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Diploma thesis

**Economic analysis of residential real estate market in
Prague – East region**

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ZADANI

DECLARATION

I hereby declare that I have worked on my Diploma Thesis called
“Economic analysis of residential real estate market in Prague – East region”
solely by myself.

I confirm that all the information used is mentioned at the end of the Thesis.

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Prague
5th April 2012

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Bc. Jana Kadeřábková

Praha
5. dubna 2012

**Economic analysis of residential real estate market
in Prague – East region**

Ekonomická Analýza trhu rezidenčních nemovitostí na
Praze východ

SUMMARY

The main aim of this diploma thesis is to clarify what are the key factors influencing the price of residential real estate at Prague East and Prague West. It includes as well the comparative analysis of the selected regions. There is than employed the objective which is to analyse more suitable option between family house for sale and family house for rent with stress on detailed calculations.

Key words

- Real Estate Market
- Economic analysis
- Residential
- Mortgage
- Investing
- Regression analysis
- Comparative analysis
- Questionnaire
- Pivot tables

SOUHRN

Hlavním cílem této diplomové práce je objasnění klíčových faktorů ovlivňujících cenu rezidenčních nemovitostí na Praze východ a Praze západ. Zahrnuta je zároveň komparativní analýza vybraných regionů. Zde je poté úkolem analyzovat vhodnou variantu mezi rodinným domem na prodej a rodinným domem na pronájem s důrazem na důkladnější kalkulaci.

Klíčová slova

- Trh nemovitostí
- Ekonomická analýza
- Rezidenční
- Hypotéka
- Investování
- Regresní analýza
- Komparativní analýza
- Dotazník
- Kontingenční tabulky

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1 Introduction

Real Estate Market is one of the most interesting markets of all. It should be the most important not just for investors or real estate agencies, but for all of us. Buying or selling housing is a complicated process and in these hard economic times there are specialists who can help us to choose a new house or sell the old one. However nobody knows whom can we trust and that makes the situation even harder. Therefore there I see the need of understanding the residential real estate market and it was the reason as well of taking this topic for writing my diploma thesis.

In case of this diploma thesis there will be residential real estate markets at two very popular locations compared, Prague East and Prague West region. The main reason for such a comparison is that these two areas are surrounding the capital city and therefore there are lot of people working or studying in Prague and there are lot of developers building new modern housing. Thanks to that fact, there is rapidly growing number of inhabitants at these two locations, and also one of the highest proportions of young people with high incomes and high standard of living in general. In other words it is possible to say that these two areas might be the best places to live in the Czech Republic.

Therefore, in my opinion, writing such a thesis is a perfect way how to distinguish advantages and disadvantages between these two areas which I also personally prefer and where I would like to invest in housing. If we take into account average middle class family financial limits, I expect the Prague East region to be much better place for living, investing, and also, for example setting up a real estate agency. On the other hand in the thesis there will be detailed analyses about possible ways of investing into real estate. There will be described differences between house for sale and for rent with respect to their profitability in future. As I hope this thesis shall be useful also for other people who are interested in residential real estate around Prague in general, there will be analysis included showing which factors are primarily influencing the price of housing in the selected region.

For better understanding of the whole problem this diploma thesis will be divided into two separate parts – Theoretical and Practical. In the first part there will be a description of procedures and theories which will be than practically applied in the second part. At the end there will be a conclusion if it is profitable at this time to invest into residential real estate. It will come to conclusion whether Prague East and Prague West regions are really

being for the middle class population the best areas to invest and which type of housing is the most advantageous and what are the factors influencing its price.

2 Aim of thesis and methodology

Aim of thesis

The aim of the thesis is to find out what are the main factors influencing the residential property purchasing decision. To fulfil the target there is used comparative analysis between Prague West and Prague East region according to its popularity and financial affordability for the potential buyers. There is a helpful analysis showing different forms of how to finance family living and their benefits from the financial point of view. The diploma thesis should be also effective in case of choosing among the large variety of real estate to distinguish what is the adequate price of the certain property.

Methodology

In the initial part were used mainly secondary sources. These sources by themselves do not give any new information but they do help to find out the primary sources which are then used in the practical part. The first theoretical part is necessary to provide the orientation in basic definitions and it is useful for readers to understand the following analyses and calculations. Some of the sources are from study room and library from the Czech University of Life Sciences but there are as well books from other libraries. There are also few internet sources but these are used only in case of need of up-to-date information. Most of the sources are in English, but there had to be few which are in Czech language. As this diploma thesis is about real estate in the Czech Republic, Czech sources are used to describe the situation and conditions only in the Czech Republic.

To achieve the goal to understand the theory connected to real estate there are definitions and facts about Czech Statistical Office, different forms of ownership, description of participants, as well as description of chosen location and importance of the location in general. It includes also theory about pricing methods which shows most common forms of pricing such as comparative method, yield method, cost method and others. Furthermore there is information about renting or owning a property and to that related possible mortgages in the Czech Republic from its theoretical point of view.

Practical part uses mainly primary sources, but also, there are again some secondary sources chiefly for data calculations. Most important are data from the Czech Statistical Office. These are used as a base for most of the analyses. On the other hand crucial data were taken from Czech real estate server www.sreality.cz.

Practical part defines Czech Bohemia region and in that contained Prague East region in comparison with Prague West region. To show all information about this location there is made the PEST analysis followed by the comparative analysis. In financing part there is shown the development of real estate prices and pros and cons of mortgages versus rents demonstrated on two same properties.

To find out how profitable would be an investment is calculated the net present value. In last part which is the regression analysis are pivot tables to display the connection among various factors connected to price of property. There are as well presented those factors which influence the price most and how much.

To establish a practical part helpful for understanding the real estate market and to achieve the set goals, there were following methods used:

PEST analysis

- In this analysis, there are summarized all possible advantages and disadvantages of the two selected regions from political, economical, social and physical points of view. It includes for instance the rate of employment, development of population, location, tax policy and so on.

Comparative analysis

- In case of this analysis, there were used data from the Czech Statistical Office. There was made a table with gained facts and according to that was made a questionnaire. Based on the answers there were calculated the results comparing the average respondents answer and real fact from the Statistical Office. Results are used to compare the Prague East and Prague West region.
- To employ a survey method, there was a questionnaire, which was given to people at Prague, Prague East and Prague West. There were 80 questionnaires, but it was possible to use answers only from 55 people. All respondents were from age 25 to 65 years old to make groups according to respondents' age and popularity of certain region.

Economic analysis

- In this part, there were compared two main forms of financing a living which is rent or in case of own house – mortgage. There was chosen real example of two absolutely same houses at Prague East region and based on prediction including different costs for each choice there was calculated the more profitable way of financing.

Net present value

- Thanks to data from the economic analysis there was calculated exact amount of net present value in case of bought house with 100% mortgage for 20 years. There was taken into consideration as well the every year changes in interest paid to the bank as well as the every year growing price of the certain property in case of sale and growing price of rents (used for calculation of profit).

Financial analysis

- For this part there would be very time consuming to gather manually all necessary data from the server www.sreality.cz therefore there was need to employ program which automatically extracts the desired data. For such finding was used specialized program „iMacro“. That allows getting wanted data from the web page. Thanks to this program were collected 2823 adverts for variety of real estate at the two mentioned regions. It was gained in about 25 categories. Not all of them were needed thus it was used 19 main categories.
- Pivot tables – Based on large sample of adverts there were in Microsoft Excel made pivot tables which are used for visualisation of selected factors which are influencing the price.
- Regression analysis itself includes calculation of multicollinearity in correlation matrix and calculation of regression analysis in Microsoft Excel. Thanks to this analysis it is possible to see which factors are influencing the price and how much they influence it.

3 Literature review - Residential Real Estate Market

In Czechoslovakia the prices of real estate have not developed in market conditions for very long time. After the fall of communism in 1989 the Czech Republic has come through big changes and there was a dynamic increase - so called "boom" in real estate in general. Nowadays there are also other factors such as economic crisis or market oversaturation which lead to its decline. On the other hand there are also other possibilities how to invest into real estate which brings there not just the investors and sellers but as well a bank sector. There are many new possibilities including different forms of mortgages, loans and so on.

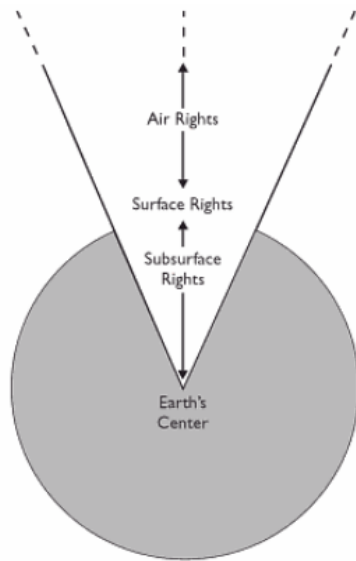
There exist many different types of real estates. Simple division would be into residential real estate market, market of commercial spaces and market of office spaces. From my point of view it is important for all of us to understand somehow how the residential market works. The reason is simple. Almost everybody will or already had bought or rent some type of housing. Somebody has the advantage that he/she may inherit it or get it, but also in this case the person should understand what he/she got, what the price of it may be and how to deal with it.

3.1 Description of real estate

Land – it is mainly seen to be just the surface on the planet earth. But it includes much more. According to the picture no.1 we can see, that it is divided into three parts. Land starts at the centre of the earth, passes through the earth's surface and continues on into the space. Thanks to owning certain parcel we also get the right to use this surface. On the other hand we cannot forget the airspace for planes or many other restrictions which are included in owning the certain part of land. Understanding this concept we can divide it into:

1. Surface rights – using of surface
2. Subsurface rights –digging or drilling at the parcel
3. Air rights – possibility to use the airspace

Picture no.1 - Land from a real estate perspective



Source: CHARLES J. JACOBUS. *Real Estate: An Introduction to the Profession*

Improvement – it is anything that is affixed to land with intend of being permanent. It means for example house, school, factory, road, fence etc. On the other hand there are items which are not fixed such as tables, beds, car, machines and others. These refer to **personal property** of the seller.

Fixtures – can be objects which were first personal property but they are attached to the land. In other words it is a property of the landowner which in case of selling the real estate is conveyed to a new owner. Therefore in this group can be included attached objects to the building as well as it may include mortgage, real estate taxes, lease terminations or insurance.¹

3.2 Different forms of ownership

In the Czech Republic there are three main types of ownership. In general we can say that the most common is **directly own housing**. It means that there is an individual who is usually living in the apartment. Every owner of such a property is than registered in the Cadastre of Real Estates. The biggest advantage of this ownership is its free possibility of selling it or transferring it to somebody else.

Next form which has in the Czech Republic a big tradition is called **cooperative ownership**. This type has roots in socialistic collectivistic economy but people now do prefer the classical directly owned housing so the amount of cooperative ownership is still

¹ CHARLES J. JACOBUS. *Real Estate: An Introduction to the Profession*, page 14

decreasing. The real owner in this case is the cooperative and the people usually living there have the right to rent the certain apartment. Thanks to the fact that they have the intensive right to use the property, they can affect functioning of the cooperative. On the other hand there can be some problems for some people for example if they want to rent it to somebody else or when they want to sell it. If the buyer needs a mortgage it would be another complication.

Third type of ownership would be **rented apartment**. It can be further divided into state housing, community housing, individual (one person or legal entity). Living in such apartment is based on lease contract. This lease law is heavily protected by the Civil Code and for the owners it can be sometimes quite hard to terminate the contract. In extreme situation when the tenant would be problematic and the owner would like to terminate the contract, still the owner would have to find an alternative housing for those tenants.²

3.3 Czech office of surveying, mapping and cadastre

As it was partly told, every owner of a property must be listed in a Czech Office of surveying, mapping and cadastre (COSMC). It is a central body of the state administration of the Czech Republic. The president of COSMC is subordinated only to the prime minister of the Government. The Office has its own account in the State budget of the Czech Republic. In the Czech Republic the Cadastre of Real Estate is performed by 14 cadastral offices in regions and 105 subordinated offices.³

Modern way of searching information from the Czech cadastre is now also possible from their internet pages www.cuzk.cz. There is a new application which allows users to look into cadastre for free. It involves:

- Selected information about lands, buildings and units which are registered. As well there is available to see the owner, other property rights, limitation of property rights and so on.
- Inspection of the raster image cadastral maps.
- In connection with proposal for owner right or some changes which have to be made in the cadastre the application involves the information about certain status of procedure which is waiting for being approved at particular cadastre.⁴

² Druhy bytů z hlediska vlastnictví. *Hyper Inzerce* [online]. 15.10.2005 [cit. 2011-10-14]

³ DOC. ING ALBERT BRADÁČ, DrSc. *Teorie oceňování nemovitostí*, page 61, 62

⁴ ING BOHUMIL KUBA, Ing Květa Olivová. *Byty a katastr nemovitosti*

3.4 Real estate as a form of investment

Investing into real estate is perceived as a lucrative way of gaining money. There is variety of ways how to invest into real estate and each offers distinct benefits. As an owner of any dwelling you have the chance not to be dependent on a landlord and hopefully it provides you financial rewards in the form of appreciation in value. On the other hand there are many factors influencing the profitability of the investment.

- Way of financing is crucial. It is necessary to consider own sources and external sources.
- There has to be taken into account the price of exact property - lower is the price than more profitable should the investment be but it depends on many and many other factors.
- Profitability goes hand to hand with the amount for which it can be rented.
- There cannot be omitted that every dwelling needs sometimes repairs even a newly build house.
- We have to take into account as well factors which we cannot influence and which include long term interest rate which is the alternative to buying a property. There is compared profitability of buying a property and profitability of investing (leaving) money in a bank with long term interest rate. Interest rate is than lowered by rate of inflation and therefore is used term real interest rate. Lower is the interest rate, more profitable is buying of real estate.⁵

It is obvious that different real estate provide different profits and different risks.

Risks:

- One of the main risks in general are those connected with law. It includes complicated forms of ownership mainly in connection with heritage and problems between inheritors. In this case it is recommended to write in the contract about possible fines covering the possible losses connected to it.
- Other risks include economic problems which are usually not possible to change and which are related with development of real estate market and other sectors of the economy.

⁵ Výpočet ekonomické efektivity pro koupi nemovitosti na investici. *Finance - i Dnes* [online]. 17.10.2011 [cit. 2012-10-17]

Profits are possible to divide into two main categories:

- Regular profits are from renting the certain property – apartment, single house, condominium, office, garage, summer house, winter house or even a land. These profits include collecting of regular rents from tenants.
- One time profit is made from selling own property.⁶

3.5 Location

Real estate market is definitely very specific market thanks to its impossibility of movement. This fact makes it even more complicated in case of buying or investing into real estates. Therefore a location is one of the most important parameters which every buyer, renter or investor has to go through. Firstly we have to take into account in which state it is located, which region and then where exactly in the region.

According to variety of housing types such as classical apartments, family houses, summer houses or winter houses there are other aspects to be solved. For each type of housing we do care about different things.

For some people can be very important the specifics of surrounded area. Somebody cares more about accessible services, a historical background and art style of buildings where somebody else prefers calm area with lot of greens. On the other hand for most people is important what kind of people would be living around. Nobody wants to live in areas where high criminality is or where is for example lot of drug dealers.

Especially for classical living we cannot forget how our location is accessible. In big cities such as Prague there are plenty of possibilities how the real estate can be reached – started from subway, tram, or bus. We also have to mention how long would it take to get to the city centre by car or if there is possible to park close to the apartment. In case of family houses people prefer nowadays housing with garage or at least with own parking space.

There are as well other mainly social factors which can then influence also the price of the real estate. For young generation is important the existence of shopping malls, high number of restaurants, night clubs or bars. Middle generation with children are interested in social security for children such as kindergarten, basic school as well as sport or art activities for the children. In this age people are as well fixed to work, therefore they need

⁶ JACK P. FRIEDMAN, Ph.D., CPA, MAI, CRE and Jack C. Harris, Ph.D. *Barrons's business keys – Keys to investing in Real Estate*

region with lot of work possibilities. Older generation may prefer calm area with nice architecture, close shopping, post office, banks and so on.

As it was already mentioned there are specifics according to the type of housing which are important for buyers and which definitely influence the price of certain real estate. For recreation houses there would be people interested mainly in places to go for a walk, places to go swimming in case of summer houses or places to go skiing in case of winter houses.

3.6 Participants

For better understanding of investing into residential real estate market it is important to be aware of terms which are used in this field. The most used ones are:

Broker

“One who acts as an intermediary between parties to a transaction. A real estate broker is a properly licensed party (individual, corporation or partnership) who, for a valuable consideration or promise of consideration, serves as a special agent to other to facilitate the sale or lease of real property.

A real estate broker is an independent businessperson who sets the office policies. A broker hires employees and salespeople, determines their compensation and supervises their activities. The broker is free to accept or reject agency relationship with principals.

Brokers represent their principals and accept the fiduciary responsibility of exercising care, skills and integrity in carrying out their instructions. Generally a broker’s duties are confined to advertising property and to finding a person ready, willing and able to deal on the terms stipulated by and acceptable to the principal. However, legal restrictions are imposed on brokers by legislative action, and federal, state and local fair housing laws place new social obligations on them. Brokers cannot legally refuse, due to race, religion, sex or national origin, to show, sell, rent or otherwise negotiate regarding property listed with them. The broker must submit all offers to principal.”⁷ quotation

Buyers broker

“An agent hired by a prospective purchaser to find an acceptable property for purchase. The broker then represents the buyer and negotiates with the seller in the purchasers best interest.

⁷ John W. Reilly: *The language of real estate*

Agent

It is a person who undertakes to transact some business or to manage some affair for another, with the authority of the latter. Frequently the term real estate agent refers to a licensed salesperson, while a broker is called a broker. Generally, a brokers, license requires more experience and education . A salesperson must be sponsored as an active licensee by a licensed broke.

Investor

One who invests capital either in equity or in mortgage.

Grantor – vendor – a seller

It is the person who conveys real estate by deed.

Grantee – vendee – a purchaser – a buyer

It is the party to whom the title to real property is conveyed.

Salesperson

Person who is licensed to deal in real estate or perform any other act enumerated by state real estate license law while in the employ of a broker licensed by the state.

Client

It is the person who employs a broker, lawyer, accountant, appraiser, and so on. Importance: the law describes certain relationships that a professional has with a client. In a real estate transaction it is essential to know exactly what that relationship is”⁸, quotation

3.7 Do sellers need a help?

The question is if it is better for the seller to use for example the broker as an intermediary, or to try it alone. In the Czech Republic there are 50% of sales made with a broker and this number is still increasing. For this behaviour there are rational reasons. People who want to buy any type of property they expect to be searching the property and not to deal with somebody (the seller as a private person) who does not understand them. They need the service in law, accounting and so on. Real estate agencies have much more experience with real estate market and they are much more educated in such a field. Brokers know the market and the competitors, they provide seller with appropriate service, they know the price levels of this kind of real estate, they can help with all kinds of documentation, they guarantee after sale service and they are excellent negotiators with the

⁸ JACK P.FRIEDMAN, Ph.D., CRE, MAI, CPA, and J. Bruce Lindeman, Ph.D. *Real Estate Licensing Exams*

other party. Thanks to these facts they have profit from the sellers business. Also it is said that 80% of real estate business is done by 10 to 20% of brokers. For that reason it is more than recommended to engage the real estate agency.

For such a help which was mentioned in previous paragraph brokers have to be well paid. In this case the money is definitely being the main motivator. Therefore the seller should not be looking for broker with the lowest provision otherwise it can happen that this person has too many properties to be sold and he/she will not do his/her best to sell your property. On the other hand nobody wants to pay more than it is necessary which means nobody will employ the broker with the highest provision. Generally it is said that in the Czech Republic the provision can range from 3% to 6%.

For easier a more clear communication between the seller and the buyer there exist so called exclusivity. This term exclusivity is used when the certain real estate agency or broker has the explicit right to sell the property. In this case both participants have to sign another separate contract where the seller undertakes to give any other real estate agency to sell his/her property. On the other hand the broker is pledge to promote the property as much as possible and he is supposed to sell it as soon as possible.

3.8 Buying or owning?

In most countries as well as in the Czech Republic there is a variety of rented and owned housing. It is up to each of us, if we prefer one or the other option. In reality it usually depends on age of the client and on his/her financial possibilities and preferences. It is evident, that owning is being more expensive. Therefore in the short run it is recommended to rent a dwelling and in the long run to buy it if we can afford it.

3.8.1 Rent Housing

There exist several reasons why people prefer to rent their housing. Some of them cannot imagine the large down payment and high monthly loan payments. It seems to them usually as the main barrier. There are as well others who are simply in favour of mobility and they do not want to be responsible for all the things related with owning an own house. On the other hand renting a dwelling also include monthly rental fees and other expenses and duties connected to it such as lease agreement, restriction or tenant rights.

3.8.2 Own Housing

Compare to rent housing there is the own housing. If we exclude young people younger than 25, most of people have the desire to have their single family dwelling or other forms of housing. It may include condominiums, apartments, summer houses, winter houses and others. People may choose if they prefer to be living in new or existing homes. There are again differences such as standardize sizes of walls, windows, rooms in general, and so on. On the other hand older buildings give you the opportunities to show your own creativity in reconstruction or equipping the home by furniture. There is usually also completed landscaping around the house. Condominiums in general are simply speaking cheaper way of own dwelling and yet not to be living in a flat. In condominiums are also lower expenses such as heating or repairs.⁹

3.9 Preparation of dwelling for sale

This chapter may seem not to be important and obvious for many people, but in reality lot of people selling their properties do not know anything about it although it can be crucial for the business. There are many factors which can influence the buyer if he or she will buy the property or not. As well as there are good points which can help every seller to prepare the house or flat for inspection.

Most of the brokers or real estate agents prefer well prepared housing where they do not have to be careful of any not working staff or messy rooms. Therefore owner should always prepare the whole property to be nicely looking and appeal the potential incomers.

The excursion

The best time of the year for excursion is from late spring to early fall. During winter there are many disadvantages for the buyer. Main problem is the change of time which brings the dark sooner and visitors who come in the afternoon do not have the possibility to see the garden and the exterior of the house. Also they cannot see the view from inside and cannot imagine how much light go in during the day. The property inside usually looks the same, but if there is a lack of day light there will be still something missing. Therefore if it is possible it is much better to wait until spring or try to have excursions during the day.

If there is no other possibility and the seller needs to sell his/her property during winter, there is essential to take care of incoming path not to be full of snow and slippery. Inside

⁹ GARMAN I FORGUE. *Personal Finance*

the house there should be open curtains and lights switched on. Important is to make it inside warm.

It is recommended for the owner not to be present during the excursion. The worst is when the owner follows potential buyer in every single room. Everybody should be also aware of family animals. Nobody knows if the incomers would be interested in them or if it will be disrupting them and they would not lose the attention to the excursion.

Emotions

If somebody wants to buy a new housing it is an emotional occasion, but when somebody needs to sell it he/she should not use any emotions. It means since the person has decided to sell the house he/she should not still take it as his own living anymore. For the broker or salesperson it is the same and they see the house just like a product which needs to be sold.

Anonymity

The house which is being sold has to look like possible place to live for anybody. It should not show any more personal staff of people living there. All the variety of pictures from holidays on walls, kids' toys, and so on can discourage the potential buyer. Every person who wants to buy it wants to have the possibility to imagine in the house his/her personal things and his possible family members.

Open space

Unfortunately it is a Czech habit to store and accumulate lot of staff which leads people to have lot of cabinets and other forms of furniture which are then full of not useful things. Every room which has lot of furniture seems to be smaller than it is which means that for the inspection owners should at least put these pieces away for a while to let the room be looking bigger and brighter at same time. In every room there should be let only the amount of furniture which would show the potential buyer the role of the room. Another reason for letting inside as little staff as possible is than it can be seen as a part of the house which would than belong to it in case of sale.

Garden and exterior of the house

The first thing which the potential buyer will see is definitely the exterior and in case of family houses a garden. Therefore the seller should be aware of it and try to make it as perfect as possible. Garden should have mowed grass, prune woody plants and it is very nice to have in the garden few coloured flowers which make the garden to look even better. For the exterior of the house it is preferred to have new plaster, but if it is not possible it

should be at least clean and without any wholes. The best colour for family houses is said to be yellow and similar ones.

Home staging

It is the art of how to make a good mood in the apartment. The house should look bigger, brighter, cleaner and warmer. The main goal is to make an interest for the buyer. Home staging is something which is made after we clean the whole property. It includes decoration of certain unique stuff in interesting places. There are professionals who can arrange things such as flowers, lamps, little carpets, pillows, baskets and so on to be looking perfect.

Repairs

There are certain repairs which are not so expansive and which can be worthy to make. On the other hand everybody has to find some kind of a compromise between what should be repaired and what is too expensive to change. For instance distinctive colours of walls are usually not wanted. Therefore it is recommended to paint only white or light beige.¹⁰

3.10 Reasons why people want to move

There are several reasons why people are looking for new housing and why they want to move. For seller it is vital to understand this reason because thanks to this knowledge he/she can then show the advantages of certain property in which is the potential buyer interested.

Current house is too small – People have children and so on and they need more space.

Desire of moving up – The want of having something different. People want something new, bigger or more modern.

Change of job – Sometimes people have to move to new location thanks to change of their job.

Personal partnership – Some people want to set up a family and they want to live together, somebody wants to divorce and they need to separate their living.

Leaving of children – When children grow up and they move to new houses. In that time parents do not need such a big dwelling anymore.

¹⁰ ŠTĚPÁN KLEIN, Petra Kesslerová. *JAK PRODAT NEMOVITOST V DOBE KRIZE*

There are many and many other reasons for moving somewhere else such as the retirement, change of life style, health problems, having too old house to repair it and so on.¹¹

3.11 Buying and owning a property

There exist variety of possibilities how to gain a property. The easiest way would be definitely a present from somebody which is not so frequently seen except to get something for living from parents. Other possibility (usually also from family members) can be heritage of such housing. However the main common situations are that people want to buy the property in cash or with a mortgage. In past there existed also other forms of gaining a property such as privatization or restitution but in case of buying and selling family housing around Prague we will not be interested in it.

After the complicated process of buying the property there are still other payments which are related with being an owner of certain property. For the seller the last duty connected with his/her property is to pay so called “tax from transfer of property”. On the other hand for the new owner it means to apply for co called “tax from real estate”.

3.11.1 Tax from transfer of property

As it was already mentioned this tax is usually paid by the seller of certain property. The sum which goes to the state budget is not huge and sometimes it is let at notary deposit until the sale of property is finished. As a tax base is taken the price of property for which it was sold or its estimated value. It is always counted from the higher amount. From this base tax are calculated 3% and that stands for the tax from transfer of property. Deadline for this payment is 3 months after the property was rewrote at the Czech Office of surveying, mapping and cadastre.¹²

3.11.2 Taxes from real estate

In the Czech Republic everybody is obliged to pay co called tax from real estate which he/she owns. This tax is divided into two separate parts – taxes from land and taxes from buildings. Thanks to the fact that there are some properties or parts of properties which are exempt from paying the real estate tax, the division excludes those part of property which are not subject of the real estate taxes from the payment.

