for the dwelling stock is *Population and Housing Census (2011)*, which is held every 10 years. According to the census, for March 26, 2011 in the dwelling stock of the Czech Republic there were 4 756 572 dwellings, of which 4 104 635 were occupied.

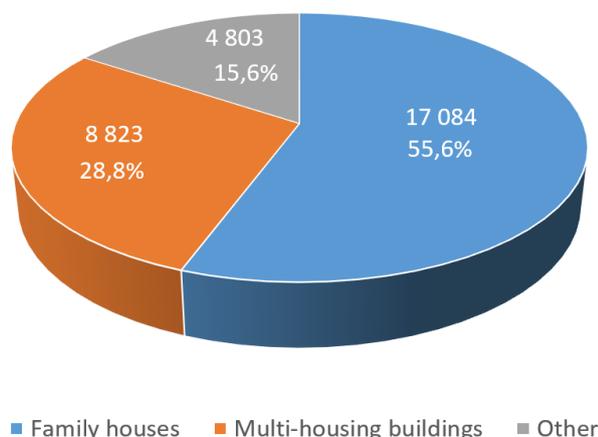
**Figure 8: Occupancy status of the dwelling stock**



Source: CZSO, own calculations

The median age in occupied multi-dwelling buildings was 52,4 years and in family houses it was 49,3. The average living area of an inhabited dwelling was 65,3 m<sup>2</sup>. The number of dwellings completed in 2016 was 27 333. Every year in the Czech Republic, since 2008, an average of 30 710 dwelling units have been built, of which 17 084 are family houses, 8 823 are multi-housing buildings, other buildings – 4 803.

**Figure 9: Development of completed dwellings according to the type of construction**



Source: CZSO, own calculations

#### **4.1.1 General information about the market**

Everything that happened in the Czech real estate market from 2014 to 2017 is a reflection of the general economic optimism that replaced a recession. From 2009 to 2014 the prices for apartments decreased: 13,3% — 4,68% — 7,18% — 7,97% — 2,8% according to the Czech statistical office.

The real estate market in 2014 witnessed a significant recovery after the financial crisis of 2008. It is possible to distinguish the following factors that influenced the dynamics of the real estate market:

- Low mortgage rates have influenced the volume and structure of demand on the Czech market. For example, mortgage rates in December 2014 decreased to 2,37%. In December 2014, it was issued 644 mortgages more than in November 2014. Their volume in 2014 amounted to 14,39 billion Czech crowns, while until December 2014 the amount of mortgage had not exceeded 12,48 Czech crowns according to data from Hypoindex.
- The cost of dwelling is one of the main components that potential buyers take into account. In 2014, there was a typical situation for recovery growth – low cost of housing. The rise of real estate prices was observed only in Prague and Brno; for example, sales of new apartments in Prague increased by 18,6%, and the total number of sales amounted to 5 950.
- In 2014, the number of low-cost projects significantly increased. The requirements that those projects were supposed to meet were the following: remoteness from the

city`s center, but still within its borders; the location of the end areas of metro stations and tram routes, use of the construction cheap materials, lack of storage and parking, remoteness from the objects of social and commercial infrastructure. According to the Czech statistical office, the increase in the number of low-cost projects led to a decrease in the average price per square meter of housing in Prague from more than 60 thousand Czech crowns in 2012 to 55 thousand Czech crowns at the end of 2014.

- In 2014, buyers from abroad began to gradually return to the Czech real estate market. This applies not only to the citizens of post-Soviet countries who continued to buy up Czech projects during the crisis, but also Western Europeans and wealthy investors from the Asia-Pacific region (China, Vietnam, Korea). This was facilitated by the increase in the number of tourists from these countries.

**Table 1: Housing prices in different cities of the Czech Republic (December 2014)**

City	1+kk	2+kk	3+kk	4+kk
<b>Prague</b>	2 059 138	2 955 290	3 869 499	5 659 374
<b>Brno</b>	1 584 131	2 229 967	954 505	3 471 064
<b>Ostrava</b>	208 471	755 867	1 047 690	1 401 122
<b>Plzeň</b>	1 182 440	1 828 912	2 677 068	2 894 141
<b>Olomouc</b>	894 784	1 314 902	1 644 884	2 463 688
<b>Liberec</b>	830 357	1 142 782	1 455 729	1 526 667
<b>Pardubice</b>	72 273	1 377 571	1 808 333	1 432 045

Source: CZSO, own calculations

The commercial real estate segment in 2014 was also revived. As a result, the total volume of investments for the year amounted to 55,4 billion Czech crowns, which is 96% more than in 2013. The largest investors were US citizens who invested about 20 billion Czech crowns in the Czech real estate, being followed by Germans and Austrians.

In 2015, recovery rates of the real estate market accelerated. There was a record in the number of transactions with new buildings; sales were active in the segment of secondary housing. In 2015, the demand exceeded the supply, it became more difficult to buy than to sell, and prices respectively began to rise.

The reasons to acquire property began to change. Previously, dwellings were purchased primarily for personal use, but in recent years, more purchases were made for the purpose of subsequent rental housing and regular income. In 2015-2016, the return of buyers

from abroad continued. On average, one third of the new apartments were bought by the citizens of other countries, most of whom were Slovaks, citizens from the post-Soviet region occupied the second place. According to the Czech statistical office, the most popular area of the capital among the citizens of Western countries was Prague 6, as well as the city`s historical center, and among the citizens of Eastern Europe – Prague 3 and dormitory areas.

The area of apartments began to change. Spacious apartments, which were in the middle price category had become smaller in area, while small apartments, on the contrary, spacious. For example, in 2010, the average area of 4+kk was 108 m<sup>2</sup>. In 2017, their area is 9 m<sup>2</sup> smaller. The 2+kk apartments in 2010 were, on average, 55 m<sup>2</sup>. In 2017, their area is 6 m<sup>2</sup> more. In addition, the area of apartments 1+kk was gradually increasing.

