Housing-induced Poverty and Rent Deregulation: A Case Study of the Czech Republic

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Abstract

This paper deals with the issue of the relationship between households' housing costs and poverty. Using the concept of housing affordability it studies so-called housing-induced poverty in the Czech Republic. It combines this concept with the concept of relative poverty defined by Eurostat. The results show that households living in apartments with rent are the most vulnerable to poverty. The next part of the paper deals with the impact of the prospective end of regulated tenancies in the Czech Republic. It focuses on the changing level of the rents, and their influence on the number of households which are at risk of poverty. Micro-simulation models based on the EU-SILC micro data for the Czech Republic were employed in the research. Based on the results of these micro-simulation models it is assumed that the number of households at risk of poverty will increase significantly owing to the deregulation process. The paper highlights the development of the number of households at risk of poverty between the years 2008 to 2010, and discusses individual factors influencing the number of households at risk of poverty presently, as well as factors that will influence it after 2010.

Keywords: *poverty, housing affordability, EU-SILC data, rent deregulation, micro-simulation modelling*

JEL Classification: I32, C31, P36

Introduction

The social situation of a household is not influenced solely by its total income, but also by the extent and structure of its expenditure. One of the most important cost items for all households is the cost of housing. The concept of

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housing affordability represents an approach that takes into account the mutual relationship between the income of a household and its housing costs. However, an entirely clear-cut interpretation of this relationship is not available. Therefore, it is only possible to employ a range of poverty related theories.

The aim of this study is to evaluate the present situation and possible changes in poverty related to the rent deregulation in the Czech Republic.

It starts with a discussion of different approaches to the definition of housing affordability. The commonly used definition (provided by Stone, 2006a) is based on monetary income of the household and its living cost. The paper focuses on two of them, the so-called *ratio* and *residual definitions*. The ratio definition is often referred to as the most important approach, where housing affordability is expressed as the maximum acceptable proportion of housing costs in relation to household income (usually 25% or 30%). The same concept is employed by the European Commission, which monitors "housing cost overburden rate" within European states. However, it is the residual approach that is considered more relevant for this study since it derives housing affordability from possession of sufficient funds available to provide for basic needs after covering housing costs.

In the paper the above mentioned theoretical indicators are applied to the example of the Czech Republic (the discussion on housing affordability in the Czech Republic can be found in Lux, 2007). It focuses on the question of how housing costs affect the amount of expenditure needed to provide other basic goods (the so-called housing-induced poverty). In the final section of the paper attention is drawn to households living in rented apartments within regulated tenancies. Given that the deregulation of a large part of these rents is currently under way in the Czech Republic, a question arises as to how the structure of households will change, in terms of poverty, after the deregulation has been completed.

1. Theoretical Background

Concepts of absolute poverty "consider households as poor if their needs regarding the very possibility of their survival are not adequately met" (Mareš and Rabušic, 1996, p. 299). The following approaches to poverty can be distinguished here: in terms of basic needs (the cost of basic needs, i.e. food, housing, heating and clothing), in terms of the basic consumption basket (the minimum expenditure for households of various sizes), and in terms of the proportion of the cost of food to other goods (see Orshansky, 1965).

Experts have also been dealing with the concepts of *financial housing affordability* for many years (Whitehead, 1991; Thalmann, 1999; Bramley, 1994;

Bramley and Karley, 2005). The availability of housing is most often seen as the correlation between the household's income and its housing costs. Housing for a household is considered affordable when the housing costs are reasonable in relation to household's income. Here it has to be mentioned that the normative basis of the definition of affordability has been widely criticized. The reason for this is that a problem exists in defining affordability. "What we consider to be adequate accommodation and adequate residual income requires some normative decision-making" (Robinson, Scobie and Hallinan, 2006). Yet the literature provides no help in discovering an objective method of benchmarking. Lux (2007) with a 'quasi-normative approach' also contributes to the discussion concerning normativity of affordability with its determination of 'optimal' rents. Worth-mentioning is also Mikeszová, Lux and Morisseau (2009), who define so-called adequate living (both case studies of the Czech Republic).

This correlation can be mathematically expressed as a difference, or as a proportion of income and housing costs. This dual view of housing affordability has become the baseline for investigation of all the associated patterns. However, according to Stone, in practice it is possible to distinguish, multiple different approaches to housing affordability (Stone, 2006a):

- *relative* – the relationship between housing costs and household income and its evolution,
- *subjective* – willingness of households to spend money,
- *household budget* – total household expenditure on housing,
- *ratio* – the maximum possible (acceptable) share of housing costs in relation to income,
- *residual* – the minimum income needed for providing basic needs after housing is covered.

Probably the most important approach, featuring the longest history of research, is the fourth one – the so-called *ratio*. The origins of the housing affordability research can be traced back to the 19th century. Prominent German statisticians, Ernst Engel and Herman Schwabe, then formulated the rule of mutual relationship between the income and individual household spending "having its roots in praxis" (Feins and Lane, 1981). Engel assumed that the percentage of income the household spends on housing is independent from their income. While Schwabe says that the amount of money paid for housing increases at a slower pace than the income alone. The continuing discussion dedicated to issues related to spending on housing, and burdening the household budgets with these costs, dates back to this period. The housing availability alone was later expressed as a 25-percentage share of housing costs in relation to monthly income, i.e. "one week salary should cover the monthly expenses for living"

(Hulchanski, 1995). This ratio was therefore not the result of sophisticated calculations, but resulted from the research concerned with households' behavior and their spending. During the 20th century the 30% limit was used more frequently, but according to Burke there is no rational basis for that. In his opinion it is rather the result of philosophical reflection based on society values, and their historical and institutional ties (Burke, 2003). For this rate, the term housing expenditure to income ratio has become widely accepted.

As we mentioned above – the ratio approach – is the most commonly used affordability indicator, and as such is often discussed. It has been criticized, for example, as (Gabriel et al., 2005):

- it does not consider issues of housing quality and over-crowding,
- a single measure is applied across all tenures, locations and household types,
- it assumes all families and individuals have the same ability to pay, and does not consider non-housing costs.

The *residual approach* can be identified as the second most used and discussed approach to housing affordability. The residual approach is based upon the assumption that housing is one of the most important attributes of every household, and that housing cost represents the spending of a substantial portion of the household's income. This means that the household suffers from the so-called housing affordability problem if, after paying the housing costs, it does not possess sufficient funds to meet their remaining basic needs. Housing affordability indicator is then defined (Bourassa, 1996) as the part of household income remaining after covering housing costs. M. E. Stone, who was mentioned above, has long been engaged in this approach. Based on his research of the residual approach, he has formulated the concept of "Shelter Poverty". This concept places greater emphasis on the amount of the household costs associated with housing, and less attention is paid to the amount or lack of income.

