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Faculty of Economics and Management
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Diploma Thesis
Economic Analysis of Rent Control in the Czech Republic

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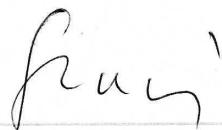
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Declaration

I declare that I have worked on my diploma thesis titled "Economic Analysis of Rent Control in the Czech Republic" by myself and I have used only the sources mentioned at the end of the thesis.

In Prague on 30.3.2012

Václav Tittelbach

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Ekonomická Analýza Regulace Nájmů v ČR

Economic Analysis of Rent Control in the Czech Republic

Souhrn

Hlavním účelem této diplomové práce je určit disparity vzniklé fungováním regulace nájemného a následný vývoj na trhu s nájemním bydlením během a po skončení deregulačního procesu.

Tato diplomová také zahrnuje hlubší analýzu vývoje cen nájemního bydlení a následný možný výsledek deregulačního zákona. Další velmi závažné téma, které je zohledněno v této diplomové práci, jsou výnosy majitelů nemovitostí z pronájmu jejich nemovitostí. Toto téma bude také objasněno v případové studii.

Tato diplomová práce také shrnuje dopady regulace nájemného a následné deregulace nájemného. Tyto dopady budou brány ze dvou různých úhlů pohledu jak sociálního tak ekonomického.

Klíčová slova: regulace nájemného, deregulace nájemného, nabídka, poptávka, cenová hladina, prognóza, ekonomická analýza, výnos, disparita, nájemné, finanční zatížení

Summary

Main purpose of this diploma thesis is to determine disparities affected by rent control and successive development on the rental market during and after rent deregulation process.

This diploma thesis also includes deeper analysis of rental price levels development and the possible outcome of rent deregulation act. Next very crucial matter, which has been taken into consideration in this diploma thesis are the yields of property owners from renting their property. This matter is also illustrated in the case study.

This diploma thesis also summarizes the impacts of rent control and following rent deregulation. These impacts are taken from point social and economic points of view.

Last part of the thesis determines the relationship between mortgage market and price levels of rent controlled rents and free market rents by using econometrical model.

Keywords: rent control, rent deregulation, supply, demand, price level, forecast, economic analysis, yield, disparity, rent, financial burden

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1. Introduction

This diploma thesis is covering the topic, which is very up-to-date nowadays; because rent deregulation process is tend to be finished till the end of year 2012. This current topic is being frequently discussed and divides whole Czech Republic into two separated groups. As the first group can be marked a group of tenants living in the rent controlled flats and second group is property owners and tenants living in flats with free market rents.

The aim of this diploma thesis is to analyze the price development during the deregulation process and to determine what will be the price level of rents after deregulation is finished.

Next very crucial point of view is what are the impacts of rent control and rent deregulation. According to the analyses in this diploma according to rent control occurred many disparities in the segment of rental housing market. Disparities affected by rent control can be divided into two parts social impacts and economical impacts, both types of disparities are being discussed in the analytical part of this thesis.

The significant part of analytical part is dedicated to the level of yields, which are achieved according to the different types of rental contracts. This diploma thesis deals with disparities of capitalization rates linked with rental purpose of the property. This analysis will provide the information about the profit abilities of the investments into rental housing market.

Next part of the analysis includes an econometrical model, which determines relationship between price levels of rent controlled rents and free market rents on the mortgages market.

Final part of the analysis includes the case study, which deals with different scenarios of property occupancy, and thus determines the levels of income for the property owner.

2. Objectives and Methodology

2.1. Objectives of the Thesis

Crucial aim of this diploma thesis is to determine development of rental price levels according to the type of rental contract. This development will cover two possible types of rental contracts the rent controlled and free market. This development is analyzed according to the conditions, which are affected by the deregulation act.

Next very important matters that are taken into consideration are the yields from properties for rental purpose.

This diploma thesis also analysis relationship between the mortgage market and price levels of rent controlled and free market rents by using econometrical model.

Last matter which is analyzed is the financial burden of tenants according to the type of rent.

Final aim of this diploma thesis is to verify or reject following hypothesis:

- Hypothesis 1: Rent deregulation significantly improves quality of rental housing stock.
- Hypothesis 2: Rent deregulation makes rental housing more affordable.
- Hypothesis 3: Mortgages market is significantly influenced by the price level of rent controlled rents.

2.2. Methodology

For the purpose of the first analytical part, which includes comparative analysis it is very crucial to determine price levels of various rents.

Definition of comparative analysis: Item by item comparison of two or more comparable alternatives, processes, products, qualifications or sets of data.¹

Analyzed price levels of rents are as follows:

- Rent Controlled Rent – Price level of this rent is calculated according to the data provided by Ministry for Local Development and according to the Deregulation Act 107/2006 Col.
- Free Market Rent – Price level of free market is determined according to the information provided estate agencies
- Cost Rent – Price level of cost rent is determined according to the Act 151/1997 Col. And edict 540/2002 Col.
- Economic Rent
- Targeted Rent
- Locally Usual Rent

After consolidating price levels of rents it is possible to compute yield according to the type of current rent. Data are divided according to the regions and municipal cities. According to the consolidated data it is possible to provide subjective forecast, which is based on document study and own calculations.

Next very crucial analytical part is to determine financial burden of households according to the free market and rent controlled rent. Necessary data are obtained from statistical database Disperiter, which is provided by Disparity.cz

Following quantitative analytical part is the econometrical model, where according to the OLSM method, is illustrated relationship between mortgages market and the price levels of free market; rent controlled rent and households income.

¹ Source: <http://www.businessdictionary.com/definition/comparative-analysis.html> (2012)

Next analytical part is the case study, which deals with income disparities of landlords, according to the type of rental contract. In this study a model property is taken into consideration and yields are computed according three different scenarios.

Final analytical part is qualitative analysis which deals with social and economical impact of rent control and rent deregulation.

3. Literature Review

3.1. Rent Control

Firstly it is very necessary to determine what rent control exactly means, for this purpose see definition below.

*"Government restriction, applicable to rental units in certain areas, in which a maximum is placed on the amount a landlord can charge a tenant. Rent control is a price ceiling imposed by the government, and is in place in many areas across the world. The practice is controversial, as some people believe it is necessary in order to prevent tenants from paying unfair rents and in order to allow as many individuals as possible access to good housing, while others feel that it could create a housing shortage due to increased demand, that a rent control situation will decrease the quality of available housing, or that it is simply unfair to the property owners."*²

This controversial topic was and still is discussed by many well known economists and their opinions significantly differ. For illustration: *"In many cases rent control appears to be the most efficient technique presently known to destroy a city—except for bombing."*³ or *"Rent control has in certain Western countries constituted, maybe, the worst example of poor planning by governments lacking courage and vision."*⁴

3.2. Purpose of Rent Control

Rent control is considered according to (Arnott, 1995) and (Oxley and Smith, 1996) as a tool, which is providing securities to the tenants.

² Source: http://www.investorwords.com/4178/rent_control.html (2012)

³ Assar Lindbeck, *The Political Economy of the New Left* (New York: Harper and Row, 1972)

⁴ Gunnar Myrdal, "Opening Address to the Council of International Building Research in Copenhagen," *Dagens Nyheter* (Swedish newspaper), August 25, 1965, p. 12

Because owners of properties are considered as a group of people for whom it is easier to deal with unexpected changes of market conditions. This is the main reason why is this housing policy set up by government. Generally it disables the property owner to increase price of the rent unexpectedly to prevent tenants from losing their basic needs – housing.

3.3. Price Regulation

*"The policy of setting prices by a government agency, legal statute or regulatory authority. Under this policy, minimum and/or maximum prices may be set. Price regulation also encompasses "guidelines" which specify the magnitude by which prices can increase as in the case of rent controls. The bases on which regulated prices are set vary. These may be on costs, return on investment, mark-ups, etc."*⁵

3.4. Deregulation

*"Deregulation refers to the relaxation or removal of regulatory constraints on firms or individuals. Deregulation has become increasingly equated with promoting competition and market-oriented approaches toward pricing, output, entry and other related Economic decisions."*⁶

Generally speaking deregulation is considered as an approach, which opens new opportunities on the market and attracts new competitors to enter the market.

^{5,6} KHEMAN, R. S.; SHAPIRO, D. M. . *Glossary of Industrial Organisation Economics and Competition Law* [online]. Paris, France: OECD, 1993, 17.3.2002 [cit. 2012-02-21]. Available at WWW: <<http://www.oecd.org/dataoecd/8/61/2376087.pdf>>

In this case of deregulation there are two different approaches that can be used:

- Shock Deregulation
- Gradual Deregulation

Generally speaking we have to take into consideration all the advantages and disadvantages related to shock and gradual deregulation. In case of shock deregulation it is necessary to mention that great advantage is that administrative costs are significantly decreased in comparison with gradual deregulation and also very important is that shock deregulation is unchangeable in the short run. Of course this type of deregulation brings significant disadvantages. In case of rent deregulation it is very important to mention that many social and economic problems can occur, because in case of shock deregulation the rental prices will rapidly and significantly increase. On the other hand in case of gradual deregulation social and economical problems will not be so significant, because consequences are spread into a longer time period. But on the other hand it brings larger administrative costs related to the rent deregulation.

3.5. Economic Rent

“Economic rent is the rent, which covers owners expenditures related to running of the given property and also carry out yield from capital, which has been invested to acquire a property.”⁷

According to the calculation many criteria have to be taken into consideration. Firstly all average annual expenditures have to be summed. Among these expenditures belong:

- Maintenance and repair works (usually 1.5% from property value)
- Insurance of the property (usually 0.2% from property value)

⁷Source: http://kalkulacky.idnes.cz/cr_vypocet-ekonomicke-najemne.php (2012)

- Taxes related to property
- Administration costs related to property
- Depreciation (usually 1% from property value)
- Risk premium – *„The return in excess of the risk-free rate of return that an investment is expected to yield. An asset's risk premium is a form of compensation for investors who tolerate the extra risk - compared to that of a risk-free asset - in a given investment.“*⁸ This coefficient related to the case that current flat will not be rented is usually achieving a value of 1.03.

After all of the previous expenditures are summed we have to take into consideration measure of capitalization. Exact definition of capitalization rate is as follows: *“A rate of return on a real estate investment property based on the expected income that the property will generate. Capitalization rate is used to estimate the investor's potential return on his or her investment. This is done by dividing the income the property will generate (after fixed costs and variable costs) by the total value of the property. If you want to get technical, it is basically the discount rate of perpetuity.“*⁹ This ratio is already determined by the Czech Ministry of Finance.

⁸ Source: <http://www.investopedia.com/terms/r/riskpremium.asp#axzz1pHL0aCio>

⁹ Source: <http://www.investopedia.com/terms/c/capitalizationrate.asp#axzz1pHL0aCio>

Capitalization measure of properties and estate rights by economic method		
Item Number	Item Description	Capitalization Measure (%)
1	<i>Properties for production and parking</i>	10
2	<i>Properties for administration and shopping</i>	7
3	<i>Properties for accommodation and catering</i>	8
4	<i>Properties for transportation and education</i>	9
5	<i>Properties for cultural purposes</i>	8
6	<i>Properties for health purposes</i>	8
7	<i>Properties for agricultural purposes</i>	7
8	<i>Properties for storage purposes</i>	6
9	<i>Blocks of flats</i>	5
10	<i>Other properties</i>	8
11	<i>Estate rights</i>	12

Tab. 1 - Capitalization Measure

For our purpose will be the most significant item number 9 from the table above (Tab.1). According to the table the capitalization measure for block of flats is equal to 5% from the property value.

After all of the necessary criteria have been determined it is possible to determine annual economic rent.

Economic rent can be different in comparison with free market rent, because in the economic rent is not included criteria of property location.

If the free market and economic rent is compared it is possible to determine whether is efficient to invest to property purchase. In case that free market rent is lower than economic one, then investment is not efficient and vice versa.

3.6. Cost Rent

Cost rent is basically very similar to economic rent there is only one significant difference that allowing profit is not taken into consideration.

"The rent of a dwelling calculated on the cost of providing and maintaining the property without allowing for a profit."¹⁰ Generally speaking measure of capitalization is not included in calculations.

¹⁰ Source: <http://www.thefreedictionary.com/cost+rent>

3.7. Types of Rent Control

Although rent control is considered as an old-fashioned by many economists, there are surprisingly many developed countries, where is still in use (see Tab. 2 - Rent Control Systems).