**Table 2: Average area of apartments in Europe**

City	Square meters
Wien	75
Prague	72
Munich	72
Budapest	71
Berlin	70
Hamburg	69
Bratislava	67
Warsaw	55

Source: Own calculations, according to data from different servers

According to the research conducted by the developers from Central Group, Trigema, Skanska Reality and KPMG, the average area of an apartment in Prague is 72 m<sup>2</sup>. Bigger than those in Prague are only apartments in Vienna – 75 m<sup>2</sup>.

#### **4.1.2 Real estate prices**

Year 2016 was marked by the growth in sales in residential, commercial and luxury real estate spheres. Apartments in the low cost segment with a price of up to 60 thousand Czech crowns per square meter gradually disappeared from the market. In 2016, the number of dwellings in this price range was 25% of the market.

Prices for the houses in the Czech Republic from January 2017 to the end of October 2017 grew almost twice faster than those for apartments. At the time, as houses went up by

7,2%, the average house price increased by 13,5%. In 2017, houses mostly rose in the South Moravian region by 23,8%. Next, the Plzeň region follows with a price increase of less than 23%. At the same time, in the Karlovy Vary region private homes fell by 1,5%.

**Table 3: Average prices for houses and apartments in the Czech Republic at the end of October 2017 (CZK /m<sup>2</sup>)**

Region name	Prices for houses	Growth since the beginning of the year (%)	Prices for apartments	Growth since the beginning of the year (%)
Prague	58 071	13,9	77 937	7,0
Central Bohemian Region	27 276	5,3	40 520	9,1
South Bohemian Region	15 593	14,1	29 872	2,9
Plzeň Region	15 290	22,8	35 297	11,1
Karlovy Vary Region	17 269	-1,5	30 169	-5,4
Ústí nad Labem Region	12 240	18,9	12 388	9,1
Liberec Region	13 495	15,5	27 130	8,2
Hradec Králové Region	14 470	10,9	34 659	-3,8
Pardubice Region	13 989	5,1	31 301	9,9
Olomouc Region	11 438	18,1	37 726	23,0
Moravian-Silesian Region	16 515	13,8	21 830	10,1
South Moravian Region	19 212	23,8	49 068	6,6
Zlín Region	12 315	9,0	30 972	8,7
Vysočina Region	11 247	19,3	26 908	4,7
Czech Republic	18 458	13,5	34 698	7,2

Source: CZSO, own calculations

As for apartments, prices rose mostly in the Olomouc region by 23%. Further, the Plzeň region follows with an increase of 11,1%. In the Karlovy Vary region, the prices for apartments, as well as for houses, decreased by 5,4%. This is also observed in the Hradec Králové region, where prices had fallen by 3,8%.

Although private homes, compared with apartments, in 2017 rose in price at a double rate, apartments (in terms of square meters) were still twice as expensive. The most significant difference in price was noted in the Olomouc Region, where apartments are more than 3 times expensive. Compared with this, in the Ústí nad Labem region the appreciation constituted only about 1,2%.

Prices in the Czech Republic differ depending on the region. The most expensive square meters (after the capital) are in the South Moravian region, then follows the Central Bohemian region. The cheapest ones are in the industrial Ústí nad Labem Region.

The construction of multi-housing buildings in the Czech Republic are beginning to be moved beyond large cities. Interest in such housing is high, as it can be bought cheaper than in the cities. And if earlier in such settlements there were only private houses built, now developers build multi-housing buildings. Housing prices are cheaper, thus the demand is growing. While the largest real estate market outside of Prague remains Central Bohemian region and South Moravian region. Many residents of these regions go to work to Prague and Brno, but prefer to live outside the cities due to cheaper prices. Therefore, in recent months, developers have launched several projects of residential buildings in settlements remote from Prague, where construction was postponed for several years.

According to the company Deloitte, in 2017, 900 projects were in the process of approval, which is about 40 000 new apartments. The disparity between the submitted applications and issued building permits caused delays to statutory deadlines at each level of the permission process. According to the company Deloitte, in the Czech Republic, the processing of the application lasts on average for 245 days, which puts the Czech Republic on the 166th place out of 185 countries. The leader in terms of application processing time is Denmark, where the whole process takes about 64 days.

**Table 4: Price per  $m^2$  in the reported quarter, the realized sales in the regional cities**

<b>Region name</b>	<b>Q4 2015</b>	<b>Q2 2016</b>	<b>Q4 2016</b>	<b>Q2 2017</b>
<b>Prague</b>	56 400	60 300	62 100	65 700
<b>Central Bohemian Region</b>	28 800	33 400	37 600	39 500
<b>South Bohemian Region</b>	28 900	27 900	32 600	33 700
<b>Plzeň Region</b>	29 400	33 800	34 800	35 100
<b>Karlovy Vary Region</b>	22 400	23 600	23 500	22 700
<b>Ústí nad Labem Region</b>	10 000	11 400	11 100	11 800
<b>Liberec Region</b>	23 300	26 100	28 700	28 500
<b>Hradec Králové Region</b>	31 200	32 700	35 700	36 900
<b>Pardubice Region</b>	28 400	31 700	32 900	35 500
<b>Olomouc Region</b>	29 100	33 400	34 300	33 600
<b>Moravian-Silesian Region</b>	17 300	17 300	17 600	19 600
<b>South Moravian Region</b>	41 200	46 100	49 100	50 700
<b>Zlín Region</b>	25 800	28 200	28 000	28 900
<b>Vysočina Region</b>	23 000	23 900	27 900	29 000
<b>Czech Republic</b>	41 800	45 000	48 100	49 800

Source: Deloitte, own calculations

From the end of 2015 to the middle of 2017, the price per square meter in the Czech Republic on average ranged from 11 075 Czech crowns in the Ústí nad Labem region to 61 125 Czech crowns in Prague. The cost of housing in the capital is more than 5 times more expensive than in the cheapest region. Real estate prices in the Czech Republic were at the peak of their growth, despite this, the demand for housing was very high, especially for small apartments in large cities of the Czech Republic.

