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Jan ČESELSKÝ¹**THE PRIVATIZATION OF MUNICIPAL HOUSING FUND AND ITS POSSIBLE IMPACT****Abstract**

The article describes a quantitative analysis of the privatization of municipal housing portfolio in connection with the issue of social housing and determines potential impact on the strategic council housing fund.

Keywords

Housing, privatization of housing fund, housing policy.

Abstrakt

Článek popisuje analýzu privatizace a kvantitativní stav obecního bytového portfolia v souvislosti s problematikou sociálního bydlení a zjišťuje možné dopady na strategický komunální bytový fond.

Klíčová slova

Bydlení, privatizace bytového fondu, bytová politika.

1 INTRODUCTION

Long term goal of professional community is to further analyze present situation of housing and so define its decisive trends and tendencies. It's in the interest of each community to have the highest level and quality of housing.

This level and quality needs to be also maintained in Communal sphere. Municipal proprietorship of housing In the Czech Rep. and in European countries has in general long standing tradition. Municipal proprietorship has special meaning for autonomous position of towns and communities. The proprietorship of communal rental housing fund forms the prerequisite. It should be in an interest of municipalities at what level they satisfy one of the most basic human needs and their social security needs. Rental housing in sole proprietorship of municipalities is a significant element. Their existence is a prerequisite for the function of housing market. None the less, the number of flats decline year after year. It's a result of negative attitude towards proprietorship of municipalities and or prioritization of personal ownership. Another element in play is low profitability and neglectfulness of Municipal Housing Fund presently acting as a proprietor and administrator since 1991.

What is especially important, municipal housing fund represents natural base for Social Housing which is not based exclusively on profit-making principle. Privatization of municipal housing fund blocks the possibility for emergence of Social Housing for young families and people in need. As a result, municipalities are loosing on their attractiveness and the number of people for whom this Fund was designed declines.

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The main reason for re-analysis of privatization in Municipal Housing Fund is present political situation in the country. It's advisable to analyze present rate of privatization with quantitative market position of Municipal Housing Fund and find out whether the rate of privatization didn't exceed its boundaries. It's also important to verify how much the privatization of Municipal Housing Fund influences business management and remaining strategic Housing Fund and whether these problems are isolated incidents or whether they are result of Communal Housing politics.

2 ANALYSIS OF PROBLEM

At first it may seem that privatization of municipal housing fund is not on the agenda of the Czech Housing Commission and that privatization in particular municipalities has ended or will end in the near future. In context with the current situation of housing politics, problem of Social Housing across the private spectrum, maintenance and restoration mainly of Pre-Fabricated Housing Fund – the process of privatization is again becoming a hot topic and there is a need for its analysis and evaluation. In particular, quantitative changes of Municipal Housing Funds which were ongoing during the privatization process or are still in progress weren't methodically recorded and towns (municipalities) practice sales of housing funds in accordance to their specific needs, methodical and conceptual models. Nevertheless, this fact isn't as much troubling. Much bigger problem is the absence of the methodical guidelines which would determine the process of privatization and above all its rate. This absence of guidelines can have negative impact in individual towns.

Thanks to the transformation of housing politics, towns took over the role of the provider for public housing which should firstly and above all serve to social groups which aren't able to obtain housing on the private housing market. On the larger scale, Municipal Housing Fund can serve as a reserve for general public which is essential for proper function of town i.e. (health care, firefighters, police, schools, culture etc.) It could also serve as a developmental element in the area of rental housing which can in case of effective and strategic management contribute to Municipal Treasury. For example - renting of above standard garrets etc.

Rushed and Impetuous privatization of Municipal Housing Fund makes municipalities to loose the options described above. Moreover, in the future it may cause homelessness and social instability. To optimize the share of flats in town's proprietorship eventually non-profit organizations cannot be adequately specified since this is given by the actual needs of the individual municipalities. Nevertheless, long-term experience from advanced European countries show that this rate should fluctuate between 15-25 % from the total housing fund (Terplan, 1998). Other professional sources define it in accordance to individual European states. (MMR, 2005) (Chart 1).

