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PERSPECTIVES OF REGIONAL PRICE INDEX AS A POTENTIAL INDICATOR OF SPATIAL SOCIAL AND ECONOMIC STATUS OF THE RESIDENTS: EXPERIMENTAL STAGE

Šárka Laboutková[1], Pavla Bednářová[2]

[1] *Technical University of Liberec, Faculty of Economics, Voroněžská 13,46302 Liberec*
Email:sarka.laboutkova@tul.cz
[2] *Technical University of Liberec, Faculty of Economics, Voroněžská 13,46302 Liberec*
Email:pavla.bednarova@tul.cz

Abstract Methods used to measure disparities require a multidimensional set of indicators because they need to reflect social, economic and environmental dimensions. The indicators which are available on a regional level at present are substantially limited regarding their extent and they do not include a number of dimensions connected with regional development. Namely these are economic, social, demographic and social dimensions and they are connected with the quality of human capital. The majority of statistics regarding regional policies which are accessible on the level of European Union are focused mainly on the economic dimension. The aim of this article is to introduce the Regional Cost-of-Living Index (RCoLI) and evaluate its possible use for the purpose of real disparities measurement. It is a spatial price index which measures the costs of the purchase of a regional expenditure basket in the context of relative costs of the purchase of the same basket in other regions taking into account a substitution effect, i.e. the spatial index of the cost of living, as a criterion of the living standard of inhabitants in different regions of the Czech Republic in a spatial (regional) context. RCoLI extends and deepens the knowledge about the development of spatial inequalities which lead to disparities influencing the development of individual regions in the Czech Republic. Taking into account regional price levels to determining earnings could contribute to the decrease in real earnings regional disparities in individual types of employment.

Keywords: region, regional disparities, real disparities, living conditions, NUTS3, cost-of-living index, nominal indicators.

JEL classification: C21, R13, R31.

1. Introduction

Regional disparity is defined as a dissimilarity or inequality of features, effects or processes which have indisputable regional allocation and which occur in at least two entities of a given regional structure (Kutscherauer, 2007). One of those are price disparities. Non-existence of a regionally different parity of the purchasing power is a limiting factor regarding regional comparisons. By means of the Purchase Power Standard (PPS), the influence of the difference in price levels between different countries is eliminated, but differences in price levels between regions inside the regions of individual classes remain unaccounted for. Differences in price levels mainly between metropolitan areas and other regions are significant, which is primarily caused by prices of rent and some other types of services. This often results in the fact that especially in urban agglomerations bigger gross added value is created than the one which can then really be used at a particular place and the real income of the inhabitants is thus, in comparison with other regions, lower than it might seem.

In the available literature it is possible to find authors who have already dealt with the problem of price disparities and their measurement. Following the EKS (Éltetö-Köves-Szulc) and PPS (Purchase Parity Standard) method, Čadil, Mazouch, Musil, and Kramulová (2012) estimated the regional price levels in 2007 – 2009 for NUTS3 in the Czech Republic. Nevertheless, they do not reflect other aspects of regional price levels, e.g. the impact on the real income disparities of inhabitants, real interregional disparities (Kocourek, Šimanová, Kraft 2014). In the German NUTS3 regions, the regional price index was calculated in 1996 – 2004 on the basis of consumer price index and housing rent index (Schulze, 2003; Kostele & Eckey, 2008; Kosfeld, Eckey & Lauridsen, 2010.

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In the United Kingdom, the issue of real regional disparities has been tackled by Overman and Gibbons (2012), who identified a significant trade-off between the level of wages during ten years period 1998 – 2008. Aten, Figueroa & Martin, (2013) discovered a higher variability in real incomes in the non-metropolitan areas than in the metropolitan ones in the USA. According to Viturka (2007), the price factors belong to the group of middle-important determinants of regional competitiveness. Kahoun (2010) considers the fact that the regional differences in price levels remain neglected, highly limiting for accountable regional comparison, especially because the difference in price levels between the Czech regions are significant.

The aim of this article is to introduce partial results of applied research which is focused on the construction of Regional Cost-of-Living Index (RCoLI) and propose its possible use for the purpose of real disparities measurement.

2. Methodology of RCoLI and its characteristics

The construction of a RCoLI is based on the generally well-known and widely used consumer price index (CPI). For its construction first the following were defined: spacial criterion, consumer basket, the basic period and area to relate the value of RCoLI and source of the data.