Other criticisms have also been made of the residual approach. These include its dependency on a subjective decision as to what are the indispensable housing costs, and for its calculation being dependent on a number of variables which are not always available, as for example the non-housing costs (Gabriel at al., 2005). Kutty (2005, p. 119) bases her work on the residual approach to housing affordability. She has defined the so-called *housing-induced poverty* (*HIP*) as a situation that arises when a household cannot afford the poverty basket of non-housing goods after covering its housing costs. It is similar to "Shelter Poverty" (*Stone's concept* – Stone, 2006b), with the exception that in order to measure housing affordability the officially established poverty line is used (i.e. a certain threshold of income, such as subsistence minimum,[1] as it is called in the Czech Republic). For the purposes of her analysis she determined that the purchase of

other goods (poor household's basket of other essential goods – excluding housing) constitutes two thirds of the officially established poverty line. This means that a household on the borderline of poverty will suffer from housing-induced poverty (HIP) if its expenditure on housing exceeds one third of their income (while household's income on the border line of poverty is at the subsistence minimum level). Households with incomes above the poverty line may also be affected by HIP when their housing costs are so high that the rest of their income is less than two thirds of the officially established poverty line. If the cost of living is very low in some households, it is theoretically possible that they can be below the officially set poverty line, but despite that they do not suffer from the so-called HIP. Kutty is aware of the limitations associated with providing the official poverty line, but she sees its benefits, especially in its wide use in both politics and in academic debates.

The difference between the two above introduced concepts – HIP and RATIO – is that HIP considers a household poor when it does not possess sufficient income that (after covering housing costs) does not provide enough to cover other needs, regardless of the proportion of housing costs in relation to income. On the contrary the ratio considers household as poor when it spends more than 30% of their income on housing, regardless of whether the rest of the household's funds is sufficient to cover other needs. Two basic problems can be introduced with these two concepts:

- Households spending less than 30% of their income on their housing costs may be overlooked within the traditional measures of poverty (ratio), and they may still experience low living standards after paying for their housing costs, and thus suffer from the so-called housing-induced poverty (HIP).
- Households spending more than 30% of their income on their housing costs should be, within the traditional poverty measures (ratio), poor. However, if the remaining income of these households is sufficient to cover their remaining needs, they do not suffer from the so-called housing-induced poverty (HIP), and therefore should not be the target of aid to poor households.

Based on the above, it is clear that the HIP concept is rather sensitive to household incomes.

[1] The Act on *Subsistence Minimum* was significantly changed from January 2007. Until 2006 the subsistence minimum in the Czech Republic consisted of two components: the sum required to secure the needs of each person in a household and the amount required to secure the necessary housing expenses. The first part of the subsistence minimum was applied on an individual basis and included mainly costs of clothing and food. The second part of the subsistence minimum served to cover other common household costs, i.e. rent, supply of water and energy and other related services. Since 2007 the subsistence minimum consists only of the first mentioned component. The second component was abolished parallel with redefinition of the main benefit designed to tackle housing expenditure – housing allowance.

The amount the households spend on housing, or possibly the structure of such spends, may vary depending on a number of factors. We would like to engage in one of them which has an absolutely indispensable impact – i.e. the deregulation of rents. Releasing prices of rents may lead to a significant increase in the prices of rents, and thus may cause an increase in expenditures of households, or possibly also a change in their structure. For example, Lux and Sunega (2003) and Mikeszová, Lux and Morisseau (2009) examined the relationship between housing affordability and the deregulation of rents specifically in the Czech Republic. By using a simulation model both authors attempted to estimate the amount of the so-called balanced rent, i.e. of the rent households will pay after the process of its deregulation finishes. While Lux made an effort to determine what price level of rent would ensure enough free rental flats so that the households' demand is satisfied, Mikeszová tried to define specific groups of households which are the most vulnerable to lack of affordable housing.

The area of price regulation of rental flats, or better their deregulation, has been a current issue for many transitive countries. Together with privatization, restitution or price liberalization of energy, it represents key steps leading to the creation of a new framework for the housing policy applied in individual countries. The main trends in the development of rent regulation, or of the rental sector as a whole, were discussed e.g. by Hegedüs and Tosics (1998) and Mandič (2000). Their texts focused on comparison of approaches to rent policies and their forms in individual transitive countries. According to their findings, the share of the rental sector in the Czech Republic was, in the 1990s, higher than the average in Central and East European countries. Any changes made in this sector have therefore had an appreciable impact to other housing sectors in the Czech Republic.

2. Methodology and Data Sources for Comparison

We have used the individual anonymous data for Czech households collected by the Czech Statistical Office (CSO) within the Survey on Income and Living Conditions in the Czech Republic from February to April 2008 (hereinafter "SILC 2008") for the analysis of housing affordability.[2] In total 11,294 households were

[2] The basis of this article is based on micro data EU-SILC 2008. In regard of the process of rent deregulation, which was re-started in the Czech Republic in 2007 (discussed more in detail in the following part "Poverty after rent deregulation"), it would be appropriate to analyse the change of poverty using SILC 2006 data. But since the concept of determination of the subsistence minimum of households was changed in the Czech Republic in 2007 (see the previous part of the article), which we use for calculation of poverty indicators, the article is based on SILC 2008 data. The new concept of the subsistence minimum and the Housing Allowance connected with it is taken into account for the first time in these data. At the same time, the recorded rent is slightly

investigated. This data includes information related to the social structure of the households at the date of the survey, their incomes and expenditures related to housing for the year 2008 and 2007 respectively.[3] The selected sample is considered to be the representative sample of the Czech Republic households for 2008 with minimum deviation (further details on data collection methodology can be found in the CZSO, 2009). To apply this sample of households to the whole country (4,082,000 households) the "PKOEF" coefficient that expresses the statistical weight of each investigated household is supplied with data file. Households are classified within the analysis into four categories by the "type of tenancy" and "type of apartment" (legal aspect of use) parameters. These categories include the following types of apartments:

- *owner-occupied housing* (home ownership, private ownership, cooperative ownership) that represented 73.0% of all households;
- the *rental-market* (rental apartment building, rented, sublet) that represented 5.5% of all households;
- the focus of this study, the *regulated tenancy* households (rental apartment building, rented, sublet) with a share of 17.6% of all households;
- and *other* (staff/caretaker apartment, other free use apartments), representing 3.8% of all households.