Chart 1: Share of social rental housing in selected European countries (year 2004)

Country	Share of social rental housing from total housing fund (%)	Country	Share of social rental housing from total housing fund (%)	Country	Share of social rental housing from total housing fund (%)
Austria	14,3	Ireland	8,0	Slovakia	4,5
Belgium	7,0	Lithuania	3,0	Slovenia	6,6
Cyprus	4,6	Netherlands	34,6	Sweden	21,0
Denmark	20,0	Poland	23,4	GB	21,0
Estonia	3,0	Portugal	3,3	Germany	6,5
Finland	17,2	France	17,5	Hungary	4,6

Source: The Ministry for Regional Development

3 THE RATE OF PRESENT PRIVATIZATION²

In order to determine present characteristics of privatization in Czech towns let's compare the ratio of flats planned to be kept in the housing fund - a strategic housing fund - with the total sum of municipal flats prior to privatization (Chart 2). This indicator somehow characterizes certain intentions of town representatives to keep or to sell housing properties. It also unveils whether the town gives priority to rightists or leftists.

Chart 2: Relation between the size of the town and ratio of flats considered to be kept with the sum of communal flats before privatization in %

The large of the city by number of inhabitants		Ratio of flats considered to kept with the sum of communal flats before privatization						TOTAL
		to 20	20-39	40-59	60-79	80 and more	unknown	
2 000 – 9 999	a)	1	2	2	2	3	0	10
	b)	2,5	5,0	5,0	5,0	7,5	0,0	
	c)	10,0	20,0	20,0	20,0	30,0	0,0	
	d)	5,3	18,2	100,0	66,7	60,0	0,0	
10 000 – 19 999	a)	1	2	0	0	0	0	3
	b)	2,5	5,0	0,0	0,0	0,0	0,0	
	c)	33,3	66,7	0,0	0,0	0,0	0,0	
	d)	5,3	18,2	0,0	0,0	0,0	0,0	
20 000 – 49 999	a)	5	4	0	1	0	0	10
	b)	12,5	10,0	0,0	2,5	0,0	0,0	
	c)	50,0	40,0	0,0	10,0	0,0	0,0	
	d)	26,3	36,4	0,0	33,3	0,0	0,0	
50 000 – 74 999	a)	6	0	0	0	0	0	6
	b)	15,0	0,0	0,0	0,0	0,0	0,0	
	c)	100,0	0,0	0,0	0,0	0,0	0,0	
	d)	31,6	0,0	0,0	0,0	0,0	0,0	
75 000 – 149 999	a)	4	2	0	0	1	0	7
	b)	10,0	5,0	0,0	0,0	2,5	0,0	
	c)	57,1	28,6	0,0	0,0	14,3	0,0	
	d)	21,1	18,2	0,0	0,0	20,0	0,0	
150 000 and more	a)	2	1	0	0	1	0	4
	b)	5,0	2,5	0,0	0,0	2,5	0,0	
	c)	50,0	25,0	0,0	0,0	25,0	0,0	
	d)	10,5	9,1	0,0	0,0	20,0	0,0	
Summary	a)	19	11	2	3	5	0	40
	c)	47,5	27,5	5,0	7,5	12,5	0,0	

Note: a) absolute frequency, b) in % with the sum of all cities, c) in % of row sum, d) in % of columns sum

Source: Monitoring of Communal housing 2007, own calculation

² At the time of analysis (April 2008 – July 2008) there weren't available any actual data for 2007. For additional analysis of privatization in Municipal Housing Funds a database of 54 evaluated towns had to be somehow reduced to 40 towns. In the questionnaire it reflects on cca20% reduction rate for the given quantity of municipal flats.

The reason for reduction of the database was following:

- To calculate the ratio, the database had to be reduced to towns which supplied with full data for the particular year.
- Larger towns and its districts either didn't supply with this information at all or delivered incomplete questionnaires. The calculation is based on towns and districts which supplied with the data.