When only national consumption patterns are available, the use of national average prices was in accordance with the pure Laspeyres approach. In the Czech Republic, city average prices were used which represent the fictive "average territory". Thus, the Laspeyres modified RCoLI used for the calculation could be written as:

$$CoLI_r = \frac{\sum_{i=1}^{N} p_{ir} q_i}{\sum_{i=1}^{N} p_{ia} q_i} = \sum_{i=1}^{N} \frac{p_{ir}}{p_{ia}} \frac{p_{ia} q_i}{\sum_{i=1}^{N} p_{ia} q_i} = \sum_{i=1}^{N} \frac{p_{ir}}{p_{ia}} w_i \qquad (1)$$

where p_{ir} is the price and q_i is the quantity of goods or services i consumed in a region r, p_{ia} stands for the mean price, in this case the average price of the 36 cities in 2011. As can be seen, Laspeyres index is the sum of all relative prices between the region of interest and the regional average price (in this case the average price of the 36 district cities) in the base year 2011, weighted by the expenditure weight w_i of each individual representative in the regional consumer basket. (Kocourek, Šimanová, 2015). For the purposes of this article RCoLI was calculated for the NUTS3 level.

RCoLI is a sectional spatial price index, which measures the costs of the purchase of a regional expenditure basket in the context of the relative costs of the purchase of the same basket in other regions taking into account a substitution effect. From the viewpoint of the essence of regional price disparities, it can be categorized among material indicators with objective measurability. A material objective indicator is constructed on the basis of measurable (hard) data, such as income per inhabitant, number of cars per household, internet connection, number of doctors per 1000 inhabitants, achieved level of education, etc.

Another characteristic feature might be the fact how easy it is to influence a particular indicator by the bearers of economic (regional) policy. This viewpoint does not often occur in the available literature, however e.g. Kutscherauer et al. (2010) take this viewpoint into account. According to them, the ease or difficulty with which a disparity can be influenced, can be understood as the possibility or purposefulness to achieve the desirable change of disparity by means of certain tools of regional policy (in this case disparity is the subject of regional policy). From this point of view, it is a

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measurement of regional disparity which can be indirectly influenced. The decisive factor is the character of individual items in a particular consumer basket. For example, the most expensive water is in Tábor where a cubic meter costs 106 Crowns. On the other hand people in Jaroměř in Náchod region pay the least – 48 Crowns per cubic meter (Vodárenství 2015). 94 per cent of Czech households are connected to water pipeline. The differences depend for example on the accessibility of water sources, the amount of investments into the repairs and maintenance of networks or into the building of new ones, or in a number of cases price discrepancies are the result of inappropriately set ownership structures[1]. The factors mentioned can be to a smaller or bigger extent influenced by appropriately chosen economic or regional policy.

The following map (Fig. 1) illustrates RCoLI for 36 regional towns according to COICOP structure (Fig. 2). The most significant price differences can be seen in Group 04 – housing, water, energy, fuel which also has the biggest weight in consumption, then Groups 11 – meals and accommodation and 07 – transport in Prague. In Prague, also clothing and shoes are more expensive – Group 03, which is probably connected with the effect of snobbish consumption.

[1] On the water market so called operation model is quite frequent which resides in the city's retaining the water infrastructure , but the supply, sewerage system and water treatment is entrusted to a private company. The agreements between cities or water companies and operators did not include criteria of operation, sanctions for disproportional increase in operation costs or for not keeping the promise of inflation increase in prices of water and sewer rates. Neither any mechanism of the participation of private sector in the profit from operation nor any principle of the participation of private sector in the increase of profit for the reason of the increase in productivity of operation as a result of building new infrastructure which cities fund was included in the agreements. If cities build new water works infrastructure, they have to lease it to the existing operator because they in fact do not have any other choice.