The section below explains how we created, with the use of other data from SILC 2008, survey indicators of housing affordability and poverty. In this paper the "at-risk-of-poverty" indicator is used, as well as indicators based on the concept of residual income. From these an arithmetical micro-simulation model (hereafter MSM) for households with regulated tenancy is constructed, which examines the impact of the rent deregulation. The simulation of policy change consists of the replacement of the recorded rental values with values of the target rent[4] for 2012 for households with regulated tenancies.

The analysis of the potential development of the number of poor households depending on rent deregulation is performed in two ways. First, a model of the poverty of households in a situation when *only* the impact of the rent growth to the expenditure of households living in apartments with regulated tenancy is considered. Then this model *is enlarged* to include the impact of other factors

affected by the ongoing deregulation. Since the SILC 2010 data are already available as of today (January 2012), some analyses have been done on SILC 2008, 2009 and 2010 data, in order to compare their results over time.

[3] Most of the data show the current status of the research period, i.e. in April 2008 – here we talk about socio-demographic characteristics of persons and households, housing characteristics, household facilities and data on working, material and health conditions of adults. Household incomes are stated for the whole year 2007.

[4] Values of target rents are published by the Czech Ministry for Regional Development.

which might affect the poverty of households (change in disposable income, subsistence minimum etc.).

The basic taxonomy of micro-simulation models is provided, for example, by Bourguignon and Spadaro (2006). The *general micro-simulation model* (hereinafter "MSM") is represented by the equation below. The inputs are: the characteristics of the society (*Z*), and the shape of public policies that are examined with regard to the impacts of change (*P*). The output (*Y*) is, for example, the influence of various policies on the poverty in the society. The *F* function then expresses the dependence of output quantities on the input quantities.

$$Y = F(Z,\ P) \tag{1}$$

Our micro-simulation model focuses mainly on the first round effect of policy change under the assumption that the individual behavior of a household remains unchanged (with one exception when the possibility of a change to a different size of the household's apartment as a reaction to an increase in price of the regulated tenancy is being simulated). The initial concept of housing-induced poverty uses the residual income of every individual household in the society (RI^i). The income is dependent on the socioeconomic characteristics of the household (z_0^i), its disposable income (y_0^i), and the setting of the particular part of the social system (α_0) that is determined by individual housing costs (r^i). The basic situation before the reform is represented by equation 2. Individual households within the model are classified by the *i* index, the 0 index represents the situation before the reform.

$$RI_0^i = F(z_0^i,\ y_0^i,\ \alpha_0,\ r_0^i) \tag{2}$$

In the first part of the micro-simulation modelling, the housing costs represent a factor of the change that influences the monitored outputs of the model. The impact of the increase of housing costs induced by the reform is indicated by index *1* (see equation 3 below).

$$RI_1^i = F(z_0^i,\ y_0^i,\ \alpha_0,\ r_1^i) \tag{3}$$

For the purposes of the MSM, the socioeconomic characteristics of households (z_0^i) are based mainly on the characteristics of housing. This includes particularly the differentiation of the tenure status, and also the region and municipality size in which the households live. Within the model, the disposable household income (y_0^i) is influenced by the settings of the social system. The parametric setting of that part of the social system that is determined by the housing costs (α_0) remains inert to the changes of housing policy. The monitored impact

of policy change includes those households that now live in apartments with regulated tenancy. Only in the case of these households is it assumed here that the deregulation will result in the increase of housing costs (r^i).

The arithmetic model used is based on the assumptions that the socioeconomic characteristics of a household do not change, similarly its disposable income and the social system setting. Furthermore, the model does not include the changes in a household's behaviour. The model then reflects only the change brought about by the increase of rent (as the result of the rent deregulation).

The assumption of non-existing behaviour response can lead to partially stronger conclusions than expected if behavioural influences were taken into account. On the other hand, it is the first-round effects that – in the case of small reform changes – do not differ from the final impacts of these changes. In reality, however, the increase in housing costs may urge the affected households to change their situation, for example by moving to a smaller house or less expensive area. Also the disposable income of a household does not have to remain unchanged: it can be increased by an additional work income of the household members.

Last, but not least, it is necessary to discuss the assumptions about the form of the reform that enters the model. When modelling the changes of taxes or benefits it can usually be expected that this change will be carried out at a certain time and a given place homogenously. However, this does not hold true in our case. The rent deregulation law has allowed the owners of rented apartments to increase the rent one-sidedly to the so-called "target rent" that reaches the height of the market rent rates. In our model it is assumed, therefore, that the owners will do so. In reality, it is also possible that some owners will not use this right fully. For example, municipalities may not apply the maximum increase of rents for various reasons. On the other hand, after the regulation has ended, private owners may choose to increase rents even above the "target rent".

In the second part of the micro-simulation modelling, the so far neglected variables are included in the basic model; the form of the model is then as follows (see equation 4 below):

$$RI_1^i = F(z_1^i,\ y_1^i,\ \alpha_1,\ r_1^i) \tag{4}$$

The enlarged basic model will allow presented results to be refined, as well as discussion of the impact of individual factors on the poverty of households in connection with the ongoing deregulation of rent housing. The specific model set-up is discussed later, together with the results.

There has been vast discussion in economic, statistical, and sociological literature on the measurement of poverty, inequality, and deprivation in the last 30 years, and these concepts are well known. We have constructed, based on the net

disposable household income (as defined by the Eurostat) in CZK per year, the "at-risk-of-poverty" indicator that is one of the Laeken indicators of social inclusion. In the context of this paper it represents an indicator of relative poverty. For the other group of indicators residual income is used. The "housing-induced poverty" indicator and "near-poverty" indicator is defined. In the Czech Republic the rent deregulation is currently under way and, as a result, many households are experiencing an increase in the cost of housing. Therefore, attention is paid in the paper to a possible increase in poverty in relation to the rent deregulation. A household is then considered to be poor if its *residual income* (RI = income after paying for housing costs) is less than the amount necessary to cover the basic living needs.

At this point, we will use an even finer description to a narrower and to a broader indicator (similarly see Kutty, 2005). When using the narrower indicator (*housing-induced poverty* – HIP) we assume that the amount needed to cover basic living needs is equal to the value subsistence minimum of a household, which is defined as the sum of the amounts of each family member. When using the broader indicator (*near poverty* – NP), we assume that this amount is equal to 150% of the value subsistence minimum of a household (hereinafter only SM). We are lead to this procedure in an attempt to capture not only those households which are now regarded as poor – households that after paying for the cost of living are left with an amount that is lower than their SM – but also households whose residual income is otherwise higher than the officially declared SM, but exceeds it by no more than 50%.