From the chart 2 is evident that towns vindicate general trend to keep a small percentage of its original Communal Housing Fond. 75% of towns plan to keep less then 40% of its Communal Fund and approximately 48% of towns intend to keep as little as 20% of its original Communal Fund.

In term of size differentiation the trend across the board indicates that towns with 20-75 thousand inhabitants lead the chart.

Relation of present course of privatization expressed by the number of privatized flats per 100 Communal flats (prior to privatization) and the size of the town can be calculated in chart 3.

Chart 3: Relation of size of the town and the number of privatized flats from the sum of Communal flats prior to privatization in %

The large of the city by number of inhabitants	Number of privatized flats from the sum of Communal flats								TOTAL
		0	1-19	20-39	40-69	70-89	90 and more	unknown	
2 000 – 9 999	a)	0	3	1	4	2	0	0	10
	b)	0,0	7,5	2,5	10,0	5,0	0,0	0,0	
	c)	0,0	30,0	10,0	40,0	20,0	0,0	0,0	
	d)	0,0	75,0	50,0	50,0	11,8	0,0		25,0
10 000 – 19 999	a)	0	0	0	0	2	1	0	3
	b)	0,0	0,0	0,0	0,0	5,0	2,5	0,0	
	c)	0,0	0,0	0,0	0,0	66,7	33,3	0,0	
	d)	0,0	0,0	0,0	0,0	11,8	12,5	0,0	7,5
20 000 – 49 999	a)	0	0	1	2	6	1	0	10
	b)	0,0	0,0	2,5	5,0	15,0	2,5	0,0	
	c)	0,0	0,0	10,0	20,0	60,0	10,0	0,0	
	d)	0,0	0,0	50,0	25,0	35,3	12,5	0,0	25,0
50 000 – 74 999	a)	0	0	0	0	3	3	0	6
	b)	0,0	0,0	0,0	0,0	7,5	7,5	0,0	
	c)	0,0	0,0	0,0	0,0	50,0	50,0	0,0	
	d)	0,0	0,0	0,0	0,0	17,6	37,5	0,0	15,0
75 000 – 149 999	a)	1	0	0	0	3	3	0	7
	b)	2,5	0,0	0,0	0,0	7,5	7,5	0,0	
	c)	14,3	0,0	0,0	0,0	42,9	42,9	0,0	
	d)	100,0	0,0	0,0	0,0	17,6	37,5	0,0	17,5
150 000 and more	a)	0	1	0	2	1	0	0	4
	b)	0,0	2,5	0,0	5,0	2,5	0,0	0,0	
	c)	0,0	25,0	0,0	50,0	25,0	0,0	0,0	
	d)	0,0	25,0	0,0	25,0	5,9	0,0	0,0	10,0
Summary	a)	1	4	2	8	17	8	0	40
	c)	2,5	10,0	5,0	20,0	42,5	20,0	0,0	100,0

Note: a) absolute frequency, b) in % with the sum of all cities, c) in % of row sum, d) in % of columns sum

Source: Monitoring of Communal housing 2007, own calculation

It is evident that over 60% of towns have already privatized over 70% of its state assigned communal flats. However, this trend isn't that much apparent in towns with less then 10 thousands inhabitants. Smaller towns on a contrary tend to privatize only 20% of its original Municipal Housing Fund of 1991.

More informative picture about the extent and dynamics of privatization of Communal Housing Fund can be obtained by calculating ratio of Communal flats after privatization to present day from the total size of the Housing Fund (For the calculation we use total size of the Housing Fund instead of Communal Housing Fund). Communal Housing Fund is because of the privatization constantly changing.

Since development of Communal Fund is not being recorded in dynamic form, there is a need to sum up the actual number of available flats from 2001 census. It will enable us to obtain trustworthy information in chart 4.