Thus, for example, in 2015, the purchaser could buy in Prague a spacious apartment with a layout of 2+kk for 3,5 million Czech crowns. In 2017, for this price it was possible to buy only an apartment with a layout of 1+kk. During the period from 2015 to 2017, prices for small apartments increased by an average of 40%. The same situation is traced with the prices for other apartments. In 2015, the apartment with the layout of 3+kk had the same price as an apartment of 2+kk in 2017, according to the statistics of Central Group and Trigema.

**Table 5: Growth in the prices for apartments and houses in the first quarter of 2017**

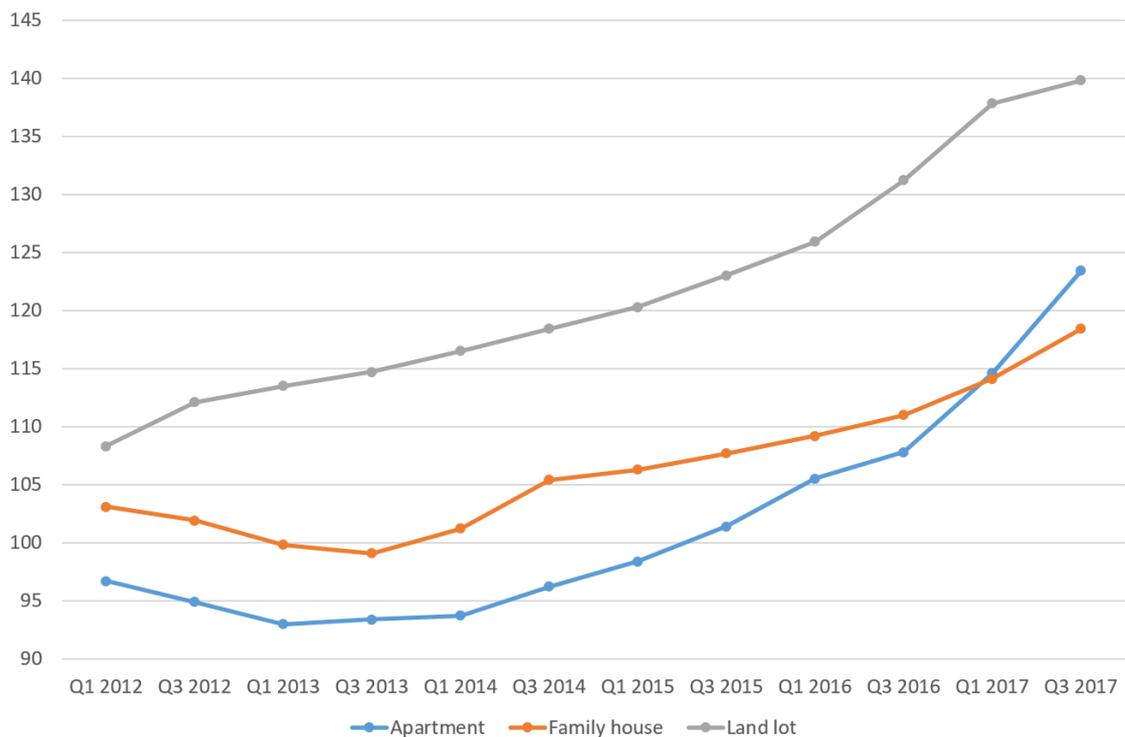
<b>Country</b>	<b>Annual change (%)</b>
<b>Czech Republic</b>	12,8
<b>Lithuania</b>	10,2
<b>Latvia</b>	10,1
<b>Ireland</b>	8,9
<b>Bulgaria</b>	8,8
<b>Hungary</b>	8,0
<b>Portugal</b>	7,9
<b>Estonia</b>	7,7
<b>Luxembourg</b>	6,8
<b>Sweden</b>	6,6

Source: Eurostat, own calculations

The cost of apartments and houses in the Czech Republic in the first quarter of 2017 increased by 12,8% in the inter-annual comparison. This is the fastest growth in property prices from all countries of the European Union. More than 10% price growth was observed also in Latvia and Lithuania. In Croatia, on the contrary, prices fell by 0,4%. Across the European Union, prices rose by an average of 4,5%.

According to the most reliable indicator HB Index, which tracks the value of real estate. The basic value of the index is 100 points, it represents real estate prices as of January 1, 2010. In the first half of 2017, prices for apartments in the Czech Republic increased by 12,1 points, reaching 117,6 in the inter-annual comparison.

**Figure 10: HB index**



Source: Hypoindex, own calculations

The lowest rise is observed in the price of private houses, in the inter-annual comparison, by 4,9 percentage points, reaching 114,1. On the market, there was a stable demand for private houses near large cities.

The index of land prices in the inter-annual comparison increased by 11,9 points and reached 137,8. Since 2012, land lots have grown by about 5 percentage points annually, making it a safe investment with low maintenance costs. The most popular land lots are the ones near major cities.

Starting from 2014 to 2017, apartment prices have increased by 20% on average. Among the causes of rapid growth, the following can be identified:

- increased demand for real estate;
- economic growth;
- low mortgage rates;
- long-term obtaining of building permits;
- lack of supply.

The Czech real estate market was mainly influenced by economic growth. During the period from 2015 to 2017, the level of GDP in the country increased by 6,6%. For European

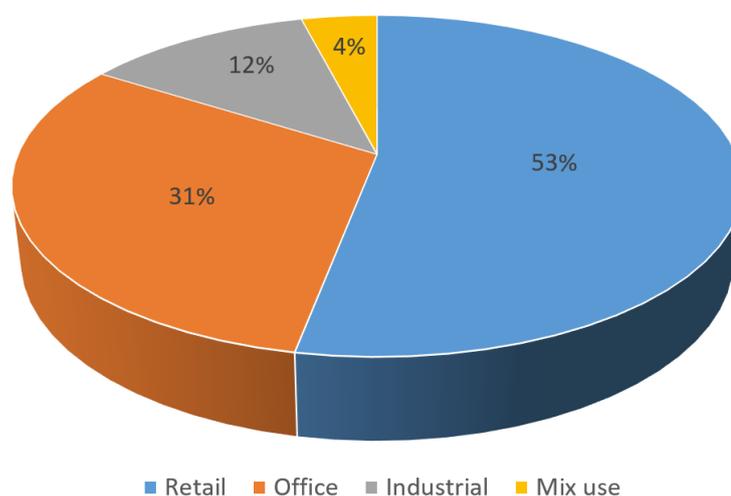
countries, this index is considered high. The economic growth of the economy affects the country's residents: they make future plans, are positively inclined, etc. In combination with low mortgage rates, this creates a favorable environment for the purchase of property.