These households are in our opinion, near poverty. It is enough for these households to experience an unexpected expense, or a slight decrease in income, and the household can be considered poor. Using the broader concept would automatically include households captured by the use of the narrower concept; therefore we will only be interested in those households that are not captured within the narrower concept. The following relations reflect the facts schematically described above Scheme 1:

S c h e m e 1

Poverty Concepts Used in the Paper

Residual income (RI)	= disposable income – housing costs		
Poor households (narrower concept – HIP)		RI ≤	100% SM
Poor households (a broader concept – near poverty)	100% SM	< RI ≤	150% SM
Household is not poor	150% SM	< RI	

Source: Authors.

The concepts of relative poverty define poor households in terms of the generally accepted standards of life within the respective society. Miscellaneous statistical measures are included among poverty levels based on these relative

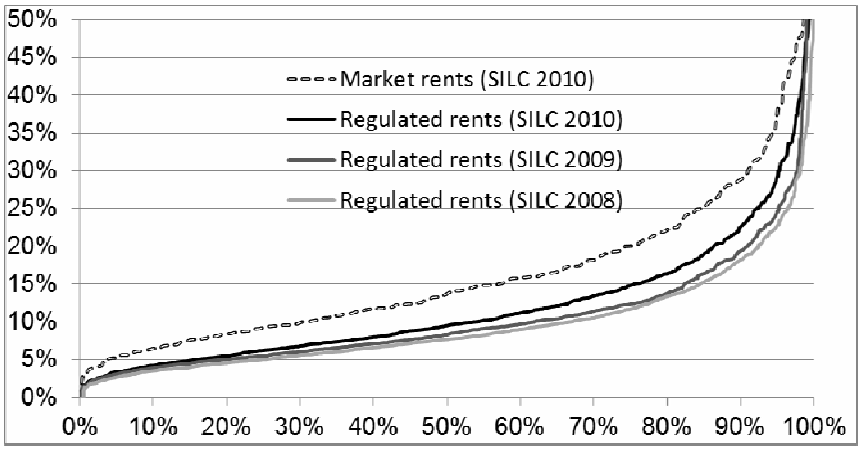
concepts, such as positions in the first and second deciles of income distribution, or as a percentage of an individual's income and the median equivalent income. For the purposes of international comparison (within EU) of poverty rates, the *relative poverty* threshold of 60% (50% or 40%) of income is set. If the percentage is less than that an individual is considered poor (or extremely poor). Eurostat determines the share of persons with an equalised disposable income below the risk-of-poverty threshold, which is defined as a certain percentage (the usually stipulated value is 60%) of the national-median-equalised disposable income (hereinafter "NMEI"). In our case, we modify the concept slightly, that is we do not measure the number of people threatened by poverty, rather the number of threatened households.

3. Findings

The development of the share of regulated tenancy on disposable incomes of households is presented in Figure 1. The curves indicate an increasing share of regulated tenancy on incomes in the years 2008 to 2010. At the same time, the burden of households paying the market rent is in 2010 higher than the burden of households paying the regulated tenancy; therefore we can expect their mutual approximation in the coming years. In Sirovátka, Kofroň and Jahoda (2011), a more detailed discussion can be found, not limiting itself only to the impact of monetary variables, but discussing the problem also from the perspective of housing quality.

F i g u r e 1

Distribution of Households According to the Rent Share on Disposable Household Incomes



Source: Own calculations based on EU-SILC Czech data for the years 2008 – 2010.

3.1. Measuring Poverty by Means of Relative Poverty Concept and the Residual Concept

The following Table 1 shows that by using the concept of residual income the results are quite well correlated with the relative poverty indicator – the share of equalized disposable income to median income (EUROSTAT methodology – at-risk-of-poverty). Poor households (HIP) typically have disposable income less than the 60% of the median income (NMEI), and would thus have been indicated as poor, even when using the relative poverty rate. Similarly, we can say that households threatened by poverty (near poverty) would also be captured by using the concept of relative poverty; their income is already slightly higher than it is the case for poor households (HIP). On the contrary, a vast majority of households whose residual income is higher than 150% SM are not regarded as poor households even when using the concept of relative poverty.

T a b l e 1

The Extent of Poverty Based on the Residual Income and Relative Poverty Indicators (in %)

		Share of equalized disposable income to median income				
		⟨0; 0.5)	⟨0.5; 0.6)	⟨0.6; inf.)	total	
Residual income concept	HIP	84.3	11.6	4.1	100.0	3.5
	Near poverty	29.1	44.4	26.5	100.0	5.0
	Not poor	0.6	3.0	96.4	100.0	91.5
	Total	5.0	5.4	89.7	100.0	100.0

Source: Own calculations based on the EU-SILC Czech data for the year 2008.

After determining the percentage of poor households in the table above, we can now explore in detail the situation according to the type of the tenure. The question is in what type of apartments the households affected by HIP, households endangered by poverty or households that do not belong into the group of poor, live. This information can be found in the following Table 2. Most of the poor households live in their own flats. This is the most represented category of tenure status.

A more complex picture of poverty can be gained by combining the residual indicators and relative poverty indicators. Therefore, we will further expand our poverty investigations with regard to the type of ownership by adding the relative poverty indicators. As shown in Table 3, household poverty is significantly differentiated. Households that own the apartment usually have lower costs associated with the use of the apartment, and therefore their residual income is higher. Only 2.2% of these households can be considered poor based on the HIP concept. The reason is usually their lower income. Conversely, there is a much

higher probability that households living in rental apartment buildings with market rent could be poor – 10.5%. These households generally have lower income. However, the income of about 9% of these households exceeds the 60% median, and their inclusion among the poor households is thus mainly due to higher housing costs. This is confirmed mainly by the near poverty concept, where more than a half of the households report income exceeding 60% of the median income, and their risk of poverty is mainly due to high housing costs.

T a b l e 2

Poverty According to Residual Income, Relative Concept and According to the Tenure Status (in %)

		Tenure status				
		owned	rent-market	rent-regulated	other	total
Share of disposable income to median income	⟨0; 0.5)	2.5	0.6	1.5	0.3	4.9
	⟨0.5; 0.6)	3.2	0.5	1.3	0.4	5.4
	⟨0.6; inf.)	67.2	4.4	14.8	3.1	89.7
	Total	73.0	5.5	17.6	3.8	100.0
Residual income concept	HIP	1.6	0.6	1.2	0.1	3.5
	Near poverty	2.7	0.6	1.5	0.1	4.9
	Not poor	68.7	4.3	14. 9	3.6	91.5
	Total	73.0	5.5	17.6	3.8	100.0

Source: Own calculations based on the EU-SILC Czech data for the year 2008.