Chart 4: Relation between the size of the town and the number of Communal Flats after privatization from the total sum of all flats in the municipality

The large of the city by number of inhabitants	Number of Communal Flats after privatization from the total sum of all flats in the municipality									
		do 5,0	5,0 - 9,9	10,0 - 14,9	15,0 - 19,9	20,0 - 24,9	25,0 - 29,9	30 and more	unkn.	TOTAL
2 000 – 9 999	a)	2	3	3	1	1	0	0	0	10
	b)	5,0	7,5	7,5	2,5	2,5	0,0	0,0	0,0	
	c)	20,0	30,0	30,0	10,0	10,0	0,0	0,0	0,0	
	d)	13,3	20,0	50,0	100,0	33,3	0,0	0,0	0,0	25,0
10 000 – 19 999	a)	1	2	0	0	0	0	0	0	3
	b)	2,5	5,0	0,0	0,0	0,0	0,0	0,0	0,0	
	c)	33,3	66,7	0,0	0,0	0,0	0,0	0,0	0,0	
	d)	6,7	13,3	0,0	0,0	0,0	0,0	0,0	0,0	7,5
20 000 – 49 999	a)	4	3	3	0	0	0	0	0	10
	b)	10,0	7,5	7,5	0,0	0,0	0,0	0,0	0,0	
	c)	40,0	30,0	30,0	0,0	0,0	0,0	0,0	0,0	
	d)	26,7	20,0	50,0	0,0	0,0	0,0	0,0	0,0	25,0
50 000 – 74 999	a)	3	3	0	0	0	0	0	0	6
	b)	7,5	7,5	0,0	0,0	0,0	0,0	0,0	0,0	
	c)	50,0	50,0	0,0	0,0	0,0	0,0	0,0	0,0	
	d)	20,0	20,0	0,0	0,0	0,0	0,0	0,0	0,0	15,0
75 000 – 149 999	a)	4	2	0	0	1	0	0	0	7
	b)	10,0	5,0	0,0	0,0	2,5	0,0	0,0	0,0	
	c)	57,1	28,6	0,0	0,0	14,3	0,0	0,0	0,0	
	d)	26,7	13,3	0,0	0,0	33,3	0,0	0,0	0,0	17,5
150 000 and more	a)	1	2	0	0	1	0	0	0	4
	b)	2,5	5,0	0,0	0,0	2,5	0,0	0,0	0,0	
	c)	25,0	50,0	0,0	0,0	25,0	0,0	0,0	0,0	
	d)	26,7	13,3	0,0	0,0	33,3	0,0	0,0	0,0	10,0
Summary	a)	15	15	6	1	3	0	0	0	40
	c)	37,5	37,5	15,0	2,5	7,5	0,0	0,0	0,0	100,0

Note: a) absolute frequency, b) in % with the sum of all cities, c) in % of row sum, d) in % of columns sum

Source: Monitoring of Communal housing 2007, own calculation

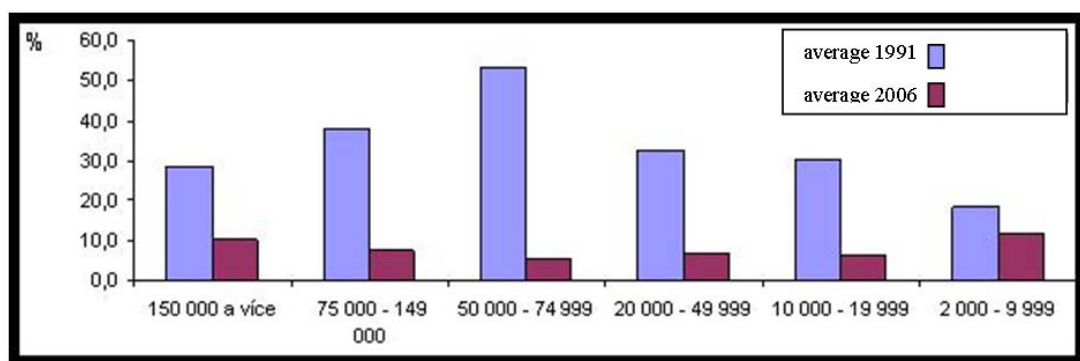
In perspective, due to privatization the whole three quarters of towns own today only about 10% of its original Communal Housing Fund. It is interesting, that it is towns of all sizes taking part in this matter. (it's rate of share is between 13-27%) as oppose to the previous chart which showed that smaller towns do not tend to privatize that much. It would seem that situation isn't troubling. It underlines the significance of this chart, respectively the indicator which is not searching for the ratio of Communal Fund but rather for a ratio of the Housing Fund. It functions as an indicator for the ratio of Social Housing in towns. What's alarming is the ratio after adding groups of towns in which Communal Housing Fund makes up for 10-15%. The total averaging below 15% creates 90% of investigated towns.