#### 4.1.3 Investments in real estate

In the field of real estate investment in the Czech Republic, there was a significant increase in sales, both in the residential and commercial sectors. Apartments, houses and land plots were bought by both Czechs and foreigners. For example, of great interest was real estate in the borderline regions – on the border between the Czech Republic and Germany. Houses in this area could be purchased for a very affordable price, and accommodation near the German and Czech infrastructure makes these areas very attractive.

In 2017, the total volume of investments in commercial real estate in the Czech Republic reached 83 million Czech crowns, according to Cushman & Wakefield. In 2016, the largest investors were Czechs, then goes investors from Germany and the United States. Their share in the total investment volume was 70%.

**Figure 11: Percentages of investments by segment in 2017**



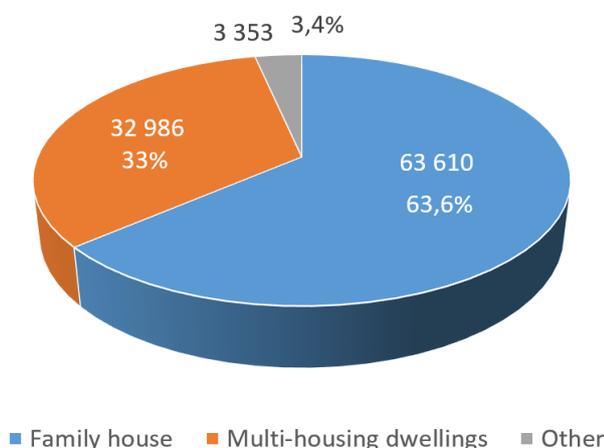
Source: Cushman & Wakefield

In 2017, investments in office premises were rather popular, and accounted for 31% of the total transaction volume. In 2016, there were about 50% of such transactions. In the retail segment, investments account for 53% of the total market share.

## 4.2 Analysis of the real estate market in Prague

According to *Population and Housing Census* for March 26, 2011, 99 949 dwellings were located within the capital's territory, which amounted to 4,6% from the dwelling stock of the Czech Republic. The number of family house was 63 610, multi-housing dwellings – 32 986, other buildings – 3 353.

**Figure 12: Development of the number of completed dwellings according to the type of construction**

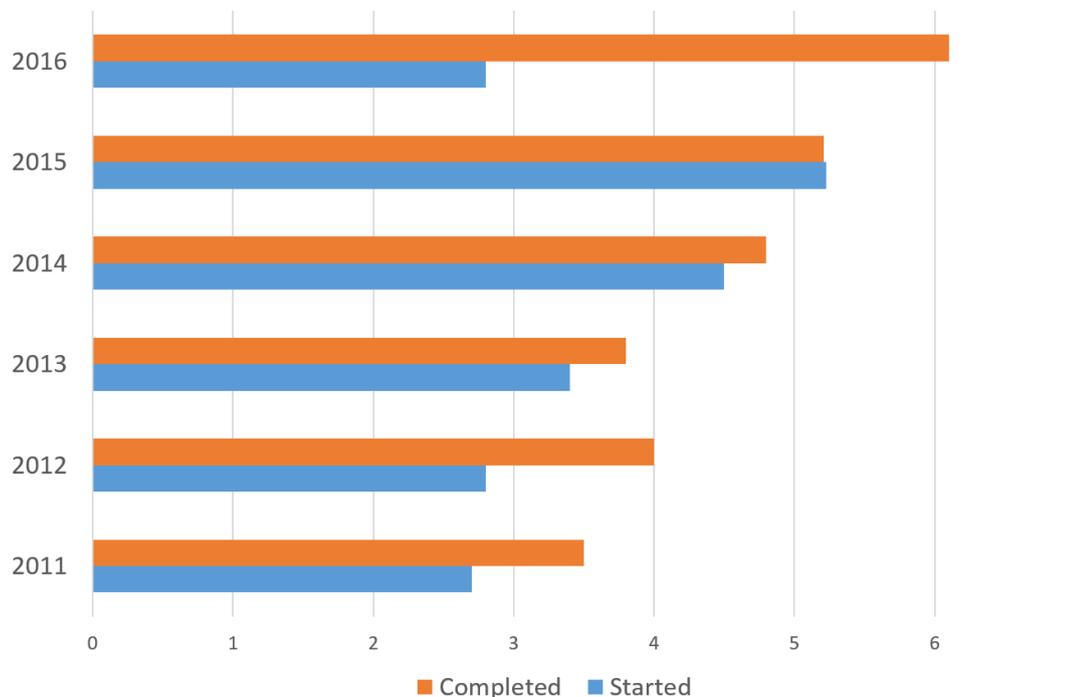


Source: CZSO, own calculations

### 4.2.1 Housing construction

In the period from 2011 to 2013, the intensity of housing construction in the capital decreased, and the number of completed apartments decreased to 3 500 – 4 000 apartments a year. The period from 2014 to 2015 was marked by an increase in housing construction, which is associated with the recovery of the economy and, as a result, of the increased demand for new apartments. As a result, the intensity of housing construction increased to 5 227 and the number of completed apartments to 5 221. Most of the construction projects were implemented in Horní Měcholupy, Zličín, Modřany, Kyje and Smíchov. Most of the projects were multi-housing buildings, 1+kk, 2+kk, as they accounted for 67% of sales.