T a b l e 3

Poverty According to Residual Income Indicator, Relative Poverty Indicator and the Tenure Status (in %)

Housing-induced poverty					
	Share of disposable income to median income				
Category	⟨0; 0.5)	⟨0.5; 0.6)	⟨0.6; inf.)	total in the category	
Owned	83.9	11.2	5.0	100.0	2.2
Rent-market rates	75.3	15.5	9.2	100.0	10.5
Rent-regulated	87.0	11.9	1.1	100.0	6.9
Other	100.0	0.0	0.0	100.0	4.0
Near-poverty					
	Share of disposable income to median income				
Category	⟨0; 0.5)	⟨0.5; 0.6)	⟨0.6; inf.)	total in the category	
Owned	35.1	44.0	20.8	100.0	3.7
Rent-market rates	12.9	35.9	51.2	100.0	11.5
Rent-regulated	21.5	49.7	28.8	100.0	8.4
Other	63.7	34.7	1.6	100.0	3.9

Source: Own calculations based on the EU-SILC Czech data for the year 2008.

Households paying rent at market rates may serve as an interesting benchmark for the situation of households with regulated tenancy. In the case of these households we can consider as poor (HIP) 6.9% of households, and threatened

by poverty (near poverty) an additional 8.4% of households. This is a slightly lower proportion than in the case of households with market rent rates. However, compared to these those households have lower household income, while only a small proportion of these households report income over 60% of the median. Poverty, or its proximity, is thus caused mostly by the lower income in these households. The expected increase in rent that comes with the process of rent deregulation may then be a threat to them.

3.2. Poverty after Rent Deregulation – the Impact of Rent Deregulation as a Single Factor

There is currently ongoing so-called deregulation of rents in the Czech Republic. That means a gradual increase of the generally low and regulated tenancies. With the increase in rents the expenditure of households on housing will grow as well, and we can therefore assume that the number of poor households will most likely change, as well as the number of households at possible risk of poverty.

Freeing up the rental prices has been a part of the reform measures in the Czech Republic since the beginning of economic transformation. Efforts to increase the rent levels to a level that would enable cover of the necessary costs associated with the operation and maintenance of housing supply has long been unsuccessful. The main reason was the non-conceptual approach of the state to the transformation of state rental housing, and largely also the reluctance of politicians to deal with this sensitive issue (Lux, 2000). Nevertheless, in the last twenty years there have been some increases in rents through numerous updates of legislation. However, the slowly increasing level of rents did not correspond to the expenditure required to maintain the housing fund (Musil, 1995). The situation has gradually became so unsustainable that in 1999 a group of Senators decided to bring a proposal for annulment of the decree dealing with the method of calculating regulated tenancies to the Constitutional Court. However, even this intervention, unprecedented in the country, was not enough to deal with the situation. It only led to disputes resulting in the gradual announcement and subsequent cancellation of legislation and the method of rent regulation calculation.

An important, and probably crucial, impulse that helped to unblock the situation became the ruling of the European Court for Human Rights in the case of Hutten-Czapská (Complaint No. 35014/97). The Court in 2005, and then again in 2006, decided in favor of the French homeowners owning apartments (with regulated tenancy), with a ruling that called the system of regulated tenancy in Poland a systematic violation of the rights of homeowners. With this ruling the Court indicated how it would deal with similar complaints. Only then the Czech government managed to break the current legal vacuum, and in 2006 it pushed

through the approval of Law No. 107/2006 Comp. concerning unilateral increase of the apartment rent, the so-called Deregulation Act. Based on this law, the four year process of deregulation was started in January 2007, the result of which should be bringing the amount of rent closer to its market rental value (about 5% of the basic price of the apartment). The beginning of the process of deregulation has been linked to the introduction (redefinition) of social benefits that were intended to mitigate the impacts of deregulation on households. The rent regulation should have been therefore completely removed by 2010, and the amount of rent should have been determined solely by the market principles. In 2009, however, that law was amended on the basis of rising house prices and related concern about the social situation of families living in rental flats. The amendment allowed in selected towns and localities the extension of the deregulation period to the end of 2012. These new conditions are related to approximately 40% of rental apartments with regulated tenancy.

As we have shown earlier, households living in flats with regulated tenancies are, according to the residual income indicator, in a situation of HIP (6.9%), or at a situation of near poverty (8.4%). The indicator of relative poverty (Eurostat – less than 60% of median income) also shows the risk of poverty for this group of households. As shown in Table 4, only a small proportion of households (28.8%) are not captured by this indicator. At the same time a household that is not poor based on the residual income indicator, usually has income greater than 60% of median income.

T a b l e 4

Extent of Poverty of Households in Apartments with Regulated Tenancies Prior to Deregulation (based on recorded SILC 2008 data) (in %)

		Share of disposable income to the equalized median income				
		⟨0; 0.5)	⟨0.5; 0.6)	⟨0.6; inf.)	total	
Residual income concept	HIP	87.0	11.9	1.1	100.0	6.9
	Near poverty	21.5	49.7	28.8	100.0	8.4
	Not poor	0.7	3.1	96.2	100.0	84.6
	Total	8.5	7.6	83.9	100.0	100.0

Source: Own calculations based on the EU-SILC Czech data for the year 2008.

These households are so far mostly paying (regulated) rent that is lower than the market rates (unregulated) rent. Therefore, we pose a question as to how would the situation change if the rent-controlled households had to pay the market rates rent. SILC data unfortunately does not allow modelling of the currently regulated tenancy using market rates rent; they do however allow it to be replaced by the so-called target rents. This is the value of rent set by the Ministry for Regional Development of the Czech Republic. The rent value is based on locally

prevailing market prices, and that is determined for the pace of rent deregulation. At the end of the deregulation period rent can reach the values of target rent.

The following Table 5 shows how many poor households there would be if households were already paying the deregulated rent today. Since the relative poverty indicator only works with disposable income, rent deregulation has no effect on the extent of poverty using this indicator. On the other hand the housing costs affect the residual household income and the poverty indicators constructed from this income. The extent of poverty could therefore more than double after the deregulation (6.9% → 14.3%), and the percentage of households near poverty can also significantly increase (8.4% → 13.2%). We can thus get into a situation where approximately one quarter of households living in apartments with regulated tenancy will fall into poverty, or will be significantly threatened by poverty. Their incomes will often be higher than the 60% of median income, and will be considered poor by Eurostat.