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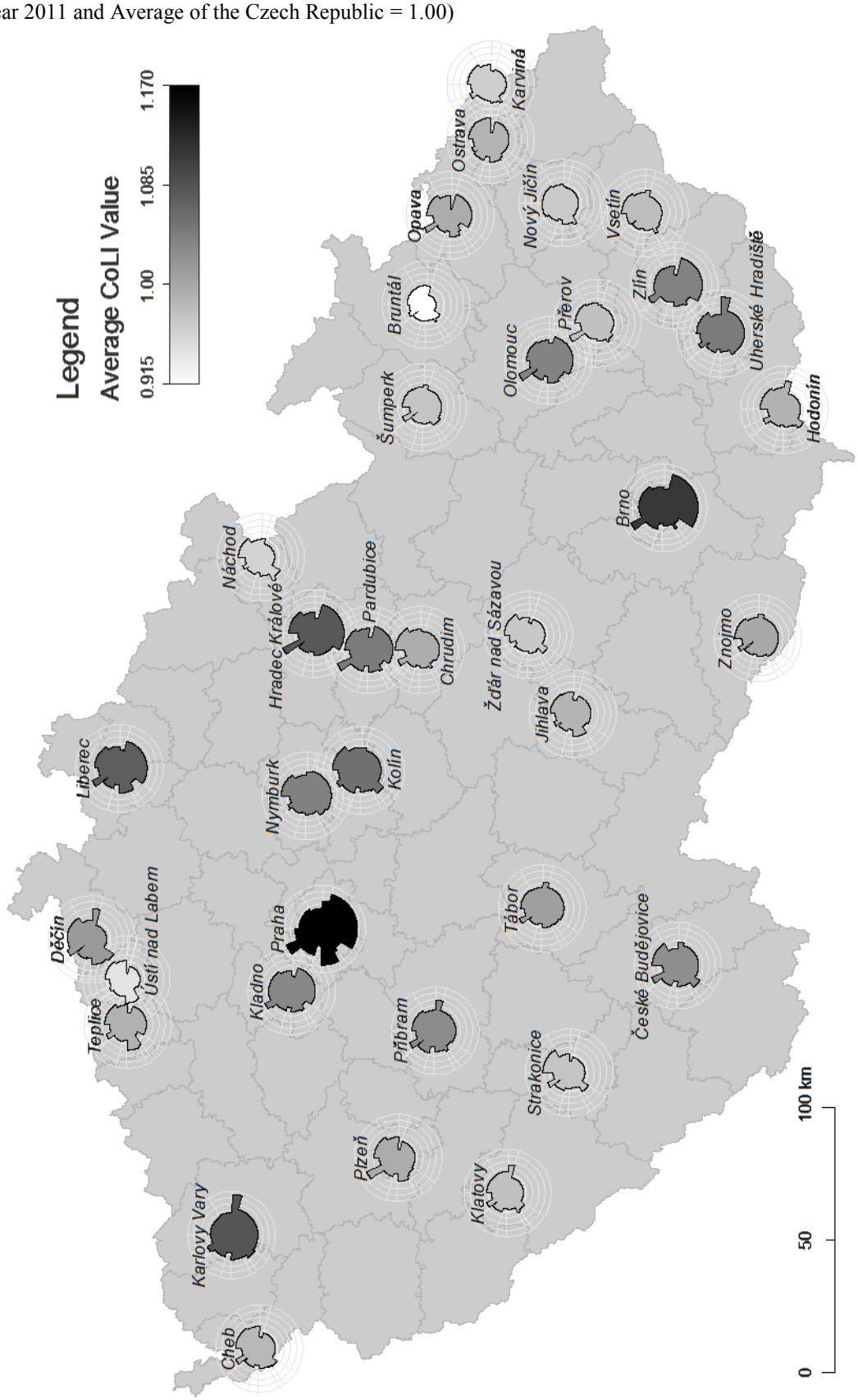
Figure 1 Size and Structure of the Regional CoLIs in 36 District Cities of the Czech Republic (Average of the Years 2011 – 2013, Year 2011 and Average of the Czech Republic = 1.00)



Source**:** (ARCDATA,2014, CZSO 2014), authors' own calculations

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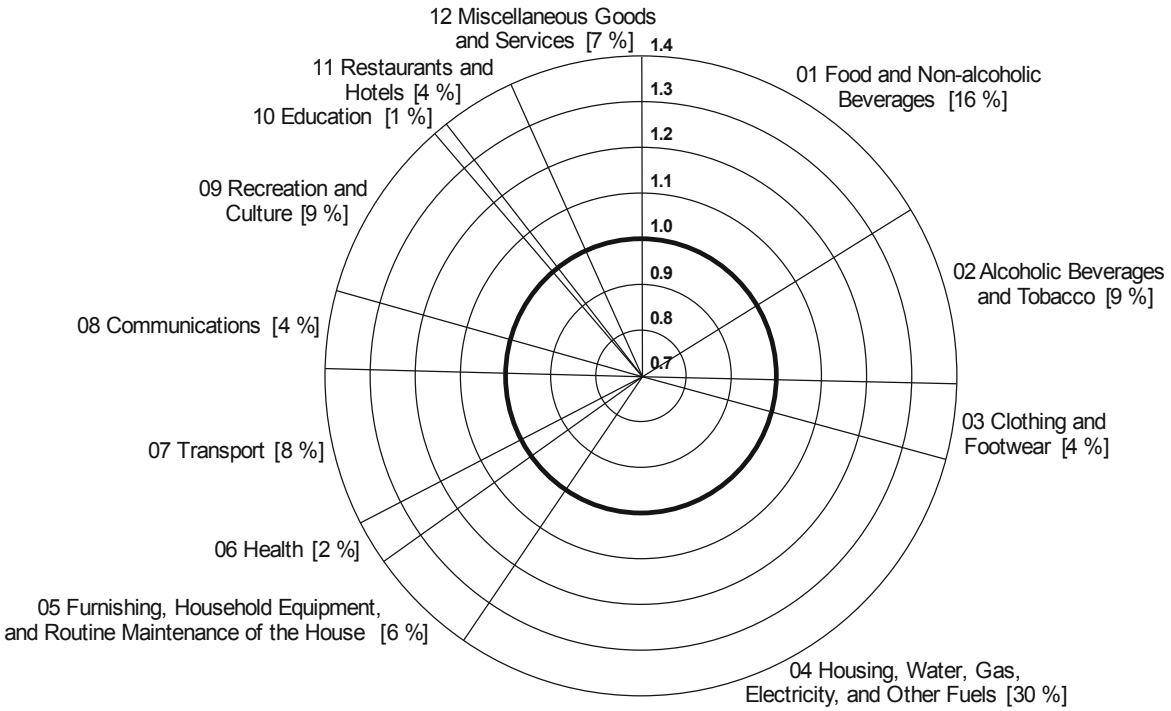
Figure 2 Structure of the Consumer Basket for the Regional CoLI (COICOP Headings and Their Weights)