¹¹ ŠTĚPÁN KLEIN, Petra Kesslerová. *JAK PRODAT NEMOVITOST V DOBE KRIZE*

¹² Daň z převodu nemovitostí. *Měšec.cz*

Tax period for real estate taxes is said to be one calendar year. Every owner who has a new property or there can be any changes in calculating the final price has to fill out special forms and apply for payment until the first of January. In special cases where the payment would be lower than 30 CZK it does not have to be paid. ¹³

3.12 Family houses in the Czech Republic

This type of housing belongs in the Czech Republic to the most widely used ones. There are more than 37% of such properties. The region with the highest newly built houses - 1/3 of all newly built houses is the Czech Bohemia region.

Market with family houses can be divided into two parts:

Individual construction – it is realised usually somewhere outside the city or close to some smaller cities. There is no interest of big well known companies in building such housing. Therefore the properties are built usually by individuals just for their own profit.

Development in Prague and surrounding – It is the most favourite location thanks to the capital city which provides people with sufficient infrastructure, higher price levels of supplying as well as demanding properties and it gives potential clients higher employment possibilities.

In given region we can divide residential real estate into three parts:

Construction of luxury family houses – most important factors influencing such prices are attractiveness plus interesting and prestige location. Prices of such family houses can range from 10 to 25 million CZK.

Construction of middle price family houses – Prices of properties in this segment can usually vary from 4 – 8 millions CZK. They are usually built in adequate quality, in areas with good infrastructure in forms of terraced housing.

Construction of lower price family houses – The biggest benefit is in this case definitely the price which goes from 2 – 3 millions CZK. On the other hand it is linked with factors which decrease the final price such as worse possibilities of transportation, low quality of used materials and technical parameters of certain building. ¹⁴

There is the reason why this diploma thesis is about individual construction of family houses around capital city which are supposed to be affordable for middle class population.

¹³ JANKŮ MARTIN. *Nemovitosti, koupě a prodej (zákon, komentáře, vzory+jud)*

¹⁴ ASOCIACE PRO ROZVOJ TRHU NEMOVITOSTÍ. *Czech Real Estate Market – Trend report 2004, Asociace pro rozvoj nemovitosti*

3.13 Mortgage

Buying an own housing is one of the biggest investment which people usually make during their lives. Unfortunately in time when people mainly do want to settle down they are young and they do not have enough finances to realise their dreams. If they do not want to buy just some very small and not comfortable type of living they need more money. Therefore there exist banks and other institutions which can help people not to pay new housing in once, but to divide this huge expense into several smaller instalments.¹⁵

Mortgages as we know them now do not exist in the Czech Republic for very long period of time. Thanks to its increasing popularity there is a decreasing trend in the mortgage rates and there is increasing number of people with any mortgage.

According to law the mortgage is said to be as an investment into real estate which is secured by a lien. These two conditions are the most important and it could not be changed. It is not possible to use the finance for anything else or first to pay by it to a building company and then when it is build to be liable by the certain building. It all has to be done in one.

In the law there is written that mortgages for real estate should not be higher than 70%, but banks usually change it to around 60%. It means that the client should have about 40% of the total price of the property. It also has to be admitted, that there exist as well institutions which offer 100% mortgage.

However, it is not necessary for the property secured by lien to use the same property. In case of a building under construction people can use any other property which is registered in the Czech office of surveying, mapping and cadastre.

In comparison with building savings the mortgage cannot be used for cooperative ownership of property. On the other hand it can be used for family house no matter if it has higher portion of commercial space or residential space.¹⁶

Mortgages in general can differ in three main parts. The most important is the purpose of the mortgage, possibility of combination of the mortgage and the loan amount.

As it was mentioned the most important thing is the purpose of the mortgage. In the Czech Republic there exist two possibilities – mortgages with exact purpose and without

¹⁵ RPSN.cz. *O půjčkách* [online]. [cit. 2011-11-28]

¹⁶ PETR SYROVÝ. *Financování vlastního bydlení*

exact purpose (so called American). In case of the exact purpose which is the most obvious for buying a property it means that the investment is made for:

- Buying of real estate or a land
- Construction of real estate
- Reconstruction, modernization or repair of real estate
- Repayment of the loan or a loan used for investment into real estate
- Gaining of part of a real estate (in case of heritage or settlement of marital property)

In case of the American loan it is not necessary that the amount from the bank will be used for real estate. The main advantage is that customer is not obliged to define what the money will be used for. On the other hand in the Czech Republic it is very often used for buying a cooperative ownership property even though there exist some other possibilities how to get money for such an investment.¹⁷

3.13.1 Time of maturity

In most cases this period is to be from 5 to 30 years, but there exist also 1 or 3 years periods. Most financial analysts recommend 20 years. Usually the mortgage should be paid until the retirement of a client. Therefore 30 years is preferred just by younger people about 30 years old. On the other hand the short time of maturity is not being preferred either because it increases monthly instalment.¹⁸

3.13.2 Interest rate

In case of mortgages it is a rate which is charged for the use of money from the bank. For customer it expresses the percentage of the loaned total amount.¹⁹

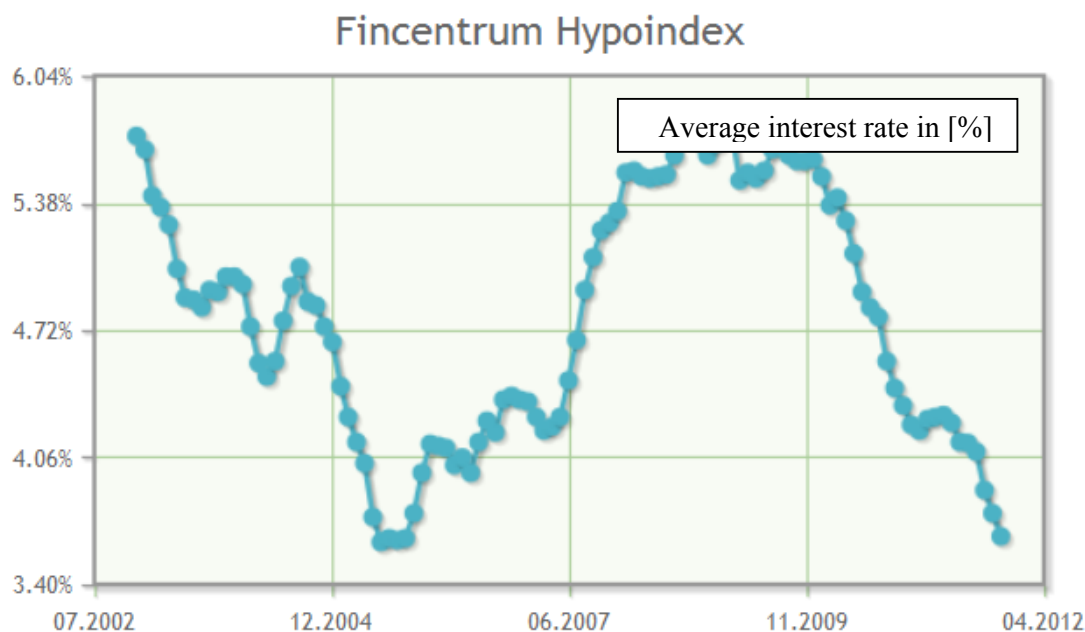
Next graph represents the development of mortgage interest rates from year 2002.

¹⁷ RPSN.cz. *O půjčkách* [online]. [cit. 2011-11-28]

¹⁸ PETR SYROVÝ. *Financování vlastního bydlení*

¹⁹ Definition of Interest Rate. *About.com Economics* [online]. [cit. 2011-12-02]

Graph no.1 - Hypoindex



Source: *Hypoindex vývoj*. Hypoindex.cz [online]

In past few years the interest rates have been changing a lot. There are many factors which influenced this behaviour whether it was positively or negatively. Mainly it means the economic situation of the country including foreign trade and stability of local exchange rate. What also influences the development of interest rates is the competition between banks which was in last year increasing thanks to few new banks. In the Czech Republic the interest rate has in last few years declined a lot. Year 2011 was said to be the best from mortgage point of view. At the end of the year was reached a record with 3,56% of interest rate which means lower than in 2005. Unfortunately at the beginning of the year 2012 there are already some banks which are again increasing their interest rates. On the other hand the prognosis say that year 2012 should not move with interest rates to much but just slightly which means maximally 0,10-0,20%. In general the interest rates should be ranging from 3,7-4% and should not exceed 4%.^{20, 21}

²⁰ Fincentrum Hypoindex prosinec 2011. Hypoindex.cz [online]. 18.1.2012 [cit. 2012-01-21]

²¹ Úrokové sazby hypoték v roce 2012 neporostou. Hypoteka bez registru [online]. 3.1.2012 [cit. 2012-01-20]

3.13.3 Fixation

Fixation is a term which means the amount of years for which the interest rate is guaranteed not to be changed. Most often people use fixation up to 5 years. Rarely it is possible to see fixation 10, 15 or even 20 years. The advantage of leaving it longer is that if there is lower interest rate in the time when the client is applying for the mortgage it will stay low during the whole period. On the other hand there are other benefits for having the fixation shorter. It includes:

- The possibility of decrease of interest rate
- It allows the client to move his/her mortgage to a different bank
- The most important is, that at the end of the fixation period there is possibility to pay off part or the whole mortgage because otherwise there would be a high sanction if the client would like to pay it off at some other time²²

3.13.4 Refinancing

Refinancing simply means that the client has the option to pay off his first mortgage for which he/she has to take a new (second) mortgage. Usually it is done after the fixation period which means with no sanctions. The reason for refinancing is that some other bank may offer better conditions such as lower interest rate and with that related lower monthly payments. The process is bit more complicated compare to absolutely new mortgage because in the same time there are two different banks which do have the lien for the one property, but it is just for a while and after the new bank sends the required money to clients account and he/she pays off his liability it is being change at the cadastre and client can start to pay new instalments at the new bank.²³

3.13.5 RPSN

In past there was often said that the mortgage rate is only for example 2%. But it was not said that it means just monthly or that it does not include other charges. Therefore in the Czech Republic it is now used a term RPSN which means yearly percentage rate of costs. It is in percentage and it includes all charges and all interests. Thanks to the RPSN it does not matter if the person has mortgage without charges and with high interest or a mortgage with low interest and high charges.²⁴

²² Tajemství fixace úrokové sazby. *finance.cz* [online]. 3.2.2010 [cit. 2012-01-10]

²³ Refinancování hypotéky. *Hypoteka.name* [online]. [cit. 2012-02-10]

²⁴ PETR SYROVÝ, Tomáš Tyl. *Osobní finance - řízení financí pro každého*

On the other hand we also have to mention that RPSN is used mainly for consumer loans. In that case it can happen that customer may pay yearly instalments in amount of 10 000 CZK and other charges can be 2 000 CZK. That would be a big difference if we compare it with mortgage where yearly instalments may be for instance 90 000 CZK and charges also 2 000 CZK. In that case the 2 000 CZK is not such a significant amount.²⁵

3.14 Pricing

Pricing is used to find out so called common price for which it would be possible in given time to sell or buy similar property. There are three main methods used in the Czech Republic such as: comparative, cost and yield method. There exist as well other methods which are then used in some special situations. It may include for example pricing according to mark to book value, method of remains residual method, method of finding the common price by weighted average and index methods.

3.14.1 P-index – Development of real estate prices?

One of the index methods is called P-index (price index). This instrument is in the Czech Republic quite new therefore it is perceived as an alternative method. It is used at the real estate market to monitor the development of prices. It is a tool for prognosis of development of real estate prices. It shows the balanced value of a property.

Reason why all around the world people are interested in residential real estate market is simple. Popularity of renting housing is decreasing. Renting is being deformed by regulations and there are not too many new housing being built just for being rented.

The development of real estate market in the Czech Republic was in last years still increasing. That did not lead to any urgent need of analyses about the market. On the other hand the trend may change and there can be slowdown of the increasing trend, market can stagnate or there can be even decrease of prices. Therefore understanding of P-index may be a useful tool. Unfortunately for the Czech Republic now there are not enough data to calculate exactly this index, but it is slowly going to be possible.

²⁵ RPSN.cz. *O půjčkách* [online]. 17.1.2011 [cit. 2011-11-28]

For calculating the price index is needed to collect data about prices of real estates. There are five main sources where it is possible to find these data but as well disadvantages which it includes.

1. Information from newspaper advertisement.

There are only prices for which owners want to sell their properties, the real price can differ. As well there are not details about the properties.

2. Statistics of already realised sales in evidence of real estate agencies.

It does not include sales made without real estate agency.

3. Estimation of many real estate brokers.

It is not a statistic, but only an estimation of certain brokers.

4. Statistics of already realised sales in evidence of state organ.

State organs do not want to cooperate with anybody who is not state organ if it is not written in the law as an obligation.

5. Statistics of initial prices of properties in evidence of banks providing mortgages

In this case banks do not want to cooperate and as well there are only sales which were made with mentioned mortgage.^{26,27,28}

3.14.2 Comparative method

Based on Czech law this method compares certain thing with same or at least similar thing and its price for sale. In the same date there has to be taken into account:

- Type and purpose of the thing
- Technical parameters
- Material used
- Quality of rendition
- Technical status
- Reparability
- In case of real estates in includes also primarily location, location in the certain city or village, size of building, fixtures and possibility of enlargement.

We should also mentioned, that the possibility to find absolutely the same real estate is quite hard. It may happen in case of apartments, but in case of family housing there are

²⁶ BRADÁČ, Albert, FIALA, Josef, HLAVINKOVÁ, Vítězslava. *Nemovitosti: Oceňování a právní vztahy*

²⁷ Kde vzít data. *Penize.cz* [online]. 29.1.2007 [cit. 2012-03-20]

²⁸ P index. *Hospodářský mechanismus* [online]. 12.2.2012 [cit. 2012-03-20]

many varieties such as single house, condominium, size of garden, garage or not, seller, old or new house. Even if there would be found two absolutely same houses in one street, their prices may range thanks to many other factors such as other street and noise, public transport, unwanted factory and so on. Therefore it has to be bear in mind that we compare similar real estates.

3.14.3 Cost method

In this method are calculated total costs which would be necessary to build the same building. Finding the price is in this case very precise, very detailed but very hard and time consuming. This method is used mainly for newly build houses because there is necessary to show details about construction and details about rendition including all used materials.

3.14.4 Yield method

First of all it is crucial to understand what it means a rent. It is an amount of money for which the owner is allowing somebody else to use his/her property. It should include costs related to the property and as well some adequate profit. In terms of pricing there exists also term cost rent which covers only the costs connected to owning of the property. Last important term is economic rent which gives to his/her owner the highest profit.

In general it is possible to say that yield method shows the real estate price only from economic point of view. There is compared the possible yield with regard to its initial costs compare to profit from the same amount of money saved with interest rate. The profit from rent may not include just rent of building, but as well land, garage or even place for advertisement billboard. Total amount of future profit is than discounted at present value. From the total profit is deducted amount of all possible costs including insurance, tax from owning the property, costs for maintenance and repairs and so on.²⁹

3.14.5 Hedonic pricing method

It is a form of non-market valuation which is commonly applied for the valuation of property. Hedonic pricing method use market prices derived from the real estate sales – to estimate the value of local environment. The method is based on the recognition that values of housing and land are influenced by at least three types of characteristics:

- The physical attributes of the property – size of garden, number of rooms
- The attributes of the surrounding neighbourhood

²⁹ BRADÁČ, Albert, FIALA, Josef, HLAVINKOVÁ, Vítězslava. *Nemovitosti: Oceňování a právní vztahy*

- The environmental quality/amenities near and at the property (environmental quality, including air pollution, water pollution, or noise environmental amenities, such as aesthetic views or proximity to recreational sites)

To get the total price of the property we have to make a function of these characteristics. Through statistical analysis, it is possible to estimate the contribution of these characteristics to the total sales price of the property and thus to estimate the implicit price of each characteristic.

HPM is suitable for the estimation of changes in water and air quality, but is especially appropriate for assessing noise and air pollution (from activities such as large agricultural machinery, land filling or transport of waste)

The hedonic pricing method is used to estimate economic values for ecosystem or environmental services that directly affect market prices. It is most commonly applied to variations in housing prices that reflect the value of local environmental attributes.

Advantages of the Hedonic Pricing Method:

- Market with properties is likely to give information, so it can be right indicators of value.
- There exist many available sources where to find needed data.
- Most of the records are very reliable.
- It can be used to estimate values based on actual choices.

Issues and Limitations:

- The method is too complex and there is a need of high degree of statistical expertise.
- It shows only the people's willingness to pay for perceived differences. If people are not interested in environment with connection to home prices it will not be reflected there.
- The scope of environmental benefits which are possible to be measured is limited to those things which are related to housing prices.^{30, 31, 32}

³⁰ Hedonic pricing method. *Ecosystem valuation* [online]. [cit. 2012-02-12]

³¹ SPRINGER DORDRECHT HEIDELBERG. *Environmental and Agricultural Modelling – Integrated Approaches for Policy Impact Assessment*

3.15 Net Present Value

For calculation whether it is profitable to invest into certain project there is most widely used the net present value (NPV). It represents the value of investment's future net cash flows minus the initial investment. Every cash flow (CF) is recalculated to its present value and there it is possible to use the specific different discount rates (r).

$$NPV = \frac{CF_0}{(1+r)^0} + \frac{CF_1}{(1+r)^1} + \dots + \frac{CF_t}{(1+r)^t}$$

The result which is get from this method is a number in certain currency which is:

- lower than zero – it means that the investment should not be made because the costs are higher than future profits
- equal to zero – it means that the investment is economically neutral
- higher than zero – it means that the investment should be profitable because the resulted number says how much will the investor get in case of investing the given amount of money

On the other hand there exists as well an internal rate of return which is the discount rate at which the net present value is equal zero but at least from the theory point of view it is much better to be using the net present value.^{33,34}

³² PERLA CHRISTINA ATIYAH. *Non-market valuation and marine management: Using panel data analysis to measure policy impacts on coastal resources*

³³ Net present value. *Business Dictionary* [online]. [cit. 2012-01-17]

³⁴ Doba návratnosti, IRR nebo NPV? *SolarCalc* [online]. 19.11.2009 [cit. 2012-01-18]

4 Practical part

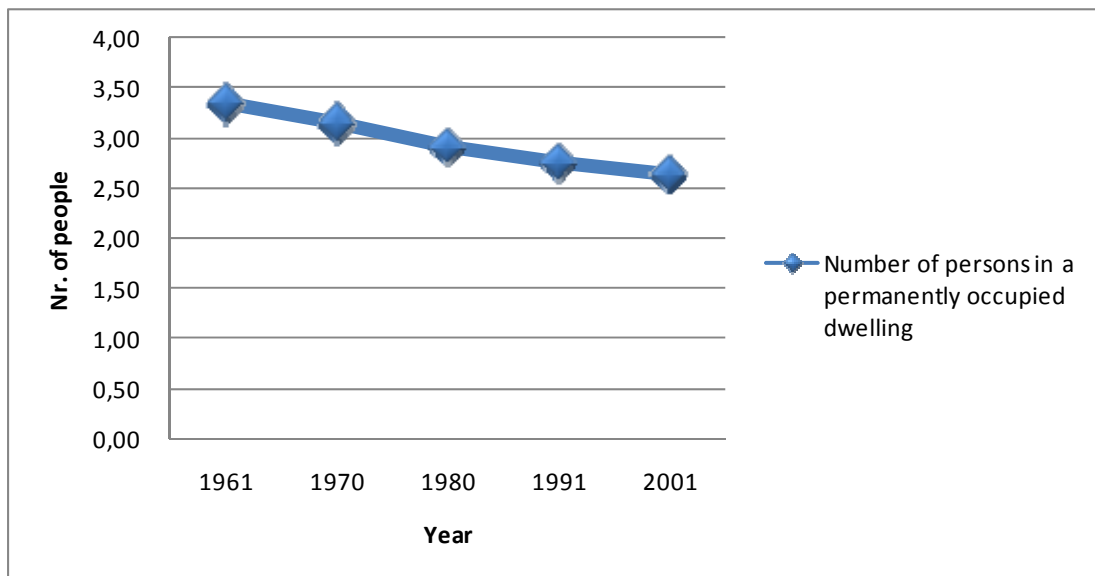
4.1 Historical background

At the beginning there is a need to describe how important is the residential real estate market in the Czech Republic in general. The main reason why this topic is still so much discussed is the fact that this country was under control of communism for more than 40 years. Only since the Velvet revolution in 1989 there is capitalism which means there is a free market and a freedom of buying and selling own property. This period of 22 years is still a short time for becoming fully capitalised country which still allows making quite high profit from trading with real estates.

This part should show how living has changed since 1961 and what is nowadays being the trend of housing. All these factors as well describe the growing importance of understanding residential real estates and related reasons why to invest into it.

In the graph no.2 it is possible to see, that the number of people living in one apartment is decreasing. The main reason can be that children tend to live alone, lot of people move from villages and small cities to big ones and they have to find their own living. On the other hand it leads to increasing number of new housing.

Graph 2 – Number of persons in a permanently occupied dwelling

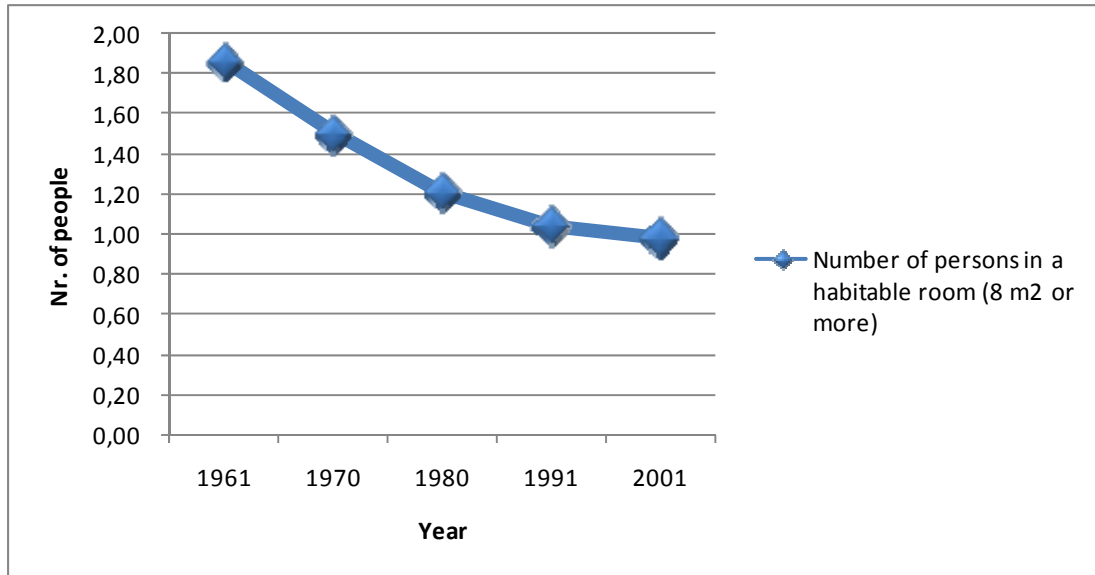


Source: Own processing data from CZSO

Next graph no.3 represents decreasing number of people living in one room. Generally it is possible to say that in past it was popular for one family to live together or at least children shared one room and parents shared one room. Nowadays people prefer to have

separate rooms for each child and it is not rare even for parents to have their own rooms. Also we can mention the fact of building many extra rooms in one apartment such as rooms for guests, huge cloakrooms in size of normal room, study rooms and many others.

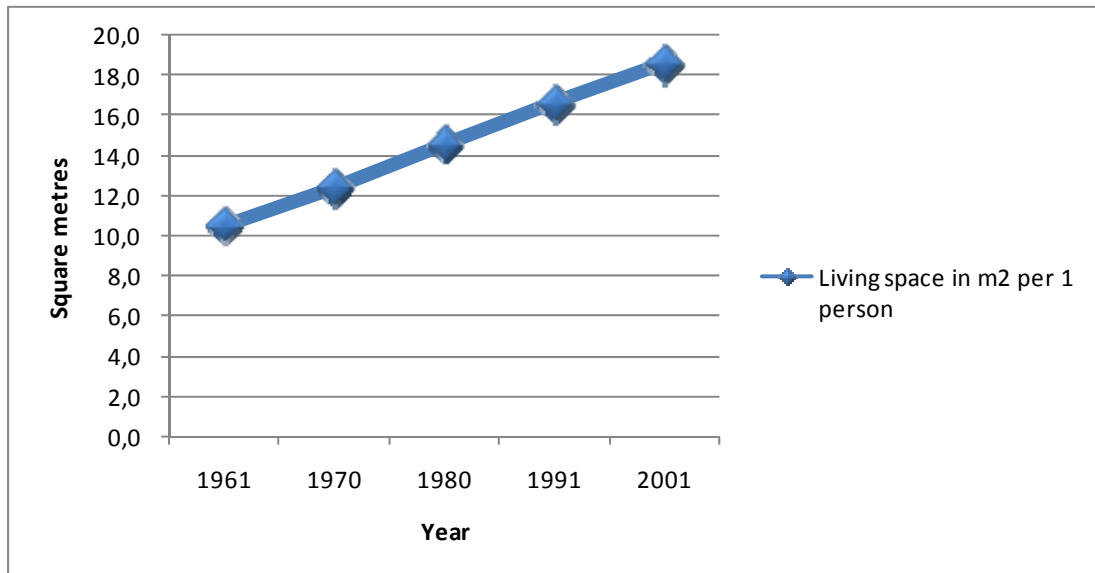
Graph 3 – Number of persons in a habitable room (8 m² and more)



Source: Own processing data from CZSO

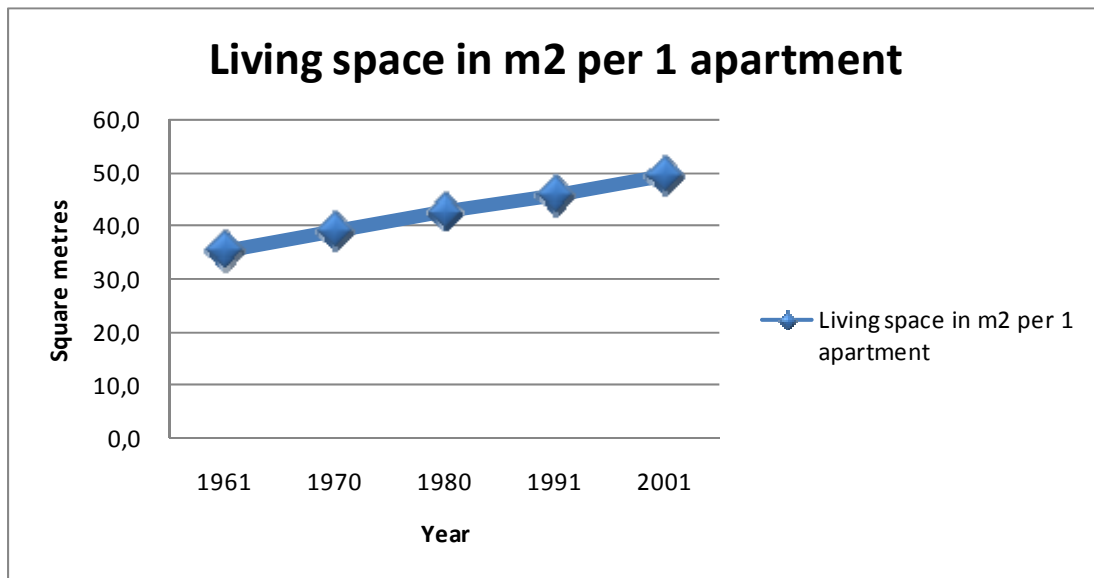
The living space for each person has in selected period almost doubled (graph no.4). As well the average size of housing in the Czech Republic has been almost linearly growing from 35m² to 49m² (graph no.5).