T a b l e 5

Scope of Household Poverty in Apartments with Regulated Tenancy after Deregulation (based on MSM using SILC 2008 data) (in %)

		Share of disposable income to the equalized median income				
		⟨0; 0.5)	⟨0.5; 0.6)	⟨0.6; inf.)	total	
Residual income concept	HIP	50.4	19.0	30.6	100.0	14.3
	Near poverty	7.1	29.0	63.8	100.0	13.2
	Not poor	0.4	1.5	98.1	100.0	72.5
	Total	8.5	7.6	83.9	100.0	100.0

Source: Own calculations based on the EU-SILC Czech data for the year 2008.

It is also unclear how the public institutions will respond to the new situation. In case of unchanged social policy we can expect a larger extent of paid out benefits. The overall situation may, however, not be nearly as negative; we believe that households will react to the new situation by changing the type of their housing, or by changing their income.

The previous Table 5 showed that the number of poor households would increase significantly if there was an increase in rents paid in apartments with regulated tenancies (values from 2008) to a so-called target rent value. Because the target rent values are set for the year 2010, or 2012, the *impact of deregulation* can be tested also with *using newer data from EU-SILC research*. The results of analysis, including deregulation simulation, are stated below in Table 6. The table summarizes the real number of households at risk of poverty between 2008 and 2010 (based on data recorded in EU-SILC datasets), and the anticipated number of households at risk of poverty (MSM working with the assumption the rent will increase to the target value).

T a b l e 6

Household Poverty in Apartments with Regulated Tenancy during the Process of Deregulation (in %)

		SILC 2008 data		SILC 2009 data		SILC 2010 data	
		recorded	MSM	recorded	MSM	recorded	MSM
Residual income concept	HIP	6.9	14.3	6.9	13.1	8.0	13.6
	Near poverty	8.4	13.2	8.5	11.0	9.0	9.8
	Not poor	84.6	72.5	84.5	75.9	83.0	76.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Own calculations based on the EU-SILC Czech data for the year 2008 – 2010.

The performed analysis showed the poverty problem to be growing in the years 2008 – 2010 as a result of the ongoing rent deregulation, which is entirely in compliance with the results of the previous part of the article. On the other hand, the poverty problem is, in reality, getting worse at a slower pace than the results of the MSM on SILC 2008 data indicated. As far as we compared the micro-simulation results based on SILC data from the years 2008 – 2010, we could see the number of households in HIP (14.3% → 13.6%), as well as the number of households near poverty (13.2% → 9.8%), decrease. This discrepancy was caused in particular due to the fact that one input for the simulations in individual years is the fixed amount of the target rent, while the other one – household incomes – changes over the period. This, however, does not change the fact that the number of poor households in the micro-simulation model is, in the reference period, always higher than the number of poor households in real data. However, if the difference in MSM and in the real data for the share of households in the situation "not poor" makes 12.1% in 2008 (84.6% – 72.5%), in 2010 it makes only 6.4%. The share of households in the situation "not poor" may, therefore, be expected to range between 76.6% and 83.0% when the deregulation finishes.

3.3. Poverty after Rent Deregulation – Impact of other Factors

In the previous part we illustrated the development of poverty in the Czech Republic on the assumption that the rent deregulation will have finished by 2012, i.e. the apartment owners will have increased the rent to its target value unilaterally. The impact of only one variable – the rent – to the monitored poverty indicators was tested in the model. In the following part of this article we will show how given indicators can change if we add further variables to MSM. Specifically, we speak about the growth of disposable household income, the increase in housing costs, the change of the subsistence minimum, another set up of the social system, and behavioural aspects connected with the price of housing (these variables will be discussed in more details further in this article; we compare

their impact to households' poverty with the results of the previous model – Tables 4 to 6). The inclusion of further factors into the analysis can be expected to lead to a certain dilution of results. The reader should therefore notice, in particular, in which direction the analysed factors affect households' poverty, and what is the strength of their impact.

The following Table 7 shows what impact the *change of basic factors influencing poverty* might have on households at the end of rent deregulation, i.e. in 2012 (simulated on EU-SILC 2010 data). The impact on poverty is shown as the final impact of the change for all the factors, but also separately for each of the factors.[5] The table shows the growth of disposable incomes of households to have a significant impact on poverty reduction. If we consider an increase in incomes from the year 2010 to 2012 by 5%, the number of households not being at risk of poverty increases from 83.0% to 85.9%. On the contrary, the growth of the subsistence minimum[6] has the biggest impact on poverty increase (the number of households not being at risk of poverty falls by 2.3 percentage points. This should be taken into account also when assessing the development of the number of households at risk of poverty in the previous years (see Table 6). Although not performing rolling valorisation of the amounts of the subsistence minimum decreases the poverty problem, it is an artificial decrease. According to the consumer price index the index of the "apartment rent" went up by 11% between November 2009 and November 2011.[7] In practice, however, a faster growth of rents in apartments with regulated tenancy rather than in those with market rent, can be expected. The expected impact on poverty of households will, therefore, probably be higher than the deterioration we stated. Also, growth of other costs connected with housing (energy, water supply, and other services) has a similar impact on the poverty of households as the growth of rent. The total impact of all above discussed factors will result in an increase in the number of households at risk of poverty in the years 2010 to 2012.

[5] Discussions on particularity of this modelling can be lead. We can imagine the model to simulate a change of basic parameters for individual types of households in a sophisticated matter, this way we could get more accurate results. However, because our target was to show the expected impact and to show the impact of individual factors, individual households were indexed according to the same rules. Specifically, the disposable incomes were increased by 5% (this percentage goes out of the change of disposable incomes of households in the Household budget survey between 2009 and 2011), the rent by 11%, the subsistence minimum by 9%, and other housing connected costs by 5%.

[6] Subsistence minimum was redefined in the Czech Republic in 2007, and despite the growing price level individual amounts remained in the years 2007 – 2011 as high as they were. Also considering the increase of the lower VAT rate, the individual amounts of the subsistence minimum were adjusted with a one-time increase by 9% starting from 2012.

[7] In the price statistics, the sectors of the market rental housing and of the regulated rental housing are not being followed separately, the mentioned 11% is a number for both sectors altogether.

T a b l e 7

Main Factors of Household Poverty in Apartments with Regulated Tenancy (in %)

		2010	MSM for 2012				
		recorded values	impact of partial changes				all changes
			Δ DI	Δ rent	Δ SM	Δ cost	
Residual income concept	HIP	8.0	6.6	8.3	9.4	8.6	8.8
	Near poverty	9.0	7.5	9.2	10.0	8.9	9.0
	Not poor	83.0	85.9	82.5	80.7	82.5	82.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Own calculations based on the EU-SILC Czech data for the year 2010.