Source: (CZSO, 2014), authors' own calculations

The differences in prices according to regions can be classified into disparities originating as a result of human activities, namely disparities caused by economic activities. Table 1 summarises the mentioned characteristics.

Tab 1 Characteristics of regional price disparities measured by means of RCoLI on the basis of selected attributes

Attribute of RD (reg. disparity) of polar character		Attribute of RD of possibilities list	
Substance	material: objective	Sphere of occurrence	social
Concreteness level	specificity	Territoriality	NUTS3, LAU
Complexity level	partiality	Measurability	
Change tendencies	convergence	- indicator	primary
Ability to be influenced	can be influenced directly	- method	comparative value
Way of origination	(Economic) activity of a man	- objectivity	objective (quantitative)
		Time	
		- time perspective	short term
		- dynamics	immediate condition
		Impact	sensitive for inhabitants

Source: author's own based on attributes structure according to Kutscherauer 2010

3. The use of RCoLI in the classification of regions and for economic-political practice

RCoLI is constructed as a spatial index of costs of living with a real ability to provide information about the standard of living of inhabitants in different regions of the CR in a spatial (regional) context. The evaluation of the standard of living usually includes a very broad scale of indicators of both

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quantitative and qualitative nature. To get a complex picture, a multi-criteria approach needs to be used. The actual evaluation of the mutual position of regions and determination of their order is best performed with the use of aggregated indicators. Aggregation can be performed in various ways in which both very simple procedures (e.g. the summary of the order of selected indicators in regions) as well as sophisticated approaches based on the results of multi-dimensional statical analyses (such as an analysis of the main components, cluster analysis or factor analysis) are used. To construct aggregated indicators which are capable of describing the examined phenomenon in a bigger complexity with simpler interpretation potential than a set of partial indicators, a thorough detailed analysis of the partial indicators which have an essential importance for the development of the standard of living is needed.

3.1 Net disposable income

One of the partial indicators which is a part of regional disparities decomposition in the social area and serves as one of the parameters of model regions is nominally expressed net disposable income of households. The available literature introduces a number of different typologies of model regions (see Czesaná el al., 2009; Harrop, 1996; Viturka and Klímová; Tuleja 2011). The typology of model regions is usually based on a thorough analysis of the economic-spatial and social-spacial dimensions of monitored regions and then the selection of specific indicators for the evaluation of inter-regional differences follows.

Net disposable income of households is an indicator frequently used for the evaluation of differences in the standard of living in different regions. The Czech Statistical Office (CSU) defines net disposable income of households as a sum which households can spend on end consumption, on savings in the form of financial assets and on accumulation of tangible and intangible assets (CSU, 2013). Disposable income is a result of the creation and distribution of income and it is a balance sheet item of the account of a secondary distribution of income. The difficulty of this indicator resides in the fact that it is shown in its nominal value. RCoLI could be used as a tool to make this indicator more precise or more real and in this way to give precision to the typology of model regions. Kocourek, Šimanová (2015) concluded based on the first experimental calculation that there might be some trade-off between the regional values of nominal NDHI per capita and the regional CoLI: the higher nominal NDHI per capita seems to be compensated for by the higher values of RCoLI.