Graph 4 – Living space in m² per 1 person



Source: Own processing data from CZSO

Graph 5 – Living space in m² per one apartment



Source: Own processing data from CZSO

According to these four graphs we can simply say that nowadays people should be more satisfied because all the defined parameters have changed to much better ones and the conditions for living are much more pleasant than in past. Unfortunately it is not like this everywhere in the Czech Republic, but fortunately in the selected area of Prague East region and Prague West region the standard of living is very high.

4.2 Location of Prague East region compare to Prague West region

At the beginning we have to make clear where the selected area of this diploma thesis is located. Czech Republic itself is divided into 14 separated districts. One of them is called Czech Bohemia district and it is divided into 12 regions as it is seen in picture no.2. For this diploma thesis was chosen Prague East region with comparison with Prague West region and their cities and villages.

Prague East region consists of cities and villages: Babice, Bašť, Bořanovice, Brandýs nad Labem-Stará Boleslav, Brázdim, Březí, Čakovičky, Čelákovice, Čestlice, Dobročovice, Dobřejšovice, Doubek, Dřevčice, Herink, Horoušany, Hovorčovice, Hrusice, Husinec, Jenštejn, Jevany, Jirny, Kaliště, Kamenice, Káraný, Klecany, Klíčany, Klokočná, Kojetice, Kostelec u Křížků, Křenice, Křížkový Újezdec, Kunice, Květnice, Lázně Toušeň, Líbeznice, Louňovice, Máslovice, Měšice, Mirošovice, Mnichovice, Modletice, Mochov, Mratín, Mukařov, Nehvizdy, Nová Ves, Nový Vestec, Nupaky, Odolena Voda, Ondřejov, Panenské Břežany, Pětihosty, Petříkov,

Podolanka, Polerady, Popovičky, Postřižín, Předboj, Přezletice, Radějovice, Radonice, Řehenice, Říčany, Sedlec, Senohraby, Sibřina, Sluhy, Sluštice, Strančice, Struhařov, Sulice, Svěmyslice, Světice, Svojetice, Šestajovice, Škvorec, Tehov, Tehovec, Úvaly, Veleň, Veliká Ves, Velké Popovice, Větrušice, Vodochody, Všestary, Vyšehořovice, Zápy, Zdiby, Zeleneč, Zlatá, Zlonín, Zvánovice,

Prague West region consists of cities and villages: Bojanovice, Bratřínov, Březová-Oleško, Buš, Černolice, Černošice, Červený Újezd, Číčovice, Čisovice, Davle, Dobrovíz, Dobříč, Dobřichovice, Dolany, Dolní Břežany, Drahelčice, Holubice, Horoměřice, Hostivice, Hradištko, Hvozdnice, Choteč, Chrást'any, Chýně, Chýnice, Jeneč, Jesenice, Jílové u Prahy, Jíloviště, Jinočany, Kamenný Přívoz, Karlík, Klínek, Kněževés, Kosoř, Kytín, Lety, Libčice nad Vltavou, Libeř, Lichoceves, Líšnice, Měchenice, Mníšek pod Brdy, Nučice, Ohrobec, Okoř, Okrouhlo, Ořech, Petrov, Pohoří, Průhonice, Psáry, Ptice, Roblín, Roztoky, Rudná, Řevnice, Řitka, Slapy, Statenice, Středokluky, Svrkyně, Štěchovice, Tachlovice, Trnová, Třebotov, Tuchoměřice, Tursko, Úholičky, Úhonicé, Únětice, Velké Přílepy, Vestec, Vonoklasy, Vrané nad Vltavou, Všenory, Zahořany, Zbuzany, Zlatníky-Hodkovice, Zvole,

Picture no.2 – Map of Czech Bohemian region



Source: *Moje kraje* - <http://www.mojekraje.cz/stredocesky-kraj>

There are many reasons why these two areas are being one of the most popular ones in the whole Republic as well as one of the most successful ones. The main reasons are simple. As it is seen from the map, Prague East and West region surrounds the capital city.

Therefore there live lot of people who work or study in Prague where as it is obvious the largest amount of work opportunities and study opportunities are. On the other hand in our two selected areas are living as well people with children or older people who prefer calmer living with environmentally friendly surroundings in connection with easy access to the capital city. People who want to enjoy benefits of countryside but be close to bustle of the city. Both mentioned areas include all different types of housing and different forms of ownership. For purpose of this thesis we will focus mainly on family housing which would be affordable for middle Czech class population and which is in personal property.

4.2.1 Transport

In the picture no.3 we can see many roads which go from the capital city across Prague East and West region to other parts of the Czech Republic.

Picture no.3 – Map of Prague and surrounding



Source: Řízení silnic a dálnic - <http://www.rsd.cz/>

It may be seen as a sufficient amount, but there are many problems connected to it. One of the escalating problems is the growing number of people living mainly in the two mentioned regions. These people every day travel to Prague and what is even more alarming is the amount of persons in one car. More money the people have more car there is and less people is using the one car which is then connected to increasing traffic.

On the other hand, next problem arising for those who live in these areas is the lack of connection between the main roads. The Czech Republic has plans how to improve the

quality and amount of roads around Prague. In near future there should be built so called Prague circle which would be one of the most important transport constructions in the Czech Republic. After its completion it will connect nine main roads with Prague and it will connect as well the capital city with surrounding regions and states. As it was mentioned it will be also very useful for Prague city traffic and suburban traffic.

This problem was partially solved not long time ago when there was open so called south motorway. However the second part of the circle is not finished yet. One of the most discussed parts of the Prague circle is a section 511 Běchovice-D1. It was supposed to be started to be build in 2013 and it was supposed to be finished in 2016. Unfortunately for somebody it will be postpone and nobody knows when it will be started not even finished. It should go through Prague parts Běchovice, Dubeč, Uhřetěves, Královice, Nedvězí, Kolovraty and in the Czech Bohemia region in communities Říčany and Nupaky. Its way takes care of country surrounding and of the environment. It will be helpful not just for trucks, but as well for those who need every day to go to work and they do not want to go through the city centre where is traffic especially in rush hours. Quite important is as well the fact that around the city centre there is growing number of P+R parking spaces which allow people to park there and not to go to the city centre. Sad fact is that the prices of these parking spaces have recently growth twice from 10 CZK to 20 CZK. This in one year can make difference of bit less than 3 000 CZK.

4.3 PEST analysis

Pricing of real estate is influenced by lot of different factors. These can be divided into subjective and objective ones. Appraiser should always be taking into account only the objective ones. On the other hand we cannot omit the most important fact, that the price is influenced by supply and demand. The final price is somewhere between the amount which buyer is willing to pay and seller is willing to accept. In this part of the diploma thesis are described Political, Economical, Sociological and Technological factors.

Political factors

This group of factors is usually influenced by behaviour of state.

Land use planning

Land use planning as a factor can increase or decrease price of certain property. It may include plans of surrounding lands. If there will be any changes such as build of apartment houses, office houses, new roads or if the land will stay as it is.

Tax policy

Tax burden of certain property does influence the total price. If there is increase of VAT it increase the total price of real estate. On the other hand there are taxes such as tax from transfer of property or tax from real estate.

Safety

Every potential buyer is interested in buying property in area with a lower crime rate. In each region is the crime rate calculated as a ratio of number of clarified crimes and detected crimes. In capital city Prague it is higher, but there are as well parts of Prague where the crime is lower.

Public interest

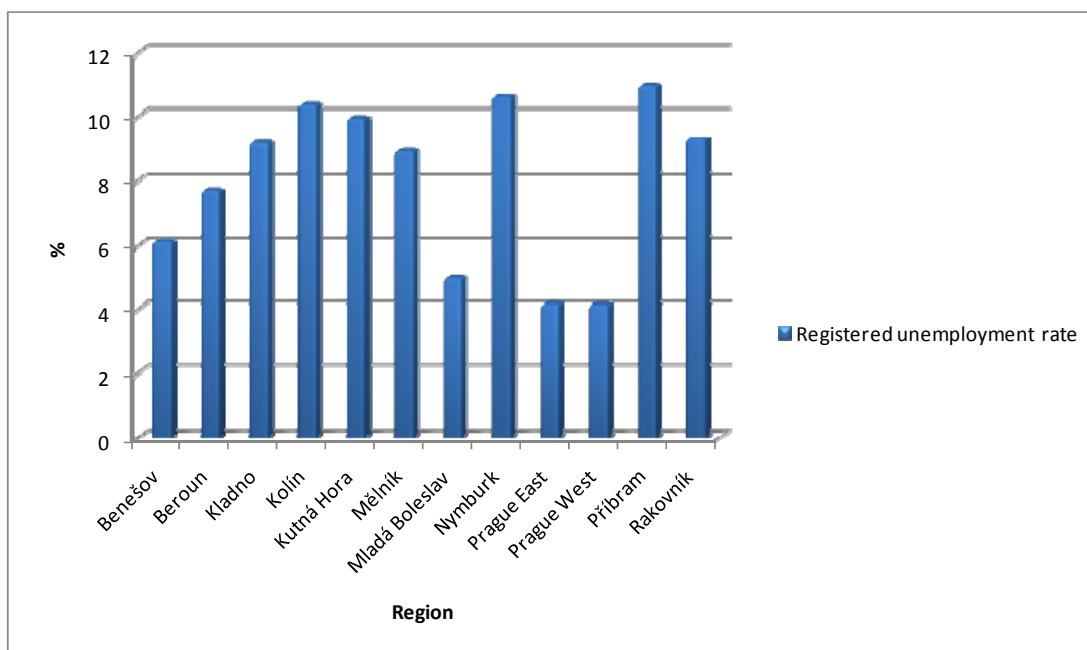
Price of property can increase building of new school, shopping mall, sport centre and so on. On the other hand to build a factory decreases its price. In case of building a new road it may differ according to distance and noise from the road.

Economic factors

Employment

One of the crucial factors influencing price of property is wealth of country's inhabitants. In next graph no.6 is shown the registered unemployment rate in the Czech Bohemia region. As it is seen the lowest rate of unemployment is right in the Prague East and Prague West regions. It is mainly because of the greater opportunity of work possibilities not just in the selected region, but mainly in close capital city.

Graph no.6 - Registered unemployment rate (%)

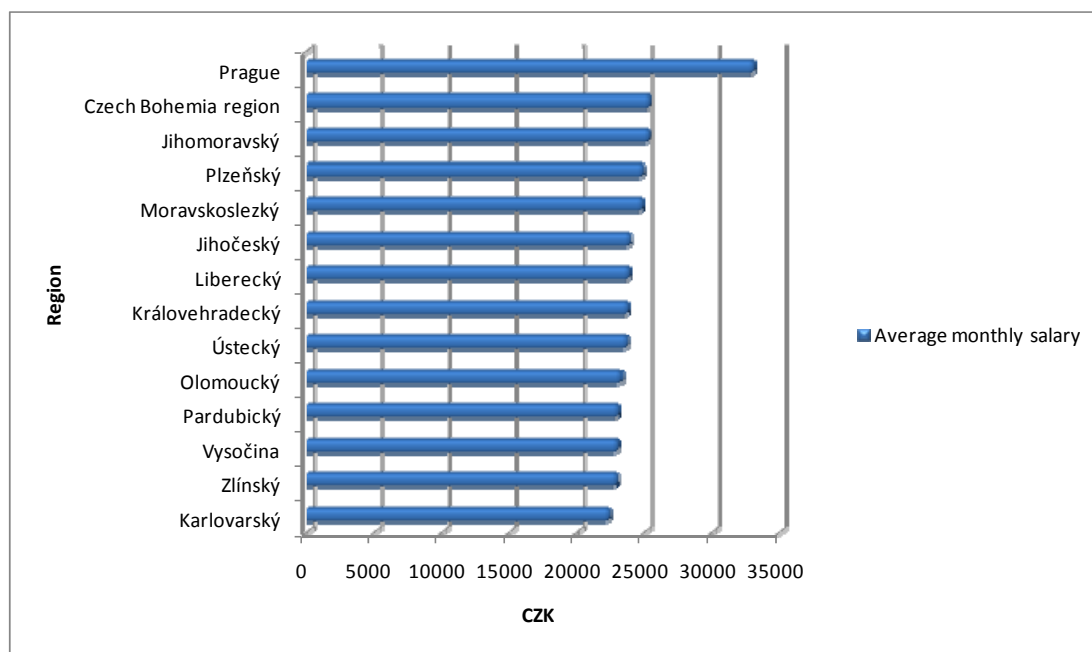


Source: Own processing data from CZSO

Purchasing power

Part of employment is purchasing power of inhabitants. For most people is salary the main part of their incomes. However, it may include heritage, winning of lottery or any presents. In next graph no.7 is shown that according to order and except the capital city Prague, there is the highest monthly salary in Czech Bohemia region.

Graph no.7 – Amount of average monthly salary in selected regions



Source: Own processing data from CZSO

Living standard

In case of living standard are compared yearly incomes and yearly costs for living. Living in this case includes rent, electricity, gas, heating and water.

Financing a living

Housing in general is very expensive part of our costs. Everybody needs a place for living. Somebody prefers renting, somebody prefers buying. As it was mentioned in other part of this thesis there are several ways how to get money to finance own housing. If we exclude own sources which most people do not have there are two most common possibilities such as a mortgage or use of money from building savings.

Situation in the construction industry

This situation influence supply of real estate and with that connected prices. In the Czech Bohemia region is permanently the highest number of new given planning the building permission. From that area is the highest number in Prague East and Prague West. For sure it is again because of growing demand for family houses close to capital city or areas around Prague in general.³⁵

³⁵ Bytovka_2011_4q.pdf. Český statistický úřad [online]. 3.2.2012 [cit. 2012-03-15]

Economic factors include many other things such as GDP, inflation, interest rate and so on.

Sociological factors

This group of factors is influenced mainly by people's wants and needs. It is simply possible to say that which group of housing is most demanding, that type of housing is usually the most expensive one.

Development of population

Based on statistics we can say that age of population is increasing and young generation is decreasing. That is of course as well influencing prices of real estate. Many people do have children even after 30 years of their age, there is high percentage of divorces and therefore there are lot of people who are young and alone, old and alone or just one parent with child or children. These groups of people do prefer to live in a small flat. On the other hand there are families who live together and these people need big flats. In this case many families prefer to live in family houses which are more convenient than to pay for expensive big apartments. That leads to increasing prices of large flats and more suitable living in family houses.

Size of household

Number of people living in one apartment is influencing the size of the wanted place of living. We also have to take into consideration the number of children. As it was mentioned in previous factor many families prefer family houses which may be bigger and therefore more suitable than flats.

Standard of living

Standard of living is another factor influencing price of property. In the Czech Republic it is increasing. It is influenced mainly by higher possibility of better technology and materials used for buildings.

Life style

This factor may influence the price if there is higher demand for certain type of real estate. In these days the society prefers for example ecology type of housing and so called self sufficient type of housing compare to cheap houses where yearly costs are much higher and it is not environmentally friendly.

Social policy

It is a factor increasing the purchasing power of inhabitants. State provides benefits for living for families with lower wage.

Technological and Physical factors

This group of factors include everything which is directly visible and connected to the property itself.

Location

As it was already mentioned in the theoretical part the location is the most important factor influencing price. We have to consider a macro location which locates the certain city or village and then the micro location which takes into account exact location of the property in certain city.

Size

It is also one of the factors which are crucial for potential buyer. It is counted in m² and usually the larger is the size the higher is the total price.

Disposition of the apartment

It can lower or increase the price. It depends on the potential buyer what he/she prefers, if it is for young couple or family with children. Everybody has own opinion about right disposition. In general is wanted to have larger living rooms than bedrooms, to have bathroom close to bedrooms or corridor and not to be situated next to kitchen. Somebody prefers single kitchen and single living room, others like it more to be together.

Transport

Fast transport from home to work or school is vital. It considers not only the way by car and how long does it take to the city centre or to some bigger city, but as well the public transport. Possibility of railway or bus does increase the price of property. On the other hand living just next to loud highway or railway can decrease the price.

Age of the building

Usually we can say that younger is the building higher is the price. The reason is because of its over usage which leads to its fall into disrepair. On the other hand there can be old buildings which are more expensive just because of it age.

Quality of maintenance

It is crucial to take care of every building. Better is the status of maintenance higher is its price. In case of bigger reconstruction which is also included in this group can the total price of building reach a new build house.

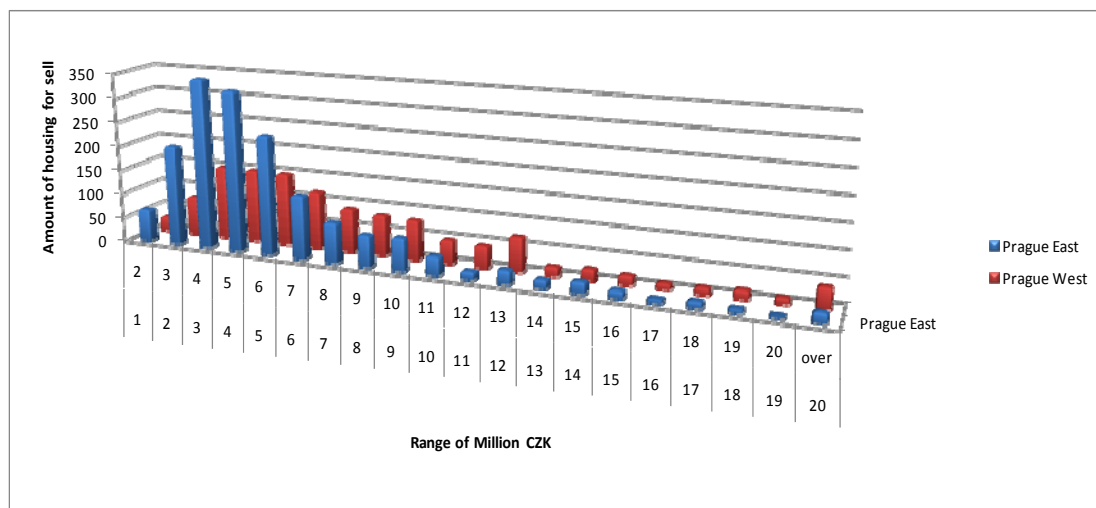
Technological – Physical factors may include many other factors such as architecture, furniture, lifetime, usability, and so on.

4.4 Comparative analysis

In this part will be compared two mentioned areas Prague East region and Prague West region. Comparative analysis shows which of these two areas is more convenient for middle class population and what people prefer.

Initial hypothesis is that Prague East region is from location and financial point of view more suitable for the selected group of people. Following graph no.8 describes both mentioned regions. On horizontal axes are ranges of millions CZK for one family house in each region. The high of slopes represent the amount of those family houses which are for sale at www.sreality.cz. From the graph is evident, that at Prague East regions there are more of cheaper properties and the trend is then sharply decreasing. On the other hand at Prague West region there are fewer properties in the most achievable range of prices (from 3 to 6 million CZK) but the amount does not decrease until 12 million CZK. It means that according to this graph the houses at Prague East region should be for the middle class population more achievable.

Graph no.8 – Price distribution of residential real estate in Prague East and West



Source: www.sreality.cz – own calculation

4.4.1 Data

For collection of all relevant factors were taken data from the Czech Statistical Office based on year 2010. One of the main factors which was supposed to be important for choosing a location was the salary in selected region. But based on pronouncement of Czech Statistical Office it was found out, that from the year 2006 there is no more evidence of such a data. There can be found salaries only according to Czech Bohemia region, but there is no division for each region.

All available collected data were put together. All of them were used in the questionnaire and then used for calculation of the comparative analysis.

4.4.2 Questionnaire

As an evidence for the comparative analysis were made questionnaires which are in supplement no.1 and supplement no.2. There are two of them because one is written in English for purpose of this diploma thesis. The other one is written in Czech language and it is the one which was given to the respondents. For respondents' better understanding of all asked questions was this questionnaire given in paper form. To have a sufficient number of filled questionnaires were asked 80 people. All these people were from capital city, Prague East region and Prague West region. The reason for that selection was because lot of people from capital city would like to move away from the rush of the metropolis and therefore they are really thinking about the reasons which region might be better and why. Respondents from the two regions were asked as they are already familiar with all advantages and disadvantages of selected region. From that knowledge it is supposed that they are the ones who can give correct significant answers. Unfortunately, as it was supposed, respondents' questionnaires were not all filled correctly according to our presumptions. Therefore it was possible to use answers only from 55 people. All respondents were from age 25 to 65 years old to make group according to respondents' age and popularity of certain region.

4.4.3 Calculation

There is also used own calculation of comparative analysis which represents table no.1.

To distinguish the difference in opinions there had been calculated this table two times. The first one is made for people who are younger than 45 years old and the second one is

for people older than 46 years old. The aim for such a division was to show - who is the target group of people who would be interested in the certain location.

Table no.1 – Calculation of comparative analysis

Factor - 2010 Respondents above 46 years old	significance	Prague East	Prague West	Points		Points	
				Prague East	Prague West	Prague East	Prague West
Unemployment (%)	4,26	3,3	3,9	3,61	4,26	4,26	3,61
Unemployment of women (%)	3,83	4,1	4,7	3,34	3,83	3,83	3,34
Unemployment of men (%)	4,17	2,8	3,3	3,54	4,17	4,17	3,54
Nr. of foreigners with long term visa in CR	2,26	7538	6884	2,26	2,06	2,26	2,06
Population density (inhabitants/km ²)	3,74	192	172	3,74	3,35	3,74	3,35
Proportion of forest	3,22	0,164	0,273	1,93	3,22	1,93	3,22
Proportion of agricultural land	3,13	0,599	0,487	3,13	2,55	3,13	2,55
Net migration	3,04	2836	2360	3,04	2,53	3,04	2,53
Total increase of population	3,13	3517	2989	3,13	2,66	3,13	2,66
Urban population (%)	3,26	0,434	0,369	3,26	2,77	3,26	2,77
Average monthly amount of old age pension	2,30	10039	10187	2,27	2,30	2,27	2,30
Nr. of kindergardens + elementary schools	2,83	95	93	2,83	2,77	2,83	2,77
Nr. of high schools, middle schools, training college	3,30	13	5	3,30	1,27	3,30	1,27
Nr. of hospitals	2,83	3	2	2,83	1,88	2,83	1,88
Nr. of physicians per 1 000 inhabitants	2,83	2,04	2,04	2,83	2,83	2,83	2,83
Nr. of dentists	3,87	38	31	3,87	3,16	3,87	3,16
Nr. Of pharmacies	3,39	18	13	3,39	2,45	3,39	2,45
Crimes	3,78	1069	967	3,78	3,42	3,42	3,78
Length of roads and motorways (km)	3,87	813,6	584,3	3,87	2,78	3,87	2,78
Dwellings completed	4,13	2133	1365	4,13	2,64	4,13	2,64
Traffic accidents	4,13	1516	1021	4,13	2,78	2,78	4,13
						68,28	59,62
						65%	57%

Factor - 2010 Respondents under 45 years old	significance	Prague East	Prague West	Points		Points	
				Prague East	Prague West	Prague East	Prague West
Unemployment (%)	4,41	3,3	3,9	3,73	4,41	4,41	3,73
Unemployment of women (%)	3,91	4,1	4,7	3,41	3,91	3,91	3,41
Unemployment of men (%)	4,38	2,8	3,3	3,71	4,38	4,38	3,71
Nr. of foreigners with long term visa in CR	2,41	7538	6884	2,41	2,20	2,41	2,20
Population density (inhabitants/km ²)	3,94	192	172	3,94	3,53	3,94	3,53
Proportion of forest	4,22	0,164	0,273	2,53	4,22	2,53	4,22
Proportion of agricultural land	2,84	0,599	0,487	2,84	2,31	2,84	2,31
Net migration	2,66	2836	2360	2,66	2,21	2,66	2,21
Total increase of population	3,34	3517	2989	3,34	2,84	3,34	2,84
Urban population (%)	3,28	0,434	0,369	3,28	2,79	3,28	2,79
Average monthly amount of old age pension	3,47	10039	10187	3,42	3,47	3,42	3,47
Nr. of kindergardens + elementary schools	3,94	95	93	3,94	3,85	3,94	3,85
Nr. of high schools, middle schools, training colleg	4,06	13	5	4,06	1,56	4,06	1,56
Nr. of hospitals	4,09	3	2	4,09	2,73	4,09	2,73
Nr. of physicians per 1 000 inhabitants	3,97	2,04	2,04	3,97	3,97	3,97	3,97
Nr. of dentists	3,84	38	31	3,84	3,14	3,84	3,14
Nr. Of pharmacies	3,19	18	13	3,19	2,30	3,19	2,30
Crimes	4,19	1069	967	4,19	3,79	3,79	4,19
Length of roads and motorways (km)	3,53	813,6	584,3	3,53	2,54	3,53	2,54
Dwellings completed	3,97	2133	1365	3,97	2,54	3,97	2,54
Traffic accidents	4,31	1516	1021	4,31	2,90	2,90	4,31
						74,40	65,55
						71%	62%

Source: own calculation

There are several factors which were as well in the questionnaire which may influence people to choose one or the other region which is being a better location for living. Based on questionnaires was made second column (as an answers average) which correlates with respondents opinions about certain factor and how this factor is important to them marked from 1 to 5 (1 being not important and 5 being crucial). Next two columns are filled with data from the two regions Prague East and Prague West. As it was mentioned, most of these numbers were taken from Czech Statistical Office for Czech Bohemia region.