Types of Rent Systems		Countries in Use
Tenancy Rent Control	Fixed Percentage	<i>Dubai, Philippines, Pakistan, Tunisia</i>
	Fraction of Construction Cost or Consumer Price Index	<i>France, Italy, Netherlands, Spain, Switzerland</i>
	Combination of Construction Cost and Consumer Price Index	<i>Canada</i>
Maximum Rent Systems		<i>Luxemburg, India, Taiwan, Dominican Republic</i>
Rent Freeze Systems		<i>Qatar, US Virgin Islands</i>
Split Systems		<i>Czech Republic, Cyprus, United States</i>

Tab. 2 - Rent Control Systems

3.7.1. Tenancy Rent Control

Generally it can be said that this type of rent control is the most widespread in the world. In this case the initial rent is fully negotiable. But on the other hand in this case exists a significant restriction, which disables the property owner to increase the initial rent according to the owner's willingness. The maximal sum of rent increase is already determined by the law.

Generally there are three possibilities how the maximal increase in rent price can be done. The first possibility is an increase determined by the maximal percentage from the current rent. Second possibility is an increase about the fraction of construction price or consumer price index. Finally the last possibility is the mixture of construction price and consumer index¹¹.

¹¹ Source: <http://www.globalpropertyguide.com/investment-analysis/The-pros-and-cons-of-rent-control> (2012)

3.7.2. Maximum Rent Systems

In this maximum rent system is the maximal possible rent determined by the local authorities. This price ceiling is then equally distributed equally between new and old tenants. Most frequently is the price ceiling not determined according to the current value of the property, but to its historical value. According to this condition this rent systems can be considered like one of the least efficient one, because rental returns are decreasing together with time period.

3.7.3. Split Systems

This type of rent control system will be the most important for this diploma thesis, because it was used in the Czech Republic and all the current disparities on the current housing market are the result of this rent system.

The main principle of this system is that rental market is divided into two different markets (free market rent and rent controlled). Generally this rent system was developed for the purpose that market of rent controlled housing will be available only for people with economical and social problems, but the nowadays reality is significantly different.

3.7.4. Rent Freeze Systems

This rent system, which is also known as rent control of first generation, has got rent prices determined and kept for significantly long time period. This rent system has got its fundamentals after Second World War period. In this after war time it was developed from the reason to prevent current tenants from unexpected changes of rent prices. Due to great inefficiency of this rent control system, most of countries where it was used, have already cancelled this system.

3.8. Specifics of Housing Market

Basic Characteristics

At the beginning it is very important to determine what the specifics of housing market are. Firstly it is very important to mention that housing as goods is linked to significant large varieties of characteristics. Among these characteristics belong locations of the housing unit, which can be considered like the most important price driving force. Next significant characteristics, which have to be mentioned, are the size of the housing unit and of course legal usage of the given housing unit. The last mentioned aspect of legal usage will be one of the most important factors, which will show the significant disparities at the housing in our case rental housing market. If we conclude all of the characteristics mentioned above, it is obvious that housing market is heterogeneous, complex and multidimensional good.

Time Horizon

After the basic characteristics were already determined it is very important to add a time horizon among specifics. Housing as a good is considered like a good with long term consumption or investment. The main reason of this is that acquisition of the housing unit is usually linked to a long term sources of financing like mortgages and long term loans.

Mobility

Also it is very important to mention that housing as a good is totally immobile or we can name the fixation to the current place. Generally speaking it means that a housing unit can not be transferred to another location and this factor of immobility makes the factor of location more important.

Governmental Interventions

For the purpose of this diploma thesis this factor will be deeply analyzed, because a governmental intervention is the factor, which is deforming market conditions by very significant way.

As the most important and most discussed topic nowadays is the rent control and full rent control deregulation from year 2012. Rent control in the Czech Republic is considered as the most significant reason for current disparities at the rental market and because of this rent control and it's afterwards deregulation will be deeply analyzed in this diploma thesis.

3.9. History of Rent Prices Development in the Czech Republic

If we want to fully understand to the current situation on the rental housing market in the Czech Republic it is necessary to go back in time to year 1964¹², because till year 1991 was the maximal price level of rental housing units on the level from year 1964. This price level was artificially kept without taking into consideration development of other financial indicators. According to previously mentioned conditions it was decided that significant changes are necessary to be made.

As the first step of upcoming deregulation can be considered year 1992, when two significant changes came into usage. First change is linked to date 1.1.1992, when prices for services linked with rental housing were deregulated in all state- owned rental housing flats and simultaneously to this date social discounts connected to rentals were cancelled. In the same year, but six months later on the 1.7.1992 according to the act 15/1992 Col., all the rents in state owned rental flats increased by 100 percent. Although changes executed in year 1992 could have been

¹² Ministry of Finance of the Czech Republic

http://www.mfcr.cz/cps/rde/xchg/mfcr/xsl/cenova_regulace_cr_60888.html (2012)

considered like very important step forward, significant disparities in rental prices still occurred. Because of that many improvements at rental housing market had still to be accepted. In year 1994 according to the act 176/1993 Col., the maximal rental price level was increased by 40 percent. In a similar way was increased maximal rental price level by 22.6 percent in year 1995 according to the Act. 30/1995 Col. But it was not only a maximal rental price increase what previously mentioned act determined. Very important matter, which was approved, was rental price will not be anymore regulated in case that the rental contract is negotiated with a new tenant of vacant flat. But still after acceptance all of the previously mentioned acts, the ratio of regulated and free market rent was only 16 percent. It is obvious that this ratio determines that significant disparities in rental prices were still an actual topic.

Till year 2006, when the rental deregulation act was approved, still three significant increases in rental housing prices occurred. The first increase occurred in year 1996 when rental prices in regulated rentals increased by 25.6 percent in average. Then in year 1997 rental prices in rent regulated flats increased by 50 percent in average, with only one exception in Prague this increase achieved the amount of 100 percent in average. The last significant increase before deregulation act occurred in year 1998, when according to the previous acts rental prices increased according to the size of the city, where is the rental flat located. The result of this was that the highest increase of rental prices occurred in Prague (41 percent in average) and the smallest impact occurred in cities with population smaller than 10 thousand people (15 percent in average).

3.10. Deregulation Act 107/2006 Col.

This deregulation act is considered as a final step of rental housing deregulation. The main aim of this act is to bring free market rent and regulated rent closer together till the end of year 2010. This market

closure should make it possible to transform the current split rental system into a free market one. It means that from year 2011 all the rental prices should be negotiable between tenant and landlord. Although this final deregulation step was planned for the four year period from year 2007 till 2010, because of special occasions some exceptions occurred. According to economic recession and unexpected increase of real estates prices was deregulation process postponed, in regional municipalities excluding Ostrava and Ústí nad Labem and in cities across Středočeský region with population higher than 9 999 inhabitants, till year 2012.

3.11. Exceptions in Deregulation Process

In this case it is very important to mention that deregulation process is not applied to all rental housing units. In this case it is necessary to define following exceptions, which will not be influenced by deregulation process¹³.

- *Flats which are rented to partners, members or founders of legal entity for purpose of future ownership block of flats.*
- *Housing cooperatives founded after 1958, in case that flats were built by usage of financial aid according to financial, credit and other housing cooperative aid directive.*
- *Housing cooperatives labelled as people housing cooperatives according to previous directives.*
- *Flats, which were built or finished after year 1993, if there was used a subsidy from state budget.*

¹³ Ministry for Local Development Czech Republic
<http://www.mmr.cz/CMSPages/GetFile.aspx?guid=e1047c33-0bf7-464e-847a-efa6bc8b49cb> (2012)

3.12. Process of Deregulation

3.12.1. Important Terms Used in Deregulation Process

To be able to precisely understand rent deregulation it is very important to determine basic terms, which are linked to the process of rent deregulation calculations.

3.12.1.1. Actual monthly rent for 1m² of floor space (AR)

Actual monthly rent is considered as a base for further calculations of rental increase in 2007-2010 (2012) period. It is very important to mention that from actual monthly rent has to be deducted the rent for the equipment of the flat, because equipment is considered as a special item within a rent contract framework.

After the first annual increase of the rent is done the rent for flat equipment will be added.

3.12.1.2. Targeted value of monthly rent for 1m² of floor space

Targeted value of the rent is the level, which can be achieved during the deregulation period 2007-2010 (2012 in exceptional cases). This targeted value has been determined according to the approximate lower level of the free market rent. Targeted value of the monthly rent is calculated according to the formula stated in the deregulation act.

Actual flat prices (AP) are based according to the statistics provided by the Czech Ministry of Finance. For the purpose of rental deregulation were determined actual prices per 1m², which are necessary for the calculation of monthly targeted rent. Generally it can be said that annual rental price for 1m² is stated as 5 percent share of actual price of the flat per 1m².

Formula for determining targeted monthly rent according to the deregulation act is:

- **TR= 1/12*p*AP**

Where variables stands for:

- TR - Targeted monthly rent per 1m²
- AP - Actual price of the flat per 1m²
- p - Stands for coefficient according to flat quality or according to the location in special cases (Prague 1,2 and 6)

Coefficient "p" value	Conditions
0,026	<i>Flats with decreased quality within the area of Prague 1</i>
0,0325	<i>Flats with decreased quality within the area of Prague 2</i>
0,041	<i>Flats with decreased quality within the area of Prague 6</i>
0,045	<i>Flats with decreased quality</i>
0,029	<i>Flats within the area of Prague 1</i>
0,0365	<i>Flats within the area of Prague 2</i>
0,046	<i>Flats within the area of Prague 6</i>
0,05	<i>All other flats</i>

Tab. 3 - Values of "p" coefficient

3.12.1.3. Floor space of flat

This term stands for the total sum of square metres of the flat with all the related basic accessories. This total floor space also includes cellars, terraces and balconies, but sum of these specific areas are divided by two every time.

3.12.1.4. Flats with decreased quality

According to the deregulation act from year 2006 new term "*Flat with decreased quality*" was established. Before this act the quality of housing was segmented into four basic categories. Generally it can be said that flats with decreased quality are very similar to previous

categories III. and IV., but there is newly added partly *basic equipped flat with no central heating*¹⁴. For illustration see (Tab.2 below).

Flat	Fully Equipped by Basic Accessories	Partly Equipped by Basic Accessories	Common Basic Accessories	No Basic Accessories
Central Heating	Standard	Standard	Standard	Decreased Quality
No Central Heating	Standard	Decreased Quality	Decreased Quality	Decreased Quality

Tab. 4 - Segmentation of housing quality

3.12.1.5. Basic Accessories

By this term is meant that flat is equipped or has an access to basic accessories. Basic accessories include bathroom or shower unit and toilet.

3.12.2. Principles of Rent Deregulation in the Czech Republic

According to the deregulation act, which is valid from year 2007-2010 and in special conditions till year 2012, is the owner of the property able to increase current rent controlled rent according to the following calculations.

- Maximal Increase of Rental Prices According to Act 176/2006 Col.

$$\square MI = ({}^{4-k+1}\sqrt{(TR/AR) - 1}) * 100$$

Where:

- MI stands for maximal monthly increase of rent
- TR stands for targeted rent
- AR stands for actual rent
- k coefficient stands for time period see table below

¹⁴ Ministry of Finance Czech Republic

http://www.mfcr.cz/cps/rde/xchg/mfcr/xsl/vyhlasaky_1191.html?year=1993 (2012)

Coefficient "k"		
Period	Standard cases	Special cases
2007	1	1
2008	2	2
2009	3	3
2010	4	2
2011	-	3
2012	-	4

After year 2010, in special cases after year 2012, the price level of rent will be driven according to locally usual rent.

3.12.3. Situation in the Czech Republic

As it was mentioned before in the Czech Republic still exists till year 2012 a split rent system. For illustration see charts below.

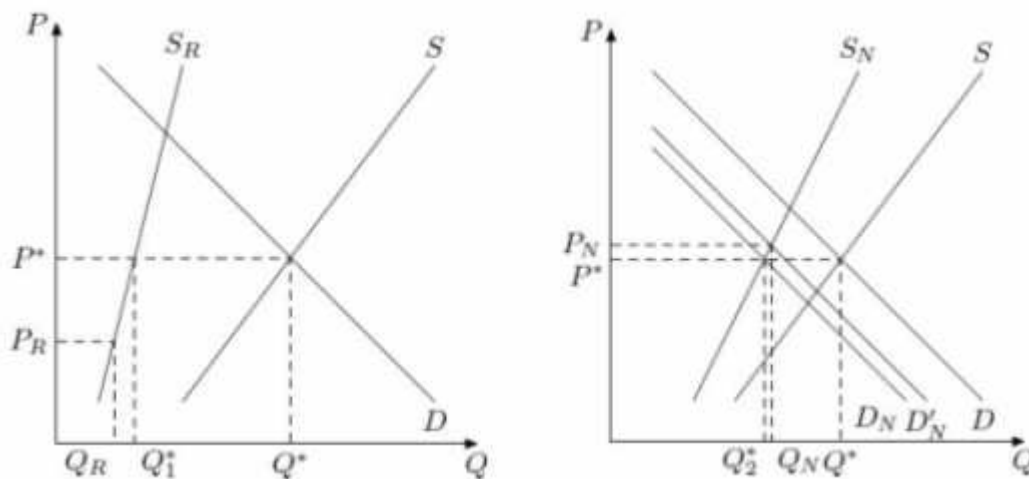


Chart 1 - Regulated and Rent Controlled Rental Housing Market

"In this split rent system the whole housing market is divided into two separated markets, but these markets are significantly influencing each other although exists a significant difference in conditions, which are assessing the rental price.