3.2 Living conditions in NUTS3

Another possible application of RCoLI index is to make the results of the survey on income and living conditions of households EU-SILC (European Union – Statistics on Income and Living Conditions) more real. This survey called Living conditions is performed by CSU every year based on Decree (EC) 1177/2003 and the following implementing decrees of the European Commission which bring information on the social and economic situation of Czech households. It specifically focuses on the amount and structure of the income of households. The data gained are used to calculate indicators of monetary and material poverty and economic activity intensity. Another aim of the same importance is to provide information both for the direction of the country's social policy as well as for the evaluation of the impact of the measures taken. Figures 3, 4 and 5 provide a comparison of the development of the nominal and real levels of annual net total income per person in 2011, 2012 and 2013.

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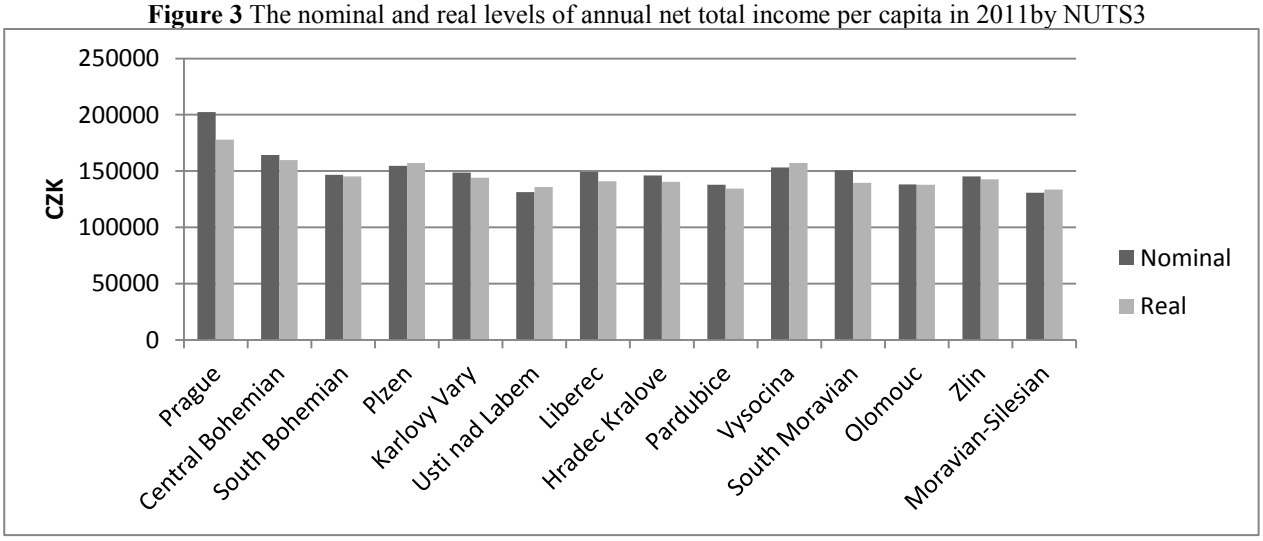
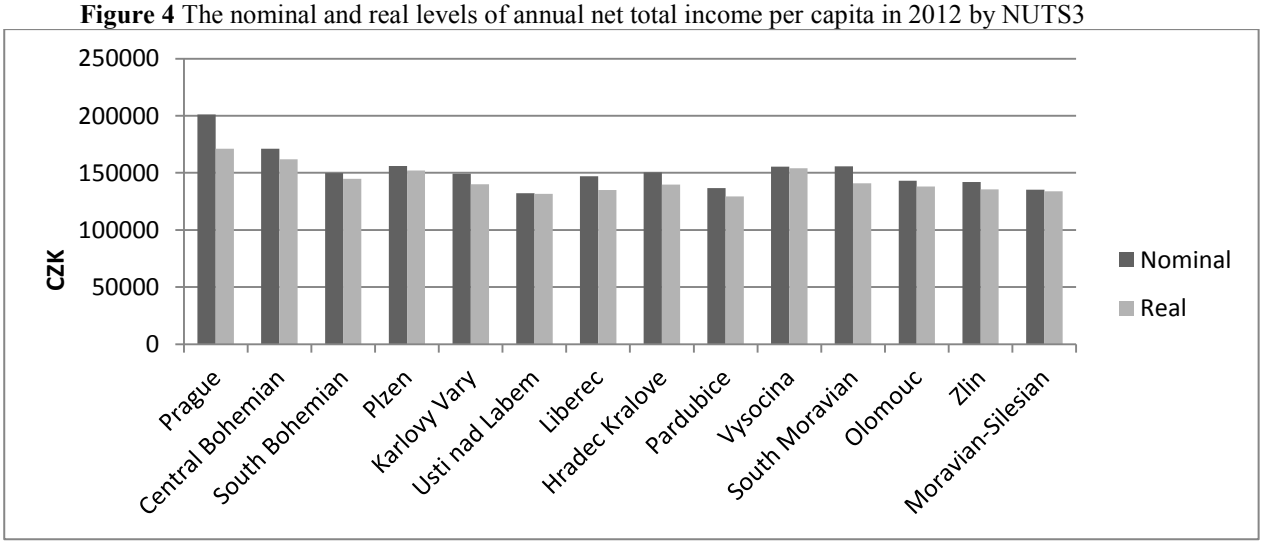
Figure 3 The nominal and real levels of annual net total income per capita in 2011by NUTS3