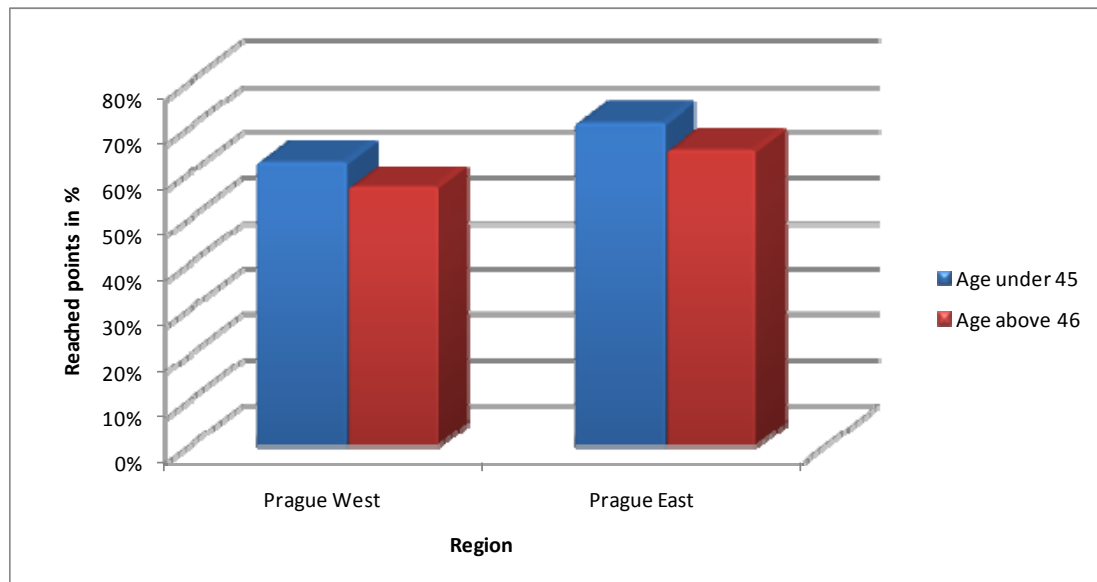
Following column was calculated as

Percentage difference between Prague East and Prague West values * significance

The results of this formula show the points gained by each region for the selected question. There was also taken into account the fact that some of the factors are negatively influencing the region. It includes all forms of unemployment, crimes and number of traffic accidents. All these factors are in the table highlighted by yellow colour. Therefore there were made last two columns which represent the final points.

For better illustration are the results represented graphically in a graph no.9. It shows in percentages that based on the questionnaire and its chosen factors, people in general are much more interested in Prague East region. If there is taken into account as well the age difference it is possible to see, that older people are more enthusiastic about this certain location.

Graph no.9 - Comparison analysis of Prague East and West region



Source: own calculation

As these two regions are according to age of population the youngest ones in the whole country, there are only slightly differences in their average age of population (according to the Czech Statistical Office). At Prague West region it is 38,1 and Prague East it is 38,3 average age of population. That exactly correlates with calculated result that in both cases there is higher interest of young people then of the older ones. From that finding it is possible to say, that our calculated results are statistically significant. Thanks to the calculation we also found out, that the initial hypothesis was accepted.

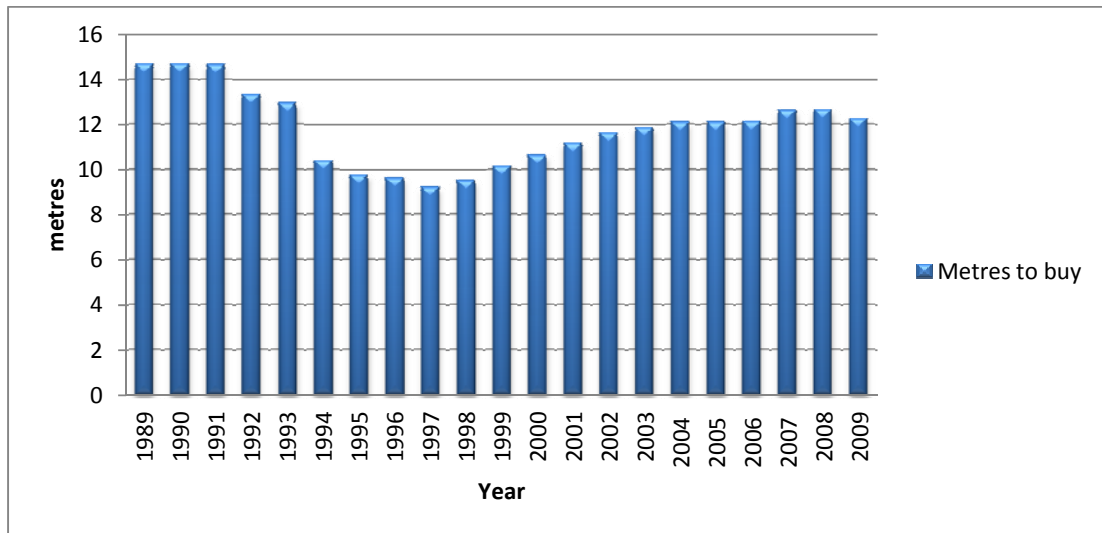
4.5 Economic analysis

At the beginning of this chapter there is necessary to describe the development of living in the Czech Republic. In graphs will be shown data from period after the Velvet revolution. These data were changing very fast and it took at least about 10 years to have prices and other factors which would be comparable to the present ones. Therefore for farther calculations will be used data only from years after 2000.

4.5.1 Development of apartment prices

First graph no.10 of this chapter represents the possible amount of squared metres which would be possible in the Czech Republic to buy from 1 year of average gross salary. Higher is the slope, higher would be the number of squared metres of flat in family house that one person would get from one whole year salary. From the graph we can see that the best time to invest into housing was definitely right after the velvet revolution. Next years it was rapidly decreasing, but since 2004 it is changing just slightly and people would get still about 12 square metres from their 1 year of average gross salary.

Graph no.10 - Square metres possible to buy

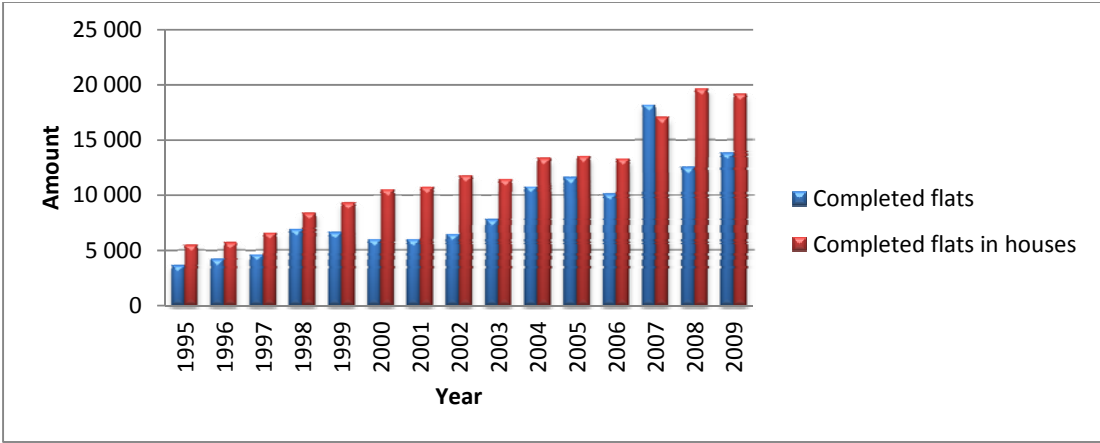


Source: CZSO - own calculation

From the next graph no.11 it is possible to see the rapid price growth of housing and how it has changed after the velvet revolution. In case of normal flats the prices of average apartment has growth from 870 thousand CZK in year 1996 to more than 2 millions in year 2009. In case of apartments in family houses we have even longer data set and the tendency in the mid twenties was growing almost 300 thousand CZK every year. In general we can say that if we would invest 319 thousand into apartment in family house in

year 1989 it would be two years ago possible to sell it for more than 3 100 000 CZK. Mathematically there would be 100% increase in our investment. It is a huge difference, but on the other hand there are also other factors influencing the money difference. Mainly it is important to mention the real value of money – inflation and what it is really possible to buy for the same amount of money.

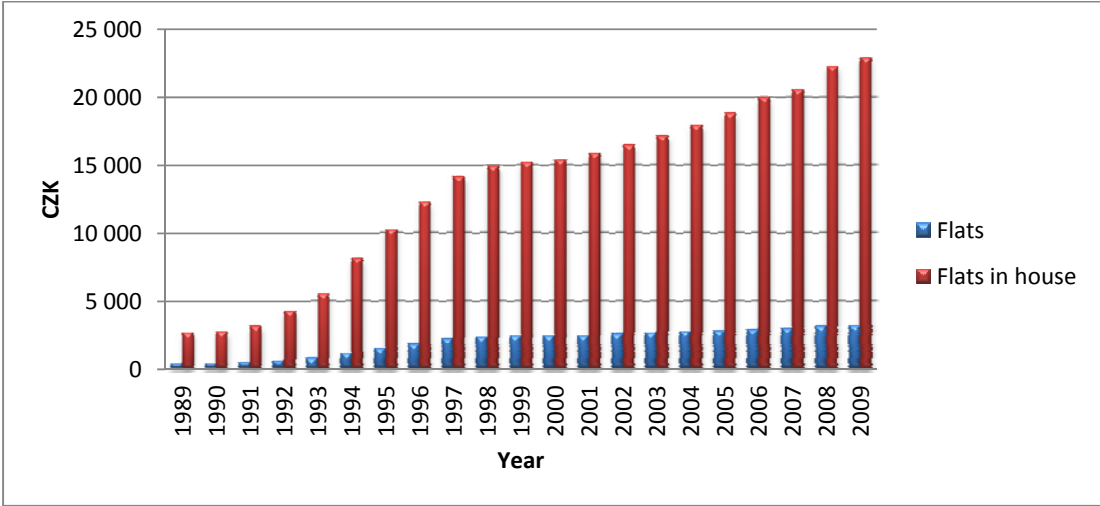
Graph no.11 - Amount of completed flats



Source: Own processing data from CZSO

Graph no.12 represents the amount of newly build – completed flats again divided to flats and flats in houses. We can see the permanent growing tendency. Even there was oversaturation of market still there are many developers who still build new and new housing.

Graph no.12 - Amount of newly build flats



Source: Own processing data from CZSO

All these previous graphs show the importance of understanding financing of housing which in people's life in the Czech Republic account for about 25% of their monthly salary. In case of retired people it is even about 60% of their incomes.

4.5.2 Mortgage vs. Rent

This part of diploma thesis should show the two main common forms of financing of own living. As it is obvious all around the world, young people usually do not have enough money to buy their first home in cash. Therefore as it was already mentioned it is very popular nowadays to buy a house on mortgage. Other common possibility of financing a living is renting the desired house.

In the Czech Republic we also have to mention that there exist so called regulated rents which are paying people living in houses of those who restituted the certain building. These regulated rents are regulated by state and they are usually much lower. On the other hand even these rents are increasing. Many people who were used to live in these regular housing are in these days often moving to own housing which they usually finance by the mentioned mortgage. Thanks to the fact that the regulated rents are no longer possible to newly rented housing, in this diploma thesis will be used only market rents – rents.

As this diploma thesis is mainly about middle size family houses in Prague East region we will take into account only this type of housing. It excludes large houses, simple flats, offices, halls, and so on. First of all we have to consider all benefits and negatives of both possibilities.

Table no.2 – Comparison between mortgage and rent

House mortgage		House - renting	
Positives	Negatives	Positives	Negatives
Own property	More complicated if you want to move	No obligations	It will never be own
Possible to make changes according to personal wants and needs	Difficult agenda	In 20 years people can move for example every year	Rent grows
Potential profit in future - in future it is supposed to have higher price and it is possible to sell it	Guarantee by the property	No problems with maintenance	Regular payments to somebody else - not payments to make to increase of own property
Potential amount of regular profit - Possibility of renting it to somebody else	Splatky of morgage is possible to deduct from taxes	Procure of rent is simple and fast	
Possibility to buy or build house according to personal wants and needs	Other payments related to house such as tax from property or insurance	Financial freedom - even when people do have money, they can invest them into business or life itself	
Prices of housing are growing	More maintenance		
Nobody can move the persons out of the house			

Source: own findings based on literature review

From this table no.2 above it is seen that both of the methods do have variety of pros and cons. It definitely depends of the exact person, couple or family what is their life style and what they expect from their living. If they see their housing more as an possible investment or if they need to move more often or do not want to commit to pay many years the same amount of money as it is necessary for mortgages. Some other people are just afraid to take a mortgage because they do not trust banks.

4.6 Financial analysis

As it was already mentioned, the family housing in the Czech Republic is popular. On the other hand there are build as well apartment houses. In this case the family houses and the flats in them account only for 8,1%. Most of these are build only for own use. Family houses which are build for being rented are very few (only about 0,4% of all build flats in family houses are for rent proposes).

However, in this chapter will be compared two properties – one for sale and the second for rent. Results should show which of these possible types of financing is advantageous.

For propose of this diploma thesis and for more visible comparison were chosen two absolutely the same family houses from Prague East region. One is for sale, the second is for rent. Both these houses are located in city Říčany which is being one of the most popular ones thanks to the very close access to capital city by car, bus and even by train. Also this location is being popular for providing all necessary services and its very good environment. Selected houses are situated in a row of four same condominiums. Both these houses are newly built in 2011 and finished this year 2012. Houses are placed in advertisement of Czech real estate server – www.sreality.cz.

Main parameters:

- Price of house for rent is 17 500 CZK per month plus 3 500 CZK for charges
- Price of house for sale is 3 990 000 CZK including provision to real estate agency
- Size of flat: 107,5 – 135m² (the difference is in so called studio which is a room in third floor)
- Size of plot: 220m²
- No. Of rooms: 3 (4) + kitchenette, two bathrooms, one extra restroom

Picture no.4 - House for sale or rent – Říčany (Prague East region)



Source: www.sreality.cz

The reason why these two absolutely same houses were chosen is for better differentiation of the two mentioned possibilities of financing – mortgage vs. rent. We would like to compare costs for rented and costs for bought family house and find out what is better from economic point of view. We also like to mentioned that there was set 100% mortgage (which is not always possible, but in case of some banks and high regular salary

it is achievable). The reason for that was to show the exact difference regardless own savings. In reality it would be much better to have at least 30% of own sources for financing a certain family house.

In following table are represented all supposed costs including the main expense which is the rent or monthly payment of the mortgage.

Table no.3 - Costs for house (mortgage vs. rent)

	House - mortgage		House - rent	
	1 month	1 year	1 month	1 year
Regular payment	23 140	277 680	17 500	210 000
Insurance	800	9 600	-	-
Tax from real estate	87	1 042	-	-
Monthly charges	3 500	42 000	3 500	42 000
Extra costs	269	3 225	-	-

Source: own calculation

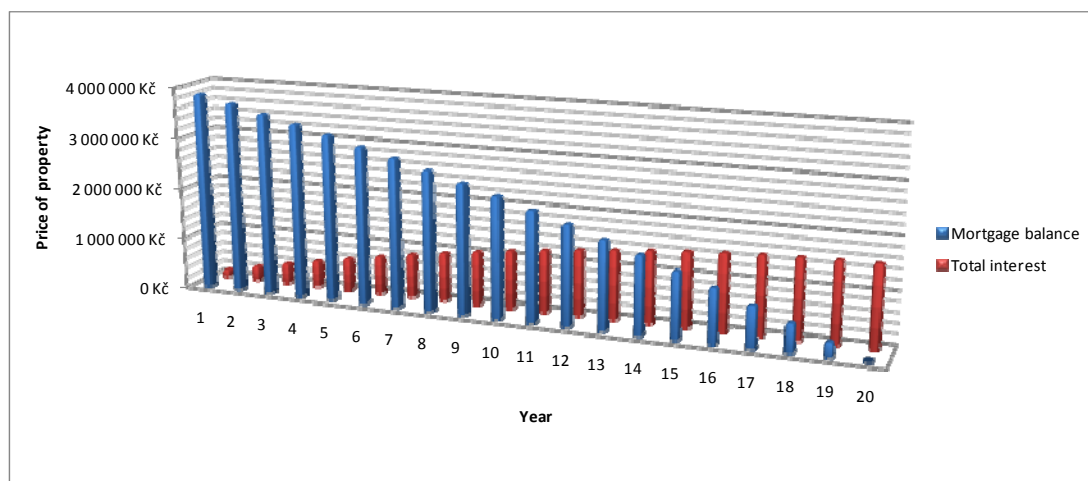
For better understanding of all expenses in table no.3 were all costs first set for each month individually and then multiplied by 12 to get year costs.

Bought family house

The amount of monthly payment of mortgage was calculated by mortgage calculator. For better understanding was made graph no.13 which shows the yearly paid interest and yearly rest of not paid mortgage. As we can see, at the beginning there is paid mainly the interest and only small amount of money goes to the mortgage itself. Only after 14 year of paying the instalments this rate turns and people are starting to pay more for the mortgage than for the interest. Thanks to these typical high payments of interest will the total some paid to bank reach:

$$\begin{aligned}
 & 3990000 \text{ CZK (the initial price of the house)} \\
 + & \underline{1\,563\,694 \text{ CZK (the total sum of the interest paid to the bank)}} \\
 = & \mathbf{5\,553\,694 \text{ CZK (the total price paid for the house excluding all variable costs and charges)}}
 \end{aligned}$$

Graph no.13 - Mortgage with the interest



Source: own calculation

Other costs related to own house which are in the table no.3 is the “insurance”. The sum was calculated based on average yearly insurance for this type and size of housing.

As it was mentioned in the theoretical part, the “tax from real estate” is paid once a year by the owner of the property. This amount was again calculated as an average sum for such type and size of house in given location.

“Monthly charges” were set at the same level as the monthly charges for rented house set by the owner from the advertisement.

“Extra costs” should include all possible expenses related to the new house which would be necessary to buy during the first 20 years and which would be in case of rent paid by the owner. We expected them to be as seen in table no.4.

Table no.4 - Own house costs

	Price	How many times in 20 years	Total sum
New boiler	10 000 CZK	3	30 000 CZK
Repair of stove	2 000 CZK	6	12 000 CZK
Small repairs	1 500 CZK	15	22 500 CZK
In 20 years			64 500 CZK

Source: own calculation

Rented family house

In case of the rented house from our chosen advertisement was the rent set by the owner at 17 500 CZK per month. We also have to include the desired 3 500 CZK for charges. On the other hand there are not any other extra costs. Therefore the rest is zero CZK.

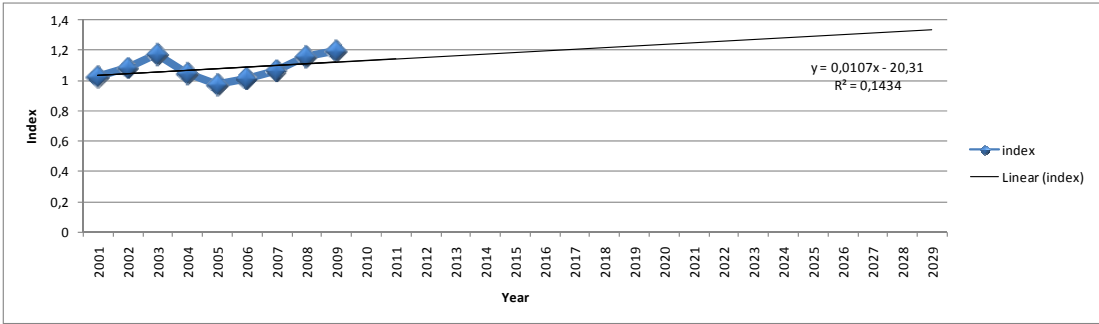
4.6.1 Calculations

For following calculations were used data in form of indexes. To form these indexes is the Czech Statistical Office using prices of Czech real estate agencies. There is always set one year as a base line according to which are the percentages then increasing or decreasing. The results then show the percentage increase or decrease in set period of time. Usually it means one year.

Index for prices of family housing was in last years growing bit more slowly than in case of prices of land. On the other hand Prague East and Prague West region were the only two regions in Czech Bohemia region which had the fastest increase. From year 2006 and 2007 it slowed down, but the tendency is still increasing.

As it was mentioned above we will not take into account the same rent for every year in the 20 years of the period. We expect it to be growing. It does not mean that it will grow every year by small amount of money, but the price of rent can be changed every 5 years. In reality nobody can predict the future for such a long time, but for purpose of this thesis was made a graph no.14 which describes the indexes of rents from 2002 to 2008. As well there was made a prediction for the selected 20 years. It should show the possible trend in rents in the Czech Republic. Based on the graph was calculated a table which is in supplement no.3. That gives us the values calculated to the end of the mortgage period (year 2032). From the calculation it is evident, that we may expect the 17 500 CZK to grow every year by about 1%. Therefore in the table no.5 will not be 17 500 CZK, but the recalculated rent for every year.

Graph no.14 - Indexes of rents in the Czech Republic



Source: CZSO – own calculation

In next table no.5 is possible to find values of bought house where is used set yearly mortgage by the calculator, yearly charges and the extra costs. For rented house there is

used the calculation of grow of rent every year. Charges are left to be the same – 3 500 CZK per month.

Table no.5 - Payments in 20 years

Date	Rent - monthly payment		Own house - monthly payment			Year costs	
	Rent	Charges	Mortgage	Charges	Extra costs	Rent	Own house
2012	17 500	3 500	23 140	3 500	3 225	213 500	284 405
2013	17 661	3 500	23 140	3 500	3 225	215 434	284 405
2014	17 822	3 500	23 140	3 500	3 225	217 367	284 405
2015	17 983	3 500	23 140	3 500	3 225	219 301	284 405
2016	18 145	3 500	23 140	3 500	3 225	221 234	284 405
2017	18 306	3 500	23 140	3 500	3 225	223 168	284 405
2018	18 467	3 500	23 140	3 500	3 225	225 101	284 405
2019	18 628	3 500	23 140	3 500	3 225	227 035	284 405
2020	18 789	3 500	23 140	3 500	3 225	228 969	284 405
2021	18 950	3 500	23 140	3 500	3 225	230 902	284 405
2022	19 111	3 500	23 140	3 500	3 225	232 836	284 405
2023	19 272	3 500	23 140	3 500	3 225	234 769	284 405
2024	19 434	3 500	23 140	3 500	3 225	236 703	284 405
2025	19 595	3 500	23 140	3 500	3 225	238 636	284 405
2026	19 756	3 500	23 140	3 500	3 225	240 570	284 405
2027	19 917	3 500	23 140	3 500	3 225	242 504	284 405
2028	20 078	3 500	23 140	3 500	3 225	244 437	284 405
2029	20 239	3 500	23 140	3 500	3 225	246 371	284 405
2030	20 400	3 500	23 140	3 500	3 225	248 304	284 405
2031	20 561	3 500	23 140	3 500	3 225	250 238	284 405
2032	20 723	3 500	23 140	3 500	3 225	252 171	284 405
2033	20 884	3 500	23 140	3 500	3 225	254 105	284 405
SUM IN CZK						5 143 654	6 256 910
DIFFERENCE IN CZK							1 113 256

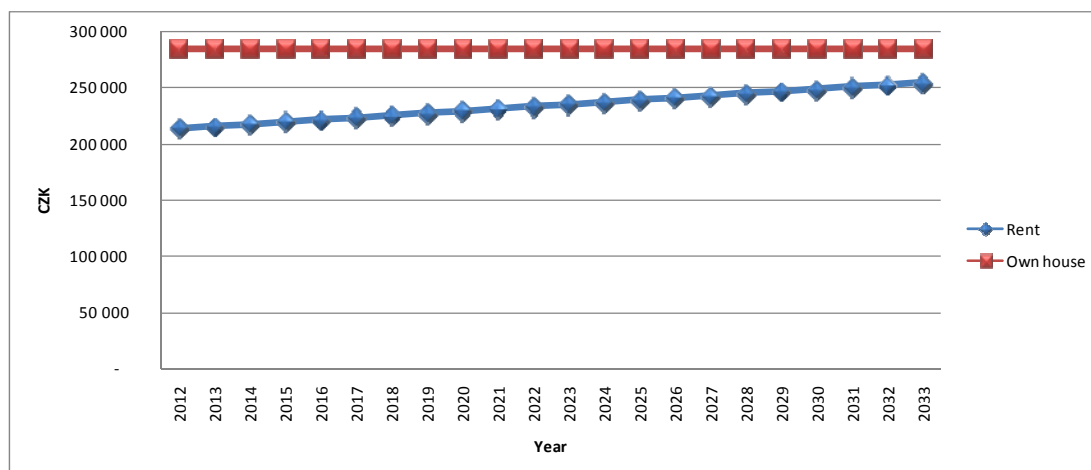
Source: own calculation

In the right side of the table no.5 are recalculated total costs for each year of both possible forms of financing. As it was supposed, there are necessary higher costs for bought family house. The difference in the costs is set at 1 113 256 CZK. To represent it graphically was made chart no.15 where the last values in the year 2032 correspond to the costs variation.

In other words we can say that during the set period of time, the family in fact had bought the house for 1 113 256 CZK which is the difference between the total costs of rented house compare to the house which was financed by 100% mortgage.

All other expenses were the same as for the rented house, but the crucial difference is that in year 2032 the house does not belong to previous owner, it is not banks property, but it is the family's property.

Graph no.15 - Total costs (rent vs. own house)



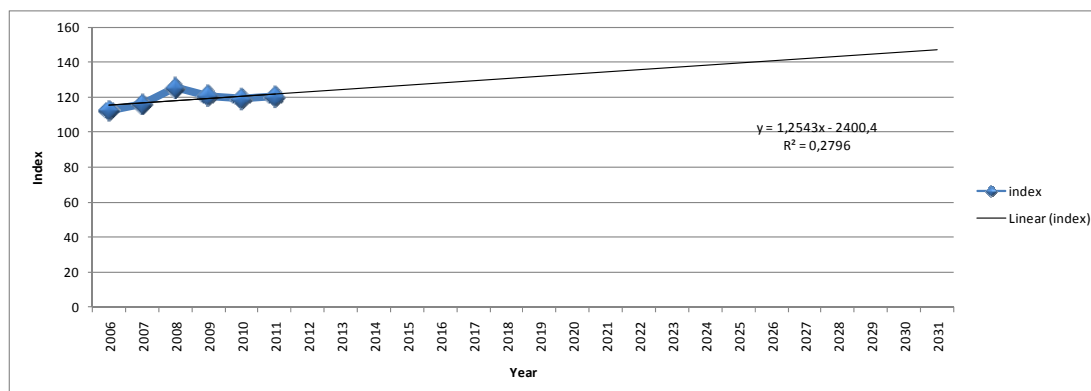
Source: Own calculation

On the other hand we have to consider the most important question which is:

Is it profitable to invest above one million CZK into housing during twenty years?

For getting the answer was calculated a prediction of price indexes of family houses at Prague East and Prague West region. As it is shown in graph no.16 the trend is again increasing.

Graph no.16 - Indexes of sold family houses (2005 = 100) at Prague East, Prague West region



Source: Own calculation

Thanks to the prediction and its linear formula was calculated the possible increase in the given 20 years period.

It shows that according to statistics there can be during 20 years increase of 16,91%. In case of our chosen house which in year 2012 is for sale for 3 990 000 CZK the price might grow to even 4 664 818 CZK.