**Figure 13: The development of the housing construction in Prague in the period of 2011-2016 (the number of started and completed apartments in thousands)**



Source: CZSO, own calculations

In 2016, the construction of 6 092 apartments was completed, and the construction of new ones started 47% less than in 2015, which is 2 758, which in turn by 2017 led to a decrease in the supply in the real estate market. The significant inter-annual growth in the construction of new apartments that started in Prague in 2017 is primarily due to weak construction in 2016. The number of the apartments allowed to be built at the level of 2-3 thousand was still half of the sales and a third of the demand. In 2015, there were 6,600 affordable apartments on the Prague market. The stock of new apartments at the end of September in 2017 year in the inter-annual comparison decreased by 7%, reaching 4 000.

In 2015-2017, the number of missing apartments in Prague tripled, reaching 22 000. According to the strategic plan, Prague needs an annual construction of about 6 000 new apartments to meet the needs of an ever-growing population.

A characteristic feature of the economic situation in 2017 was the shortage of offers in the real estate market. For example, in Prague in December 2017, 2 900 apartments were put up for sale on the primary and secondary housing market, while the demand was about 6 000.

Since 2009, all new buildings are required to be marked with a display of energy efficiency class. The energy passport of the project is used to assess the energy efficiency of the building. In total, there are seven categories.

**Figure 14: Energy efficiency rating**



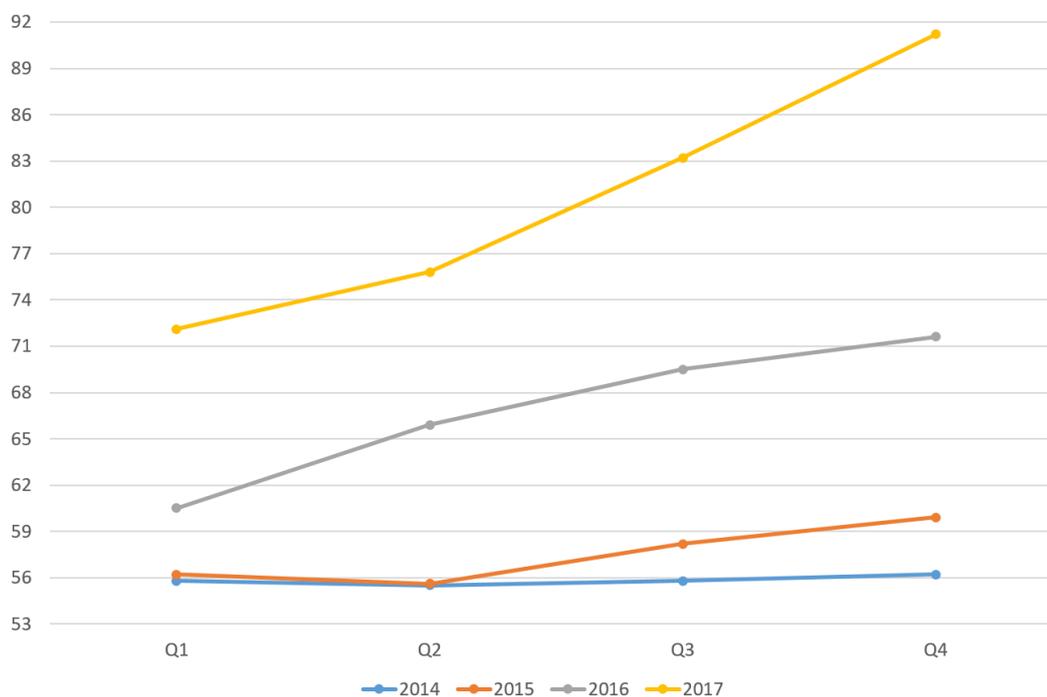
Source: Zelenausporam-2

Most of the apartments built in Prague belong to class *B* in energy efficiency, which means economical construction. Over the past five years, the share of low-energy apartments has increased by 70%. At the moment class *B* in energy efficiency has almost a half of all housing projects. The 10% of all projects belong to class *C* – "satisfactory". As exclusively low-energy projects that belong to class *A* on the market were recognized only 1,3% of homes. At the same time, the number of low-energy houses that have the category *A*, *B* or *C* is constantly growing.

#### **4.2.2 Real estate prices**

For 2016-2017, the prices of apartments in Prague rose. Moreover, prices grew not because of the high demand, but because of the lack of supply. New buildings in Prague 5, Prague 9 and Prague 10 were the most popular. Their share in total sales was two-thirds. The average price of an apartment in 2016 was 77 216 Czech crowns. The average price of new apartments sold in Prague at the end of September 2017 in the inter-annual comparison grew by 19,6 percent to 83 150 Czech crowns per square meter according to Trigema, Skanska Reality and Central Group.

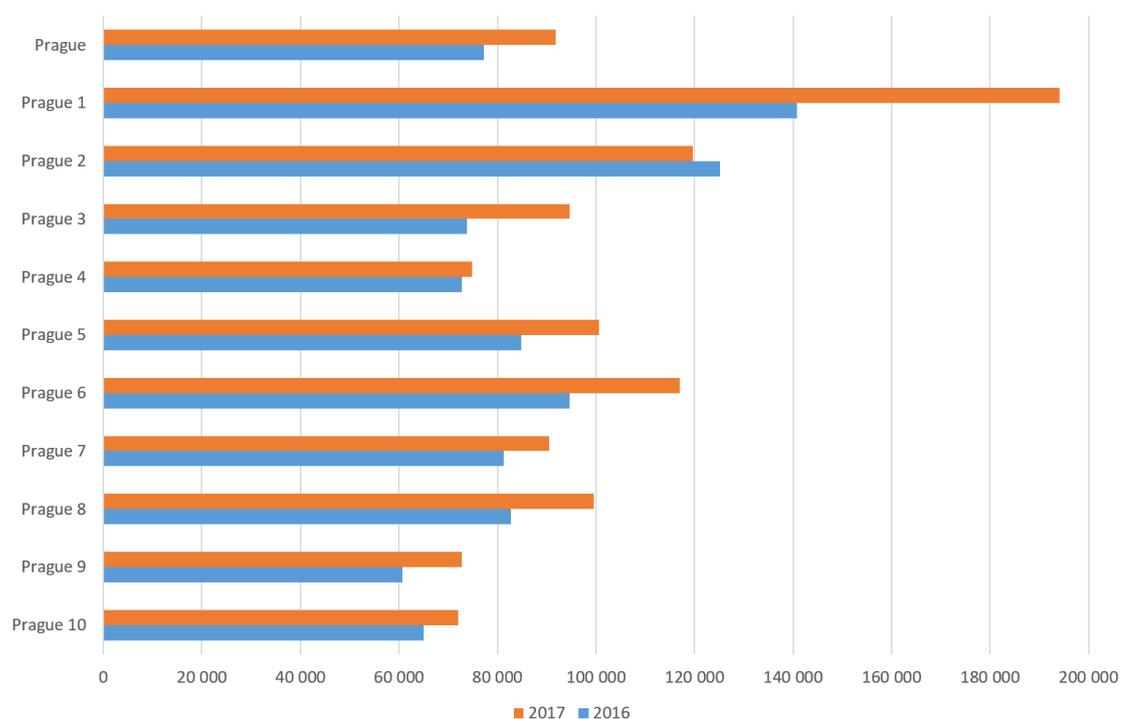
**Figure 15: Average price of new apartments sold in Prague (CZK / m<sup>2</sup>)**