In comparison to the total number of flats from 1991 to 2006 there is a noticeable decline in number of Communal flats across the board. To determine the dynamics of privatization in individually researched towns - it is the most evident if compared to the average number of Communal flats from the total sum of flats in a municipality chart 5., Pict.1.

Chart 5: The relation between the size of the town, comparison of an average number of Communal flats, from the total Housing Fund of the town from between 1991 – 2006

The large of the city by number of inhabitants (Census 2001)	Ratio of municipal flats from total municipal portfolio (%)	
	average 1991	average 2006
150 000 and more	28,7	10,3
75 000 - 149 000	38,2	7,7
50 000 - 74 999	53,4	5,3
20 000 - 49 999	32,6	6,8
10 000 - 19 999	30,6	6,3
2 000 - 9 999	18,2	11,5

Source: Monitoring of Communal housing 2007, own calculation



Picture 1: Comparison of average indicators of the proportion of municipal flats from total municipal flat portfolio between 2006 and 1991

At first sight it is evident that the dynamics of privatization of Municipal Housing Fund is in average similar for all groups of towns. Slightly higher dynamics of privatization were recorded in towns of medium size (50-75 thousand of inhabitants) in which the ratio of Municipal Housing Fund fell down to one tenth of its original value. Whereas, milder dynamics dominated in smaller towns - as presented in previous chart.

What's important to state is that average values of Municipal Housing Fund are in general below 15% for the total amount of Municipal Fund of the town. According to estimates based on long term experience from advanced European countries (15-25% of the total Municipal Fund) it is evident that 90 percent of Czech towns are below the minimum of the 'recommended' estimate.

After comparison of average values we can institute the following; the average ratio of Communal flats from the total number of flats in the Czech Rep. with value of $\bar{O} = 8,21$ is below average in comparison to the rest of Europe ($\bar{O} = 12,22$).

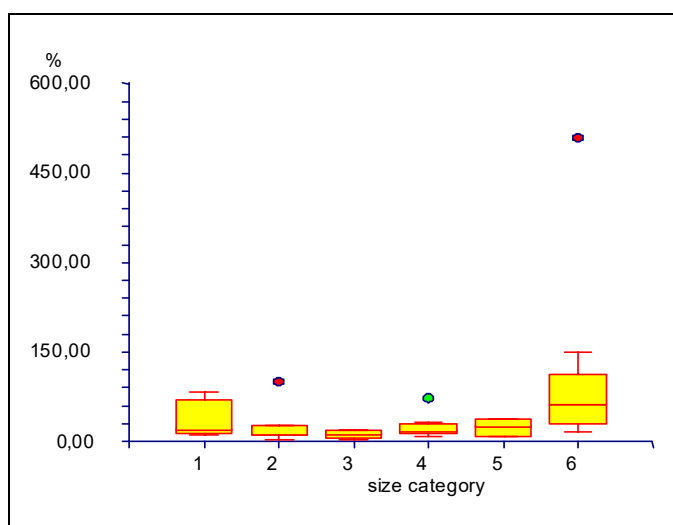
To avoid controversy, it is possible to approach this matter from statistical point of view. In this case we don't have available the basic collection of data therefore we can analyze only its - selective set of data. Analyzing selective set of data won't give us the parameters for population but only the estimate.

The presentation of individual indicators of privatization of Municipal Housing Fund: i.e. by boxed graphs, which evaluate the finding with objectivity as oppose to traditional evaluation.

For this way of evaluation it is not influenced by extreme remote values.