To conclude it, the family which invested 1 113 256 CZK more in 20 years which accounts for 4 638 CZK every month will have in year 2032 property in value of

4 664 818 CZK. In general it is possible to say that thanks to the invested money for example at the beginning of a partnership it can be a possible way how to earn money to give your children when they grow up.

4.6.2 Net Present Value

It is a method which evaluates if the investment which we would like to make will be profitable. There might be always many and many other factors which can change the situation, but in general in case of our chosen family house at Prague East region we expect it to be a prosperous investment. That means the results should be over given period of time higher than zero.

Based on previous chapter we expect investing into own housing to be more profitable than investing into renting the same property. This chapter should show whether it will be really efficient way of investing into housing at all.

Calculation

To calculate whether it is rational to invest into housing during 20 years, there was used the formula for net present value.

$$\frac{CF}{(1+r)^t}$$

Minus the initial investment and plus the selling price

In following calculation were used data as it is seen in table no.6 precised as possible. The calculation takes into account the price of the property in time of buying it which is 3 990 000 CZK. To show the final selling price in 20th year there was the value of property for each year recalculated based on prices in past and with that correlated and calculated trend for the next 20 years. For better understanding was made a table which is in supplement no.4. As it was mentioned in previous chapter, the prices are increasing. For the 20th year the selling price is calculated to be 4 664 818 CZK.

As a profit – cash flow we expect the own property to be rented (only as a place for living – no commercial purpose) for the same amount as it was advertised in the www.sreality.cz. Therefore it is 17 500 per month. There was again calculated the trend and prediction and there were used different rents for each year. Based on the fact, that family housing is usually rented for many years (not only for few months), the house is expected to be fully rented during the whole period. In this stage of the calculation was the

cash flow lowered by the interest which is paid to the bank every year and which is changing every year.

In most times the net present value is calculated for business proposes. That means there is usually 5% discount rate as it is said by the structural funds. In case of net present value of a family living, there was chosen the same amount as it is set by the bank to be monthly interest rate – 3,5%. The reason for such a selection was that in case the family would like some other house, the interest rate would be in the bank the same. It means the family would be taking the same risk.

From that knowledge the net present value was calculated as:

$$NPV = (\text{yearly profit [rent in each year – the interest in each year]} / (1 + \text{discount rate } 3,5\%)^{\text{time period}})$$

As it is seen in the table the investment into such a house even with 100% mortgage for 20 years will be a prosperous investment.

Table no.6 - Net present value

Year	Interest in selected year	Value of property in selected year	Monthly rent	discount rate
2012		3 990 000	17 500	3,5%
2013	137 414	4 030 200	17 661	3,5%
2014	132 425	4 069 598	17 822	3,5%
2015	127 259	4 108 217	17 983	3,5%
2016	121 908	4 146 082	18 145	3,5%
2017	116 368	4 183 213	18 306	3,5%
2018	110 630	4 219 631	18 467	3,5%
2019	104 689	4 255 358	18 628	3,5%
2020	98 536	4 290 412	18 789	3,5%
2021	92 164	4 324 812	18 950	3,5%
2022	85 565	4 358 577	19 111	3,5%
2023	78 733	4 391 724	19 272	3,5%
2024	71 656	4 424 270	19 434	3,5%
2025	64 329	4 456 230	19 595	3,5%
2026	56 740	4 487 621	19 756	3,5%
2027	48 882	4 518 458	19 917	3,5%
2028	40 744	4 548 755	20 078	3,5%
2029	32 317	4 578 526	20 239	3,5%
2030	23 589	4 607 785	20 400	3,5%
2031	14 553	4 636 545	20 561	3,5%
2032	5 193	4 664 818	20 723	3,5%

NPV
355 801

Source: Own calculation

As we know that this investment is not being very risky and there is still growing number of people taking the mortgages it does not matter even the fact that the calculated net present value is not very high (355 801 CZK). It would have to be much higher if the investment would be made into some kind of a risky business.

In fact, after pay off the mortgage in 2032 the investment would be more and more profitable every year because the prices of real estate are expected to grow and because there will be higher cash flow which would not be lowered by the necessary interest paid to the bank.

Thanks to all previous calculations it would be highly recommended to put money into such housing not only to have better living, but as well to increase family's finances.

4.7 Regression analysis

In this part of the diploma thesis is the aim to find out which factors are mostly affecting the total price of real estate at Prague East and Prague West region. The intent was to search for as many different factors and as many observations.

4.7.1 Data gathering

To have the largest possible number of results there was a need to use any program which would automatically download the desired data. For the findings was used specialized program “iMacro”. That allows extracting wanted data from the real estate web www.sreality.cz. First of all there has to be defined the elements which will be extracted. After that this program does it without any need of persons help. To collect the data took about 7 hours together. Thereafter data are needed to be sorted as it is required for the work with it. Thanks to this program was downloaded 2823 adverts for variety of real estate at the two mentioned regions. It was gained in about 25 categories, but some of them were not relevant for calculation – such as the link, how long is it passed on the www.sreality.cz, type of ownership and so on. Therefore we got 19 main important categories.

For regression analysis itself was not possible to use all 2823 adverts which were extracted. The reason was that for counting the analysis in Microsoft Excel it is not possible to use observations which would not have all values for all variables as well as it is not possible to use those values which are described by words not by number.

As it was expected to have only numerical data it was necessary to change many of them. On the other hand, to make the regression analysis as precised as possible there were used only the ones which were not necessary to change or which were really relevant. It included

- Explained variable
 - Price
- Explanatory variables
 - Location
 - Type of house
 - Size
 - State of building
 - Type of house 2
 - Building-up area

- Size of plot
- Balcony
- Terrace
- Garage
- Parking space
- Cellar

Where there was not number itself (such as size in metres), there in most cases was used number “0” when the variable was in the real estate not included and number “1” when the variable was included. In cases where there were more possibilities for one variable such as type of building, there was expected the same length from each possibility to another. Thanks to that there were employed numbers from 1 to 5. Special situation was for “year of final approval” and “year of reconstruction”. To have more data collected there was used function “maximum” to include only the newer year of those two variables.

After filtrating only those adverts which do have all values, was gained 2546 real estate adverts with 13 variables. That amount is for calculation still a high number of observations.

To find out how each variable was recalculated from “word value” to “numerical value” was made a table which is in supplement no.5.

4.7.2 Pivot tables and standard deviation

Pivot tables were used for graphical visualization of all factors which influence the price. It is a very useful and practical tool to sort such a large amount of data which was get thanks to the “iMacro”. It is a Microsoft Excel tool which provides us with calculation of amounts, averages, standard deviation and many others of chosen variables.

For building a pivot tables were available to use variables such as:

- Price
- Location
- Type of house
- Size
- State of building
- Type of house 2
- Building-up area
- Size of plot
- Balcony
- Terrace
- Garage
- Parking space
- Cellar
- Size - interval
- Material of house
- Site of house
- Usable area
- Size of plot – interval
- Size of garden
- Year of approval
- Year of reconstruction
- Final year of reconstruction or approval
- Furnished
- Gas

First pivot table no.7 represents real estate at Prague East and Prague West according to their size. There was used an interval to illustrate square metres of certain property with corresponding average price. From the table is seen that at Prague East regions there are higher amount of houses for sale. On the other hand until 200 square metres per property there is still higher number, but from the selected interval (201-250 m²) this amount is higher at Prague West region. With then correlates the fact, that Prices at Prague West are in all cases much higher in all selected sizes of houses. Last column represents the standard deviation which is in this case higher as the price of property and its size is higher. Lower standard deviation is at Prague East which means there are more similar properties with similar prices and smaller differences between the prices.

Table no.7 - Pivot table – Prices based on size interval

Location	Size interval	Count	Average of Price	StdDev of Price
Prague East		1616	5 999 908	5 162 908
	51-100	217	2 988 342	1 079 406
	101-150	520	4 218 928	1 277 757
	151-200	342	5 455 206	2 131 118
	201-250	203	7 114 665	2 968 209
	251-300	112	8 205 168	4 159 438
	301<	222	11 822 533	10 563 037
Prague West		1207	8 228 810	6 916 179
	<50	6	2 573 917	1 668 760
	51-100	108	3 345 072	1 709 296
	101-150	220	4 701 016	2 012 905
	151-200	275	6 803 446	2 550 790
	201-250	169	8 528 219	3 746 048
	251-300	139	9 611 939	4 968 236
	301<	290	13 355 045	10 998 667
Grand Total		2823	6 952 896	6 075 611

Source: Own calculation

Second pivot table no.8 represents the amount of all houses which are for sale at Prague East and Prague West region at www.sreality.cz. There is made a division according to type of the house. From the table is visible, that most houses in these two regions are family houses. On the second place are villas which in reality are bigger family houses and which based on the tables cost in general twice as much. Villas are even more expensive than residential houses which are usually possible to sell by individual flats. Low energy, turnkey and wooden houses are quite rare in this location. Their average price is lower and with that correlates the lower standard deviation.

Table no.8 – Pivot table - Prices according to type of house

Type of house	Count	Average of Price	StdDev of Price
Family House	2643	6 662 391	5 777 925
Low energy	26	5 803 070	2 903 416
Residential	13	10 351 769	5 892 904
Turnkey	22	7 593 301	4 587 951
Villa	107	14 213 474	9 062 862
Wooden house	12	3 831 491	1 242 842
Grand Total	2823	6 952 896	6 075 611

Source: Own calculation

Third pivot table no.9 was made to show whether it is more profitable to sale house with furniture or not. Thanks to this pivot table it is seen that even the sum of houses was not equal there is growing tendency of average price if the real estate is partly or even fully furnished.

Table no.9 – Pivot table - Prices according to furnishing

Furnished	Count	Average of Price
No	229	7 073 081
Partly	117	7 790 876
Yes	114	9 775 339
Grand Total	460	7 925 341

Source: Own calculation

Last pivot table no.10 vertically divides properties according to their state and horizontally according to their size in different intervals. In grand total it is interesting, that absolutely new buildings are cheaper than houses after reconstruction. The reason is partly seen in the sizes of properties. If the size is above 200 m² it is more expensive to buy reconstructed house, if the size is smaller, it is more expensive to buy new house. The reason for such trend can be that there is higher amount of smaller real estate which are newly build (mainly by developers) and in case of large properties there is smaller variety and therefore it is costly, but profitable to reconstruct the building. As well it is good to mentioned that people owning small properties are usually making only average reconstruction when it is necessary and owners of large villas dispose with lot of money and therefore they can make expensive and high quality reconstructions which may be much better or comparable than to build new house.

Table no.10 – Pivot table - State of building corresponding with interval of size

Average of Price State of building	Size interval <50	51-100	101-150	151-200	201-250	251-300	301<	Grand Total
New building	544 500	3 638 838	4 711 017	6 615 941	8 901 751	10 273 152	14 494 807	7 528 868
Very good	3 675 000	3 200 052	4 406 170	6 106 953	7 616 204	8 878 444	13 661 807	7 959 397
After reconstruction		3 205 350	4 256 931	5 822 161	7 689 000	11 291 818	15 366 053	8 697 054
Under construction		3 018 311	4 046 627	4 624 122	6 647 500	5 661 583	8 077 316	4 809 791
Good	2 516 333	2 763 245	3 984 259	5 396 298	5 785 024	5 919 091	8 287 713	5 251 589
Poor		1 834 762	1 445 000		273 300		6 649 667	2 765 818
Before reconstruction		2 475 643	2 912 785	3 984 655	2 887 500	3 836 667	6 063 588	3 572 531
Grand Total	2 573 917	3 114 147	4 377 719	6 061 022	7 768 211	8 949 755	12 690 557	6 993 271

Source: Own calculation

4.7.3 Multicolinearity

As it was already mentioned, for the regression analysis was used Microsoft Excel. First of all there was necessary to install special “application” which is the “data analysis”. It includes not only the regression but as well the correlation.

To check the model for occurrence of multicollinearity was thus set up the correlation matrix. If there would be higher number than 0,8 between two explanatory variables there would be necessary to exclude the one variable from the model or to use dummy variable or first differences.

Based on prepared data was get following correlation matrix in table no.11. From the results it is seen that there is no need of any modification and the model can be used as it is.

Table no.11 - Correlation matrix

	Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balkony	# Garage	# Parking space	# Terrace	# Cellar
Price	1												
# Location	-0,174291	1											
# Type of house	0,211842	-0,028577	1										
Size	0,448055	-0,112062	0,110339	1									
# State of building	-0,205279	-0,022258	0,031926	0,027786	1								
# Type of house II	0,152930	-0,078481	0,034913	0,124722	-0,119313	1							
Build-up area	0,345679	-0,061701	0,089505	0,457548	0,137711	-0,002581	1						
Size of plot	0,566309	-0,034001	0,056472	0,380927	0,068281	0,028069	0,352403	1					
# Balkony	0,160069	-0,053266	0,018360	0,117815	-0,101366	0,182152	-0,000960	0,045853	1				
# Garage	0,196959	-0,071853	0,044560	0,074977	-0,112806	0,139945	0,073683	0,082058	0,176173	1			
# Parking space	-0,011306	-0,017099	-0,065713	0,023718	-0,003720	0,005114	-0,005108	0,002589	0,124189	0,043582	1		
# Terrace	0,161245	-0,053552	0,025232	0,031567	-0,218402	0,115161	0,031385	0,045386	0,191312	0,353912	0,184293	1	
# Cellar	0,077650	-0,106698	0,029032	0,100811	0,212594	0,094367	0,118093	0,107070	0,153944	0,209757	0,148700	0,164035	1

Source: Own calculation

4.7.4 Calculation of regression

To find out the regression was again used “data analysis” in the Microsoft Excel. The results for the 12 variables are in supplement no.6. Unfortunately there was higher number of P-value in 3 cases. It means that these values were insignificant. It included the parking space, terrace, and cellar. As we can see, these three variables are not very relevant and therefore it was decided not to rebuild the model, but to exclude them from the model.

To calculate prices only of family housing was get the following summary output in table no.12. In this analysis the P-value is always lower than 5%. The output represents the final results of remaining 9 parameters including 841 observations. There are only the significant parameters which are influencing the prices of real estate. Whole table is in supplement no.7.

Table no.12 - Regression analysis

SUMMARY OUTPUT

<i>Regression Statistics</i>		
Multiple R	0,985474524	
R Square	0,971160038	
Adjusted R Square	0,970847691	
Standard Error	743698,0159	
Observations	841	

	<i>Coefficients</i>	<i>P-value</i>
Intercept	3620504,282	6,8524E-182
# Location	-1397536,224	7,0509E-111
# Type of house	951981,4557	1,0704E-118
Size	3969,37525	6,86834E-74
# State of building	-704721,8305	1,4137E-224
# Type of house II	766766,2801	1,19949E-25
Build-up area	4097,265062	2,38495E-54
Size of plot	1926,096571	0
# Balkony	685194,4154	6,16876E-27
# Garage	884374,8728	3,15453E-54

Source: Own calculation

In the table no.12 above it is as well seen the coefficient of determination which describes in percentage how much of behaviour of the explained variables is explained by the predetermined variables. In case of this 10 parameters it is 97,11%. In case of adjusted coefficient of determination it takes into account as well the number of the explanatory variables which are in the model and in this case it accounts for 97,08%. Both these percentages are very high which gives to given model even higher significance.

Thanks to Microsoft Excel, its data application and regression, we get following function:

$$\text{Price of Real Estate} = 3620504 + (-1397536) * \text{location} + 951981,5 * \text{type of house} + 3969,375 * \text{size} + (-704722) * \text{state of building} + 766766,3 * \text{type of house II} + 4097,265 * \text{build-up area} + 1926,097 * \text{size of plot} + 685194,4 * \text{balcony} + 884374,9 * \text{garage}$$

To find out how the chosen 841 adverts fits to the function was made table no.13 (the whole table with all 841 adverts is in a supplement no.8). In blue colour are values from which was calculated the regression. The yellow values on the top represent the calculated coefficient. The first yellow column is than calculated from the given function and on the

right side in column called difference we can see the percentage difference between the price from www.sreality.cz and our calculated price. From the table it is evident that it fits very well and there are only in average about 9% differences between the real price of the property and the calculated price of the property. As it was mentioned the remaining results (of the table) are possible to see in supplement no.8.

Table no.13 - Calculation of regression analysis

Intercept	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	Average Diff = 9%
3 620 504	- 1 397 536	951 981	3 969	- 704 722	766 766	4 097	1 926	685 194	884 375	

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
3 500 000	1	1	103	1	0	103	103	0	0	3 499 480	0%
6 900 000	0	1	242	2	1	102	366	0	1	6 897 644	0%
7 089 750	0	1	309	2	1	82	372	0	1	7 093 204	0%
4 890 000	0	1	320	5	1	111	240	0	1	4 887 277	0%
6 900 000	0	1	242	2	1	104	366	0	1	6 905 839	0%
6 950 000	1	1	206	3	1	129	1505	0	1	6 956 939	0%
6 290 000	1	1	170	2	1	94	946	0	1	6 298 671	0%
4 276 800	1	1	105	1	0	105	495	0	0	4 270 643	0%
5 900 000	1	1	212	1	1	129	676	0	0	5 909 090	0%
7 499 000	0	1	210	1	1	122	801	0	0	7 510 769	0%
7 500 000	1	1	245	2	1	154	925	1	1	7 486 957	0%
6 000 000	0	1	165	5	1	93	1285	1	0	6 011 864	0%

Source: Own calculation

From this calculation is evident which factors are most influencing the price of the real estate and their order as it is seen in table no.14 below.

Table no.14 - Order of variables influencing the price of property

ORDER	VARIABLE	COEFFICIENT
1	Intercept	3 620 504,28
2	# Location	- 1 397 536,22
3	# Type of house	951 981,46
4	# Garage	884 374,87
5	# Type of house II	766 766,28
6	# State of building	- 704 721,83
7	# Balcony	685 194,42
8	Build-up area	4 097,27
9	Size	3 969,38
10	Size of plot	1 926,10

Source: Own calculation

The given order should represent the reality and its influence on total price of real estate. The only exceptional variable is the balcony which scored with high coefficient and which is not very obvious to be influential for the price. On the other hand there are two negative values which correctly represent the reality – Location and State of building. As it was said, that Prague East region is represented by “1” and Prague West by “0” it is evident, that if the property is located at Prague West region, its value will be much higher only thanks to its location. In case of state of building, it was said, that better is the state, lower is the number (supplement no.5). It means that if the building would be new, than the price

will be higher whereas if the building would be before reconstruction, that the coefficient would be lowering the price.

These results can be helpful for those who are interested in buying new family housing in one of the selected regions and for those who would like to find out if the price set by the owner is equivalent to other properties. Based on the equation given in this diploma thesis and thanks to the parameters which are the real estate agency advertising, it is possible to calculate the possible price. If the price set by the owner would be higher this function can be an argument for lowering the price and potentially buying the property cheaper. According to the calculations the average difference between the real price for sale and the calculated price for sale is 9% .That is a low number which can be as well the difference between the price calculated by one of the pricing methods and the price wanted from the owner or calculated by other pricing method.

5 Conclusion

The main aim of this diploma thesis was to analyse the residential real estate market at Prague East region from different viewpoints. As this thesis is supposed to be helpful for those who will be interested in buying or selling their house, it includes all relevant information starting with the theory background. Thesis covered facts as well as detailed description of important terms.

In the PEST analysis it was found out, that it is very useful to understand the situation on the market. Thanks to those findings we should understand, what are the factors which we have to take into consideration before deciding to invest or to sell any type of property.

In the comparative analysis there was the hypothesis, that the Prague East is more affordable for the middle class population than the Prague West. This hypothesis was accepted. Based on the answers from respondents' questionnaires were factors found out which are important for the people. Comparing their opinions with real facts and numbers primarily from the Czech Statistical Office, it was found that Prague East region is for people in all ages more popular. Answers were based on the situation in the region of their desired place for living.

According to statistics, these two regions are the youngest ones in the whole country, and it exactly correlates with the calculated results that in both cases, there is higher interest of young people over the older ones.

Economic analysis was very crucial to discover whether it is better, from financial point of view, to rent a house or if it is better to buy the house even with 100% mortgage for 20 years. To find the answer there were two absolutely the same houses chosen – one for rent and one for sale. Based on the data from the Czech Statistical Office there were tables and graphs made to show the average prices of rents and average sale prices. A prediction was made and the trend for the selected 20 years calculated. All necessary costs including taxes from real estate, insurance, repairs and so on were taken into consideration and there was calculated the result. It shows that as it was supposed, that it is much more advantageous to invest into house ownership. In selected case owning a house costs in 20 years 1 113 256 CZK more than renting the house, but after the 20 years of time, the family would own property in valued at 4 664 818 CZK. The difference of 3 551 562 CZK is than the possible profit made during the 20 years. Every following year this difference would grow even higher thanks to the absence of mortgage payments.

Following part was the calculation of net present value. As we had already data from previous chapter – “Economic analysis”, it was calculated as precisely as possible. The monthly changing interest paid to the bank was taken into account there. The growing price of the property according to prediction was also included there as well as growing price of rent which was used as a profit for the calculation. Result showed that it is well worth to buy one’s own house with mortgage. After 20 years the net present value would be 355 801 CZK which in case of non business investment but in case of family living is sufficient value. Therefore it is highly recommended to make such an investment.

Last part which was the “Financial analysis” used large amount of data thanks to “iMacro” program. First of all there were calculated pivot tables to see the average prices and amount of housing for sale in selected categories in variety of situations. There were also calculated standard deviations to see the differences from the average. From the tables was possible to see, that lower standard deviation in selected situations was at Prague East region which means that there are more similar properties with similar prices and smaller differences between the prices.

To find out what are the factors which influence the price of property most, there was a regression analysis made. First of all there was calculated the multicollinearity and than the regression itself. The obtained results showed us the main factors in their order of importance which we should consider in case of buying a new property. Thanks to the equation which was made it is as well possible to calculate the approximate price of real estate at Prague East and Prague West. After adding data into the equation we got the result which, according to calculation may differ only in average by 9% from the real market price of the property.

6 Resources

6.1 Resources - Books

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- GARY W. ELDRED PHD. *Investing in Real Estate*. Published by John Wiley and Sons, Inc, Hoboken, New Jersey, 2009. ISBN 978-1-118-17297-1.
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- KUBA ING BOHUMIL, Ing Květa Olivová. *Byty a katastr nemovitosti*. Praha: Linde, 2008. ISBN 978-80-7201-727-0.
- PERLA CHRISTINA ATIYAH. *Non-market valuation and marine management: Using panel data analysis to measure policy impacts on coastal resources*. Los Angeles: University of California, 2009. UMI number 3363917.
- SPRINGER DORDRECHT HEIDELBERG. *Environmental and Agricultural Modelling – Integrated Approaches for Policy Impact Assessment*. Springer Dordrecht Heidelberg London New York: Springer Science+Business Media, 2010. ISBN 978-90-481-3618-6.
- ŠTĚPÁN KLEIN, Petra Kesslerová. *JAK PRODAT NEMOVITOST V DOBE KRIZE*. Praha: Grada, 2009. ISBN 978-80-247-3200-8.
- SYROVÝ PETR, Tomáš Tyl. *Osobní finance - řízení financí pro každého*. Praha: Grada Publishing, a.s., 2011. ISBN 978-80-247-3813-0.
- SYROVÝ PETR. *Financování vlastního bydlení*. Praha: Grada Publishing, spol. s.r.o., 2000. ISBN 80-7169-978-0.
- ŽÁK, Milan: *Velká ekonomická encyklopedie, II. vydání, Linde Praha, a.s., Praha 2002, ISBN 80-7201-381-5*

6.2 Resources - Internet

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6.3 List of graphs

Graph no. 1 - Hypoindex

Graph no. 2 – Number of persons in a permanently occupied dwelling

Graph no. 3 – Number of persons in a habitable room (8 m² and more)

Graph no. 4 – Living space in m² per 1 person

Graph no. 5 – Living space in m² per one apartment

Graph no. 6 - Registered unemployment rate (%)

Graph no. 7 – Amount of average monthly salary in selected regions

Graph no. 8 - Price distribution of residential real estate in Prague East and West

Graph no. 9 - Comparison analysis of Prague East and West region

Graph no. 10 - Square metres possible to buy

Graph no. 11 - Amount of completed flats

Graph no. 12 - Amount of newly build flats

Graph no. 13 - Mortgage with the interest

Graph no. 14 - Indexes of rents in the Czech Republic

Graph no. 15 - Total costs (rent vs. own house)

Graph no. 16 - Indexes of sold family houses (2005 = 100) at Prague East, Prague West region

6.4 List of tables

Table no. 1 – Calculation of comparative analysis

Table no. 2 - Comparison between mortgage and rent

Table no. 3 - Costs for house (mortgage vs. rent)

Table no. 4 - Own house costs

Table no. 5 - Payments in 20 years

Table no. 6 - Net present value

Table no. 7 - Pivot table – Prices based on size interval

Table no. 8 – Pivot table - Prices according to type of house

Table no. 9 – Pivot table - Prices according to furnishing

Table no. 10 – Pivot table - State of building corresponding with interval of size

Table no. 11 - Correlation matrix

Table no. 12 - Regression analysis

Table no. 13 - Calculation of regression analysis

Table no. 14 - Order of variables influencing the price of property

6.5 List of pictures

Picture no. 1 - Land from a real estate perspective

Picture no. 2 – Map of Czech Bohemian region

Picture no. 3 - House for sale or rent – Ricany (Prague East region)

Picture no. 4 – Map of Prague and surrounding

6.6 List of supplements

Supplement no. 1 – Questionnaire: English

Questionnaire - I would like to ask you about help with my diploma thesis on the topic: Economic analysis of Residential Real Estate Market in Prague East Region. I request you for true responses which will be used not only in the analysis within the diploma thesis, but it will be used as well as basic information for potential buyers of family house at given location.

Thank you for your cooperation

1. Age

Less than 45	More than 46
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2. I am living in

Prague	Prague East region	Prague West region
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3. How would you evaluate by points from 1 to 5 the importance of following factors in the region where would you like to live?

1 – Not important at all	2 – Not very important	3 – Quite important	4 – Important	5 – Crucial	
Unemployment	1	2	3	4	5
Unemployment of women	1	2	3	4	5
Unemployment of men	1	2	3	4	5
Nr. Of foreigners with dlong term visa in the CR	1	2	3	4	5
Population density	1	2	3	4	5
Proportion of forest	1	2	3	4	5
Proportion of agricultural land	1	2	3	4	5
Net migration	1	2	3	4	5
Total increase of population	1	2	3	4	5
Percentage of urban population	1	2	3	4	5
Average monthly amount of old age pension	1	2	3	4	5
Nr. of kindergardens + elementary schools	1	2	3	4	5
Nr. of high schools, middle schools, training college	1	2	3	4	5
Nr. Of hospitals	1	2	3	4	5
Physicians per 1 000 population	1	2	3	4	5
Nr. Of dentists	1	2	3	4	5
Nr. Of pharmacies	1	2	3	4	5
Crimes	1	2	3	4	5
Length of roads and motorways	1	2	3	4	5
Dwellings completed	1	2	3	4	5
Traffic accidents	1	2	3	4	5

Supplement no.2 – Questionnaire: Czech

Dotazník - Dobrý den, ráda bych Vás touto formou požádala o pomoc s mou diplomovou prací na téma: Ekonomická analýza rezidenčního realitního trhu na Praze východ. Poprosila bych Vás prosím o pravdivé odpovědi, které budou využity nejen pro analýzy v rámci diplomové práce, ale poslouží i jako základní informace pro potenciální zájemce o koupi domu v dané lokalitě.