In this case of particular regulation quantity demanded $Q^*_1 - Q_r$, which is not satisfied on the regulated market, is moved to non-regulated market (see Chart 3 and 4). This movement leads to increase of

demand on non-regulated part of market by $D'_N = D - Q_r$. This increase of demand determines new price $P_n < P^*$ and a new quantity demanded on non-regulated market $Q_n > Q^*_2$.

Regulation of prices on first market leads to increase of prices on non-regulated market above equilibrium.

This increase is higher, if the share of regulated market is higher on the aggregate housing market or the lower is the regulated price under the equilibrium price.

The result of rental market deregulation is the aggregation of two separated markets already mentioned. Generally speaking quantities of rent controlled and free market housing units will be summed and abolition of price ceilings in case of rent control will lead to new price equilibrium, which will be under previous the free market price equilibrium".¹⁵

3.12.4. Definition of Locally Usual Rent

This term Locally Usual Rent (LUR) is significantly linked to the final step of the whole deregulation process, which started in year 2006 according to Act 107/2006 Col.

The exact definition of this term is as follows: "*Locally usual rent is the price is the price that can be achieved at a certain place and time for renting a specific rental housing unit. It is not an average rental price or a rental price, which is the most common at a given place in the given time period*"¹⁶.

Unfortunately this term is not yet precisely defined by any act, but it is possible to derive term according to the Act. 151/1997 Col.

¹⁵ Tittelbach, V., Rent Control in the Czech Republic, Prague, 2010

¹⁶ Ministerstvo pro místní rozvoj [online]. 2009 [cit. 2012-02-12]. Co znamená „v místě obvyklé nájemné“?. Available at: <http://www.mmr.cz/Pro-media/Tiskove-zpravy/2009/Co-znamenava--v-miste-obvykle-najemne>

3.12.5. Factors Influencing Price Level of Local Usual Rent

Next matter, which is very important to determine are the driving factors influencing the price level of LUR.

Very usual point of view is that the most important driving factor of rental price is the location of the housing unit this can be true, but it is not the only factor. It is obvious that human beings have got different wants and needs and these differences are also reflected at the rental housing market. For illustration try to imagine two different groups of people a family with two children and for example manager. The first group will probably prefer a larger housing unit at suburbs, where gardens, parks or woods are near to their homes. On the other hand the second group will probably more prefer living in the centre of the town, where institutions are more available.

But as it was already mentioned location is not the only among factors, which significantly drive the rental price, can be added:

- Size of the rental housing unit
- Dereliction of maintenance
- Type of heating in the given flat
- Flats at ground floors or flats at last floors
- Non-standard equipment of the rental unit

All the other factors, which are also very important, are already included in the factor location. Among these factors belong traffic availability, security, parking opportunities, cultural and sport opportunities and one of the most important job opportunities.

3.13. State Concept for Housing Policy till 2020

3.13.1. Basic Facts

For processing of new housing policy concept were used specialized literature, studies and findings of National Control Agency about fulfillment of previous housing concept for period 2005-2010 and findings from surveys about needs and demands of municipalities.

3.13.2. Three Basic Pillars

Economic suitability

- It means that form of state interventions, have to respect basic economic principles

Sustainability of public and private finance

- If the previously mentioned pillar will not be respected the main impact will be increasing demands of state budget. These increasing expenditures will cause the significant decrease of competitiveness of the Czech Republic.

Responsibility of state for creating conditions, which fulfils the basic right for housing for each individual.

3.13.3. Vision of the State

Although responsibility for housing can be considered as a responsibility of each individual the role of state in the housing policy is very significant. In case that individual is unable from objective reasons to fulfill own responsibility it is a responsibility of state to help. Help of state intervention has to be a mix of tools, which are affecting preventively, incentively and from point of view of public finances are maximally effective.

Generally speaking vision of the new concept of housing policy can be described by three simple characteristics:

Affordability, Stability and Quality

3.13.4. Instruments of New Housing Policy Concept

Generally according to the concept it is necessary that revolving instruments are better solution than the current instruments in form of direct subsidies from state budget.

Very important effect, which is linked to this new concept, is employment, which is in case of building construction significant.

3.13.5. Opinions about Housing Policy Concept

For illustration of situation about the current housing policy it will be very interesting to provide information what are the opinions from two different points of view, because each side is trying to protect different group of people. The opinion is from Ing. Michal Taraba, chairman of tenants union in the Czech Republic.

"Analysis of previous and current situation in housing segment is considered as adequately testified. To futures proposals we significantly support higher support of rental housing in municipal agglomeration, because this matter is no longer possible to postpone. We also support concentration on guarantee and credit aid into a segment of rental housing. We recommend permanent searching for a legislative form for anchoring three grade public sectors it means state, regions and municipalities complete with responsibility for housing policy realization."

Next opinion is provided from chairman of Civic Association of Buildings, Flats and other Properties Owners.

"Focal point of housing policy in current period lies and for the long time will lie in right construction of direct subsidies to social housing in harmony with the right gradual transition on contractual principles according to novella of civic code of law, which has been successfully prepared by Ministry for Local Development, and to completely new civic code of law. Although it is still necessary to finish liberalization of rental right, in order to not call unnecessary court argues and in order to possibility to get over to contracts on indefinite period, not to a infinite contracts."

4. Analytical Part

4.1. *Property as an Investment*

In this analytical part is taken into consideration how the rent control effects influence decision of investments into buying a property for the purpose of renting the flats for tenants.

For the purpose of this analysis it is very crucial to determine price levels of economic rents, cost rents, maximal rent controlled rents and targeted rent according to the deregulation act.

The result of this analysis will determine if an investment into buying a property for the purpose of renting is efficient under the various conditions or generally speaking under what conditions will investment into property generate required profit.

4.1.1. Price Level of Cost Rents

To determine price level of cost rents there are used data acquired from Ministry of Local Development, which stated costs rents valid for year 2005. For the purpose to determine actual data to year 2010 it is necessary to take into consideration construction price indexes (ICSP) and of course change in VAT tariff linked to construction works. The VAT tariff for construction works has increased by 4% and for development of construction price indexes see table below.

Year	ICSP
2005	103,0
2006	102,9
2007	104,1
2008	104,5
2009	101,2
2010	99,8
2011	99,6

Tab. 5 - Price Index of Construction Works, Source: Czech Statistical Office

Price Level of Cost Rents (According to the Act. 540/2002 Col.) CZK per 1m ²		
	Standard Quality	Decreased Quality
Prague	49	44
Brno	47	43
Cities above 50 000 inhabitants	44	39
Cities above 10 000 till 49 999 inhabitants	42	38
Cities above 2000 till 9999 inhabitants	40	36
Cities below 1999 inhabitants	34	31

Tab. 6 - Price Level of Cost Rents

After consolidation of previously mentioned data it is possible to determine actual price level of cost rents per 1m². From the data is obvious that the price level of cost rents has slightly increased exactly by 12.14 % by the six year period.

Actual Price Level of Cost Rents (CZK per 1m ²)		
	Standard Quality	Decreased Quality
Prague	55,77	50,08
Brno	53,49	48,94
Cities above 50 000 inhabitants	50,08	44,38
Cities above 10 000 till 49 999 inhabitants	47,8	43,25
Cities above 2000 till 9999 inhabitants	45,52	40,97
Cities below 1999 inhabitants	38,69	35,28

Tab. 7 - Actual Price Level of Cost Rents

Due to coefficients for cost valuation according to the edict 540/2002 were used, the results can be inaccurate especially in cases of cities with population below 1999 inhabitants¹⁷.

Or in the case if the more precise calculation is required there is the possibility how to calculate the cost rent.

Firstly it is necessary to determine what the price level of flat per 1m² is. For this purpose it is possible to use data, which are provided by the

¹⁷ Source: <http://www.sinz.cz/archiv/docs/si-2005-01-56-64.pdf> (2012)

Ministry for Local Development¹⁸. After the price level is determined it is very crucial to add other costs that are linked to flat.

First cost that will be mentioned is the property tax rate per 1m² of the flat for rental purpose.

Property Tax Rate (CZK/1m ²)		
Municipality	Coefficient	Tax per 1m ² (CZK)
Below 300 inhabitants	0,30	0,47
From 300 till 600 inhabitants	0,60	0,92
From 600 till 1000 Inhabitants	1,00	1,52
From 1000 till 6000 inhabitants	1,40	2,12
From 6000 till 10000 inhabitants	1,60	2,42
From 10000 till 25000 inhabitants	2,00	3,02
From 25000 till 50000 inhabitants	2,50	3,77
Above 50000 inhabitants	3,50	5,27
Prague	5,00	7,52

Tab. 8 – Property Tax Rates

After the tax rate is determined it is also necessary to determine the price level of insurance, which is usually on the level of 0.2% from the property value in case that property is new. After that it is very crucial to determine the rest of the costs, which are maintenance and depreciation. For illustration see table below where the example for assessing the cost is deeply analyzed. The analyzed flat is located in Středočeský district with the population above 50 000 inhabitants and with the standard quality.

¹⁸ Ministry for Local Development

<http://www.mmr.cz/CMSPages/GetFile.aspx?guid=3108b05e-e0ce-4523-a451-4bf4878a24e1> (2012)

Line	Costs	Description	Calculation	
1.	Price per 1m ² of the Flat	<i>According to the data of Ministry for Local Development</i>	22025	CZK/1m ²
2.	Cost of the Common Equipment		48,28	CZK/1m ²
3.	Sum	<i>Line 1+2</i>	22073,28	CZK/1m ²
4.	Property Tax per Year	<i>According to the Tab. 5</i>	7,52	CZK/1m ²
5.	Insurance per Year	<i>0,02 % from Line 3</i>	44,15	CZK/1m ²
6.	Maintenance per Year	<i>1% from Line 3</i>	220,73	CZK/1m ²
7.	Depreciation per Year	<i>1% from Line 3</i>	220,73	CZK/1m ²
8.	Administration per Year	<i>Usually 5% from the Rent</i>	85	CZK/1m ²
9.	Cost for not Rented Flat per Year		36	CZK/1m ²
10.	Total Sum		614,13	CZK/1m ²
11.	Monthly Cost Rent per 1m ²		51,18	CZK/1m ²

Tab. 9 - Cost Rent Calculations

According to the calculations provided in Tab. 9 - Cost Rent Calculations it is obvious that price levels of costs rents provided by the Ministry for Local Development, which were updated to actual period, corresponds with own computations.

After the computations were approved it is possible to exactly determine average price level of cost rents for each municipal city in the Czech Republic.

4.1.2. Price Level of Economic Rents

After price level of cost rents have been determined it is necessary to determine what the price level of the economic rent is. To determine this price level it necessary to take into consideration the capitalization rate. Usually the capitalization rate reaches the value of 5% from the value of the property. There are only three exceptions Prague 1, 2 and 6, where the rates achieve the values 2.9%, 3.65% and 4.6%. We also have to take into a consideration the risk that landlord will not be able to rent the current for this purpose it is necessary to use a risk premium coefficient. After the necessary capitalization rate is added to sum of all expenditures and depreciation then the economic rent is obtained.

Adequate Profit (P)	} Economic } Rent = P+C
Simple Reproduction Costs (C)	

For the purpose of determining price level of economic rent there is used a relationship for the perpetual annuity. *"Annuity derived from an asset (such as an income generating security) where the life span of the annuitant (security holder or his or her beneficiary) is of no consequence."*¹⁹

- $C = z/i = z/u * 100\%$

Where variables stands for:

- C – Value of the asset, which has been acquired
- Z – Net annual income from the investment
- u – Capitalization rate per year in %

After the previous equation is modified it is obvious that variable z is the result of gross annual income from investment (V) minus sum of the annual costs linked to the investment (N)

- $Z = C * i \implies z = V - N$

From the equation above can be easily determined necessary annual gross income from the rent.

- $P = z + N = (C * i) + N$

¹⁹ Source:

<http://www.businessdictionary.com/definition/perpetualannuity.html#ixzz1qVPwZCOh> (2012)

Where variable P stands for the gross annual income, which is necessary to obtain the certain level of profit determined by variable i.

For illustration there is used the same flat as in the example of determining the price level of cost rent.