Common legend:

Large of the cities	indication in graph	Large of the cities	indication in graph
<i>150 000 and more</i>	1	<i>75 000 - 149 000</i>	2
<i>50 000 - 74 999</i>	3	<i>20 000 - 49 999</i>	4
<i>10 000 - 19 999</i>	5	<i>2 000 - 9 999</i>	6



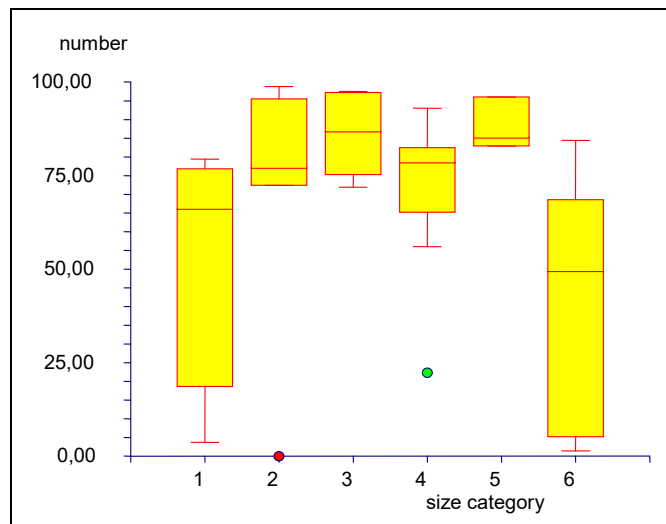
Picture 2: Ratio of flats considered to be kept to a number of Communal flats prior to privatization

Picture number 2 clearly presents that size of the town matter. There are tendencies to keep larger part of Housing Fund in towns with 10-150 thousand inhabitants; i.e. in majority of Czech towns. The median values of these indicators are very similar. This is not true for small towns or towns above 150 thousand of inhabitants.

Small towns as oppose to towns with 10-150 thousand of inhabitants tend to keep larger portion of its properties. The boxed graph of this group of towns demonstrates in the lay out of the rectangle. Larger margins of the upper quartile and median in towns above 150 thousand inhabitants are driven by higher values of Brno town.

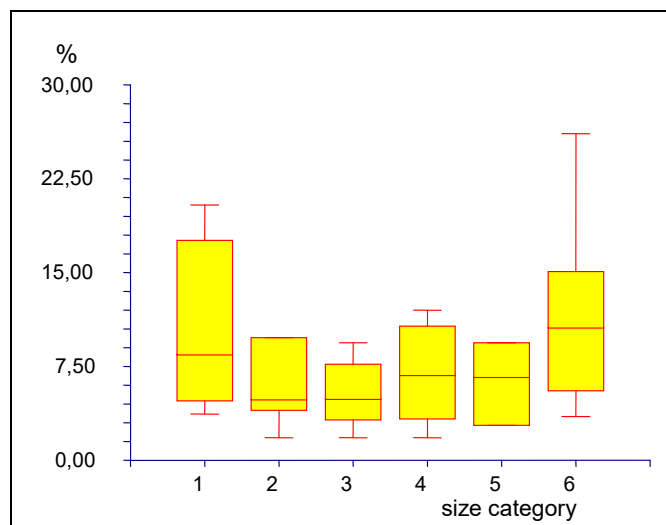
Since the ratio is made of towns, municipalities and districts which responded - the earlier described deviation can be considered as a partial deviation which if we had used complete number never occurred.

On the other hand it is possible that this boxed graph in this particular group of towns theoretically describes and strengthens professional expert opinions which call for Communal housing reserves.



Picture 3: Number of privatized flats for 100 Municipal flats prior to privatization

Boxed graphs describe the dynamics of privatization based on the number of privatized Municipal flats prior to privatization. They point at high inequality between particular groups of towns. Large margin between quartiles (the lowest and the highest) is especially evident in groups of large and small towns (Pict. 3).



Picture 4: Ratio of municipal flats after privatization from the total number of flats

Earlier described fact - the traditional way of evaluation – shows, that towns of all sizes without exception got to the point where the size of Municipal Housing Fund is lower than the European average (Picture 4). Basically all boxes (margins of high and low quartile) lay below the value of 15% of the Municipal Housing Fund. Even towns with 10 to 150 thousand of inhabitants are under borderline of the recommended estimate.