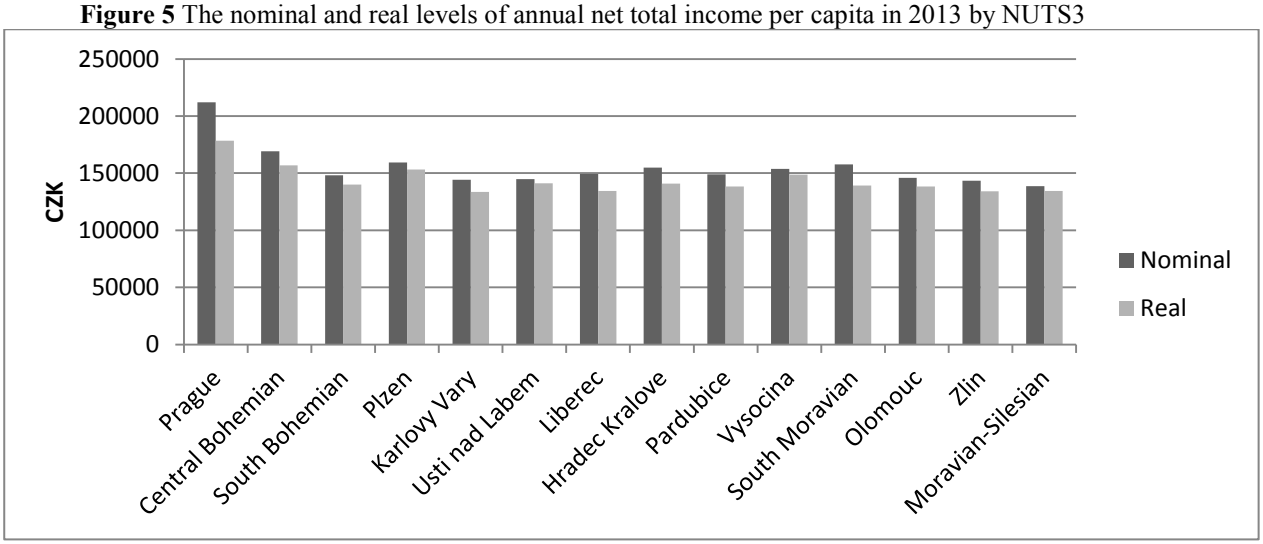
Source: data form CZSO and authors´ own calculation

Figure 4 The nominal and real levels of annual net total income per capita in 2012 by NUTS3



Source: data from CZSO and authors´ own calculation

Figure 5 The nominal and real levels of annual net total income per capita in 2013 by NUTS3



Source: data from CZSO and authors´ own calculation

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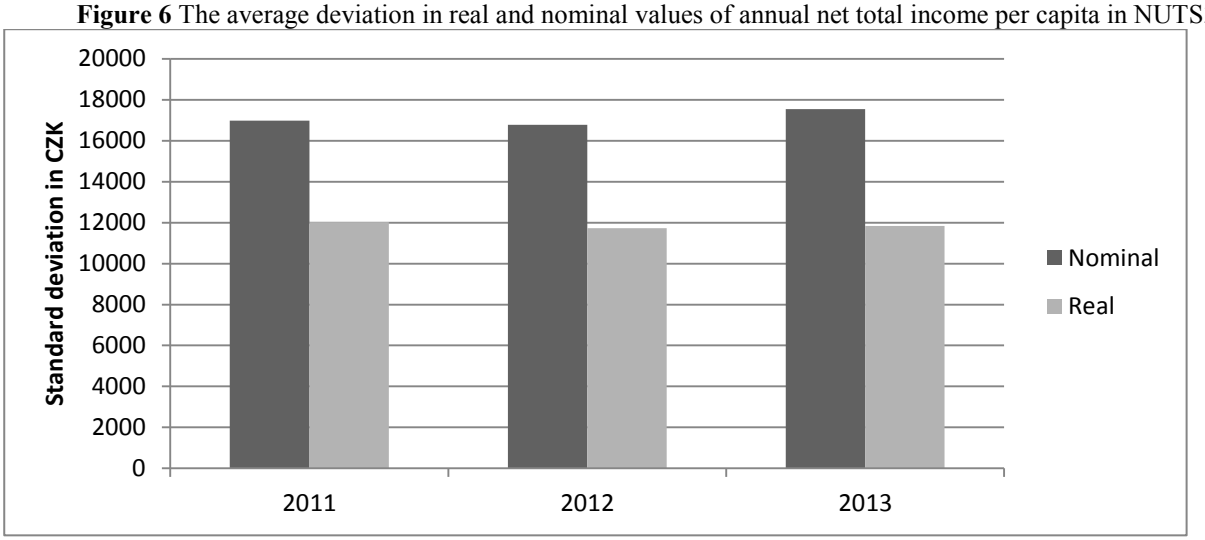
Figure 6 shows the average deviation in real and nominal values of annual net total income per capita in 2011, 2012 and 2013 in NUTS3. It is obvious that although the nominal values measured in regions diverge, the real values obtained by means of RCoLI converge on the other hand.