Source: Trigema, own calculations

In general, in 2017, the average price for new housing in the capital exceeded the border of 90 thousand Czech crowns per square meter, while in 2016 the cost per square meter was less than 80 thousand Czech crowns, and in 2015 – less than 65 thousand Czech crowns per square meter.

**Figure 16: Average price of offered new apartments in Prague (CZK / m<sup>2</sup>)**



Source: Deloitte, own calculations

As a result, due to the lack of supply, apartments from the cheapest category to 45 thousand Czech crowns per square meter simply disappeared from the market, although in the middle of 2016 they were 20% of the total supply. Apartments with a price of up to 60 thousand Czech crowns per square meter, previously considered the middle segment, in 2017 amounted to only 11% of the total offer. In 2015, it was half of the offered apartments.

In 2017, the cheapest category consisted of apartments with a price of up to 60 000 thousand Czech crowns per square meter, the middle segment was represented by apartments from 60 to 90 thousand Czech crowns. It accounted for about 60% of the apartments. The luxury segment included apartments worth 90 000 Czech crowns per square meter or more. In total, the developers have offered 29% of such housing. The highest concentration of apartments at a price above 90 thousand CZK per square meter was found in Prague 5. Ten of the most expensive apartments were in Prague 1. They are usually located in old houses after renovation.

Due to the growing cost of new buildings and the insufficient number of supply, buyers' interest in older apartments has increased. A small number of them once again

affected the cost. Prices for secondary housing grew every quarter, which in turn manifested itself in rental prices, which in 2017 also increased. According to the Czech statistical office, from 2000 to 2015, prices for apartments in old houses increased by 136%.

**Table 6: Prices on the secondary market (CZK / m<sup>2</sup>)**

<b>Current administrative districts</b>	<b>Price on the secondary market</b>	<b>Price of new buildings</b>	<b>Difference (%)</b>
<b>Prague 1</b>	148 498	194 112	30,7
<b>Prague 2</b>	101 113	118 968	17,7
<b>Prague 3</b>	90 920	94 647	4,1
<b>Prague 4</b>	67 064	74 853	11,6
<b>Prague 5</b>	73 035	100 629	37,8
<b>Prague 6</b>	88 236	116 960	32,6
<b>Prague 7</b>	82 812	90 498	9,3
<b>Prague 8</b>	78 251	99 648	27,3
<b>Prague 9</b>	72 715	72 787	0,1
<b>Prague 10</b>	70 923	71 998	1,5

Source: CZSO, own calculations

A situation similar to Prague was also observed in Brno, where, due to the insufficient number of apartments, prices for new and older apartments increased. During the first quarter of 2017, developers in Brno sold 220 apartments, which is 42% less than in 2016. As regards sales in Brno, just like in Prague, 2016 set a record. A new apartment in Brno in 2017 cost about 61 thousand Czech crowns per square meter, which is 9% more expensive than in 2016 according to Trikaya.

In other regions of the Czech Republic, the situation was stable. Developers supplied to the market a sufficient number of apartments, and the price increase was not as fast as in the two largest cities of the Czech Republic.

#### **4.2.3 Real estate investment**

Real estate in Prague was often purchased for investment purposes, which is about 20% of all the apartments sold. In some areas attractive for rent, the proportion of such apartments was 25%. The most attractive for investment were 1+kk and 2+kk apartments,

which were best rented out. Popular were such areas as Žižkov, Holešovice, Dejvice, Vršovice, Karlín and Libeň. The investors were Czech, as well as foreigners from European and Asian countries.

At the same time, the purposes of apartments were different: apartments for long-term rent, for short-term rent or for resale.