Line	Levels of Economic Rents with different Levels of Capitalization Rates					
1.	Capitalization Rate (%)	1%	2%	3%	4%	5%
2.	Price per 1m ² of the Flat (CZK)	22025				
3.	Annual Cost Rent	614,13	614,13	614,13	614,13	614,13
4.	Annual Net Income (1m ² /CZK)	220,25	440,5	660,75	881	1101,25
5.	Annual Economic Rent (1m ² /CZK)	834,38	1054,63	1274,88	1495,13	1715,38
6.	Monthly Economic Rent (1m ² /CZK)	69,53	87,89	106,24	124,59	142,95

Tab. 10 - Price Levels of Economic Rents

After the method for determining the price level of economic rent is already it is possible to summarize price levels of cost and economic rents for each municipal city in the Czech Republic. For this purpose see Tab. 11.

Municipal City	Actual Flat Price (CZK)	Cost Rent (CZK)	Economic Rent (CZK) / Capitalization Rate				
			1%	2%	3%	4%	5%
Prague	29 435,86	64,76	89,29	113,82	138,35	162,88	187,41
České Budějovice	15 882,00	39,73	52,96	66,20	79,43	92,67	105,90
Plzeň	19 703,00	46,73	63,15	79,57	95,99	112,41	128,83
Karlovy Vary	19 010,00	45,46	61,30	77,15	92,99	108,83	124,67
Ústí nad Labem	7 072,00	23,58	29,47	35,36	41,26	47,15	53,04
Liberec	15 158,00	38,40	51,03	63,66	76,30	88,93	101,56
Hradec Králové	21 745,00	50,48	68,60	86,72	104,84	122,96	141,08
Pardubice	17 445,00	42,59	57,13	71,67	86,21	100,74	115,28
Jihlava	17 621,00	42,92	57,60	72,28	86,97	101,65	116,34
Brno	24 687,00	55,87	76,44	97,02	117,59	138,16	158,73
Olomouc	20 158,00	47,57	64,37	81,16	97,96	114,76	131,56
Zlín	20 228,00	47,70	64,55	81,41	98,27	115,12	131,98
Ostrava	12 005,00	32,62	42,62	52,63	62,63	72,64	82,64

Tab. 11 – Price Level of Economic and Cost Rents

4.1.3. Price Level of Maximal Rent Controlled Rents

After price levels of economic and cost rents have been determined it is very crucial and interesting for comparison to determine price levels of maximal rent controlled rents.

For this purpose the basic data are obtained from the Ministry for Local Development, where are stated maximal rent controlled rents from the year 2006. After obtaining these data it is possible to determine their future development, till year 2010 and in special cases till year 2012, according to the deregulation act, which was already mentioned (below Tab. 12).

Municipal City / Period	2006	2007	2008	2009	2010	2011	2012
Prague	37,00	43,33	54,38	69,38	81,04	101,70	129,77
České Budějovice	19,00	22,25	27,92	35,63	41,61	52,23	66,64
Plzeň	24,00	28,10	35,27	45,01	52,57	65,97	84,18
Karlovy Vary	23,00	26,93	33,80	43,13	50,38	63,22	80,67
Ústí nad Labem	21,00	24,59	30,86	39,38	46,00		
Liberec	19,00	22,25	27,92	35,63	41,61	52,23	66,64
Hradec Králové	26,00	30,45	38,21	48,76	56,95	71,47	91,19
Pardubice	21,00	24,59	30,86	39,38	46,00	57,72	73,66
Jihlava	21,00	24,59	30,86	39,38	46,00	57,72	73,66
Brno	22,58	26,45	33,19	42,35	49,46	62,08	79,21
Olomouc	21,00	24,59	30,86	39,38	46,00	57,72	73,66
Zlín	21,00	24,59	30,86	39,38	46,00	57,72	73,66
Ostrava	21,00	24,59	30,86	39,38	46,00		

Tab. 12 - Price Level of Rent Controlled Rents

According to the provided data it is obvious that deregulation act caused a significant increase of rent controlled rents in the four respectively six year period. Generally speaking deregulation act fulfilled its purpose by straightening disparities in price levels of rents. In general average rental prices in municipal cities, which were supposed to finish deregulation till year 2010 the average rent controlled prices has increased by 219% and in the municipal cities, with prolonged

deregulation period the average rent controlled prices increased by 350%.

4.1.4. Price Level of Targeted Rent

The process of determining targeted rent was already explained in the literature review part. This price level can be considered as the most important one for this analysis, because this level of rent should provide the information what is the expected outcome of the deregulation act. After the previously mentioned formula is utilized:

- $TR = 1/12 * p * AP$

It is possible to determine price levels of targeted rents for every municipal city in the Czech Republic (below Tab. 13).

Municipal City	Targeted Rent (CZK/1m ²)
Prague	116,82
České Budějovice	66,18
Plzeň	82,10
Karlovy Vary	79,21
Ústí nad Labem	29,47
Liberec	63,16
Hradec Králové	90,60
Pardubice	72,69
Jihlava	73,42
Brno	98,29
Olomouc	83,99
Zlín	84,53
Ostrava	50,02

Tab. 13 - Price Level of Targeted Rent

4.1.5. Price Level of Locally Usual Rent

Last price level of rents, which is necessary for this analysis, is the level of locally usual rent. The main aim of determining these levels of rents

is to provide outline what is the approximate price level of free market rent before deregulation process is done.

Municipal City	Locally Usual Rent (CZK/1m ²)
Prague	155,00
České Budějovice	94,00
Plzeň	99,00
Karlovy Vary	106,00
Ústí nad Labem	90,00
Liberec	106,00
Hradec Králové	100,00
Pardubice	104,00
Jihlava	94,00
Brno	127,00
Olomouc	98,00
Zlín	102,00
Ostrava	98,00

Tab. 14 - Price Level of Locally Usual Rent

On the first sight it is obvious that price level of locally usual rent significantly outnumbers maximal rent controlled rents and is approaching the levels of economic rents, which were already determined.

4.1.6. Comparisson of Price Levels

After all of the price levels were consolidated it is finally possible to make assumptions if the deregulation act fulfilled or still fulfils its purpose.

First and very important matter, which can be derived from the Chart 2 below is the deregulation caused approximation of rent controlled price level to the level of cost rent. This fact is considered as a very crucial one, because from the point when price level of rent control is equal to the price level of cost rent, renting of the property is no longer in loss. Generally speaking expenditures related to the flat are equal to the net income from rent. This equilibrium was achieved after three years of deregulation act functioning in year 2009. Although this break even point was a great step forward, because in the periods before landlords

had to subsidize their properties, still in year 2009 it was almost impossible to generate an adequate profit from renting a property.

When deregulation act came into the fourth year of its function the maximal price of rent controlled rent finally achieved the level, when in average the level of rents yielded a profit. According to the calculations yields from the rent controlled flats achieved a level of 1% capitalization rate, but still this level of capitalization rate still could not be considered as an adequate one.

Finally in the year 2012, when deregulation act is supposed to be finished the capitalization rate achieved the level between 1% - 2% in the municipal cities, there is only one exception in case of Prague, where capitalization rate achieved a level of 3%.

Although nowadays capitalization rate from renting a flat does not achieve an adequate level a significant progress is obvious. According to the worldwide experiences and the information provided by the Czech Ministry of Finance an adequate level of capitalization rate reaches the level of 4%-5%.

Generally speaking *"Own capital invested to the property can not remain without any interest on capital, otherwise owner of the capital reinvest capital to another opportunity (e.g. shares or obligations). If the investment into property wants to remain equally attractive, it is necessary to obtain at least the same yield as in the case that investment is invested to another opportunity with similar risks."*²⁰

In the case of the Czech Republic according to the calculated data investment into property can not be considered as the most suitable and profitable investment, because there exist a various possibilities where to invest own capital with the same or higher rate of return and similar risks.

²⁰ Gratz,E.:Stanovení ceny nájemného ve Švýcarsku. OSMD Praha 2000

Although price level of rent controlled rents has increased almost 3,5 times since year 2006 till 2012, the rental market is still so deformed that adequate yield still can not be achieved.

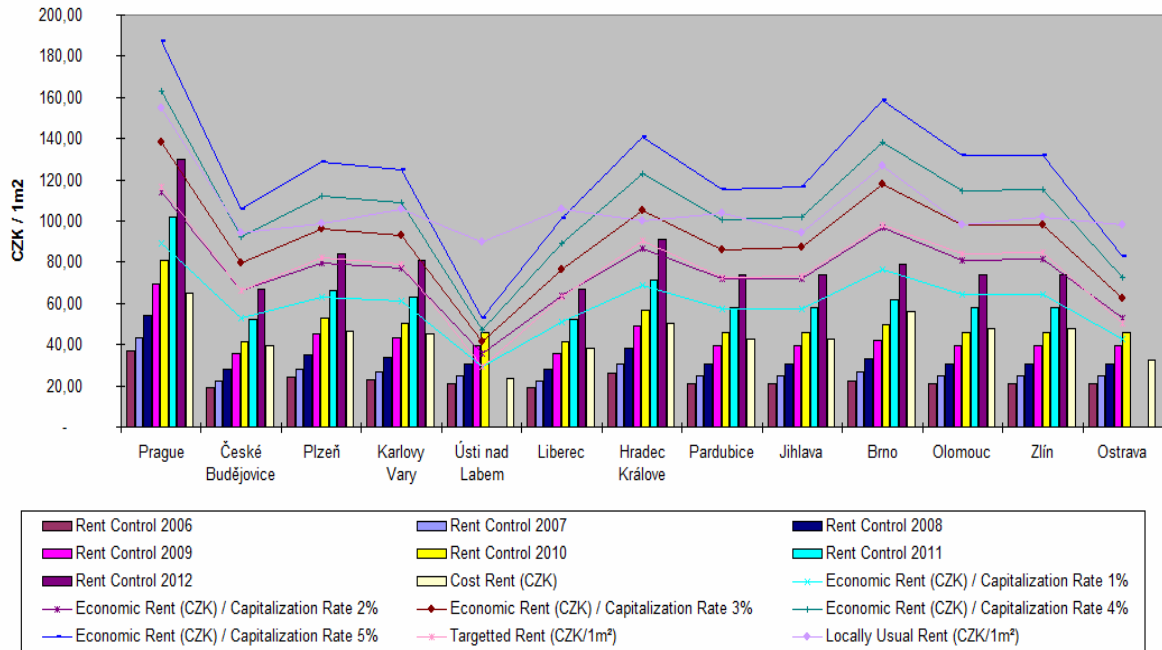


Chart 2 - Consolidated Price Levels of Rent

4.1.7. Final Yields from Flats for Rental Purpose

From the data provided in the Tab. 15 below, where the yields from renting a rent controlled flat are determined it is obvious that deregulation act fulfilled its purpose. According to the table we can deduct that renting a rent controlled flat was generating significant losses on the investments. Break event point has occurred in most cases in year 2010 after two years of functioning of deregulation act. Otherwise year 2010 is considered as the year, when the renting of rent controlled finally started to generate profit. On the other hand the level of yield can not be still considered as an adequate one, because investment to the rental housing is considered as more risky and requires higher level of investment maintenance than for example

investments in the banking sector, where the yields are same of higher with no necessary maintenance.

Yields of Rent Controlled Housing								Average Cost Rent (CZK)
Municipal City / Period	Rent Control 2006	Rent Control 2007	Rent Control 2008	Rent Control 2009	Rent Control 2010	Rent Control 2011	Rent Control 2012	
Prague	-1,13%	-0,87%	-0,42%	0,19%	0,66%	1,51%	2,65%	64,76
České Budějovice	-1,57%	-1,32%	-0,89%	-0,31%	0,14%	0,94%	2,03%	39,73
Pizeň	-1,38%	-1,13%	-0,70%	-0,11%	0,36%	1,17%	2,28%	46,73
Karlovy Vary	-1,42%	-1,17%	-0,74%	-0,15%	0,31%	1,12%	2,22%	45,46
Ústí nad Labem	-0,44%	0,17%	1,24%	2,68%	3,80%			23,58
Liberec	-1,54%	-1,28%	-0,83%	-0,22%	0,25%	1,09%	2,24%	38,40
Hradec Králové	-1,35%	-1,11%	-0,68%	-0,10%	0,36%	1,16%	2,25%	50,48
Pardubice	-1,49%	-1,24%	-0,81%	-0,22%	0,23%	1,04%	2,14%	42,59
Jihlava	-1,49%	-1,25%	-0,82%	-0,24%	0,21%	1,01%	2,09%	42,92
Brno	-1,62%	-1,43%	-1,10%	-0,66%	-0,31%	0,30%	1,13%	55,87
Olomouc	-1,58%	-1,37%	-0,99%	-0,49%	-0,09%	0,60%	1,55%	47,57
Zlín	-1,58%	-1,37%	-1,00%	-0,49%	-0,10%	0,59%	1,54%	47,70
Ostrava	-1,16%	-0,80%	-0,18%	0,68%	1,34%			32,62

Tab. 15 - Yields from Rent Controlled Rental Flats

The Chart 3 describes a long term development of yields in the sector of rental housing market. In this chart can be observed only one significant deviation in the case of Ústí nad Labem, but this deviation can be explained by speculative motives in the municipal city.