Předem děkuji za spolupráci

1. **Věk**

Méně než 45	Více než 46
-------------	-------------

2. **Bydlím v**

Praha	Praha východ	Praha západ
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3. **Jak byste na stupnici od 1 do 5 ohodnotili důležitost následujících faktorů v kraji bydliště, kde byste chtěli bydlet?**

1 – Naprosto nevýznamné	2 – Nevýznamné	3 – Docela významné	4 – Významné	5 – Naprosto zásadní	
Nezaměstnanost	1	2	3	4	5
Nezaměstnanost - ženy	1	2	3	4	5
Nezaměstnanost - muži	1	2	3	4	5
Počet cizinců dlouhodobým pobytem v ČR	1	2	3	4	5
Hustota obyvatelstva	1	2	3	4	5
Procento zalesnění	1	2	3	4	5
Procento orné půdy	1	2	3	4	5
Počet přistěhovalců	1	2	3	4	5
Celkový přírůstek obyvatel	1	2	3	4	5
Procento městské populace	1	2	3	4	5
Průměrný měsíční důchod	1	2	3	4	5
Počet mateřských školek, základních škol	1	2	3	4	5
Počet středních škol, odborných učilišť, vyšších odborných	1	2	3	4	5
Počet nemocnic	1	2	3	4	5
Počet lékařů na 1 000 obyvatel	1	2	3	4	5
Počet zubních lékařů	1	2	3	4	5
Počet lékáren	1	2	3	4	5
Kriminalita	1	2	3	4	5
Délka silnic a dálnic	1	2	3	4	5
Dwellings completed	1	2	3	4	5
Dopravní nehody	1	2	3	4	5

Supplement no.3 - Indexes of rents in the Czech Republic

	1	2	3	4	5	6
year	2001	2002	2003	2004	2005	2006
index	1,02	1,08	1,17	1,04	0,97	1,01
Percentage		5,556%	7,692%	-12,500%	-7,216%	3,960%
Price						

7	8	9	10	11	12	13
2007	2008	2009	2010	2011	2012	2013
1,06	1,15	1,19	1,13	1,1407	1,1514	1,1621
4,717%	7,826%	3,361%	-5,310%	0,938%	0,929%	0,921%
					17 500	17 661

14	15	16	17	18	19	20
2014	2015	2016	2017	2018	2019	2020
1,1728	1,1835	1,1942	1,2049	1,2156	1,2263	1,237
0,912%	0,904%	0,896%	0,888%	0,880%	0,873%	0,865%
17 822	17 983	18 145	18 306	18 467	18 628	18 789

21	22	23	24	25	26	27
2021	2022	2023	2024	2025	2026	2027
1,2477	1,2584	1,2691	1,2798	1,2905	1,3012	1,3119
0,858%	0,850%	0,843%	0,836%	0,829%	0,822%	0,816%
18 950	19 111	19 272	19 434	19 595	19 756	19 917

28	29	30	31	32	33
2028	2029	2030	2031	2032	2033
1,3226	1,3333	1,344	1,3547	1,3654	1,3761
0,809%	0,803%	0,796%	0,790%	0,784%	0,778%
20 078	20 239	20 400	20 561	20 723	20 884

Supplement no.4 - Indexes of family houses (2005 = 100) at Prague East, Prague West region

	1	2	3	4	5
year	2006	2007	2008	2009	2010
index	112,3	115,8	125,3	120,6	119
Percentage					
Price					

6	7	8	9	10	11
2011	2012	2013	2014	2015	2016
120,1	123,2401	124,4944	125,7487	127,003	128,2573
		101%	102%	103%	104%
	3 990 000	4 030 200	4 069 598	4 108 217	4 146 082

12	13	14	15	16	17
2017	2018	2019	2020	2021	2022
129,5116	130,7659	132,0202	133,2745	134,5288	135,7831
105%	106%	107%	108%	108%	109%
4 183 213	4 219 631	4 255 358	4 290 412	4 324 812	4 358 577

18	19	20	21	22	23
2023	2024	2025	2026	2027	2028
137,0374	138,2917	139,546	140,8003	142,0546	143,3089
110%	111%	112%	112%	113%	114%
4 391 724	4 424 270	4 456 230	4 487 621	4 518 458	4 548 755

24	25	26	27	28	29
2029	2030	2031	2032	2033	2034
144,5632	145,8175	147,0718	148,3261	149,5804	150,8347
115%	115%	116%	117%	118%	118%
4 578 526	4 607 785	4 636 545	4 664 818	4 692 617	4 719 954

30	31	32	33
2035	2036	2037	2038
152,089	153,3433	154,5976	155,8519
119%	120%	120%	121%
4 746 840	4 773 287	4 799 304	4 824 902

Supplement no.5 – Explanatory notes

VARIABLE	VALUE	MEANING
Price	Numeric	CZK
Size	Numeric	m ²
Build-up area	Numeric	m ²
Usable area	Numeric	m ²
Floor area	Numeric	m ²
Size of plot	Numeric	m ²
Size of garden	Numeric	m ²
Approval - reconstruction	Numeric	Year
Location	0	Prague West
	1	Prague East
Type of house	0	Single storey
	1	Two storey
Balcony	0	No
	1	Yes
Garage	0	No
	1	Yes
Parking space	0	No
	1	Yes
Terrace	0	No
	1	Yes
Cellar	0	No
	1	Yes
Gas	0	No
	1	Yes
House	1	Family House
	2	Low energy
	3	Turnkey
	4	Wooden house
	5	Villa
	6	Residential
Position of house	1	Detached
	2	Corner
	3	In a block
	4	Terraced
State of building	1	New building
	2	Very good
	3	After reconstruction
	4	Under construction
	5	Good
	6	Poor
	7	Project
	8	Before reconstruction
	9	For demolition
Material of house	1	Brick
	2	Mixed
	3	Panel
	4	Prefabricated
	5	Skeletal
	6	Stone
	7	Wood

Supplement no.6 – First regression analysis

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,716241586
R Square	0,51300201
Adjusted R Square	0,510694874
Standard Error	3891474,132
Observations	2546

ANOVA

	df	SS	MS	F	Significance F
Regression	12	4,04069E+16	3,36724E+15	222,3544581	0
Residual	2533	3,83587E+16	1,51436E+13		
Total	2545	7,87656E+16			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	3625207,056	288369,5083	12,57139521	0,00000000%	3059743,023	4190671,09	3059743,023	4190671,09
# Location	-1335498,941	157754,5323	-8,465677163	0,00000000%	-1644839,949	-1026157,934	-1644839,949	-1026157,934
# Type of house	1045123,219	96375,90231	10,84423797	0,00000000%	856139,6239	1234106,815	856139,6239	1234106,815
Size	4394,061141	393,4783229	11,16722545	0,00000000%	3622,489136	5165,633146	3622,489136	5165,633146
# State of building	-696643,3996	44207,58232	-15,75845959	0,00000000%	-783330,0884	-609956,7108	-783330,0884	-609956,7108
# Type of house	708501,4206	202885,2506	3,492128769	0,04873904%	310663,5461	1106339,295	310663,5461	1106339,295
Build-up area	3880,438572	581,820236	6,669480248	0,00000000%	2739,546736	5021,330407	2739,546736	5021,330407
Size of plot	1887,135845	64,62685017	29,20049236	0,00000000%	1760,408995	2013,862695	1760,408995	2013,862695
# Balkony	768884,7183	186956,4845	4,11264001	0,00403626%	402281,5759	1135487,861	402281,5759	1135487,861
# Garage	758020,4998	171021,2758	4,432316952	0,00097194%	422664,723	1093376,277	422664,723	1093376,277
# Parking space	-297678,2532	162740,8759	-1,829154793	6,74939166%	-616796,9863	21440,48004	-616796,9863	21440,48004
# Terrace	376489,6395	178425,9176	2,110061389	3,49508879%	26614,0936	726365,1854	26614,0936	726365,1854
# Cellar	21007,61806	193650,3693	0,1084822	91,36217919%	-358721,5692	400736,8053	-358721,5692	400736,8053

Supplement no. 7 – Final regression analysis

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,985474524
R Square	0,971160038
Adjusted R Square	0,970847691
Standard Error	743698,0159
Observations	841

ANOVA

	df	SS	MS	F	Significance F
Regression	9	1,54771E+16	1,71968E+15	3109,242729	0
Residual	831	4,59615E+14	5,53087E+11		
Total	840	1,59367E+16			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	3620504,282	96125,41421	37,6643816	6,8524E-182	3431827,132	3809181,432	3431827,132	3809181,432
# Location	-1397536,224	53305,93877	-26,21727064	7,0509E-111	-1502166,333	-1292906,114	-1502166,333	-1292906,114
# Type of house	951981,4557	34657,97624	27,46788933	1,0704E-118	883953,9914	1020008,92	883953,9914	1020008,92
Size	3969,37525	196,8962527	20,15972979	6,86834E-74	3582,902806	4355,847695	3582,902806	4355,847695
# State of building	-704721,8305	15685,42449	-44,9284513	1,4137E-224	-735509,5385	-673934,1224	-735509,5385	-673934,1224
# Type of house II	766766,2801	70818,12541	10,82726033	1,19949E-25	627762,8522	905769,7079	627762,8522	905769,7079
Build-up area	4097,265062	244,9595833	16,72629013	2,38495E-54	3616,452818	4578,077305	3616,452818	4578,077305
Size of plot	1926,096571	18,1363581	106,2008459	0	1890,498114	1961,695027	1890,498114	1961,695027
# Balkony	685194,4154	61539,44179	11,13423189	6,16876E-27	564403,3989	805985,4319	564403,3989	805985,4319
# Garage	884374,8728	52943,85735	16,70401284	3,15453E-54	780455,465	988294,2806	780455,465	988294,2806

Supplement no.8 – Result of regression analysis

Intercept	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage
3 620 504,28	-1 397 536,22	951 981,46	3 969,38	-704 721,83	766 766,28	4 097,27	1 926,1	685194,41	884 374,87