Figure 6 The average deviation in real and nominal values of annual net total income per capita in NUTS3



Source: authors´ own calculation

The comparison of the resulting total income from micro-data with the income on a macro level shown by the statistics of national accounts per a household sector (even after the items which are not monitored in private households were cleared) is difficult. As regards the volume, the income obtained by direct asking in households is always lower, nevertheless the development of household income is roughly in balance with the trends of national accounting.

RCoLI can also be used for investigating the share of households in income groups, in other words income distribution according to regions. The disadvantage of such a segmentation resides in the fact that different groups of households tend to consume different sets of goods and services. Consequently, when relative prices change, the change in the cost of living for these groups will tend to diverge and the appropriate compensation for one group of households may not be the same as for another group.

3.3 Average wages in NUTS3 according to employment type

Taking into account regional differences in price levels has a significant impact on the relative level of average real wages, salaries, pensions and benefits in individual regions (Bajgar, Janský,2014). Table 2 shows differences in nominal and real average gross earnings of employees classified according to the international classification of occupations ISCO in individual regions in 2011. The line marked as CZ-ISCO divides employees according to the occupation classification: 1000 – managers; 2000 – professionals; 3000 - technicians and associate professionals; 4000 - clerical support workers; 5000 - service and sales workers; 6000 - skilled agricultural, forestry and fishery workers; 7000 - craft and related trades workers; 8000 - plant and machine operators and assemblers; 9000 - elementary occupations. Column (1) presents the Regional Index of Cost of Living (RCoLI) in a particular region. The even columns show average nominal earnings for a particular occupation, expressed in the percentage of the national median of the average earnings. The odd columns describe regional average real earnings which are arrived at by dividing the nominal earnings of the even columns RCoLI. Real wages are again expressed as percentages of the national median of the average earnings for a particular occupation.

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Tab 2 Nominal and real median of average gross wages in % refers to the level of NUTS3

Region NUTS3	RCoLI	Median of Average Monthly Gross Wages of Employees by CZ-ISCO-08 Major Group and by Region in 2011																	
		1000		2000		3000		4000		5000		6000		7000		8000		9000	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Prague	114	162	145	134	122	127	113	122	107	117	105	112	101	114	101	105	99	105	92
Central Bohemian	103	162	160	103	104	110	108	107	103	101	101	102	101	112	110	105	110	105	111
South Bohemian	101	95	96	96	99	102	102	101	100	96	98	114	116	97	97	96	103	96	96
Plzen	98	104	108	101	107	103	106	104	106	103	108	111	115	106	109	96	105	96	110
Karlovy Vary	103	90	88	94	94	95	94	105	101	106	106	94	93	98	96	92	95	92	96
Usti nad Labem	97	104	109	97	104	98	103	96	99	93	99	89	94	100	105	102	113	102	108
Liberec	106	104	100	99	97	99	94	95	90	101	98	90	87	104	99	95	96	95	102
Hradec Kralove	104	96	94	92	91	95	92	95	90	101	99	89	87	97	94	95	98	95	106
Pardubice	103	95	94	94	95	99	98	103	100	99	99	111	111	97	95	91	95	91	100
Vysocina	98	96	100	97	103	101	105	100	102	98	103	108	113	98	101	90	99	90	111
South Moravian	108	106	100	106	101	103	96	100	92	97	92	92	87	100	93	94	93	94	98
Olomouc	100	95	96	94	97	96	97	94	93	101	103	111	113	100	101	95	101	95	100
Zlin	102	96	95	95	96	98	98	93	91	97	98	98	99	100	99	96	101	96	98
Moravian-Silesian	98	104	108	99	104	102	106	99	101	97	102	94	98	107	110	104	114	104	100