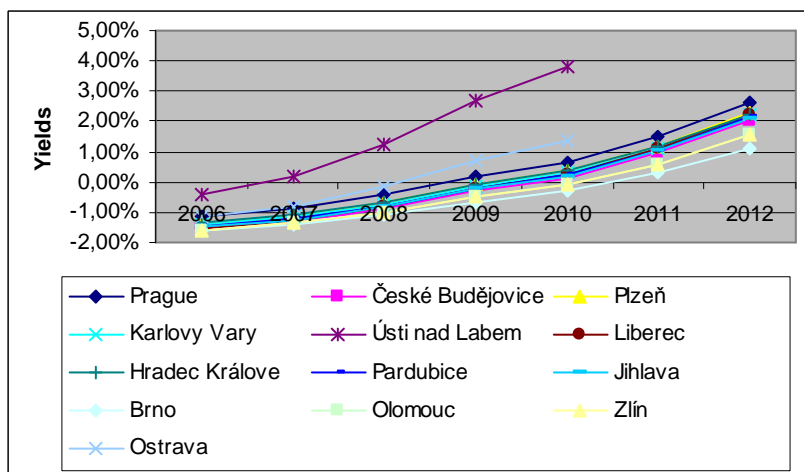


Chart 3 - Yields from Rent Controlled Flats

According to the outcome of yields analysis that the ratios of return on investments in case of rent control were not adequate and because of this fact investment into a property before deregulation act was not profitable at all. On the other hand from the data above it is obvious that deregulation affected yields from rent controlled flats positively and according to this fact the future returns on investments will generate adequate profit and because of this prognosis it is possible to expect that the situation in terms of quality of rental housing stock will improve in the future.

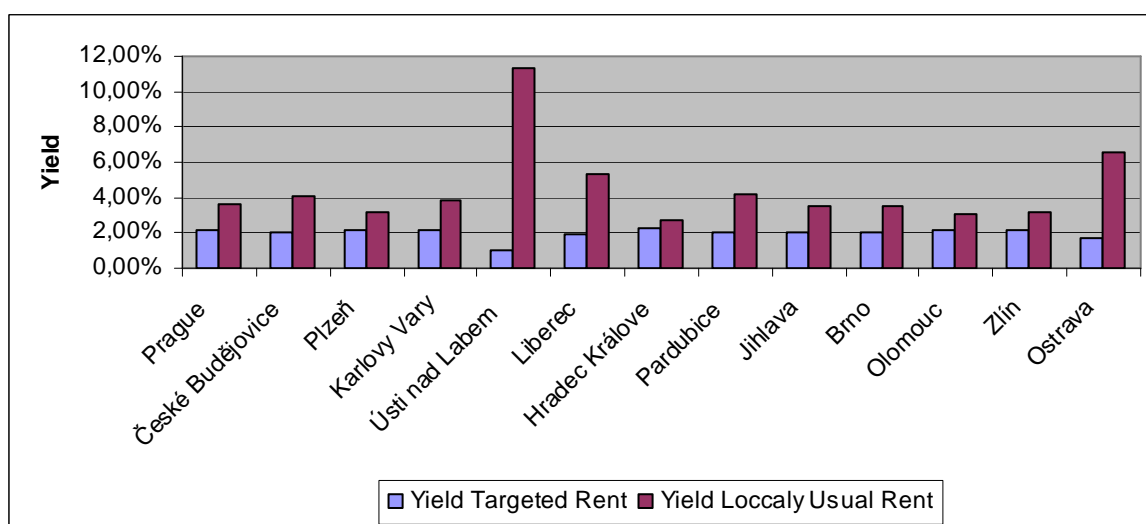


Chart 4 - Comparisson of Yields from Targeted Rents to Locally Usual Rent

4.2. Impact of Rent Control

4.2.1. Constraints for Construction Investments

„Consequence of rental market regulation is also future perception of higher risks for investments into rental market a this fact leads to permanent shift of supply curve to the left. It means as well as regulation of the market is terminated renewal of previous equilibrium will not be achieved, because of the negative expectations from the side

of the investors (investments will not be renewed and thus supply will not increase). ²¹

Although rental prices are not regulated in case of newly built rental flats, there is tendency of investors to not enter rental market, because of market deformation caused by rent control.

In fact rationally, which investor will enter to the market in which exists a segment, which is considered as non-profitable.

4.2.2. Constraints for Property Maintenance

According to Chart 2 on page 41 it is obvious that if price of regulated rents are hold under the price level of cost rents for the long time period than the only possible result of this situation is decrease of housing stock quality. Generally speaking regulation of rental market creates the future debt, which will be in the case of the Czech Republic refunded after deregulation of rental market.

In fact neglected maintenance will also significantly increase future repair and innovative costs.

4.2.3. Decrease of Rental Market

The fact that rent controlled rents were for a long time under the price level of cost rents leads to the situation that housing stock has significantly decreased. The main reason of this decrease is the fact that rental housing units, which were owned by municipalities were sold to private owners, because these rental housing units meant a significant financial burden to municipalities. According to this fact the volume of rental housing units has decreased by 50%. In year 1990 supply of rental housing units achieved a volume of 1.5 million housing units

²¹ LUX, M.: Sociální aspekty bydlení v České republice a zemích Evropské unie, Praha: Sociologické nakladatelství (Slon), 2002, ISBN:80-86429-12-1.

according to the actual data the current supply of rental housing units is on the level of 700 000 rental housing units.

According to the current situation government of the Czech Republic has acquired a new edict (284/2011 Coll.), which enables offering subsidies from National Fund for Housing Development in form of low interest credit.²²

This credit will be provided to legal entities and individuals (municipalities are also included) for the purpose of construction new rental housing.

These new constructed rental housing units are aimed on two specific groups of citizens. First group are seniors above 70 years of age, disabled people and people with low incomes. The second group of people is any individual.

Level of interest rate will be determined according to the group of people to whom will be rental housing units provided. Obviously if the investor is willing to provide housing to the first mentioned group the level of interest will be lower.

4.2.4. Threat of Arbitrations

Next matter, which can be considered as negative impact of rent control in the Czech Republic, is that state is facing the threat of paying compensations to the property owners because of inability of solving deregulation process. Compensations for lost profit and for the restriction of possibility to use of own property can be quantified in hundred billions of Czech crowns.

²² State Fund for Housing Development

http://www.sfrb.cz/fileadmin/sfrb/docs/programy/uvery-na-bydleni/Najemni_byty_-_nar._vlady_c._284-2011_Sb..docx.pdf

4.3. Impact of Rent Deregulation

Economic Impacts

As the most important impact of rent deregulation process can be considered removal of market deformations and acceptance of equal market conditions. Below market conditions without existence of any regulation price determination will be influenced only by supply and demand for the certain good and this can be considered as the most fair solution.

Although the main purpose of deregulation was removal of market deformations it is possible to determine other positive impacts, which are influenced by deregulation.

Mobility on Labor Market and Unemployment Duration

According to the comparison of price level of rent controlled and free market rent it is possible to deduct that these expenditures for rental housing and unevenly distributed. In practice it is obvious that households living in flats with rent controlled rents are significantly less mobile on the labor market, because their willingness to move for job opportunities is influenced by presence of threat from losing their advantage in form of rent price level.

Additional Profit for Housing Stock Innovation

Deregulation process is also very crucial from point of view of investments for innovation and maintenance purposes. In conditions when rent control is present it is possible to observe significant disparities in price of rents. Generally speaking if rent controlled prices are many times lower than in case of free market prices and rent

controlled rents are at the similar level with cost rents there is no willingness and opportunity for owner property to make required investments into property.

It is possible to expect that after rent deregulation is finished opportunities for reconstruction and innovative investments will occur. This fact will lead to significant improvement of housing stock quality, because the long term revenues, which will generate adequate profit, will attract new investors.

Attraction of new investors will significantly increase the current supply of rental housing opportunities and the rental prices will be generally more affordable.

The presence of rent control constrains landlords for developing their investments, because of the lack financial resources.

Social Impacts of Rent Deregulation

Rent deregulation together with economic impacts also brings very significant and crucial negative and positive social impacts and these impacts are summarized in this analytical part.

As one of the most important negative impact is considered absence of affordable housing for inhabitants from weak social groups this group is considered as the one, which is significantly threatened by deregulation of rental prices, because these groups do not dispose of wealth to afford any type of housing. For this socially weak groups of the people is impossible to deal with the prices, which will be set up after rent deregulation. From this point of view state should act the role of protectionist and provide to mentioned social group affordable housing opportunities.

As a positive impact of rent deregulation is considered removal of inequity in occupancy of flats, which are under rent control, by tenants who for some reason, although they do not deserve this kind of

privileged housing. For the illustration Union for Protection of Property Owners published in year 2004 list of the prominent people, who are abusing primary concept of rent control²³.

Next very crucial social aspect which occurs after rent deregulation is the removal of barrier in form that landlords finally achieves the possibility of free disposing with their own equity. This can be considered as one of the most important change in the rental housing market, because in previous periods landlords were unable to set the rental prices according to the market conditions and this fact was generally restricting the concept of running the efficient business. After breaking this barrier it is possible to expect that part of the profit, after deduction of adequate profit for landlord, will be distributed to maintenance of the rental housing stock.

Higher supply of rental housing will also remove the current trend of housing stock consumption, the overall result after deregulation will be that tenants will be occupying only rental housing according the their financial possibilities. Although many proponents of rent control argues that rent deregulation will significantly increase expenditures connected to rental housing usage for the group of people who were using this kind of privileged housing, there should be another solution of the current situation.

²³ <http://tn.nova.cz/zpravy/ekonomika/pokuta-za-zverejneni-seznamu-lidi-platicich-regulovane-najemne.html> 23.2.2012

4.4. Price Development

According to the obtained data it is possible to determine how the rental prices developed over the time period from 2006 till actual price levels from year 2012.

As it was already mentioned purpose of rent control deregulation is to straighten current disparities in price levels of rents. According to the Chart 5 and Chart 6 below and it is obvious that functioning of deregulation act significantly increased price levels of rent controlled rental housing on the other it is obvious that price levels differs in ranks of hundreds percentages.

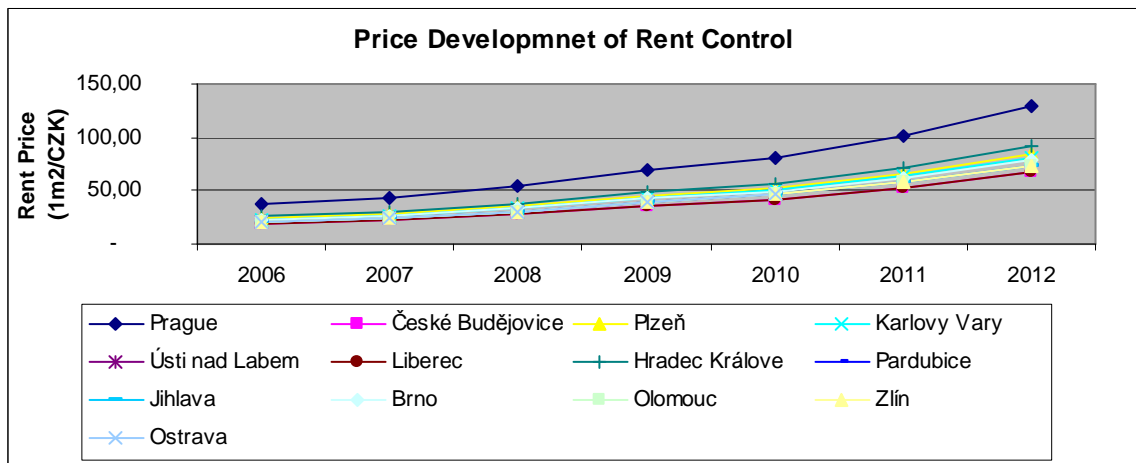


Chart 5 - Price Development of Rent Control Rents

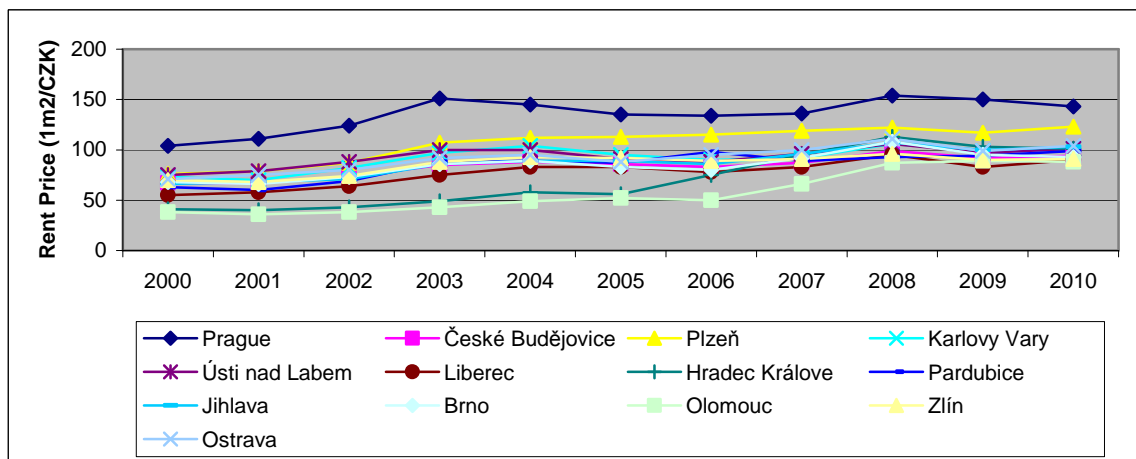


Chart 6 - Price Development of Free Market Rents

Very important is also to focus on the development of free market price levels. The trend of this development is generally downward sloped. Generally speaking the expected outcome of the deregulation process is illustrated in the Chart 7 below.