Presented poverty values of Czech households after performed deregulation (Tables 5 and 6) have been simulated on assumption that *the social system will not react* to the performed deregulation.[8] In other words, that the households keep drawing social benefits in the same amount, and that the setting of the social system does not react to a change in housing costs. This assumption is, in fact, too strong, and its application slightly increases the expected values of poor households. On the other hand, the EU-SILC data does not enable precise modelling of the claim and of the amount of benefits. It is particularly the fact that the SILC research does not record data in a form necessary to determine eligibility and the amount of social benefits that prevents the above mentioned. The effect of "non-take-up" concerning housing allowance appears then to be the major problem. According to our calculations, almost 70% of households who are entitled to this benefit do not draw it. The phenomenon of "non-take-up" of social benefits has not been discussed in detail in the Czech Republic yet. Some of the existing findings, e.g. Mareš (2001), suggest reasons such as the problem of unsatisfactory competence of households to assess correctly their right to the benefit, the lack of relevant information, the lack of feeling to be entitled to it, or even in a resignation of households. Sunega (2011) then specifically states that less than one fifth of all entitled Czech households draw housing allowance. Given the ongoing rent deregulation, we believe the impact of housing allowance in Czech households will grow. We are, however, not able to assess accurately what will be the impact of non-take-up of this benefit. In this situation, the current

[8] The social system today allows the households to draw Housing Allowance and Supplement for Housing. A household is entitled to housing allowance if its apartment is at the same time its domicile and if the housing costs exceed 30% (or 35% in Prague) of its decisive income. Housing costs are assessed in the amount of normative housing costs; their amount depends on the tenure status, the number of people and on the size of the residence. The decisive income is assessed for the latest quarter. Supplement for Housing is one of the benefits of the social assistance, a household is entitled to this benefit if its income after deduction of the subsistence minimum is not enough to cover housing costs. Supplement for Housing does not have to be modelled, because only households being in the situation housing induced poverty are entitled to apply for this benefit.

amount of the housing allowance is difficult to be simulated; even more difficult is to model the change of housing allowance after the deregulation has been performed.[9] Despite the aforementioned difficulties, we have created a simple model of the impact of housing allowance to poverty of Czech households before and after the performed deregulation for the year 2009 (there are no required data in SILC 2010 for us to be able to model the impact of social benefits in 2010).[10] The results of the model are summarized in Table 8. The table shows that the social system is able to soften the poverty problem caused by the growth of housing costs. However, this ability depends, to a large extent, on the specific setting of the social system after performed deregulation, and on the ability of Czech households to draw benefits to which they are entitled.

T a b l e 8

The Impact of the Social System on Household Poverty in Apartments with Regulated Tenancy in 2009 (in %)

		Recorded SILC 2009 values	MSM for 2012	
			without a change in the social system	with a change in the social system
Residual income concept	HIP	6.9	13.1	11.0
	Near poverty	8.5	11.0	11.9
	Not poor	84.5	75.9	77.1
	Total	100.0	100.0	100.0

Source: Own calculations based on the EU-SILC Czech data for the year 2009.

The previous static micro-simulation models could be reproached for not taking the reaction of households to a change in housing price into account. If housing is considered to be a normal good, growth of its price should cause a reduction in demand (in this case represented by the efforts of households to move to another apartment with lower costs). The applied regulation of rental housing in the past led to distortions in the housing market, where some households over-consumed housing. For example, a household lived in a larger apartment than it would be possible in a situation where it was required to pay the standard market rent. The release of rent regulation will, in the case of this household, lead to increased housing costs. MSM will then classify the household as belonging to the "HIP" group or to the "near poverty" group. In reality, however, the household may change the

[9] In 2009, CZK 2.3 billion (approx. 0.06% of GDP) was spent on housing allowance from the State budget, in the SILC 2010 data, there is a record of CZK 2.1 billion spent on housing allowance for 2009. When modelling the housing allowance, its amount for 2009 can theoretically reach up to CZK 6.5 billion.

[10] Model assumes the growth of normative housing costs as a result of increased rent. Another assumption of the MSM is the housing allowance to be drawn by those households which are entitled to it and which have been drawing it already according to SILC 2009 data or whose amount of the HA has exceeded the test criterion we defined.

size of its apartment and achieve cost reduction this way, and may not be at risk of poverty. The choice of the size of the apartment is simulated by a simple model, which assumes the existence of an apartment of an appropriate size. In our model this is given by the average value of occupied apartments by households in market tenancy. If the household is at risk of poverty, and the size of its apartment is larger than appropriate, then the household moves into a similar apartment of an appropriate size.[11] In this model, we do not expect the household to move into a much smaller apartment or into an apartment of lower quality, whose costs per m^2 will be lower in comparison to the previous apartment. In reality, however, these situations may occur. Table 9 shows then the poverty values in case a household does not react to the change in the price of housing and the situation when it changes the size of the apartment. Values given in the table should not be understood as a precise calculation of changes in households' behaviour in reaction to changes in the price of housing; rather it should be perceived as one of a range of possible scenarios. It follows from the table that a change in the size of the apartment affects the number of households at risk of poverty. We are, however, not able to evaluate to what extent the households will, in reality, react to changes in the price of housing by changing the size of their apartments.

T a b l e 9

The Impact of Change in Apartment's Size on Household Poverty in Apartments with Regulated Tenancy (in %)

		Recorded SILC 2010 values	MSM for 2012	
			without a change in apartment's size	with a change in apartment's size
Residual income concept	HIP	8.0	13.6	12.0
	Near poverty	9.0	9.8	9.3
	Not poor	83.0	76.6	78.6
	Total	100.0	100.0	100.0

Source: Own calculations based on the EU-SILC Czech data for the year 2010.

Conclusion

Poverty is a complex phenomenon and can never be narrowed down to one indicator only. As a part of our paper we are thus working with the concept of housing-induced poverty (basic human need) that is based on residual income. Using this concept we investigated whether sufficient funds to cover basic living needs remain available to households. Based on our calculations, a household is poor if its

[11] We assume an appropriate apartment to be of 46 m^2 for a single-member household, 58 m^2 for a two-member household, 67 m^2 for a three-member household and 72 m^2 for a four- or more-member household. The concept of an appropriate housing we applied conforms to theoretical concepts discussed at the beginning of this article.

residual income does not cover the subsistence level, and it is near poverty when the residual income covers the subsistence minimum, but does not exceed it by much. The results of our calculations show that households living in apartments with rent are the most vulnerable to poverty, with a greater percentage of poor being reported by households paying market rate rent. By contrast, households with regulated tenancies are currently at little lower risk of poverty, in their case however the threat stems from the process of rent deregulation. Based on the analysis of the SILC 2008 data, we assumed that after the completion of deregulation process the proportion of poor households will double within this group. It will be new households, whose poverty is caused by rising housing costs and that are not captured by the "at-risk-of-poverty" indicator, which is used by Eurostat.