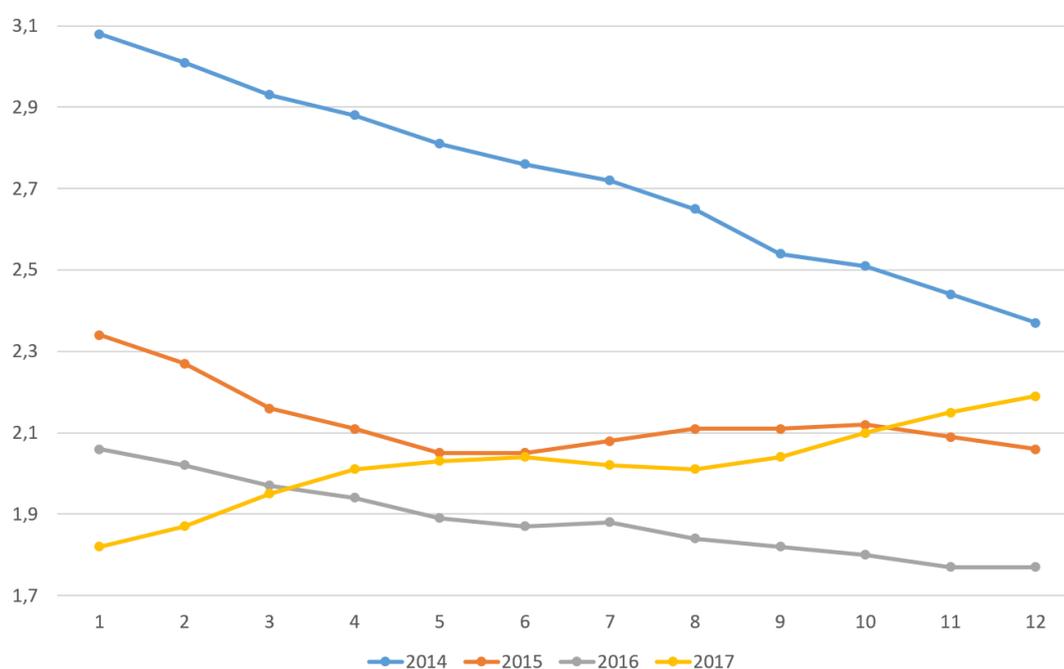
- Apartments for long-term rent were the most popular among buyers. The highest demand was for 1+kk and 2+kk apartments. The target audience were students, young professionals, foreigners. The cost of small apartments for long-term rent started from 2 500 000 Czech crowns and reached up to 4 000 000 Czech crowns. This is an economy class apartment. The rental price in this segment is approximately 10 000 – 15 000 Czech crowns a month.
- Short-term rent. Prague is one of the most visited European cities. Recently, tourists from all over the world prefer to live not in hotels, but in apartments in the city center or near it. Therefore, as a result of this, a short-term rental market for tourists was formed in Prague. 1+kk cost from 4 500 000 to 6 000 000 Czech crowns, 2+kk – from 6 000 000 to 8 500 000 Czech crowns. Liquidity from the apartment, given to short-term rent, will be higher than the apartment in long-term rent. On condition of the 80% occupancy by tourists, the profit is from 1 700 to 3 800 Czech crowns per day.
- Subsequent sale. For the purchase of an apartment in Prague for resale, the best suited are new buildings at the initial stage of construction. At this point, the price of an apartment is much lower than on the market, and the choice of apartments is large. If one buys an apartment at the stage of commissioning, in 95% of cases the apartment with a good view and layout in the project will not be available. In 2017, in the real estate market of the Czech Republic there is such a situation that there are almost no small apartments (1+kk and 2+kk) for sale. Therefore, in new projects such apartments are sold out at the foundation pit level. Before commissioning, the cost of the apartment increases, as a rule, by 10-20%.

The majority of rental apartments is located in Prague, Moravian-Silesian region and South Moravian region. These three regions accounted for half of the total rental market. The largest offer of apartments was traditionally noted in Prague. According to statistics UlovDomov, the owners offered for rent about 3 170 apartments in Prague every month. In Ostrava, it is 810 apartments, in Brno – 680.

### 4.3 Mortgage

Up to 2016, in the Czech Republic it was possible to take a hundred percent mortgage, which, of course, greatly fueled the interest in real estate. Since October 2016, banks in the Czech Republic had no right to give customers a mortgage with a zero down payment, according to the order of the Czech National Bank, and LTV at 95% was set. In April 2017, LTV was at 90%.

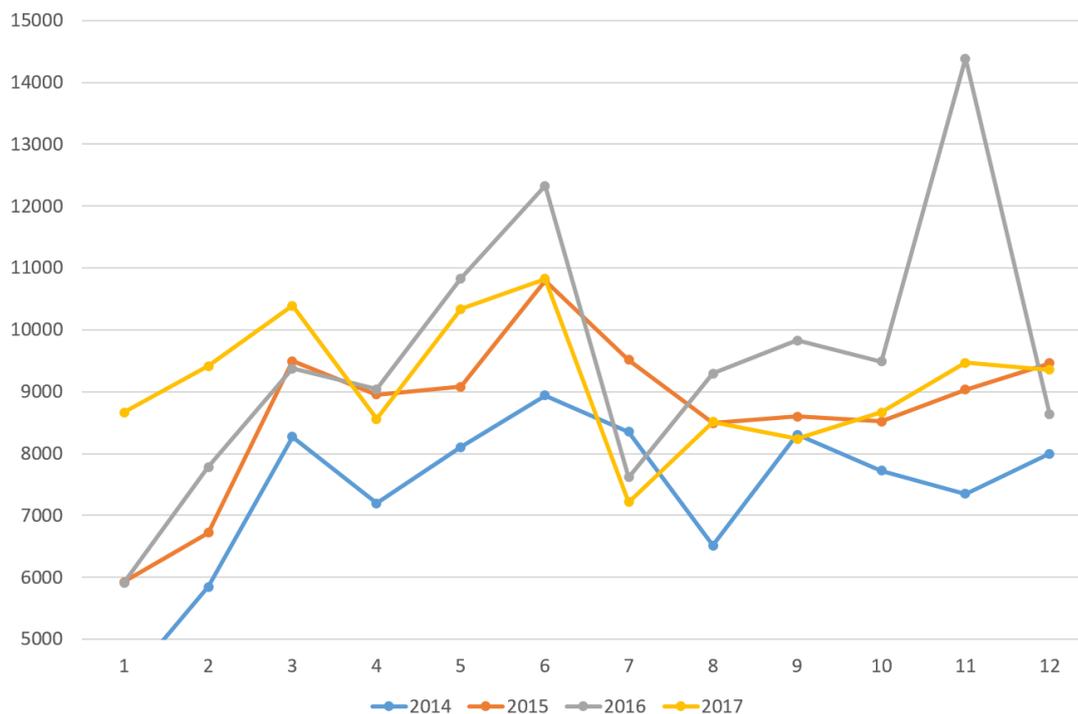
**Figure 17: Average interest rate (%)**



Source: Hypoindex, own calculations

In November 2016, the total number of mortgage loans exceeded the previous record number in 2015. For eleven months, sales exceeded 208 billion Czech crowns. This is due, first of all, to the minimum level of lending rates, as well as the abolition of one hundred percent mortgages, before the introduction of which the level of the demand for real estate increased. In December 2016, the average mortgage rate reached a minimum, amounting to 1,77%. Subsequently, rates began to rise again due to the legislation of the new law on lending.