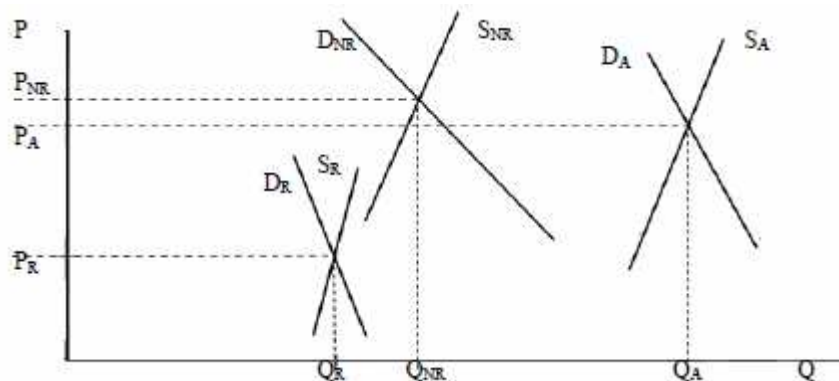
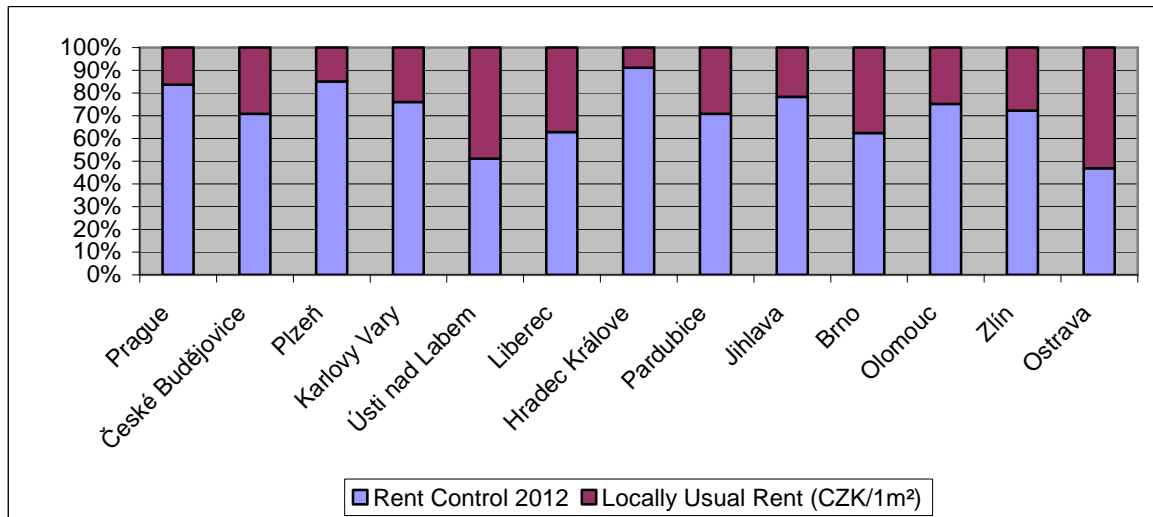


Chart 7 Aggregated Supply and Demand

According to the chart it is possible to determine how the future supply and demand on the housing will look like. According to the chart the expected outcome is that after removal of regulation the already determined supply and demand of free market and rent control rental housing will aggregate into a common aggregated market, where Q_R and Q_{NR} is equal to Q_A , where the resulting price level will be below the price level of free market rent.

Very interesting comparison is also comparing the price levels of maximal rent controlled prices from year 2012 to price level of locally usual rent, which is considered as the final outcome after deregulation process is finished. It is still obvious that disparities between these two variables are still present. Generally speaking the levels of maximal rent controlled prices are still at 70% from the level of locally usual rent. There are only two exceptions in the chart at it is the case of Ústí nad Labem and Ostrava, where the deregulation process already finished.

Although this deviation can be considered as a significant one the previous differences were significantly higher and according to this deregulation act can be considered as a great step forward.



Tab. 16 - Comparison of Rent Control 2012 and Locally Usual Rent

According to subjective time series forecast it is possible to deduct that there is tendency of free market to stagnate or slightly decrease and the level of current rent controlled rents will equalize the current free market rents in the short run period.

4.5. Influence of Price Level of Rents upon Mortgages Market

In this analytical part it is considered economic model that volume of mortgages for housing purpose is influenced by the price level of rent controlled rents, free market rents and household income.

Econometric model – this model contains four variables, one endogenous variable (volume of mortgages) and four exogenous variables (price level of rent controlled rent, free market rent, household income and unit vector)

y_{1t} – volume of mortgages (contracts per year)

x_{1t} – unit vector

x_{2t} – price level of rent controlled rents (CZK/1m²/month)

x_{3t} – price level of free market rent (CZK/1m²/month)

x_{4t} – household income (CZK/year)

$$y_{1t} = \gamma_1 x_{1t} + \gamma_2 x_{2t} + \gamma_3 x_{3t} + \gamma_4 x_{4t} + u_t$$

Data Set

For the purpose of this analysis there are ten observations from year 2002 till 2011. To avoid multicollinearity that is caused by the variable x_{4t} it is necessary to transform household income values in form of differences.

Year	Mortgages	UV	Rent Control	Free Market Rent	Household Income	Difference - income
2002	19333	1	20,99	74,31	16024	1,303
2003	28910	1	22,81	88,23	16944	920
2004	37039	1	22,81	91,85	17708	764
2005	46625	1	22,81	88,46	18882	1174
2006	61784	1	22,81	89,31	20852	1970
2007	76180	1	26,72	95,54	22618	1766
2008	56066	1	33,53	107,46	24614	1996
2009	39385	1	42,78	100,62	25574	960
2010	45390	1	49,97	102,38	26094	520
2011	64306	1	63,62	103,57	26930	836
AVG. Values	47501,8	1	32,89	94,17	21624	1091

Tab. 17 - Data Set for Econometrical Model

After multicollinearity is removed from econometrical model it is possible to proceed to the next step. Next step is the estimation of parameters by using OLSM. By using data from the table above in the OLSM $((x^T x)^{-1} * x^T y)$ computation we will obtain data to build up our quantified model.

Exogenous Variable	Values
x1t	59279,40
x2t	962,62
x3t	-789,23
x4t	28,32

Tab. 18 - Resulted Exogenous Variables

From the table above it is now possible to determine the final equation:

$$y_{1t} = 59279,4 + 962,62 x_{2t} - 789,23 x_{3t} + 28,32 x_{4t} + u_{1t}$$

For the purpose to prove the correctness of our estimation it is necessary to input average values of exogenous variable from the data set into determined equation and then the result is compared with value of endogenous variable.

Statistical Verification

Statistical Significance of Parameters	X _{1t}	X _{2t}	X _{3t}	X _{4t}
Matrix $(X^T X)^{-1}$	27,09103751	0,002200426	0,005713055	6,6331E-07
Sii	2595102195	210782,9797	547264,3996	63,53972666
Sbi	50942,14556	459,1110756	739,7732082	7,971181008
ABS Parameters	59279,40243	962,6218249	789,2276077	28,31983753
T-Value	1,163661282	2,096707912	1,066850758	3,552778126
T-Tab	1,9432	1,9432	1,9432	1,9432
Sign./Insign.	Insignificant	Significant	Insignificant	Significant

Tab. 19 - Statistical Verification

Coefficient of determination: $R^2 = 0,64546 = 65\%$

According to the value of coefficient of determination it is possible to derive that from 65% are endogenous variables dependant upon exogenous variables.

Economic Verification of the Econometric Model

- X_{2t} – According to econometrical model that has been derived it is possible to say that increase of rent controlled rents has a positive impact on increase of mortgages volume. Generally speaking deregulation of rent prices on rent controlled market is forcing rent controlled tenants to transition to another form of housing ownership. In this case it is obvious that tenants more likely prefer ownership form of housing, which can be considered as substitute for rental housing.
- X_{3t} – In case of free market rent it is possible to observe a reverse tendency. From the data set of the econometrical model it is obvious that free market rental prices have already no tendency to significantly increase rather there is expected a tendency towards decrease of market rents price level. According to this fact it is possible to derive that current tenants on the free rental market are feeling more secure and their willingness to change the form of housing is decreasing.
- X_{4t} – Last variable, which has to be explained is the household income, in this case increase of household income causes the increase of mortgages volume.

4.6. Comparisson of Financial Burden

In this analytical part are examined disparities of financial burdens by rent in cases of free market rent and rent control.

According to the data, which were obtained from the database software Disperiter provided by Disparity.cz, it was possible to determine what the level of financial burden is with relationship to the type rental contract.

For the purpose if this comparison was chosen sample of the household, where both adult persons are employed (KZAM 4) and have got one child. The sample flat 3+1 has got an area of 73m² and obtained data are from year 2001 till 2010.

Households Rent Control Contracts

From the obtained data is possible determine what is the financial burden related to the rent price of the household according to the region where the flat is located.

In case of rent control it is obvious that from year 2001 till 2006 was the financial burden decreasing this was influenced by the increase of wages and the fact that rent controlled rents were freezed. In that time period was an average financial burden on the level of 5%-6% only one exception can be observed and it is a case of Prague where the average financial burden achieved level of 9%.

From year 2007, when deregulation act came into effect can be observed that financial burden of households started significantly increasing. According to the Chart 8 below it is obvious that from the conditions valid in year 2006 financial burden by rent controlled rent more than doubled in all regions till year 2010. Highest increase of the financial burden can be observed in Prague, where it increased from 8% in year 2006 to 20% in year 2010.

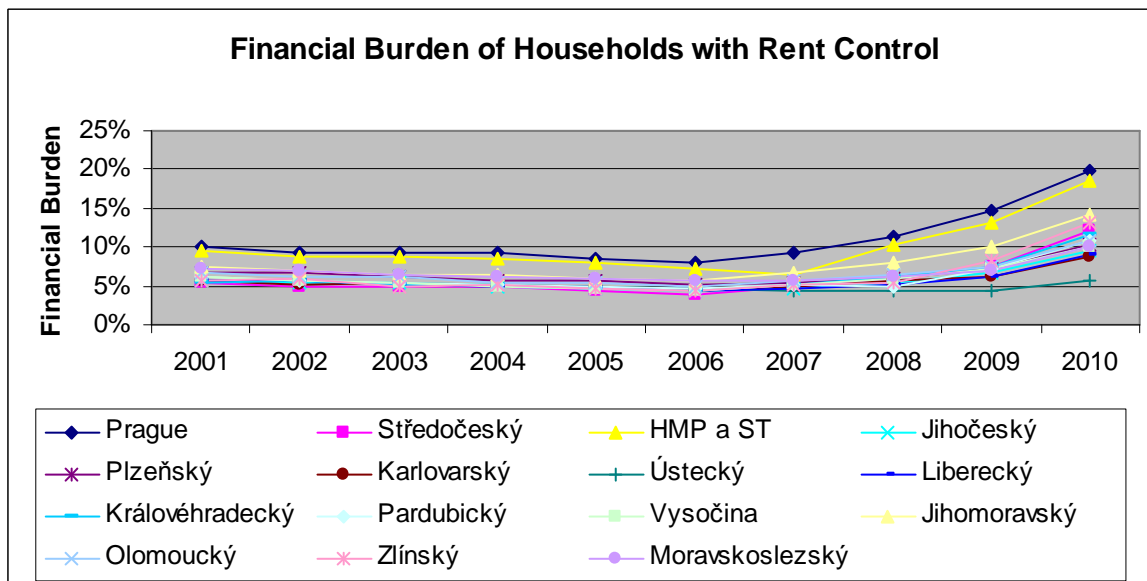


Chart 8 - Financial Burden of Households with Rent Controlled Rents

Households with Free Market Rent Contracts

In case of financial burden of households by rent we can observe opposite trend in financial burden development. This trend opposite trend can be explained by presence of rent control. In general financial burden by rent achieved its peak between years 2003 and 2004, when the average financial burden achieved the average level of 21.5% with the exception of Prague where the level reached the level of 36.5%. After financial burden reached a peak it is possible to observe that rent controlled rents converging with free market rent and this fact is reflected in the decreasing level of financial burden by free market rent. Next matter which is necessary to mention is the presence of higher dispersion of financial burden in case of free market rent than in case of rent controlled rents. From this fact can be deducted that financial burden by free market rent better reflects differences in life conditions. On the other hand absence of these dispersions in case of rent control shows us the evidence of inadequate diversification of rent price level between different regions.