When we enlarged our analyses with data from other years we had to modify our results slightly. Recorded values from later SILC surveys indicated the extent of poverty of analysed households to be growing. However, the actual pace does not suggest that there should be double as many poor households after the deregulation finishes. Our analyses have shown the increase in rent of apartments related to the ongoing deregulation not to be the only factor influencing the number of poor households. Performed micro-simulation models have also proved a significant impact of a change of disposable incomes, or of the subsistence minimum setting. Last, but not least, the role of the social system and changes in behaviour of affected households should be mentioned. These factors play an important role when softening negative impacts connected with the deregulation of rental housing. The impact of these factors is, however, more difficult to quantify unambiguously. In addition, avoiding poverty (by moving into a smaller apartment) need not be perceived only positively by the affected household. There is a question whether and how the appropriate governmental authorities will respond to the newly created situation.

We are well aware of the fact that results of micro-simulation models are not able to predict accurately the expected effects of deregulation (we expect, that the used MSM's will lead to an estimation of a slightly higher extent of poverty than there will be in reality following the deregulation). However, this in no way affects the fact that the findings presented here are perhaps the best published estimates of poverty after the completed deregulation in the Czech Republic.

References

BRAMLEY, G. (1994): An Affordability Crisis in British Housing: Dimensions, Causes and Policy Impact. Housing Studies, *9*, No. 1, pp. 103 – 125.

BRAMLEY, G. – KARLEY, N. K. (2005): How Much Extra Affordable Housing is Needed in England? Housing Studies, *20*, No. 5, pp. 685 – 715.

BOURASSA, S. C. (1996): Measuring the Affordability of Home-ownership. Urban Studies, *33*, No. 10, pp. 1867 – 1877.

BOURGUIGNON, F. – SPADARO, A. (2006): Microsimulation as a Tool for Evaluating Redistribution Policies. Journal of Economic Inequality, *4*, No. 1, pp. 77 – 106.
BURKE, T. (2003): Measuring Housing Affordability. [Online, cit. 10. 5. 2010.] Available from: <http://www.sisr.net/publications/0311burke.pdf>.
CZSO (2009): Household Income and Living Conditions 2008. [Online, cit. 10. 5. 2010.] Available from: <http://czso.cz/csu/2009edicniplan.nsf/engpubl/3012-09-2008>.
FEINS, J. D. – LANE, T. S. (1981): How Much for Housing?: New Perspectives on Affordability and Risk. Cambridge, MA: Abt Books. ISBN 978-0890115589.
GABRIEL, M. – JACOBS, K. – ARTHURSON, K. – BURKE, T. – YATES, J. (2005): Conceptualising and Measuring the Housing Affordability Problem. In: National Research Venture 3: Housing Affordability for Lower Income Australians. Melbourne: Australian Housing and Urban Research Institute.
HEGEDÜS, J. – TOSICS, I. (1998): Rent Reform – Issues for the Countries of Eastern Europe and the Newly Independent States. Housing Studies, *13*, No. 5, pp. 657 – 678.
HULCHANSKI, D. (1995): The Concept of Housing Affordability: Six Contemporary Uses of the Housing Expenditure-to-income Ratio. Housing Studies, *10*, No. 4, pp. 471 – 496.
KUTTY, N. K. (2005): A New Measure of Housing Affordability: Estimates and Analytical Results. Housing Policy Debate, *6*, No. 1, pp. 113 – 142.
LUX, M. (2000): The Housing Policy Changes and Housing Expenditures in the Czech Republic. [Sociological Papers, Working Paper 00:1.] Praha: Institute of Sociology of the Academy of Sciences of the Czech Republic
LUX, M. – SUNEGA, P. (2003): Equilibrium Rent and Housing Policy Implication. Czech Journal of Economics and Finance, *53*, No. 1 – 2, pp. 31 – 59.
LUX, M. (2007): The Quasi-normative Approach to Housing Affordability: The Case of the Czech Republic. Urban Studies, *44*, No. 5 – 6, pp. 1109 – 1124.
MANDIČ, S. (2000): Trends in Central East European Rented Sectors. Journal of Housing and the Built Environment, *15*, No. 3, pp. 217 – 231.
MAREŠ, P. (2001): Problém nečerpání sociálních dávek. [Výzkumná zpráva.] Praha: Výzkumný ústav práce a sociálních věcí. 37 s.
MAREŠ, P. – RABUŠIC, L. (1996): K měření subjektivní chudoby v české společnosti. Sociologický časopis, *32*, No. 3, pp. 297 – 315.
MIKESZOVÁ, M. – LUX, M. – MORISSEAU, A. (2009): Potential Unaffordability of Housing after Rent Deregulation. Czech Sociological Review, *45*, No. 2, pp. 315 – 343.
MUSIL, J. (1995): The Czech Housing System in the Middle of Transition. Urban studies, *32*, No. 10, pp. 1679 – 1684.
ORSHANSKY, M. (1965): Counting the Poor: Another Look at the Poverty Profile. Social Security Bulletin, *28*, No. 1, pp. 2 – 29.
ROBINSON, M. – SCOBIE, G. M. – HALLINAN, B. (2006): Affordability of Housing: Concepts, Measurement and Evidence. [Working Paper 06/03.] Wellington: New Zealand Treasury.
SIROVÁTKA, T. – KOFROŇ, P. – JAHODA, R. (2011): Rizika příjmové chudoby a materiální deprivace v České republice (celková situace a vybrané aspekty na datech SILC). Praha: VÚPSV. 79 s. ISBN 978-80-7416-092-9.
STONE, M. E. (2006a): What is Housing Affordability? The Case for the Residual Income Approach. Housing Policy Debate, *17*, No. 1, pp. 151 – 184.
STONE, M. E. (2006b): A Housing Affordability Standard for the UK. Housing Studies, *21*, No. 4, pp. 453 – 476.
SUNEGA, P. (2011): Proč české domácnosti nepobírají příspěvek na bydlení? [SOCIOweb 05/11.] Praha: Sociologický ústav AV ČR.
THALMANN, P. (1999): Identifying Households which Need Housing Assistance. Urban Studies, *36*, No. 11, pp. 1933 – 1947.
WHITEHEAD, C. (1991): From Need to Affordability: An Analysis of UK Housing Objectives. Urban Studies, *28*, No. 6, pp. 871 – 887.