**Figure 18: Number of new mortgages (pcs.)**

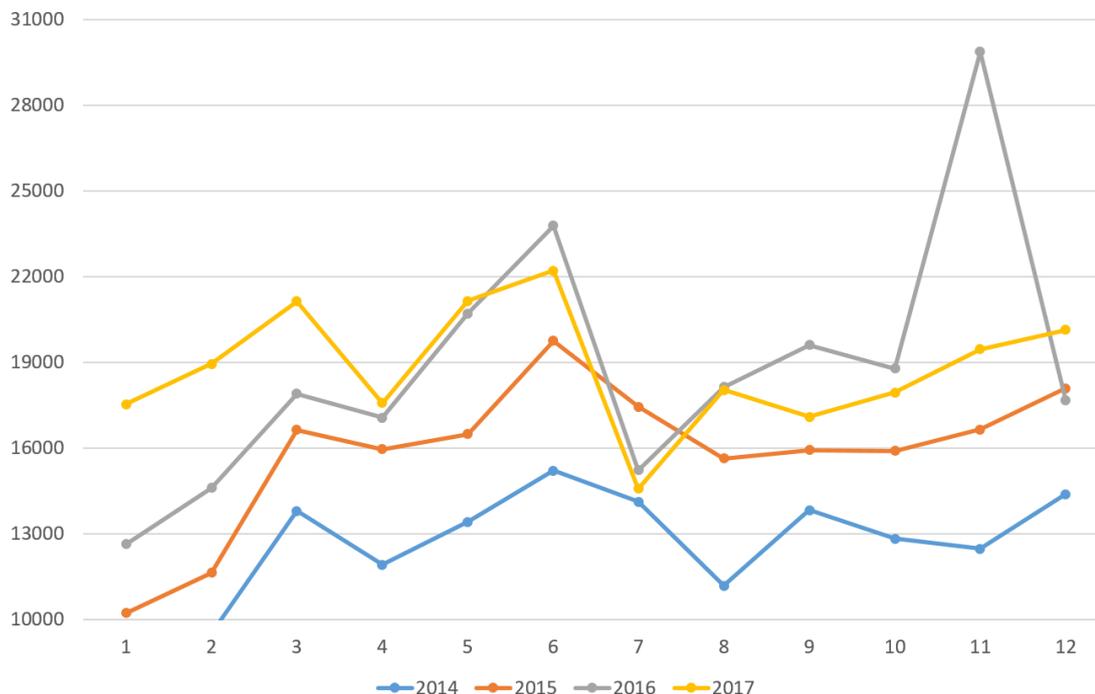


Source: Hypoindex, own calculations

In 2016, banks provided 112 000 mortgages for a total of 218,3 billion Czech crowns. Czech banks provided 55 712 mortgage loans for the first six months of 2017 for a total of 113,1 billion Czech crowns. In the inter-annual comparison, we are talking about a growth by almost 4% and an increase in volumes - by 11%.

The development of the mortgage market in 2017 confirms that the Czech Republic still has a very high demand for housing, despite rising prices for dwelling and rising interest rates.

**Figure 19: Volume of new mortgages (mil. CZK)**



Source: Hypoindex, own calculations

In 2017, the imbalance in the volume of mortgage loans issued in monthly terms was minimal. The only problem was the trend towards a certain reduction in mortgage sales in the second half of 2017, in comparison with the first half. This is mainly due to the gradual tightening of the rules for the provision of loans and the higher LTV that the Czech National Bank has introduced. Although, the Czech National Bank tightened the rules of mortgage lending, the total annual housing financing increased by almost 7 billion Czech crowns, from 277 billion to 284 billion Czech crowns. In order to reduce the demand, the Czech National Bank increased interest rates three times in 2017, followed by a growing mortgage rate, which was 2,19% at the end of the year.

## 5 Conclusion

Real estate is the basis of the country's national wealth. The real estate market is closely linked to other markets. Without the real estate market, there can be no other markets, as capital, labor, goods and services markets need space to carry out their activities. Similarly, the real estate market cannot exist without other markets. Real estate is one of the few areas with which each person without exception has to interact. Throughout life, people need to meet their needs, which are somehow connected with real estate.

The theoretical part takes into consideration the general characteristics related to the real estate market: features, classification, functions, evaluation methods, participants. In addition, the economic definitions are reviewed: price, cost, factors affecting the value of demand and supply.

In the practical part, factors affecting the dynamics of the market are addressed, and the prices of houses and apartments, demand and supply in different regions of the Czech Republic, the construction of new housing, investments in different real estate sectors are compared, the mortgage market is briefly considered as well.

Currently, the real estate market in the Czech Republic is one of the most dynamic markets in Europe. The main feature of the Czech real estate market over the past two years is the huge demand for the purchase of apartments of small and medium size in Prague. Investors are actively buying such housing at the construction stage. Prague real estate has a high liquidity, and even having decided on a sale, the investor can quickly and easily sell their property without any losses.

Property prices in the Czech Republic are very different depending on the region. Real estate in Prague is considered to be the most expensive. In other large cities, property prices are much lower. The sharp rise in real estate prices is mainly due to low interest rates, economic growth, high demand and lack of supply.

An insufficient number of new apartments are being built – this is another feature that occurs on the real estate market, if the problem is not solved in the near future, then in the further, shortage of housing will grow rapidly, and as will the prices.

In the future, the growth of real estate prices will continue, but not at such a rapid pace. Mortgage rates will also rise slightly. The real estate market in Prague will continue to be in demand among local residents and foreign investors who are considering stable and promising markets in Europe.

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