Average
Diff = 9%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
3 500 000	1	1	103	1	0	103	103	0	0	3 499 480	0,01%
6 900 000	0	1	242	2	1	102	366	0	1	6 897 644	0,03%
7 089 750	0	1	309	2	1	82	372	0	1	7 093 204	0,05%
4 890 000	0	1	320	5	1	111	240	0	1	4 887 277	0,06%
6 900 000	0	1	242	2	1	104	366	0	1	6 905 839	0,08%
6 950 000	1	1	206	3	1	129	1505	0	1	6 956 939	0,10%
6 290 000	1	1	170	2	1	94	946	0	1	6 298 671	0,14%
4 276 800	1	1	105	1	0	105	495	0	0	4 270 643	0,14%
5 900 000	1	1	212	1	1	129	676	0	0	5 909 090	0,15%
7 499 000	0	1	210	1	1	122	801	0	0	7 510 769	0,16%
7 500 000	1	1	245	2	1	154	925	1	1	7 486 957	0,17%
6 000 000	0	1	165	5	1	93	1285	1	0	6 011 864	0,20%
7 900 000	1	1	250	2	1	125	1200	1	1	7 917 659	0,22%
5 640 000	1	1	110	3	1	87	1115	0	1	5 652 616	0,22%
8 990 000	0	1	230	2	1	145	1500	1	0	9 011 207	0,24%
5 207 500	1	1	151	1	1	100	507	0	0	5 222 627	0,29%
3 020 000	1	1	120	3	1	60	249	0	0	3 029 309	0,31%
8 500 000	0	1	180	1	1	94	1095	1	0	8 528 431	0,33%
7 877 000	0	1	164	1	1	140	603	0	1	7 904 936	0,35%
7 499 000	0	1	252	1	1	85	801	0	0	7 525 884	0,36%
5 900 000	1	1	120	1	0	160	1182	0	0	5 878 761	0,36%
4 500 000	1	1	135	1	1	70	220	0	0	4 483 409	0,37%
4 319 040	1	1	105	1	0	105	511	0	0	4 301 460	0,41%
9 200 000	0	1	450	3	1	202	1766	0	0	9 240 439	0,44%
5 790 000	1	1	300	3	1	149	649	0	1	5 763 267	0,46%
10 052 829	0	1	196	1	1	136	1333	1	1	10 106 812	0,53%
5 390 000	0	1	132	2	1	129	227	0	0	5 419 537	0,55%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
5 799 000	1	1	153	2	1	110	670	0	1	5 765 145	0,59%
100 000 000	1	1	2000	5	1	1059	44547	0	1	99 382 060	0,62%
6 500 000	0	1	350	5	1	127	603	1	1	6 456 282	0,68%
3 500 000	1	1	170	5	1	80	607	0	1	3 474 197	0,74%
7 800 000	0	1	270	3	1	230	840	0	1	7 741 485	0,76%
4 430 000	1	1	140	1	1	65	175	0	0	4 396 096	0,77%
9 000 000	0	1	260	1	1	178	930	0	1	9 071 526	0,79%
6 600 000	1	1	180	2	1	129	680	1	1	6 654 622	0,82%
5 300 000	1	1	150	1	1	168	382	0	0	5 256 510	0,83%
3 500 000	1	1	100	1	0	100	100	0	0	3 469 501	0,88%
7 100 000	1	1	245	1	1	167	652	0	1	7 033 924	0,94%
3 090 000	0	1	70	5	1	100	320	0	0	3 119 577	0,95%
7 900 000	1	1	350	1	1	192	792	0	1	7 822 794	0,99%
4 099 920	1	1	105	1	0	105	428	0	0	4 141 594	1,01%
5 199 000	1	1	102	1	1	110	191	1	0	5 145 648	1,04%
3 350 000	1	1	130	5	1	80	607	0	1	3 315 422	1,04%
5 590 000	0	1	195	5	1	300	595	1	0	5 650 072	1,06%
6 500 000	1	1	214	2	1	140	826	0	1	6 430 666	1,08%
5 200 000	0	1	110	2	1	60	335	0	0	5 257 518	1,09%
7 900 000	0	1	208	1	1	165	871	0	0	7 813 839	1,10%
6 900 000	0	1	160	1	1	100	675	0	0	6 979 472	1,14%
6 990 000	1	1	223	1	1	133	706	0	1	6 911 300	1,14%
8 852 034	0	1	219	1	1	130	702	1	1	8 958 157	1,18%
5 611 000	1	1	105	1	1	105	758	0	0	5 543 972	1,21%
2 385 000	1	1	87	4	1	90	300	0	0	2 414 747	1,23%
4 850 000	1	1	100	1	1	120	345	0	0	4 790 107	1,25%
4 780 000	1	1	107	1	0	121	753	0	0	4 841 071	1,26%
7 750 000	0	1	262	2	1	150	614	0	1	7 651 373	1,29%
5 599 000	1	1	220	1	1	100	600	0	0	5 675 641	1,35%
6 900 000	0	1	134	1	0	155	918	0	0	6 802 893	1,43%
6 000 000	0	1	280	2	1	120	288	0	0	6 087 621	1,44%
10 500 000	0	1	263	1	1	168	1609	0	1	10 350 281	1,45%
6 500 000	0	1	210	2	1	68	353	1	0	6 407 098	1,45%
6 690 936	1	1	178	1	1	123	757	0	1	6 789 936	1,46%
6 180 000	1	1	152	2	1	110	580	1	1	6 273 022	1,48%
6 832 708	1	1	228	1	1	151	670	0	1	6 935 558	1,48%
8 240 000	1	1	315	1	1	140	1232	1	0	8 119 110	1,49%
8 900 000	0	1	286	1	1	286	628	0	1	9 035 553	1,50%
3 300 000	1	1	72	1	0	87	72	0	0	3 251 164	1,50%
10 900 000	1	5	400	5	0	175	2581	0	0	10 735 293	1,53%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
5 900 000	1	1	228	3	1	300	500	0	1	5 809 171	1,56%
10 900 000	1	5	200	5	1	175	2592	0	0	10 729 371	1,59%
8 900 000	0	2	150	1	1	108	797	0	1	9 043 896	1,59%
3 200 000	1	1	356	5	1	300	100	0	0	3 252 993	1,63%
7 200 000	1	1	160	2	1	430	659	0	1	7 082 869	1,65%
3 750 000	1	1	156	2	1	70	130	0	0	3 688 696	1,66%
9 000 000	0	1	200	1	1	140	1020	0	1	8 851 016	1,68%
7 900 000	0	1	153	1	1	114	610	0	1	7 768 227	1,70%
4 300 000	0	1	290	5	1	120	120	1	0	4 374 759	1,71%
4 847 000	1	1	98	1	0	109	844	0	0	4 931 454	1,71%
4 600 000	1	1	126	2	1	62	724	0	0	4 680 938	1,73%
8 490 000	1	1	291	1	1	102	1020	1	1	8 344 191	1,75%
3 574 438	1	1	136	4	1	78	439	1	0	3 513 001	1,75%
5 500 000	0	1	200	5	1	152	669	0	1	5 405 236	1,75%
7 400 000	0	1	250	2	1	117	615	1	0	7 271 276	1,77%
7 990 000	0	1	168	1	1	84	833	0	1	8 134 369	1,77%
2 949 000	1	1	60	5	0	387	793	0	0	3 002 539	1,78%
9 650 000	0	1	160	1	1	111	1131	1	1	9 472 411	1,87%
5 720 000	1	1	190	1	1	130	566	0	0	5 613 990	1,89%
7 490 000	1	1	288	1	1	122	615	1	1	7 634 159	1,89%
5 949 000	1	1	150	1	1	98	950	0	0	6 063 724	1,89%
4 200 000	1	1	115	2	0	123	349	0	1	4 282 530	1,93%
15 190 000	0	1	190	8	1	100	7595	0	0	15 494 089	1,96%
9 900 000	0	1	328	1	1	225	869	1	1	10 101 717	2,00%
4 990 000	1	1	160	2	1	80	829	0	0	5 091 887	2,00%
3 200 000	1	1	164	4	0	164	757	0	0	3 137 046	2,01%
5 949 000	1	1	150	1	1	100	950	0	0	6 071 918	2,02%
3 650 000	1	1	117	2	1	75	142	0	0	3 577 490	2,03%
4 990 000	1	1	160	2	1	80	830	0	0	5 093 814	2,04%
18 990 000	0	5	730	1	1	430	2450	1	1	19 390 430	2,07%
8 900 000	0	1	320	2	1	230	1338	0	0	8 719 497	2,07%
7 490 000	1	1	168	1	1	110	734	1	1	7 337 872	2,07%
2 990 000	1	1	134	4	1	84	483	0	0	2 929 200	2,08%
2 896 150	1	1	170	2	0	75	109	0	0	2 957 539	2,08%
4 200 000	1	1	120	5	1	65	1533	0	0	4 113 460	2,10%
6 896 000	0	1	140	1	0	140	605	0	1	7 046 757	2,14%
6 390 000	1	1	169	2	1	107	898	0	1	6 255 514	2,15%
9 900 000	0	1	350	2	1	214	1000	1	1	9 691 570	2,15%
5 150 000	0	1	280	4	1	107	620	0	0	5 264 377	2,17%
5 591 000	1	1	188	1	1	96	340	1	0	5 716 641	2,20%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
4 650 000	1	1	104	2	0	116	984	0	0	4 548 883	2,22%
5 795 000	1	1	110	1	0	132	828	0	1	5 926 881	2,23%
5 800 000	1	1	180	2	1	106	575	0	1	5 672 950	2,24%
9 990 000	0	1	320	1	1	231	1055	0	1	9 767 605	2,28%
12 900 000	1	5	420	1	0	230	1934	0	0	12 612 733	2,28%
7 285 000	0	1	165	1	0	125	624	0	1	7 121 128	2,30%
5 508 600	0	1	152	2	0	108	283	0	1	5 638 352	2,30%
2 200 000	0	1	169	8	0	169	556	0	1	2 253 258	2,36%
5 190 000	1	1	150	1	0	100	600	1	0	5 316 213	2,37%
5 300 000	1	1	137	1	1	88	210	0	1	5 430 213	2,40%
10 499 000	0	1	200	2	1	303	1767	0	1	10 252 942	2,40%
4 000 000	1	1	130	5	1	94	987	1	0	3 905 520	2,42%
6 950 000	1	1	240	2	1	162	1013	1	0	6 785 009	2,43%
5 400 000	1	1	280	4	1	177	878	0	1	5 534 957	2,44%
7 900 000	0	1	180	1	1	109	180	1	1	7 711 886	2,44%
4 990 000	1	1	195	4	1	120	1060	1	0	5 115 385	2,45%
11 790 000	0	5	280	2	1	140	623	0	1	11 507 109	2,46%
4 637 000	1	1	119	1	1	96	219	0	0	4 524 502	2,49%
8 990 000	0	1	300	1	1	174	934	0	1	9 221 616	2,51%
6 990 000	1	1	350	4	0	150	1500	1	1	6 818 647	2,51%
8 570 000	1	1	275	1	1	101	1289	1	1	8 794 704	2,55%
3 700 000	1	1	130	2	1	75	130	0	0	3 605 978	2,61%
3 390 000	1	1	120	1	0	130	1	0	0	3 481 123	2,62%
4 987 000	0	1	180	5	1	185	493	0	1	5 122 065	2,64%
5 285 000	1	1	157	1	1	103	595	0	0	5 428 232	2,64%
4 986 000	0	1	180	5	1	185	493	0	1	5 122 065	2,66%
7 900 000	0	1	186	1	1	96	186	1	1	7 693 995	2,68%
5 490 000	0	1	280	5	1	152	730	1	0	5 641 097	2,68%
7 300 000	0	1	173	2	1	132	862	1	0	7 502 839	2,70%
6 500 000	0	1	240	2	0	170	513	0	1	6 684 690	2,76%
4 199 000	1	1	71	2	1	45	105	0	1	4 085 090	2,79%
6 890 000	0	1	179	1	1	94	705	0	0	7 088 089	2,79%
8 900 000	0	1	285	1	1	325	610	0	1	9 156 707	2,80%
3 990 000	0	1	74	2	0	47	120	0	0	3 880 479	2,82%
5 400 000	1	1	225	5	1	124	1782	0	0	5 251 581	2,83%
3 860 000	1	1	115	5	1	331	331	0	1	3 752 692	2,86%
3 200 000	1	1	187	5	1	134	823	0	0	3 294 591	2,87%
5 500 000	1	1	188	2	1	130	962	0	0	5 664 064	2,90%
2 490 000	1	1	82	5	1	65	807	0	0	2 564 278	2,90%
7 900 000	0	1	208	2	1	165	706	0	1	7 675 686	2,92%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
11 990 000	0	5	300	1	1	160	700	0	0	11 637 099	3,03%
5 990 000	1	1	147	1	1	94	669	1	0	6 179 388	3,06%
7 990 000	0	1	220	1	1	110	727	0	1	8 243 139	3,07%
7 795 000	0	1	192	1	1	123	861	0	0	7 558 983	3,12%
5 900 000	1	1	161	1	1	82	517	0	1	6 092 206	3,15%
6 850 000	1	1	185	2	1	112	696	1	1	6 635 633	3,23%
8 401 881	0	1	268	1	0	165	1598	0	0	8 685 508	3,27%
7 490 000	0	1	394	2	1	220	443	0	0	7 248 401	3,33%
4 500 000	0	1	138	4	1	90	476	0	0	4 353 714	3,36%
5 850 000	1	1	120	1	0	143	852	0	1	6 057 871	3,43%
5 590 000	1	1	222	1	1	127	397	0	0	5 403 208	3,46%
7 190 000	0	1	152	1	1	122	889	0	0	7 450 041	3,49%
6 500 000	1	1	255	4	1	202	1603	1	0	6 735 394	3,49%
3 660 000	1	1	146	5	0	183	1460	0	0	3 792 770	3,50%
5 450 000	1	1	190	3	1	107	810	1	0	5 265 472	3,50%
6 450 000	0	1	160	2	1	226	620	0	0	6 685 070	3,52%
4 270 000	1	1	180	5	1	260	1000	0	0	4 123 980	3,54%
6 590 000	1	1	220	1	1	156	624	0	1	6 835 689	3,59%
5 700 000	1	1	120	1	1	70	638	1	0	5 914 172	3,62%
8 400 000	0	1	180	1	0	222	1215	0	1	8 716 427	3,63%
5 700 000	0	1	160	1	1	61	206	0	0	5 916 339	3,66%
4 990 000	1	1	110	1	0	130	713	0	0	4 812 810	3,68%
4 800 000	1	1	130	1	1	70	490	0	0	4 983 609	3,68%
6 750 600	1	1	158	1	1	102	696	0	1	6 507 014	3,74%
3 590 000	1	1	100	3	0	100	508	0	1	3 730 280	3,76%
6 990 000	1	1	178	1	1	123	647	1	1	7 263 260	3,76%
6 900 000	1	1	245	2	0	236	984	1	1	7 169 806	3,76%
5 450 000	1	1	560	5	1	374	560	0	0	5 251 948	3,77%
8 990 000	0	1	250	1	1	154	787	1	1	9 343 260	3,78%
4 900 000	0	1	120	3	1	180	340	0	0	5 093 792	3,80%
2 600 000	1	1	140	5	1	140	600	0	0	2 703 094	3,81%
5 700 000	1	1	144	1	1	92	445	0	1	5 927 020	3,83%
7 950 000	1	2	221	1	1	166	850	0	1	8 267 910	3,85%
8 400 000	0	1	210	2	1	140	950	1	1	8 736 355	3,85%
16 320 000	0	1	570	2	1	300	3950	1	0	15 714 808	3,85%
9 200 000	0	1	300	2	1	200	1069	1	1	9 568 640	3,85%
7 599 000	0	1	224	1	1	166	884	0	0	7 906 486	3,89%
4 860 000	0	2	138	4	1	65	400	0	0	5 056 881	3,89%
4 400 000	1	1	119	3	0	91	853	1	0	4 234 146	3,92%
8 600 000	0	1	340	1	1	200	764	0	0	8 275 109	3,93%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
5 500 000	1	1	116	1	1	73	543	1	0	5 727 607	3,97%
5 299 000	1	1	380	2	1	79	380	0	0	5 096 235	3,98%
5 300 000	1	1	380	2	1	79	380	0	0	5 096 235	4,00%
2 205 000	1	1	70	5	1	192	423	0	0	2 297 377	4,02%
6 450 000	1	1	218	2	1	291	836	0	0	6 200 117	4,03%
7 870 000	1	1	185	2	1	693	1088	0	0	8 201 604	4,04%
3 850 000	1	1	160	4	1	121	751	0	0	3 700 196	4,05%
4 650 000	1	1	158	1	1	81	338	0	0	4 847 054	4,07%
5 835 800	1	1	170	1	1	98	460	0	1	6 083 699	4,07%
11 200 000	1	5	310	2	1	220	1205	0	1	11 677 424	4,09%
1 980 000	0	1	85	6	1	57	199	0	0	2 065 155	4,12%
4 999 000	1	1	120	1	0	140	880	0	0	5 215 135	4,14%
8 990 000	1	1	320	1	1	200	900	1	1	8 629 703	4,18%
4 999 000	1	1	120	1	0	142	877	0	0	5 217 551	4,19%
2 990 000	1	1	230	5	1	100	230	1	0	2 868 986	4,22%
2 390 000	1	1	80	2	0	63	80	0	0	2 495 271	4,22%
8 150 000	0	1	285	3	1	112	1103	1	1	8 509 306	4,22%
6 876 313	1	1	247	1	1	146	769	0	1	7 181 173	4,25%
7 960 000	0	1	697	2	0	87	697	1	0	8 313 842	4,26%
8 500 000	1	1	193	1	1	79	1526	0	1	8 150 366	4,29%
6 990 000	0	1	180	2	1	178	333	1	0	6 700 194	4,33%
5 790 000	1	1	137	1	1	144	415	0	1	6 054 509	4,37%
6 800 000	1	1	260	1	1	130	741	0	1	7 113 288	4,40%
4 500 000	0	1	140	5	1	200	789	0	0	4 710 499	4,47%
11 995 000	0	1	220	1	1	200	2215	0	1	11 477 925	4,50%
5 740 000	1	1	137	1	1	144	393	0	1	6 012 135	4,53%
6 990 000	0	1	212	2	1	113	728	1	0	7 321 700	4,53%
4 190 000	0	1	110	5	1	90	720	0	0	4 007 818	4,55%
9 990 000	0	1	280	2	1	219	1536	1	1	10 466 588	4,55%
7 500 000	0	1	220	1	0	97	1413	0	0	7 860 036	4,58%
6 915 000	1	1	148	1	1	302	804	0	0	6 610 417	4,61%
6 500 000	0	1	140	2	1	90	1018	0	0	6 815 041	4,62%
6 599 000	0	1	170	1	1	111	600	0	0	6 919 778	4,64%
4 950 000	1	1	406	2	0	85	406	1	0	5 192 529	4,67%
4 799 000	0	1	250	5	1	97	716	0	0	4 584 507	4,68%
7 450 000	1	1	150	1	1	101	674	1	1	7 113 982	4,72%
3 550 000	1	1	92	1	0	92	92	0	0	3 389 559	4,73%
4 410 000	1	1	110	1	1	64	360	0	0	4 629 245	4,74%
5 300 000	1	1	168	2	0	167	550	0	1	5 060 332	4,74%
5 950 000	1	1	190	1	1	142	575	0	0	5 680 492	4,74%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
6 700 000	1	1	280	2	1	165	950	0	1	7 033 913	4,75%
6 990 000	0	1	310	2	1	180	393	1	0	7 339 973	4,77%
6 400 000	0	1	145	1	1	94	585	0	0	6 721 999	4,79%
3 350 000	1	1	175	5	1	213	796	0	0	3 518 638	4,79%
6 490 000	0	1	350	2	0	110	262	1	0	6 192 854	4,80%
6 245 608	1	1	185	1	1	123	624	0	1	6 561 551	4,82%
7 490 000	0	1	280	1	1	144	796	0	0	7 869 134	4,82%
8 990 000	0	1	338	1	1	204	1369	0	0	9 448 847	4,86%
8 700 000	0	1	240	1	1	130	670	0	1	8 294 684	4,89%
4 890 000	1	1	152	1	1	78	510	0	0	5 142 235	4,91%
8 500 000	1	1	762	4	1	531	903	0	1	8 946 780	4,99%
2 370 000	1	1	80	2	0	63	80	0	0	2 495 271	5,02%
5 990 000	1	1	207	1	1	110	474	0	1	6 306 698	5,02%
7 500 000	0	1	120	2	1	271	1236	0	0	7 897 148	5,03%
4 790 000	1	1	120	2	1	90	510	1	0	5 044 855	5,05%
5 990 000	1	1	136	1	0	159	916	0	1	6 310 207	5,07%
5 290 000	1	1	170	1	1	168	505	0	0	5 572 807	5,07%
9 800 000	0	1	353	2	1	270	1209	1	1	10 335 479	5,18%
6 837 000	1	1	123	1	1	350	696	0	0	6 499 833	5,19%
5 500 000	1	1	166	1	1	94	330	0	1	5 801 040	5,19%
8 500 000	0	1	200	1	1	170	200	1	1	8 079 729	5,20%
8 036 000	1	1	323	1	1	172	897	1	0	7 636 735	5,23%
8 900 000	0	1	286	1	1	286	326	0	1	8 453 872	5,28%
7 140 000	1	1	240	2	1	120	1100	1	0	6 780 495	5,30%
4 399 000	1	1	140	2	1	73	410	0	0	4 176 785	5,32%
3 590 000	1	1	135	5	1	71	1323	0	0	3 793 104	5,35%
5 800 000	0	1	90	2	1	146	320	0	0	5 501 604	5,42%
6 990 000	1	1	138	1	1	94	818	0	1	6 629 833	5,43%
8 900 000	1	1	324	2	1	324	1759	0	1	9 418 242	5,50%
5 440 000	1	1	137	1	1	86	843	0	0	5 756 863	5,50%
8 850 000	0	2	170	1	1	130	876	0	1	9 365 585	5,51%
8 900 000	0	1	233	1	1	164	1197	0	1	9 421 259	5,53%
5 499 000	0	1	220	5	1	106	942	0	1	5 821 973	5,55%
5 850 000	1	1	160	1	0	124	1000	0	0	5 539 485	5,61%
3 990 000	1	1	151	5	0	330	1363	0	0	4 228 083	5,63%
1 680 000	0	1	60	8	1	60	270	0	1	1 589 897	5,67%
14 990 000	0	5	400	1	1	282	1628	1	1	15 890 889	5,67%
7 850 000	0	1	200	2	1	115	700	0	1	7 427 511	5,69%
6 500 000	1	1	351	2	1	247	629	0	0	6 149 062	5,71%
3 850 000	1	1	120	2	1	76	167	0	0	3 641 647	5,72%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
7 890 000	1	1	235	1	1	109	1018	0	1	7 461 540	5,74%
5 200 000	1	1	130	1	0	130	726	0	0	4 917 237	5,75%
9 901 149	0	1	217	1	1	143	887	1	1	9 359 810	5,78%
7 900 000	0	1	157	2	1	110	820	0	1	7 467 473	5,79%
6 558 000	0	1	122	1	1	83	321	0	1	6 961 519	5,80%
4 485 000	0	1	90	2	1	50	140	0	0	4 761 569	5,81%
6 550 000	1	1	259	2	1	127	1492	0	0	6 954 429	5,82%
6 499 000	1	1	155	1	1	107	1000	1	0	6 901 945	5,84%
8 900 000	0	1	252	2	1	252	811	0	1	8 409 041	5,84%
6 500 000	0	1	188	1	1	116	188	1	0	6 903 356	5,84%
7 990 000	0	1	178	1	1	111	451	0	1	7 548 920	5,84%
2 200 000	1	1	260	8	0	290	880	0	1	2 336 759	5,85%
5 600 000	0	1	230	5	1	121	1059	1	0	5 949 299	5,87%
9 999 000	1	1	210	1	1	941	941	0	1	10 622 921	5,87%
5 170 000	1	1	191	1	1	95	577	0	0	5 495 743	5,93%
7 630 401	0	1	177	1	1	195	195	1	0	7 196 860	6,02%
10 250 000	1	1	230	1	1	976	976	0	1	10 913 126	6,08%
1 890 000	1	1	90	3	0	94	109	0	0	2 013 115	6,12%
6 300 000	1	1	161	1	1	110	835	0	0	5 935 053	6,15%
8 850 000	0	3	170	1	1	130	875	0	0	9 431 266	6,16%
4 790 000	1	1	120	1	1	100	510	0	0	5 105 355	6,18%
5 050 000	0	1	198	4	1	198	198	0	1	5 383 301	6,19%
5 290 000	1	1	260	2	0	130	740	0	1	5 639 874	6,20%
2 500 000	1	1	200	8	1	428	780	0	0	2 353 801	6,21%
9 900 000	0	1	302	1	1	168	638	1	1	9 320 041	6,22%
2 125 000	0	1	119	5	0	84	208	0	0	2 266 031	6,22%
4 982 000	1	1	157	1	1	104	533	0	0	5 312 911	6,23%
6 400 000	0	1	145	1	0	94	620	0	0	6 022 646	6,27%
2 799 000	0	1	140	8	1	290	341	0	1	2 986 571	6,28%
3 990 000	1	1	101	1	1	61	192	0	0	4 257 645	6,29%
4 300 000	1	1	68	1	0	68	815	0	0	4 588 528	6,29%
16 920 000	0	1	2120	2	1	230	2120	1	0	18 055 774	6,29%
880 000	1	1	100	5	0	100	250	0	0	939 529	6,34%
5 600 000	0	1	230	5	1	121	1059	0	0	5 264 105	6,38%
9 999 000	0	1	300	2	1	137	1115	1	1	9 399 113	6,38%
6 500 000	0	1	250	2	1	138	400	1	0	6 943 208	6,38%
6 490 000	0	1	165	2	0	165	807	0	1	6 932 773	6,39%
4 980 000	1	1	198	3	1	100	860	0	0	4 679 656	6,42%
7 700 000	1	1	170	1	0	185	1270	0	1	7 233 533	6,45%
6 000 000	0	1	214	4	1	132	1300	0	0	6 414 576	6,46%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
5 480 000	0	1	150	5	1	123	1174	1	0	5 861 445	6,51%
5 500 000	0	1	152	3	1	105	385	0	1	5 884 566	6,54%
7 850 000	1	1	295	2	1	210	997	0	1	7 368 357	6,54%
5 150 000	1	1	221	4	1	144	1165	0	0	4 833 969	6,54%
5 290 000	1	1	146	5	1	202	1636	1	0	5 661 571	6,56%
4 800 000	1	1	209	2	1	146	152	0	1	5 137 214	6,56%
6 500 000	0	1	168	1	1	84	235	0	0	6 098 188	6,59%
14 900 000	0	1	1864	2	1	252	1864	0	0	15 951 479	6,59%
8 900 000	0	1	320	1	1	129	1149	0	1	9 530 737	6,62%
15 000 000	0	5	319	1	0	319	2563	0	1	16 069 908	6,66%
4 990 000	1	1	196	2	1	152	734	0	0	5 346 809	6,67%
1 590 000	1	1	57	5	1	42	461	0	0	1 704 377	6,71%
9 950 000	0	1	303	1	1	168	638	1	1	9 324 010	6,71%
5 492 000	1	1	145	1	0	178	1097	0	0	5 888 028	6,73%
5 360 323	1	1	171	1	1	105	351	0	0	5 022 030	6,74%
7 980 000	1	1	217	1	1	135	650	1	1	7 473 011	6,78%
7 757 708	1	1	176	1	1	118	662	1	1	7 263 727	6,80%
13 950 000	0	5	312	2	1	150	986	1	1	13 059 470	6,82%
10 500 000	0	5	180	2	1	120	751	0	1	11 274 767	6,87%
3 490 000	1	1	107	5	1	76	637	0	1	3 265 520	6,87%
4 950 000	1	1	196	1	1	98	469	0	0	5 319 863	6,95%
6 000 000	1	1	132	2	1	132	667	1	1	6 451 344	7,00%
5 600 000	0	1	185	2	1	115	460	0	0	6 021 333	7,00%
7 800 000	1	1	134	1	1	100	800	1	1	7 289 063	7,01%
4 999 000	0	1	190	8	0	190	1735	1	1	5 378 720	7,06%
7 650 000	0	1	284	1	1	150	964	0	0	8 233 180	7,08%
4 900 000	0	1	175	5	1	92	876	0	0	4 574 493	7,12%
9 900 000	0	1	290	1	1	135	1047	0	1	9 239 778	7,15%
5 900 000	1	1	450	1	1	114	450	0	0	6 357 045	7,19%
9 490 000	0	1	220	1	1	119	1128	1	0	8 853 199	7,19%
6 900 000	0	1	167	1	1	140	812	0	0	7 435 023	7,20%
5 066 000	1	1	182	1	1	96	219	1	0	5 459 767	7,21%
7 500 000	0	1	254	2	1	196	650	0	0	6 993 056	7,25%
5 800 000	0	1	165	5	1	96	1404	1	0	6 253 361	7,25%
12 500 000	0	5	300	5	1	140	1859	1	0	11 653 806	7,26%
4 790 000	1	1	120	1	1	120	500	0	0	5 168 039	7,31%
4 279 000	1	1	105	1	1	63	366	0	0	4 616 857	7,32%
9 000 000	0	5	600	8	1	267	957	0	1	9 712 647	7,34%
3 925 402	1	1	111	1	1	52	180	0	0	4 237 350	7,36%
5 200 000	0	1	177	2	1	125	245	0	0	5 616 440	7,41%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
21 000 000	0	1	1300	1	1	580	5000	0	1	22 685 989	7,43%
1 899 000	1	1	190	8	1	150	776	0	1	2 051 738	7,44%
14 900 000	0	1	600	3	1	400	2621	1	1	13 863 486	7,48%
4 490 000	0	1	83	2	1	51	200	0	0	4 853 446	7,49%
5 180 000	1	1	140	2	1	127	219	1	1	5 599 722	7,50%
6 100 000	0	1	210	3	1	120	583	0	0	5 673 241	7,52%
3 850 000	1	1	600	8	1	500	742	0	0	4 163 362	7,53%
6 082 992	1	1	176	1	1	118	662	0	1	6 578 532	7,53%
11 200 000	0	1	450	2	1	780	780	0	0	10 414 249	7,54%
14 990 000	1	5	842	2	1	420	2040	0	1	16 216 875	7,57%
6 990 000	1	1	178	1	0	123	647	1	1	6 496 494	7,60%
8 500 000	1	1	260	1	1	200	1000	0	1	7 898 956	7,61%
4 460 000	1	1	213	3	1	248	591	0	0	4 827 472	7,61%
8 900 000	1	5	300	5	1	149	1059	1	1	9 636 643	7,64%
4 290 000	1	1	84	1	0	95	754	0	0	4 645 172	7,65%
3 593 480	1	1	85	1	0	85	382	0	0	3 891 661	7,66%
6 382 815	0	1	202	2	0	132	1254	0	0	6 921 020	7,78%
10 900 000	1	1	400	1	1	249	1756	0	1	10 111 564	7,80%
5 146 000	1	1	125	1	1	96	335	0	0	4 771 746	7,84%
6 600 000	0	1	350	2	1	150	283	1	0	7 163 959	7,87%
6 599 000	1	1	159	1	1	41	621	0	1	6 116 593	7,89%
6 850 000	0	1	185	1	1	169	716	0	0	7 440 388	7,93%
4 500 000	1	1	124	1	1	100	389	0	0	4 888 175	7,94%
5 550 000	1	1	120	1	1	85	560	0	0	5 140 201	7,97%
3 900 000	1	1	140	1	1	75	72	0	0	4 238 680	7,99%
4 500 000	0	1	250	5	1	143	401	0	0	4 166 260	8,01%
8 450 000	0	1	250	1	1	171	1025	0	1	9 186 130	8,01%
7 410 000	1	1	155	1	1	111	866	0	1	6 859 418	8,03%
7 990 000	1	1	237	1	0	250	1078	0	1	7 395 993	8,03%
4 872 000	1	1	167	1	1	100	513	0	0	5 297 694	8,04%
8 900 000	1	5	247	4	1	238	991	0	1	9 679 476	8,05%
12 900 000	0	1	231	2	1	512	2868	1	1	14 038 148	8,11%
5 490 000	1	1	120	2	1	99	974	1	0	5 975 439	8,12%
6 350 000	1	1	170	2	1	119	775	1	0	5 872 560	8,13%
2 990 000	0	1	133	7	1	80	220	1	1	3 255 218	8,15%
4 250 000	1	1	110	1	1	64	360	0	0	4 629 245	8,19%
9 300 000	0	1	300	2	1	145	680	1	1	8 594 039	8,21%
12 400 000	0	1	570	1	1	272	2396	0	1	13 510 832	8,22%
5 730 000	0	1	116	5	1	116	1320	0	0	5 293 821	8,24%
6 600 000	1	1	270	1	1	140	741	0	1	7 193 955	8,26%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
5 440 000	1	1	102	1	0	124	852	0	0	5 024 199	8,28%
12 500 000	0	5	339	1	1	200	1109	0	1	13 627 943	8,28%
12 500 000	0	5	346	1	1	200	1098	0	1	13 634 542	8,32%
6 242 867	0	1	198	1	0	105	541	1	0	6 811 126	8,34%
5 063 067	1	1	151	1	1	84	239	0	1	5 525 252	8,36%
8 300 000	1	1	360	1	1	260	1000	0	0	7 657 355	8,39%
2 120 000	1	1	82	5	0	120	313	0	1	1 955 744	8,40%
5 790 000	1	1	234	3	1	113	797	1	1	6 324 043	8,44%
4 600 000	1	1	140	2	1	68	861	0	0	5 024 968	8,46%
2 490 000	0	1	115	5	1	55	116	0	0	2 720 898	8,49%
3 897 000	0	1	88	4	1	57	600	0	0	4 258 872	8,50%
8 900 000	0	1	210	1	1	140	1100	1	1	9 729 992	8,53%
4 650 000	1	1	110	1	1	72	579	0	0	5 083 838	8,53%
5 400 000	1	1	280	4	1	180	1040	0	0	4 974 902	8,54%
3 432 000	1	1	80	1	0	88	314	0	0	3 753 131	8,56%
12 900 000	0	5	171	2	1	110	750	1	1	11 881 338	8,57%
14 500 000	0	5	540	2	1	236	1300	0	0	13 352 077	8,60%
4 980 000	1	1	108	8	1	198	2158	0	1	4 584 783	8,62%
2 390 000	1	1	63	5	1	63	877	0	0	2 615 492	8,62%
4 500 000	1	1	227	5	1	115	762	0	1	4 142 401	8,63%
3 690 000	1	1	150	5	1	135	135	1	1	3 396 236	8,65%
7 950 000	1	1	221	1	1	166	850	0	1	7 315 929	8,67%
2 590 000	1	1	86	5	1	131	341	0	1	2 837 388	8,72%
8 755 000	1	1	276	1	1	190	1171	1	0	8 051 675	8,74%
3 466 760	1	1	85	1	0	85	334	0	0	3 799 208	8,75%
4 450 000	1	1	103	1	1	150	320	0	0	4 876 780	8,75%
7 990 000	1	1	180	1	1	180	920	0	1	7 345 373	8,78%
5 190 000	1	1	145	1	1	148	660	0	0	5 690 172	8,79%
3 299 000	0	1	40	5	0	308	596	0	0	3 617 563	8,81%
6 300 000	1	1	200	1	1	100	700	0	0	5 788 863	8,83%
6 490 000	0	1	233	2	1	100	148	1	1	7 119 031	8,84%
2 900 000	1	1	120	3	0	40	500	0	0	2 664 048	8,86%
5 990 000	1	1	145	1	0	169	916	0	0	5 502 529	8,86%
5 490 000	0	1	210	5	1	220	825	0	1	6 024 015	8,86%
3 260 000	1	1	117	2	1	75	142	0	0	3 577 490	8,87%
11 700 000	0	1	487	1	1	382	1000	1	0	10 744 062	8,90%
4 510 000	1	1	104	1	0	129	800	0	0	4 952 467	8,93%
4 990 000	1	1	145	2	1	73	609	0	0	4 579 925	8,95%
5 871 000	1	1	155	1	1	121	634	0	1	6 453 536	9,03%
4 220 000	1	1	230	5	0	262	1100	0	1	4 640 861	9,07%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
1 895 000	1	1	58	5	0	58	561	0	1	2 084 121	9,07%
7 388 000	0	1	115	1	1	140	819	0	1	8 126 473	9,09%
4 999 000	0	1	200	8	1	190	1735	0	1	5 499 985	9,11%
4 590 000	1	1	164	1	1	99	393	0	0	5 050 557	9,12%
5 149 000	1	1	150	2	1	150	643	1	0	5 665 943	9,12%
3 700 000	1	1	100	5	0	150	957	0	1	3 390 517	9,13%
4 000 000	1	1	140	2	1	75	140	0	0	3 664 933	9,14%
4 367 500	1	1	124	1	1	100	347	0	0	4 807 279	9,15%
9 414 400	0	1	188	1	1	112	630	1	1	8 622 677	9,18%
5 790 000	0	1	160	3	1	83	775	1	0	6 378 179	9,22%
9 990 000	1	1	600	4	1	259	1919	0	1	9 146 199	9,23%
6 250 000	0	1	320	2	1	125	610	0	0	6 887 085	9,25%
5 299 000	0	1	300	5	0	246	1346	0	0	5 840 142	9,27%
5 999 000	1	1	500	3	1	350	709	0	0	6 611 883	9,27%
4 789 000	1	1	120	2	1	100	500	0	0	4 381 372	9,30%
7 690 000	1	1	180	1	1	150	1280	0	0	7 031 475	9,37%
5 700 000	0	1	160	2	1	61	206	0	0	5 211 617	9,37%
7 400 000	0	1	200	1	1	100	750	0	1	8 167 079	9,39%
8 900 000	0	1	180	1	1	116	1200	0	0	8 135 616	9,40%
6 731 000	0	1	180	1	1	137	789	0	0	7 430 033	9,41%
9 400 000	1	1	354	1	1	177	1214	0	1	8 590 025	9,43%
6 900 000	0	1	160	2	1	352	837	0	0	7 619 289	9,44%
7 900 000	0	1	400	5	1	360	400	1	1	7 218 416	9,44%
4 888 000	1	1	150	2	1	124	431	0	0	4 465 887	9,45%
4 380 000	1	1	124	1	1	100	363	0	0	4 838 096	9,47%
7 900 000	1	1	300	2	1	300	1605	1	0	8 728 844	9,50%
6 750 000	1	1	300	2	1	146	814	1	1	7 458 697	9,50%
7 800 000	1	1	450	2	1	295	1250	1	0	8 619 999	9,51%
5 480 000	0	1	198	5	1	92	1050	0	0	5 000 929	9,58%
12 900 000	0	1	1000	2	1	475	1000	0	0	11 771 481	9,59%
7 500 000	0	1	200	2	1	137	809	0	0	6 843 221	9,60%
6 290 000	1	1	192	1	1	118	827	0	1	6 959 848	9,62%
3 290 000	1	1	114	2	1	63	207	0	0	3 641 611	9,66%
11 990 000	0	1	410	2	0	938	1950	0	1	13 273 984	9,67%
8 500 000	1	1	600	2	1	600	600	0	1	9 412 289	9,69%
3 890 000	1	1	90	1	0	111	534	0	0	4 310 803	9,76%
9 490 000	0	1	510	3	1	258	755	0	1	8 645 140	9,77%
8 000 000	0	1	121	5	1	74	1619	1	1	7 287 055	9,78%
6 800 000	1	1	220	1	1	350	680	1	0	7 539 239	9,81%
5 490 000	0	1	258	5	1	129	847	0	0	4 999 693	9,81%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
5 949 000	1	1	135	1	1	70	502	1	1	6 596 138	9,81%
7 725 000	1	1	180	2	1	182	1120	0	1	7 034 065	9,82%
5 200 000	0	1	134	2	1	134	393	0	0	5 767 694	9,84%
4 700 000	1	1	156	1	1	97	499	0	0	5 214 773	9,87%
4 990 000	1	1	237	3	1	142	677	0	1	5 538 446	9,90%
5 800 000	1	1	140	2	0	184	684	0	1	5 276 940	9,91%
6 990 000	0	1	212	2	1	72	212	0	1	6 359 026	9,92%
7 500 000	0	1	210	2	1	165	1500	0	0	8 328 571	9,95%
7 995 000	1	1	166	1	1	133	1010	0	1	7 270 579	9,96%
5 680 000	1	1	180	2	1	92	935	0	1	6 308 983	9,97%
5 193 000	1	1	132	1	1	87	502	1	0	5 769 508	9,99%
4 390 000	1	1	135	8	1	227	1732	0	1	3 990 260	10,02%
14 990 000	1	1	200	1	1	269	5525	0	1	16 659 092	10,02%
9 250 000	0	1	180	1	1	98	920	0	1	8 406 933	10,03%
3 540 000	0	1	204	7	1	134	668	0	1	3 935 993	10,06%
3 375 000	1	1	80	1	0	88	314	0	0	3 753 131	10,08%
4 990 000	1	1	300	4	1	320	1000	0	0	5 550 862	10,10%
3 700 000	1	1	145	2	0	150	210	0	0	3 360 135	10,11%
23 600 000	1	1	1200	5	1	1000	8000	1	1	26 256 964	10,12%
3 600 000	0	1	120	5	1	144	228	1	0	4 006 318	10,14%
6 250 000	0	1	200	2	1	160	360	0	1	6 957 015	10,16%
5 371 509	1	1	122	1	1	82	425	0	0	4 875 825	10,17%
6 900 000	1	1	160	1	1	100	1306	0	1	7 681 678	10,18%
4 235 000	1	1	124	1	1	77	349	0	0	4 716 894	10,22%
8 150 000	0	1	180	2	0	180	628	1	1	7 394 195	10,22%
8 950 000	1	1	255	1	1	219	1084	0	1	8 118 749	10,24%
2 990 000	1	1	90	3	1	60	146	0	0	2 711 840	10,26%
3 190 000	1	1	103	4	1	62	575	0	0	2 893 210	10,26%
4 500 000	1	1	226	5	1	102	760	0	1	4 081 315	10,26%
4 220 000	1	1	124	1	1	77	342	0	0	4 703 411	10,28%
3 290 000	1	1	200	5	1	294	294	0	0	2 982 850	10,30%
6 890 000	0	1	492	2	0	179	492	0	1	7 681 400	10,30%
7 000 000	0	1	170	1	1	111	600	0	1	7 804 153	10,30%
4 799 000	1	1	122	1	1	37	248	0	0	4 350 529	10,31%
2 900 000	1	1	120	5	1	120	500	0	1	3 233 527	10,31%
4 999 900	0	1	170	3	1	110	280	1	0	5 575 081	10,32%
6 490 000	0	1	220	1	1	110	664	0	0	7 237 420	10,33%
17 498 000	0	1	800	5	1	1804	1804	0	0	15 857 287	10,35%
5 550 000	1	1	182	1	0	91	300	0	1	5 027 709	10,39%
5 900 000	0	1	280	2	1	118	550	0	0	6 584 064	10,39%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
8 990 000	0	1	250	1	1	175	934	0	0	8 142 870	10,40%
4 300 000	1	1	110	1	0	127	714	0	0	4 802 445	10,46%
5 800 000	1	1	152	1	1	113	670	0	1	6 478 190	10,47%
4 990 000	1	1	180	2	1	150	430	0	1	5 573 946	10,48%
5 066 000	1	1	182	1	1	96	219	0	1	5 658 948	10,48%
12 400 000	0	1	570	1	1	215	2339	1	1	13 852 695	10,49%
5 990 000	0	1	321	5	1	191	650	1	1	6 693 922	10,52%
4 550 000	1	1	140	2	1	79	514	1	0	5 086 877	10,55%
12 750 000	0	5	250	1	1	162	744	0	0	11 531 573	10,57%
2 890 000	1	1	120	4	1	78	360	0	0	2 612 135	10,64%
3 650 000	1	1	150	3	1	110	629	0	0	4 085 170	10,65%
3 699 000	0	1	115	5	0	78	788	0	0	3 342 706	10,66%
7 450 000	1	1	225	2	1	130	981	0	1	6 731 902	10,67%
9 950 000	0	1	305	2	1	190	780	1	1	8 990 873	10,67%
6 750 000	1	1	180	2	1	101	807	0	1	6 099 318	10,67%
4 369 000	1	1	136	1	1	88	392	0	0	4 892 418	10,70%
2 798 000	1	1	140	4	0	140	541	0	0	2 527 410	10,71%
8 990 000	0	1	338	4	0	250	1618	0	1	8 120 363	10,71%
9 500 000	0	1	200	1	1	137	886	0	1	8 580 627	10,71%
6 850 000	1	1	228	1	1	131	783	0	0	6 186 887	10,72%
11 900 000	1	5	389	2	1	676	930	0	1	13 329 681	10,73%
4 600 000	1	1	160	3	1	90	850	1	0	5 153 781	10,75%
6 990 000	1	1	288	2	0	357	1338	0	1	7 832 902	10,76%
9 990 000	1	1	600	1	1	300	1443	1	1	11 196 725	10,78%
10 500 000	1	5	200	2	1	155	1262	1	1	11 769 452	10,79%
5 499 000	0	1	131	2	1	86	353	1	0	6 167 268	10,84%
9 900 000	1	5	547	4	1	405	757	0	1	11 103 825	10,84%
11 000 000	0	1	382	1	1	265	1036	1	0	9 917 237	10,92%
6 800 000	0	1	320	2	1	209	819	0	0	7 633 810	10,92%
5 150 000	1	1	160	1	1	110	402	1	0	5 782 278	10,93%
6 390 000	0	1	300	5	1	265	510	1	0	5 759 734	10,94%
3 990 000	1	1	135	1	1	70	220	0	0	4 483 409	11,01%
5 379 000	1	1	151	1	1	96	483	0	1	6 044 387	11,01%
3 580 000	1	1	98	2	0	60	428	0	0	3 224 710	11,02%
4 990 000	1	1	230	4	1	130	1000	0	0	4 494 526	11,02%
3 080 000	1	1	161	5	1	100	577	0	1	3 462 635	11,05%
5 499 000	0	1	180	3	1	120	450	0	1	6 182 364	11,05%
3 690 000	0	1	126	5	1	77	788	0	0	4 149 038	11,06%
6 182 800	1	1	261	1	1	192	524	0	1	6 953 325	11,08%
2 850 000	1	1	65	3	1	90	390	0	0	3 205 491	11,09%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
2 590 000	1	1	130	5	1	68	68	1	1	2 913 283	11,10%
4 895 000	1	1	200	5	1	114	1172	1	1	5 506 024	11,10%
9 650 000	0	1	188	1	1	133	973	0	1	8 684 176	11,12%
5 990 000	1	1	220	1	1	126	396	0	0	5 389 246	11,15%
5 650 000	1	1	177	1	1	112	559	0	1	6 359 530	11,16%
10 500 000	0	1	360	2	1	273	1959	1	1	11 820 129	11,17%
8 100 000	1	1	260	1	1	103	531	1	1	7 283 376	11,21%
8 000 000	0	1	414	1	1	221	949	0	0	9 011 213	11,22%
5 650 000	1	1	200	1	1	120	500	0	1	6 369 964	11,30%
9 950 000	0	1	302	2	1	168	806	1	1	8 938 903	11,31%
5 790 000	1	1	200	2	1	166	620	0	0	5 200 473	11,34%
5 320 620	0	1	117	1	1	150	150	0	0	6 002 451	11,36%
3 150 000	1	1	90	2	0	90	175	0	0	2 828 570	11,36%
4 369 000	1	1	136	1	1	88	412	0	0	4 930 940	11,40%
5 000 000	0	1	214	4	0	131	1300	0	0	5 643 712	11,41%
9 950 000	0	1	324	1	1	213	1847	0	1	11 235 200	11,44%
8 900 000	1	1	247	1	1	238	991	0	1	7 985 715	11,45%
6 800 000	1	1	370	5	1	269	1260	1	0	6 101 016	11,46%
8 490 000	0	1	160	2	1	162	1449	1	1	9 589 149	11,46%
4 489 000	0	1	290	5	1	97	887	0	0	5 072 644	11,51%
6 490 000	0	1	154	2	1	77	500	0	0	5 819 630	11,52%
6 690 000	1	1	240	1	1	169	932	0	1	7 561 579	11,53%
6 500 000	0	1	180	2	1	147	634	0	1	7 352 114	11,59%
10 000 000	0	1	210	2	1	138	1070	1	1	8 959 292	11,62%
3 900 000	1	1	101	1	0	58	200	0	0	3 493 995	11,62%
3 430 000	1	1	89	5	1	89	546	0	1	3 072 061	11,65%
3 900 000	1	1	150	3	1	150	715	0	0	4 414 705	11,66%
3 900 000	1	1	101	1	1	58	280	0	0	4 414 849	11,66%
17 000 000	1	1	720	1	1	486	3244	0	1	15 218 847	11,70%
5 990 000	1	1	219	1	1	114	689	0	1	6 784 831	11,71%
3 490 000	1	1	237	5	0	237	351	0	1	3 123 569	11,73%
12 950 000	0	1	1130	5	1	210	3900	0	0	14 673 239	11,74%
7 990 000	0	1	220	5	1	159	2153	1	1	9 056 826	11,78%
4 948 000	1	1	105	1	1	74	502	1	0	5 609 071	11,79%
5 490 000	1	1	360	5	1	252	922	1	1	6 225 023	11,81%
4 300 000	1	1	121	1	1	100	389	0	0	4 876 266	11,82%
6 954 000	0	1	164	1	1	98	276	0	0	6 218 642	11,83%
6 500 000	0	1	325	2	0	207	1075	0	0	7 371 777	11,83%
3 590 000	0	1	220	4	0	240	240	0	0	4 072 468	11,85%
6 990 000	0	1	250	3	1	152	730	0	0	6 246 265	11,91%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
10 791 360	0	1	306	1	1	190	1106	0	1	9 642 277	11,92%
4 400 000	0	1	120	5	0	120	1548	0	0	4 998 471	11,97%
7 950 000	1	1	295	1	1	190	637	1	0	7 098 558	11,99%
2 349 000	1	1	110	5	1	70	496	0	0	2 096 890	12,02%
5 280 000	1	1	174	1	1	117	370	0	1	6 004 076	12,06%
8 900 000	1	1	324	1	1	324	1759	0	1	10 122 964	12,08%
5 810 000	1	1	137	1	1	144	422	0	0	5 183 617	12,08%
6 300 000	1	1	339	2	1	113	1111	1	0	7 165 969	12,08%
6 750 000	1	1	180	1	1	280	880	0	1	7 678 056	12,09%
8 800 000	0	1	220	1	1	141	2040	0	0	10 014 744	12,13%
4 313 800	1	1	124	1	1	100	400	0	0	4 909 362	12,13%
8 900 000	0	1	286	1	1	105	442	0	1	7 935 694	12,15%
4 990 000	0	1	274	5	1	147	490	0	0	4 449 337	12,15%
6 300 000	0	1	130	1	0	210	1001	0	0	7 172 231	12,16%
9 900 000	0	1	316	2	1	203	1000	0	1	8 826 347	12,16%
4 090 000	1	1	124	1	1	77	319	0	0	4 659 111	12,22%
8 990 000	0	1	930	1	1	178	260	1	0	10 241 342	12,22%
5 430 000	0	1	68	1	0	68	919	0	0	6 186 378	12,23%
3 299 000	1	1	200	5	1	120	1067	0	0	3 758 799	12,23%
7 990 000	1	1	143	2	1	143	1323	0	1	7 118 402	12,24%
8 800 000	0	5	128	2	1	82	295	0	1	10 034 363	12,30%
5 300 000	1	1	200	2	1	152	734	1	0	6 047 881	12,37%
1 980 000	0	1	88	7	0	120	924	0	0	2 260 123	12,39%
4 299 000	1	1	136	1	1	88	400	0	0	4 907 827	12,41%
7 500 000	1	1	250	2	1	150	500	1	1	6 671 823	12,41%
5 990 000	1	1	170	2	1	120	846	0	0	5 328 215	12,42%
7 100 000	1	1	373	1	1	162	601	1	1	8 108 481	12,44%
6 590 000	0	1	170	1	1	95	950	0	0	7 528 356	12,46%
4 950 000	1	1	140	2	1	100	469	0	0	4 401 050	12,47%
4 500 000	0	1	120	2	1	71	231	0	0	5 141 968	12,48%
3 790 000	1	1	115	2	0	123	374	0	1	4 330 683	12,48%
10 900 000	0	1	205	2	1	120	1497	1	1	9 688 138	12,51%
5 600 000	0	1	160	2	1	63	820	0	0	6 402 435	12,53%
3 690 000	1	1	72	1	1	50	255	0	0	4 218 807	12,53%
7 999 000	1	1	152	1	1	114	639	1	1	7 107 772	12,54%
6 490 000	0	1	150	1	1	89	950	0	0	7 424 385	12,59%
7 700 000	0	1	350	1	1	149	670	0	1	8 809 164	12,59%
5 800 000	0	1	284	7	1	197	1000	0	1	5 151 134	12,60%
14 000 000	1	1	520	2	1	288	3453	0	0	12 427 171	12,66%
4 500 000	1	1	138	2	1	109	385	0	1	5 152 570	12,66%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
5 398 568	1	1	182	1	1	118	444	0	1	6 182 459	12,68%
9 700 000	1	1	185	2	0	237	2666	0	0	8 605 866	12,71%
5 299 000	0	1	127	2	1	94	650	0	0	6 071 025	12,72%
4 350 000	0	1	170	8	1	656	998	0	0	4 986 321	12,76%
7 398 000	0	1	351	5	1	351	992	0	0	6 557 721	12,81%
8 200 000	1	1	194	1	1	145	569	1	1	7 266 674	12,84%
3 800 000	1	1	120	2	1	151	381	0	0	4 361 127	12,87%
5 900 000	1	1	161	1	1	81	517	1	1	6 773 303	12,89%
8 016 600	1	1	158	1	1	102	1004	0	1	7 100 252	12,91%
3 890 000	1	1	121	4	1	80	326	0	1	3 443 186	12,98%
3 590 000	1	1	110	1	1	75	75	0	0	4 125 377	12,98%
5 850 000	1	1	322	4	0	322	1957	0	0	6 722 891	12,98%
6 500 000	1	1	350	1	1	223	1002	0	0	7 469 914	12,98%
3 675 000	0	1	100	5	1	54	425	0	0	3 252 424	12,99%
5 950 000	0	1	305	5	1	119	912	1	1	6 840 046	13,01%
4 690 000	1	1	120	1	1	5	505	1	0	5 391 679	13,01%
5 830 000	1	1	136	1	1	95	502	1	1	6 702 539	13,02%
7 000 000	0	1	169	1	1	119	356	1	1	8 048 189	13,02%
7 300 000	0	1	79	2	1	80	980	0	0	6 458 745	13,03%
12 500 000	0	1	945	2	1	360	1896	1	1	14 377 332	13,06%
9 990 000	0	1	200	1	1	120	2537	1	0	11 491 778	13,07%
6 800 000	1	1	301	1	1	149	629	1	1	7 823 352	13,08%
5 390 000	0	1	152	1	1	129	227	0	0	6 203 646	13,12%
5 899 000	1	1	221	1	1	80	404	1	1	6 789 719	13,12%
5 599 000	1	1	220	1	1	100	1000	0	0	6 446 080	13,14%
5 990 000	1	1	170	1	1	92	1000	1	0	6 900 027	13,19%
4 992 000	1	1	117	2	1	135	445	0	0	4 406 933	13,28%
6 100 000	1	1	244	1	1	122	752	0	1	7 038 187	13,33%
3 790 000	1	1	150	4	1	170	1017	0	0	4 373 610	13,34%
7 990 000	0	1	297	1	1	184	921	0	1	9 225 641	13,39%
4 990 000	0	1	181	2	0	91	427	1	0	5 761 988	13,40%
5 900 000	1	1	300	5	0	322	1957	0	1	6 815 218	13,43%
9 800 000	1	1	506	1	1	219	2231	0	1	11 324 295	13,46%
9 590 000	0	1	221	1	1	110	829	0	1	8 443 570	13,58%
7 900 000	0	1	240	1	1	158	1050	0	1	9 141 324	13,58%
6 650 000	0	1	140	2	1	90	1018	0	1	7 699 416	13,63%
4 090 000	1	1	120	1	0	125	664	0	0	4 737 639	13,67%
3 896 000	1	1	91	1	1	65	338	0	0	4 515 550	13,72%
5 900 000	1	1	95	1	0	120	960	0	0	5 188 043	13,72%
6 990 000	1	1	240	2	1	130	749	1	0	6 145 407	13,74%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
12 900 000	1	1	1087	1	1	198	1087	0	1	11 341 005	13,75%
17 900 000	0	1	643	1	1	360	3214	0	1	15 736 703	13,75%
9 990 000	0	1	241	2	1	185	1170	0	1	8 782 330	13,75%
3 750 000	1	1	124	5	0	360	960	0	1	4 351 986	13,83%
7 950 000	0	1	275	1	1	185	1068	1	0	9 226 368	13,83%
4 490 000	1	1	200	2	1	160	639	0	0	5 212 485	13,86%
5 999 000	0	1	160	2	1	100	1034	0	0	6 966 219	13,88%
7 490 000	1	1	300	1	1	221	932	1	1	8 697 993	13,89%
8 470 000	1	1	240	1	1	120	614	1	1	7 433 508	13,94%
6 200 000	0	1	100	3	1	240	1350	0	0	7 205 598	13,96%
4 960 000	1	1	191	2	1	114	1042	0	0	5 764 504	13,96%
6 400 000	1	1	323	1	1	173	792	1	0	7 438 592	13,96%
13 000 000	1	5	400	1	1	200	200	1	1	11 406 912	13,97%
5 499 000	0	1	400	5	1	100	524	1	1	6 391 963	13,97%
27 000 000	1	1	480	3	1	730	7992	1	1	23 686 787	13,99%
8 990 000	1	1	255	1	1	255	990	1	0	7 886 017	14,00%
8 199 000	1	1	156	1	0	120	1414	0	1	7 188 997	14,05%
6 929 127	0	1	146	1	1	80	277	0	0	6 075 369	14,05%
6 500 000	0	1	150	1	1	76	592	0	1	7 565 953	14,09%
5 450 000	0	1	68	1	0	68	1001	0	0	6 344 318	14,10%
2 850 000	1	1	160	5	0	265	551	0	1	3 317 870	14,10%
7 900 000	1	1	316	1	1	299	999	1	1	9 210 139	14,22%
14 900 000	1	1	822	2	1	460	2322	0	1	13 036 612	14,29%
6 500 000	1	1	280	1	1	161	880	0	1	7 587 419	14,33%
11 750 000	0	1	380	2	1	280	1100	1	1	10 273 681	14,37%
6 300 000	1	1	240	2	1	145	1703	0	0	7 359 168	14,39%
7 999 000	0	1	198	2	1	99	971	0	0	6 991 614	14,41%
8 100 000	0	1	260	2	1	173	1155	1	1	9 464 884	14,42%
4 470 000	1	1	163	2	1	82	428	0	1	5 224 000	14,43%
5 490 000	1	1	260	3	1	170	1028	0	1	6 420 525	14,49%
5 990 000	1	1	201	1	1	126	816	0	1	7 007 163	14,52%
4 995 000	0	1	120	3	1	100	130	0	0	4 361 531	14,52%
6 890 000	0	1	146	1	1	127	146	0	0	6 015 622	14,54%
6 958 000	1	1	239	1	1	140	683	0	0	6 074 816	14,54%
6 630 000	0	1	200	1	1	120	955	0	0	7 759 499	14,56%
7 490 000	0	1	170	1	1	105	759	1	1	8 771 013	14,61%
6 950 000	1	1	160	2	1	100	1291	0	0	6 063 689	14,62%
5 400 000	1	1	173	5	1	152	734	1	1	4 710 917	14,63%
5 950 000	1	1	180	1	1	129	938	1	0	6 971 902	14,66%
9 290 000	1	1	303	1	1	184	1051	0	1	8 102 314	14,66%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
3 180 000	0	1	88	4	1	54	330	0	0	3 726 534	14,67%
9 000 000	0	1	262	3	1	122	1141	0	1	7 846 980	14,69%
4 799 000	1	1	142	1	1	90	301	0	1	5 633 529	14,81%
10 950 000	0	1	260	1	1	167	838	1	1	9 534 449	14,85%
4 390 000	1	1	164	1	1	101	445	0	0	5 158 908	14,90%
5 490 000	0	1	151	2	0	231	907	0	0	6 455 856	14,96%
6 990 000	1	1	210	2	1	200	1280	1	1	8 220 267	14,97%
7 990 000	0	2	182	1	1	98	582	1	1	9 401 027	15,01%
8 900 000	0	1	286	1	1	110	326	0	1	7 732 753	15,09%
9 950 000	0	1	303	1	1	168	638	0	1	8 638 816	15,18%
6 580 000	1	1	100	2	1	135	342	1	1	5 710 635	15,22%
4 990 000	0	1	117	1	1	69	264	0	0	5 890 148	15,28%
3 170 000	1	1	99	4	0	122	779	0	0	2 749 326	15,30%
5 990 000	0	1	280	5	1	157	843	0	0	5 194 038	15,32%
2 950 000	1	1	120	5	1	200	460	0	1	3 484 264	15,33%
9 990 000	0	1	240	2	1	185	1108	0	1	8 658 942	15,37%
5 490 000	0	1	120	1	1	85	538	0	0	6 495 363	15,48%
11 950 000	0	1	295	1	1	190	1494	0	1	10 345 939	15,50%
7 200 000	1	1	250	2	1	129	1505	1	1	8 521 508	15,51%
5 900 000	1	1	140	1	0	195	1187	0	1	6 995 558	15,66%
7 200 000	1	1	257	2	1	858	763	0	0	8 537 467	15,67%
10 640 000	1	1	416	1	1	261	1327	1	0	9 198 765	15,67%
1 990 000	1	1	177	8	1	250	750	0	1	2 359 784	15,67%
5 595 000	0	1	170	1	1	117	444	0	0	6 643 891	15,79%
8 990 000	0	1	250	1	1	154	782	0	0	7 764 060	15,79%
6 490 000	1	1	129	1	0	170	1000	0	0	5 604 909	15,79%
5 750 000	0	1	140	1	1	114	150	0	1	6 830 620	15,82%
6 990 000	0	1	160	2	1	96	922	1	1	8 303 676	15,82%
6 840 616	1	1	231	1	1	112	671	0	0	5 905 224	15,84%
7 490 000	1	1	207	1	1	125	1790	0	1	8 902 901	15,87%
11 340 000	0	1	348	2	1	188	1567	1	0	9 784 825	15,89%
3 860 000	1	1	131	4	1	85	236	0	1	3 330 018	15,92%
8 200 000	1	1	180	1	1	144	854	0	1	7 070 749	15,97%
3 850 000	1	1	131	4	1	85	230	0	1	3 318 461	16,02%
5 800 000	1	1	228	3	1	144	411	0	1	4 998 575	16,03%
9 049 400	0	1	188	1	1	112	557	0	1	7 796 877	16,06%
11 000 000	0	3	210	1	0	144	725	0	1	9 476 097	16,08%
3 500 000	1	1	130	4	0	170	750	0	0	3 013 188	16,16%
5 986 000	0	1	137	1	0	149	641	0	1	7 141 064	16,17%
4 950 000	1	1	170	5	1	195	770	0	1	4 259 336	16,22%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
5 800 000	0	1	170	5	1	106	613	0	1	4 989 819	16,24%
4 844 200	1	1	107	1	0	74	502	0	0	4 165 049	16,31%
7 398 000	0	1	190	2	1	332	992	0	1	8 839 344	16,31%
18 500 000	0	6	708	5	1	708	1879	0	0	15 905 867	16,31%
5 490 000	1	1	155	2	1	101	601	0	0	4 718 933	16,34%
9 990 000	0	1	279	1	1	177	640	0	1	8 584 278	16,38%
7 990 000	1	1	220	1	0	150	1050	0	1	6 864 856	16,39%
4 170 000	1	1	120	4	1	80	400	0	1	3 581 748	16,42%
5 250 000	1	1	250	3	1	130	600	0	0	4 508 197	16,45%
8 900 000	0	1	180	1	0	98	920	0	1	7 640 167	16,49%
5 650 000	1	1	200	2	1	131	512	0	0	4 849 050	16,52%
10 800 000	0	1	357	1	1	193	800	0	1	9 267 621	16,53%
10 284 000	1	1	416	1	1	262	1126	1	0	8 815 717	16,66%
3 990 000	0	1	111	3	0	86	86	0	0	3 416 930	16,77%
5 990 000	0	1	200	5	1	111	611	0	1	5 125 534	16,87%
4 480 000	1	1	145	2	1	68	232	0	0	3 833 300	16,87%
6 990 000	0	1	172	1	1	122	889	0	1	8 413 804	16,92%
4 999 000	0	1	240	5	1	281	630	0	1	6 017 440	16,92%
4 377 900	1	1	111	4	1	76	614	1	0	3 742 639	16,97%
9 990 000	0	1	210	2	1	168	788	1	1	8 539 051	16,99%
10 500 000	0	1	295	2	1	188	1152	0	1	8 974 298	17,00%
4 115 000	1	1	121	4	1	80	364	0	1	3 516 378	17,02%
7 199 000	1	1	180	1	1	140	844	0	0	6 150 724	17,04%
9 495 000	0	1	200	1	1	110	344	1	1	8 111 251	17,06%
3 200 000	1	1	80	5	1	120	782	0	0	2 733 536	17,06%
5 299 000	0	1	100	3	0	290	760	0	1	6 391 673	17,10%
14 900 000	0	1	400	2	1	200	2500	1	1	12 721 822	17,12%
9 206 600	0	1	188	1	1	112	589	0	1	7 858 512	17,15%
10 500 000	0	1	330	2	1	165	765	1	1	8 958 784	17,20%
4 040 000	1	1	120	4	1	80	330	0	1	3 446 921	17,21%
8 900 000	0	1	203	1	1	150	798	0	0	7 591 928	17,23%
7 487 000	1	1	228	1	1	131	883	0	0	6 379 497	17,36%
14 000 000	0	1	124	4	1	124	6509	0	1	16 941 966	17,36%
6 500 000	1	1	230	1	1	230	230	0	0	5 535 323	17,43%
12 500 000	0	1	387	1	1	187	1109	1	1	10 642 477	17,45%
6 700 000	1	1	119	1	0	166	1080	0	0	5 702 914	17,48%
5 000 000	1	1	110	1	1	61	171	0	0	4 252 921	17,57%
10 550 000	0	1	293	1	1	106	607	1	1	8 970 577	17,61%
10 800 000	0	1	357	1	1	193	746	0	1	9 163 612	17,86%
8 475 000	0	1	200	1	1	130	635	0	0	7 184 121	17,97%