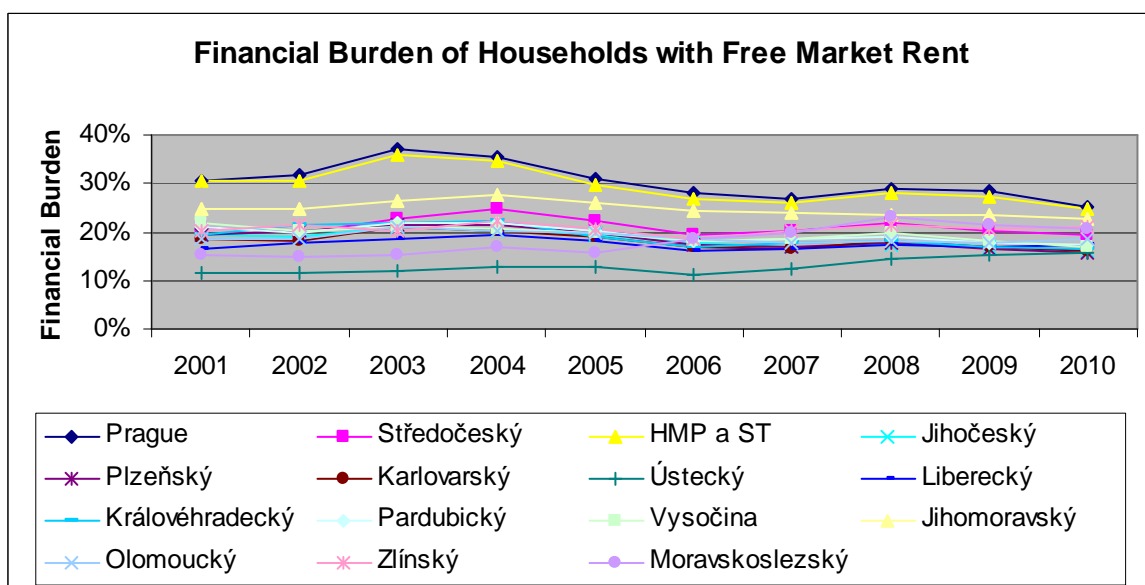


Chart 9 - Financial Burden of Households with Free Market Rents

4.7. Case Study

For better understanding of disparities, which are influenced by the presence of rent control on the rental market, here is provided a case study with various scenarios.

For this purpose let us imagine that we are owners of the block of flats in Prague exactly Prague 4 in year 2007 when deregulation process was in the first year of its functioning. We acquired this property after restitutions and this property provides no additional revenues. Our model block of flats has four floors with twelve rental units in the standard quality with an area of 68m². For the purpose of this analysis three basic scenarios will be set up. In the first scenario one third of rental units are occupied by tenants with rent controlled rents and the rest of tenants have got free market rent. In the second scenario portion of rent control and free market is on the same level and the third scenario one third of rental units are occupied by tenants with free market rent and the rest is have got rent controlled rents.

The expected outcome of this case study is to prove that existences of significant disparities in the income are present and influenced by the rent control.

First matter, which has to be done, is determination of cost rent for analyzed property see Tab. 20 below.

Line	Costs	Description	Calculation	
1.	Price per 1m ² of the Flat	<i>According to the data of Ministry for Local Development</i>	30612,00	CZK/1m ²
2.	Cost of the Common Equipment		48,28	CZK/1m ²
3.	Sum	<i>Line 1+2</i>	30660,28	CZK/1m ²
4.	Property Tax per Year	<i>According to the Tab. 5</i>	7,52	CZK/1m ²
5.	Insurance per Year	<i>0,02 % from Line 3</i>	61,32	CZK/1m ²
6.	Maintenance per Year	<i>1% from Line 3</i>	306,60	CZK/1m ²
7.	Depreciation per Year	<i>1% from Line 3</i>	306,60	CZK/1m ²
8.	Administration per Year	<i>Usually 5% from the Rent</i>	85	CZK/1m ²
9.	Cost for not Rented Flat per Year		36	CZK/1m ²
10.	Total Sum		803,05	CZK/1m ²
11.	Monthly Cost Rent per 1m ²		66,92	CZK/1m ²

Tab. 20 - Determination of Cost Rent per Flat

From the table above it is possible to determine that the cost rent of the model flat in this case study is equal to 4550 CZK. This value is very crucial for the following scenarios.

Scenario 1

In this first scenario where tenants with rent controlled rents are in the minority in the model property it is obvious that analyzed property assigns adequate profit. But according to the calculations it is seeable that yields have got tendency to decrease from year 2009, this is caused by particular removal of market deformation caused by the rent control. Although this decrease occurred it can not be considered as crucial indicator, because property will still generate adequate profit in the long run period.

Scenario 1					
Sum of the Flats in the model Property	12				
Number of Rent Controlled Flats	3				
Number of Free Market Flats	9				
Period	2007	2008	2009	2010	
Total Costs per Month	54600	57057	57742	57626	CZK
Free Market Rent in Prague 4	136,00	154,00	150,00	143,00	CZK/1m ²
Rent Controlled Rent in Prague 4 per Flat	43,327	54,38	69,38	81,04	CZK/1m ²
Sum of Free Market Rent per Month	83 232	94 248	91 800	87 516	CZK
Sum of Rent Controlled Rent per Month	8 839	11 093	14 154	16 532	CZK
Sum of Rent Revenues	92 071	105 341	105 954	104 048	CZK
Yield (Revenues - Costs) per Month	37 471	48 284	48 212	46 422	CZK

Tab. 21- Case Study Scenario 1

Scenario 2

In this scenario where rent controlled and free market tenants are equally allocated it is possible to observe significant decrease in total yields in comparison with scenario 1. But still this scenario can be considered as the profitable one although it is obvious that value of capitalization rate is not as high as in the first scenario.

Scenario 2					
Sum of the Flats in the model Property	12				
Number of Rent Controlled Flats	6				
Number of Free Market Flats	6				
Period	2007	2008	2009	2010	
Total Costs per Month	54600	57057	57742	57626	CZK
Free Market Rent in Prague 4	136,00	154,00	150,00	143,00	CZK/1m ²
Rent Controlled Rent in Prague 4 per Flat	43,327	54,38	69,38	81,04	CZK/1m ²
Sum of Free Market Rent per Month	55 488	62 832	61 200	58 344	CZK
Sum of Rent Controlled Rent per Month	17 677	22 185	28 308	33 064	CZK
Sum of Rent Revenues	73 165	85 017	89 508	91 408	CZK
Yield (Revenues - Costs) per Month	18 565	27 960	31 767	33 782	CZK

Tab. 22 - Case Study Scenario 2

Scenario 3

This last scenario shows the yield development of the property, where the majority of the tenants are burdened with rent controlled rent. Very important is to focus on year 2007, where according to the data,

property allocate loss. In this case landlord generates no profit and even has to subsidize this property from own financial resources. And for illustration this loss has occurred in the time period when deregulation act was already functioning for one year so there already existed a tendency to straighten rental prices. According to Tab. 20 above it is obvious that rent controlled rent was on the level of cost rent till year 2009. From this fact it is possible to deduct that before year 2008 this model property did not and was unable to generate any profit and it makes this property unintended because it creates negative financial burden for the property owner.

Scenario 3					
Sum of the Flats in the model Property	12				
Number of Rent Controlled Flats	9				
Number of Free Market Flats	3				
Period	2007	2008	2009	2010	
Total Costs per Month	54600	57057	57742	57626	CZK
Free Market Rent in Prague 4	136,00	154,00	150,00	143,00	CZK/1m ²
Rent Controlled Rent in Prague 4 per Flat	43,327	54,38	69,38	81,04	CZK/1m ²
Sum of Free Market Rent per Month	27 744	31 416	30 600	29 172	CZK
Sum of Rent Controlled Rent per Month	26 516	33 278	42 462	49 596	CZK
Sum of Rent Revenues	54 260	64 694	73 062	78 768	CZK
Yield (Revenues - Costs) per Month	- 340	7 637	15 321	21 142	CZK

Tab. 23 - Case Study Scenario 3

Case Study Conclusion

According to the data from tables above it is necessary to mention that functioning of deregulation act brings positive aspects for future sustainable functioning of rental market. Significant progress of rent controlled rents prices brings adequate profit for the property owners and brings opportunity for future innovations of the current housing stock, which is still not in good condition.

Next matter which is very crucial to mention that neither scenario included the extreme possibility that acquired block of flats will be occupied only by tenants who are paying only rent controlled rent. If this possibility occurs, and according my experience this scenario is not

so uncommon, the acquired property is becoming Greek gift, which was before rent deregulation act, unsustainably generating significant financial losses for the owner.

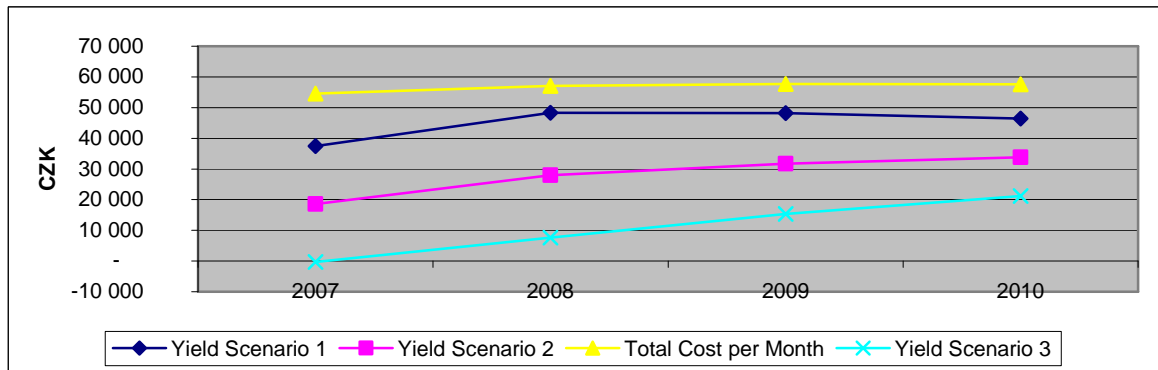


Chart 10 - Summary of Case Study Scenarios

5. Conclusion

According to the data obtained from price levels and yields from the properties with rental purpose it is possible to verify Hypothesis 1 and Hypothesis 2. It has been proved that concept of rent control does not enable to generate adequate profit and this fact leads to the situation that current housing stock losses value. The significant additional profit generated by the rent deregulation is distributed to the funds for maintenance and repairs. It can be argued that the extra generated profit will not be invested that way, but these investments are necessary for landlords if they want to be successful on the future deregulated free market with properties for rental purposes. Landlords will be forced to make these mentioned investments, because the deformations will disappear from the market, and the presence of market forces of supply and demand will be the only drivers on the rental market.

It has been also proved that after rent control is removed the differences in the price level of rents will decrease and achieves levels according to the free market conditions. It can be argued that increase of previous rent controlled rents is very significant, but in the other hand according to the data of financial burden it is possible to deduct that financial burden in this case of rent control does not achieve adequate values. According to this it is necessary to say that average financial burden by rent in Europe achieves approximately 40% from household's income and this is twice as high as in the case of rent controlled rentals.

Generally it can be expected that aggregation of rental markets will push the general prices of rent down, because there will tendency to free market competition on this market with no artificially made barriers, which deforms current rental market.

Finally the last hypothesis has been also proved and is supported and economically verified by results of the econometrical model.

At the end it is necessary to mention that although deregulation of rental market brings significant improvements there are still social groups of citizens, which are unable to reach the price level of rents, which are set up by market, and in this case the state should play significant role by providing housing for this certain group. But this way should be more efficient than rent control, because as it is obvious from this thesis rent control brings more disadvantages in form of disparities and market deformations than advantages.