Also, comparison of Municipal Housing Fund in general with the rest of the Europe, executed by method of inductive statistics, confirms the traditional evaluation. Working with the basic ratios and available information (the average values) of both groups (CZ and Europe) the method of inductive statistics – hypothesis test – particularly the test of relevance $|M - \mu_0|$, can help us to find out whether average values are statistically consistent.

Prerequisite for the test of relevance $|M - \mu_0|$ is submission of data from the set/array (in this case represented by towns) ration out $N(\mu; \sigma^2)^3$ in range n (40 towns) with median value M (the average) and dispersion directive σ^2 (standard deviation). For the calculation of relevancy $|M - \mu_0|$ holds:

- Zero hypothesis $H_0: \mu = \mu_0$
- Alternative hypothesis $H_1: \mu \neq \mu_0$
- Testing criteria is given by “Students ratio” “ $t(n - 1)$ ”

$$T = \frac{M - \mu_0}{\sigma} \cdot \sqrt{n - 1}$$

- The critical values of the tested criteria are given by “Students ratio”, conditions of probability and number of available levels.
- If $|T| > t_p(n - 1)$, we reject the hypothesis H_0 (and accept H_1).

	States of Europe	Czech Republic
Average	$\mu_0 = 12,22777778$	$M = 8,211842804$
Standard deviation		$\sigma = 5,486399418$
Zero hypothesis	$\mu = \mu_0 = 12,22777778$	
Test criterion	$T = \frac{8,211842804 - 12,22777778}{5,486399418} \cdot \sqrt{40} = 4,513712172$	
Critical value	$t_{0,05}(39) = \text{TINV}(0,05;39) = 2,022688932$	
<i>Testing criteria exceeded critical value.</i>		
<i>Zero hypothesis denied.</i>		

The test vindicate that the average for the Czech Republic exceeds the average of other European countries and in fact confirms evaluation in traditional way. Indicator of the ratio for Municipal housing and the total of Housing Fund in the Czech Republic run statistically below the average in comparison to the rest of Europe. It is evident that this finding is in the least alarming.

³ Parameters μ and σ represent in connection with the issue of continuous normal (Gauss) distribution of mean value and standard deviation.

4 CONCLUSION

Investigated regions of this analysis embody in all indicators of privatization i.e.:

1. Ratio of flats considered to be privatized from the total sum of Communal flats before privatization
2. The number of privatized flats for 100 Communal flats before privatization
3. Ratio of Municipal flats after privatization from the total sum of the flats in the town

Similar trends, although, naturally in diverse dynamics. The privatization dynamics of Communal Housing Fund indicates that middle sized and large towns tend to privatize on larger scale. This doesn't apply to small towns which prefer slower methodical approach. Smaller towns usually dispose with lower quantities of housing portfolio as oppose to large towns.

What is alarming in context to "Social Housing" is that average ratio of Municipal Housing Fund through out Czech towns and municipalities are 15% i.e. below average. In comparison to the rest of the European countries where housing fund averages between 15-25%, 90% of Czech towns average below the recommended estimate. The finding confirms the comparison of average values from the Czech Republic and selected European countries.

It is imperative to verify and further investigate other towns and municipalities in the Czech Republic which is for technical reasons impossible to do. The finding helped us to answer the question, whether the privatization contributed and satisfied socially weak groups and households. Given the results we can state that it didn't. Privatization of Communal Housing Fund has raised to the forefront other aspects. That is - whether the privatization of Housing Fund was beneficial to:

- better utilization of Communal Housing Fund
- to lower the amount of vacant flats in the region (improve the image of the town)
- to improve the maintenance and restoration of Housing Fund
- reinforcing the housing development
- segregate of building or elimination of ghettos
- gave community and town general attraction.

Even though the process of privatization of communal housing fund is running to its closure in Czech municipalities and towns, there is a need to address this problem. How this unfolds is a question of time, finances, and above all the will.

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