Price	# Location	# Type of house	Size	# State of building	# Type of house II	Build-up area	Size of plot	# Balcony	# Garage	CALCULATION	DIFF in %
11 797 833	0	1	232	1	1	132	1565	0	1	9 994 980	18,04%
4 560 000	1	1	107	4	1	76	684	1	0	3 861 588	18,09%
8 500 000	1	1	260	2	1	200	1000	0	1	7 194 234	18,15%
7 990 000	0	1	178	1	0	178	757	0	0	6 761 681	18,17%
6 650 000	1	1	146	1	1	110	704	0	0	5 623 194	18,26%
9 366 100	0	1	188	1	1	112	619	0	1	7 916 295	18,31%
8 208 000	1	1	339	1	1	193	812	0	0	6 937 375	18,32%
8 990 000	0	1	270	2	1	173	623	1	0	7 595 519	18,36%
10 150 000	0	1	208	1	1	122	992	1	0	8 555 909	18,63%
9 990 000	0	1	279	1	1	139	630	0	1	8 409 321	18,80%
12 900 000	1	5	170	1	1	121	912	0	1	10 856 458	18,82%
11 900 000	0	1	260	1	1	184	1050	1	1	10 012 435	18,85%
7 390 000	0	1	165	1	1	98	272	0	0	6 214 907	18,91%
12 500 000	0	1	359	1	1	187	1098	1	1	10 510 148	18,93%
5 300 000	1	1	129	2	0	148	813	0	0	4 449 867	19,10%
9 900 000	0	1	328	1	1	170	869	0	0	8 306 798	19,18%
3 120 000	1	1	120	3	0	120	303	0	0	2 612 388	19,43%
6 590 000	1	1	105	1	0	134	1080	0	0	5 516 230	19,47%
6 600 000	1	1	270	1	0	135	741	0	0	5 522 327	19,51%
9 972 000	1	1	422	1	1	260	870	1	0	8 338 258	19,59%
6 599 000	1	1	105	1	0	134	1080	0	0	5 516 230	19,63%
8 700 000	1	1	202	1	1	145	554	1	1	7 269 538	19,68%
4 200 000	1	1	132	4	1	85	326	0	1	3 507 336	19,75%
3 190 000	1	1	90	3	1	79	79	0	0	2 660 640	19,90%
4 210 000	1	1	132	4	1	85	328	0	1	3 511 188	19,90%
3 687 210	0	3	87	7	0	100	397	0	0	3 063 118	20,37%
5 900 000	1	1	228	3	1	120	411	0	1	4 900 240	20,40%
3 600 000	1	3	164	7	1	100	525	0	0	2 984 531	20,62%
3 890 000	1	1	152	4	0	173	808	0	0	3 224 520	20,64%
5 900 000	1	1	220	2	0	190	762	0	0	4 884 934	20,78%
4 990 000	1	1	100	1	1	50	150	0	0	4 127 709	20,89%
2 399 000	1	1	98	5	0	237	504	0	0	1 982 144	21,03%
5 500 000	1	3	164	7	1	100	510	1	1	4 525 208	21,54%
2 500 000	1	1	190	5	1	118	206	0	0	2 052 541	21,80%