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7. Supplements

Supplement 1. Form for Announcement about Unilateral Increase of Rent

Příloha

**Oznámení o jednostranném zvýšení nájemného – vzor pro
jednostranné zvýšení v roce 2009**

Nájemce:

Nájemné v bytě č. v domě (*ulice, č. popisné, č. orientační, obec, kde se předmětný byt nachází*) bude počínaje dnem (*uvést přesné datum*) zvýšeno, a to na základě příslušných ustanovení zákona č. 107/2006 Sb., o jednostranném zvyšování nájemného z bytu a o změně zákona č. 40/1964 Sb., občanský zákoník, ve znění pozdějších předpisů (dále jen „zákon“), na Kč/m²/měsíc podlahové plochy bytu – tj. na Kč/měsíc za tento byt.

Jedná / nejedná (*uvést jednu ze dvou alternativ*) se o byt se sníženou kvalitou podle § 2 písm. e) až g) zákona.

Odůvodnění:

Pronajímatel využil možnosti dané mu zákonem a oznamuje jednostranné zvýšení nájemné.

Údaje nezbytné pro zvýšení nájemného byly získány ze zákona a ze Sdělení Ministerstva pro místní rozvoj č. 214/2008 Sb. ze dne 11. června 2008 publikovaného ve Sbírce zákonů částka č. 67 ze dne 26.6.2008 (dále jen „Sdělení“).

Velikostní zařazení obce (*event. uřčené oblasti, pokud jde o Prahu nebo Brno*), kde se předmětný byt nachází, bylo provedeno v souladu s přílohou č. 1 (*event. přílohou č. 2, pokud jde o byt v Praze nebo Brně*) Sdělení.

Dosud placené aktuální nájemné za 1 m² podlahové plochy bytu je Kč měsíčně. V této výši není započítána úhrada za vybavení bytu ani jiné platby spojené s užíváním bytu.

Maximální přírůstek měsíčního nájemného je v souladu se zákonem a se Sdělením - tj. byl vypočten podle vzorců uvedených v příloze zákona nebo vyhledán v příloze č. 4, popř. 4a pro byt se sníženou kvalitou (*uvést jednu ze dvou alternativ*), a čími % pro období od níže uvedeného dne do 31. prosince 2009.

Pronajímatel využil možnosti zvýšení nájemného v plné výši (*event. maximální přírůstek je nižší, pokud se pro nižší zvýšení pronajímatel rozhodl, a to*).

Povinnost platit zvýšené nájemné vzniká nájemci dnem (*nejdříve prvním dnem kalendářního měsíce následujícího po uplynutí 3 měsíců od doručení tohoto oznámení*).

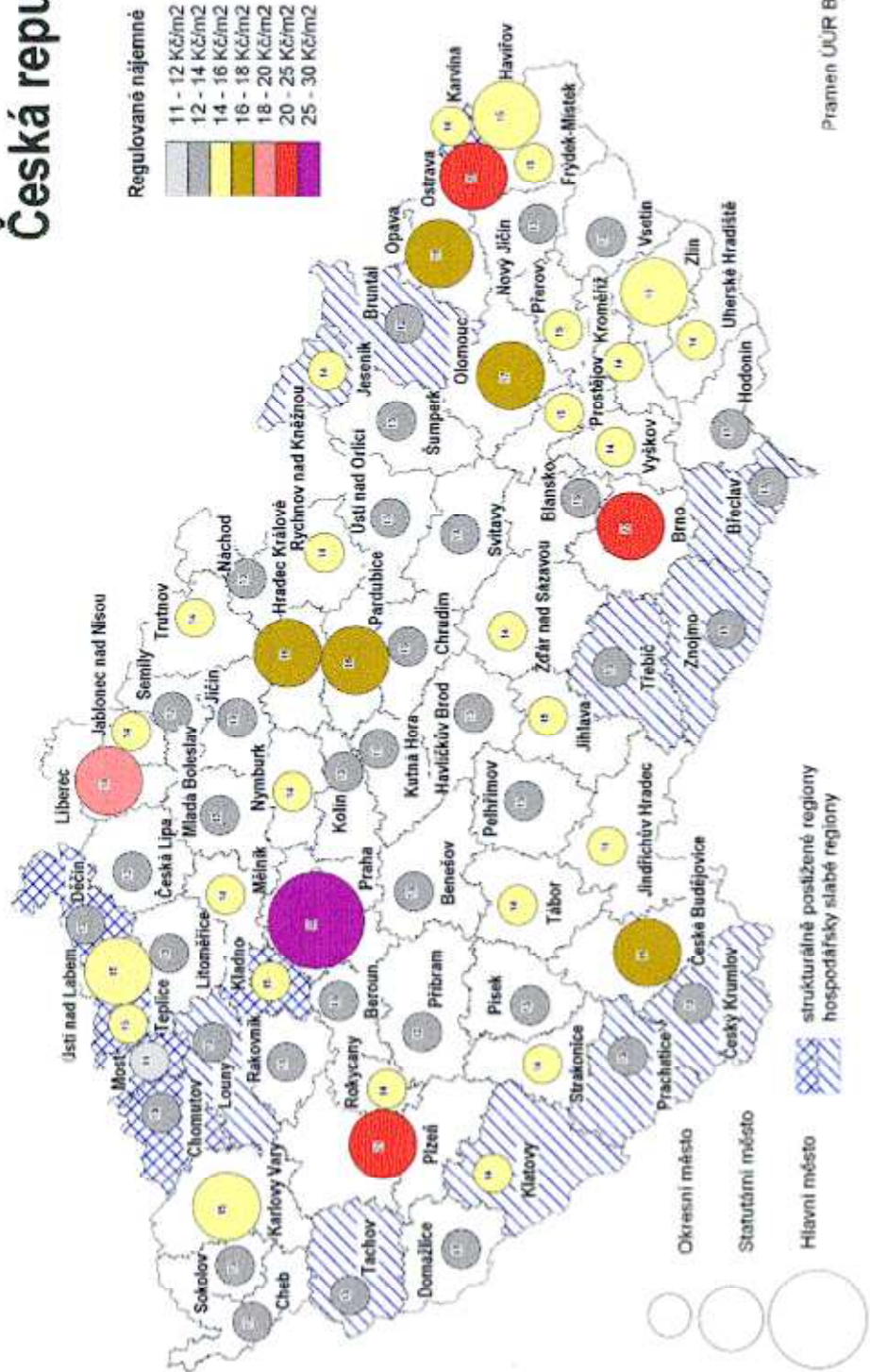
Celková výše nájemného, včetně nájemného za vybavení bytu, nyní čími Kč/měs.

V dne

Pronajímatel:

Supplement 2. Rent Control in the Czech Republic Layout

Česká republika



Pramen ÚJR Brno, leden 1999

Supplement 3. Fundamental price and targeted rent in CZK/m² of floor area for the period from 1.1.2007 till 31.12.2007

Kraj; velikostní kategorie obcí podle počtu obyvatel, oblasti Praha a Brna	Základní cena bytu v Kč/m ²	Cílová hodnota měsíčního nájemného v Kč/m ²	Cílová hodnota més. náj. v Kč/m ² pro byty se sniženou kvalitou
HL.M.PRAHA			
Oblast č. 1	44 275	107,00	95,93
Oblast č. 2	32 759	99,64	88,72
Oblast č. 3	23 895	99,56	89,61
Oblast č. 4	19 985	83,27	74,94
Oblast č. 5	23 895	99,56	89,61
Oblast č. 6	31 175	119,50	106,51
Oblast č. 7	23 895	99,56	89,61
Oblast č. 8	23 895	99,56	89,61
Oblast č. 9	21 524	89,68	80,72
Oblast č. 10	21 524	89,68	80,72
Oblast č. 11	23 895	99,56	89,61
Oblast č. 12	21 524	89,68	80,72
Oblast č. 13	17 529	73,04	65,73
Oblast č. 14	19 985	83,27	74,94
Oblast č. 15	19 985	83,27	74,94
Oblast č. 16	17 529	73,04	65,73
Oblast č. 17	17 529	73,04	65,73
Oblast č. 18	21 524	89,68	80,72
Oblast č. 19	21 524	89,68	80,72
Oblast č. 20	23 895	99,56	89,61
Oblast č. 21	19 985	83,27	74,94
Oblast č. 22	17 529	73,04	65,73
Oblast č. 23	17 529	73,04	65,73
Oblast č. 24	17 529	73,04	65,73
Oblast č. 25	17 529	73,04	65,73
Oblast č. 26	21 524	89,68	80,72
Oblast č. 27	17 529	73,04	65,73
Oblast č. 28	17 529	73,04	65,73
STŘEDOČESKÝ			
50 000 a více obyvatel	15 611	65,05	58,54
10 000-49 999 obyvatel	11 393	47,47	42,72
2 000-9 999 obyvatel	9 634	40,14	36,13
do 1 999 obyvatel	6 314	26,31	23,68
JIHOČESKÝ			
50 000 a více obyvatel	9 637	40,15	36,14
10 000-49 999 obyvatel	8 511	35,46	31,92
2 000-9 999 obyvatel	5 578	23,24	20,92
do 1 999 obyvatel	3 520	14,67	13,20
PLZENSKÝ			
50 000 a více obyvatel	13 194	54,98	49,48
10 000-49 999 obyvatel	7 605	31,69	28,52
2 000-9 999 obyvatel	6 664	27,77	24,99
do 1 999 obyvatel	4 448	18,53	16,68
KARLOVARSKÝ			
50 000 a více obyvatel	14 182	59,09	53,18
10 000-49 999 obyvatel	7 660	31,92	28,73
2 000-9 999 obyvatel	5 236	21,82	19,64
do 1 999 obyvatel	4 100	17,08	15,38
ÚSTECKÝ			
50 000 a více obyvatel	5 118	21,33	19,19
10 000-49 999 obyvatel	4 473	18,64	16,77
2 000-9 999 obyvatel	5 320	22,17	19,95
do 1 999 obyvatel	3 915	16,31	14,68
LIBERECKÝ			
50 000 a více obyvatel	11 269	46,95	42,26
10 000-49 999 obyvatel	7 495	31,23	28,11
2 000-9 999 obyvatel	5 026	20,94	18,85
do 1 999 obyvatel	5 606	23,36	21,02
KRALOVĚHRADECKÝ			
50 000 a více obyvatel	16 257	67,74	60,96
10 000-49 999 obyvatel	8 546	35,61	32,05
2 000-9 999 obyvatel	7 137	29,74	26,76
do 1 999 obyvatel	3 994	16,64	14,98
PARDUBICKÝ			
50 000 a více obyvatel	10 285	42,85	38,57
10 000-49 999 obyvatel	8 790	36,58	32,93
2 000-9 999 obyvatel	6 449	26,87	24,18
do 1 999 obyvatel	5 553	23,14	20,82
VYSOČINA			
50 000 a více obyvatel	12 374	51,56	46,40
10 000-49 999 obyvatel	8 643	36,01	32,41
2 000-9 999 obyvatel	6 863	28,60	25,74
do 1 999 obyvatel	4 014	16,73	15,05
BRNO			
Oblast č. 1	19 338	80,58	72,52
Oblast č. 2	17 115	71,31	64,18
Oblast č. 3	17 115	71,31	64,18
Oblast č. 4	19 338	80,58	72,52
Oblast č. 5	17 115	71,31	64,18
Oblast č. 6	13 841	57,67	51,90
Oblast č. 7	12 260	51,08	45,98
Oblast č. 8	12 260	51,08	45,98
Oblast č. 9	12 260	51,08	45,98
Oblast č. 10	12 260	51,08	45,98
Oblast č. 11	12 260	51,08	45,98
Oblast č. 12	17 115	71,31	64,18
JIHOMORAVSKÝ bez BRNA			
10 000-49 999 obyvatel	9 081	37,84	34,05
2 000-9 999 obyvatel	7 565	31,52	28,37
do 1 999 obyvatel	5 768	24,03	21,63
OLOMOUCKÝ			
50 000 a více obyvatel	13 597	56,65	50,99
10 000-49 999 obyvatel	8 095	33,73	30,36
2 000-9 999 obyvatel	5 677	23,65	21,29
do 1 999 obyvatel	3 557	14,82	13,34
ZLINSKÝ			
50 000 a více obyvatel	13 373	55,72	50,15
10 000-49 999 obyvatel	9 658	40,24	36,22
2 000-9 999 obyvatel	7 555	31,48	28,33
do 1 999 obyvatel	4 749	19,79	17,81
MORAVSKOSLEZSKÝ			
50 000 a více obyvatel	7 310	30,46	27,41
10 000-49 999 obyvatel	5 724	23,85	21,47
2 000-9 999 obyvatel	4 467	18,61	16,75
do 1 999 obyvatel	4 407	18,36	16,53