Source: authors' own calculations based on data from CZSO

3.4 Real purchasing power in NUTS3

By means of RCoLI, it is possible to find out and spatially compare how much a worker would really earn in the same occupation in individual regions if the republic's median earnings for a particular occupation were taken into account. This calculation can help to answer the question what real purchasing power earnings of employees in each region would have if these employees received the same (median) earnings. In reality the highest salaries would be earned by employees in the following regions: Usti nad Labem, Vysocina, Moravian-Silesian and Plzen (see Tab 3). In these regions the real median earnings reach 103 % in all the categories of employment (in the case of Usti nad Labem region and Vysocina region), and 102 % (in the case of Moravian-Silesian and Plzen regions) of the national median earnings in the given occupation categories. In Olomouc and South Bohemianregion, real salaries were not significantly different from the median of nominal gross earnings (100 %, 99 %). Real salaries in Zlin, Pardubice, Central Bohemian, Karlovy Vary and Hradec Kralove regions were slightly below the earnings median (98 %, 97 %, 97 %, 96 %). The worst situation was in Liberec and South Moravian regions and in the capital city of Prague; here employees would in fact earn only 95, 93 and 88 % of the median nominal earnings.

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Tab 3 Nominal and real monthly wages in CZK by occupation

Code CZ-ISCO-80	Nominal Monthly Wages (Median) of Employees by CZ-ISCO-08 Major Group in 2011 in the Czech Republic								
	1000	2000	3000	4000	5000	6000	7000	8000	9000
Nominal Monthly Wages (Median)	39 846	30 355	25 638	20 483	14 505	16 535	20 035	19 923	13 577
Regions NUTS3	**Real Monthly Wages (Median) of Employees by CZ-ISCO-08 Major Group and by Region in 2011**								
Prague	35 014	26 673	22 529	17 999	12 746	14 530	17 605	17 507	11 931
Central Bohemian	38 723	29 499	24 915	19 906	14 096	16 069	19 470	19 362	13 194
South Bohemian	39 529	30 114	25 435	20 320	14 390	16 404	19 876	19 765	13 469
Plzen	40 535	30 879	26 081	20 837	14 756	16 821	20 381	20 268	13 812
Karlovy Vary	38 610	29 413	24 843	19 848	14 055	16 022	19 414	19 305	13 156
Usti nad Labem	41 163	31 358	26 486	21 160	14 985	17 082	20 697	20 582	14 026
Liberec	37 661	28 690	24 233	19 360	13 710	15 629	18 937	18 831	12 833
Hradec Kralove	38 239	29 131	24 605	19 657	13 920	15 869	19 227	19 120	13 030
Pardubice	38 874	29 614	25 013	19 983	14 151	16 132	19 546	19 437	13 246
Vysocina	40 867	31 133	26 295	21 008	14 877	16 959	20 549	20 434	13 925
South Moravian	36 928	28 132	23 761	18 983	13 443	15 324	18 568	18 464	12 583
Olomouc	39 766	30 294	25 587	20 442	14 476	16 502	19 995	19 883	13 550
Zlin	39 141	29 818	25 185	20 121	14 249	16 243	19 681	19 571	13 337
Moravian-Silesian	40 700	31 006	26 188	20 922	14 816	16 890	20 465	20 350	13 868

Source: authors' own calculations based on data from CZSO

The use in practical economic policies is in this case more on a theoretical level. Taking into account regional price levels when determining earnings could on the one hand contribute to the decrease in real earnings regional disparities in individual types of employment. On the other hand, such a step is administratively demanding and additional collection of data requires significant costs.

4. Conclusion

The aim of the article was to explain the essence of the Regional Index of the Cost of Living and suggest its possible use. The article introduced an experimental calculation of RCoLI, its characteristics from the viewpoint of regional disparities and the examples of potential specific use. All this in relation to partial outcomes of the running applied research. In the steps to follow the calculation of the index will be modified and made more precise, other data leading to the more real nature of social-economic indicators in NUTS3 will be provided, such as a living wage, distribution of real household income in regions, etc. and their economic-political interpretation.

Potential application of the acquired results following from regional differences in price levels to practical economic or regional or social policy resides mainly in their informative value. As a part of the social policy it is possible to use different benefits and allowances increasing disposable income of households, such as contributions to housing, fees for kindergarten (after the flat tax reduction was deduced), benefits of assistance in material need, etc. In terms of types of regional policy, it should more likely be a stabilizing-oriented regional policy, which, however, often comes into conflict with policies aimed at increasing economic competitiveness. Theoretically, it is possible to perceive the effort to reduce significant interregional differences in average earnings as the encouragement of regional demand, which would basically represent the increase in budget constraints of consumers in a particular region.

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Literature

[1] Arcdata. 2014. *ArcČR 500: Digitální geografická databáze 1:500 000.* Praha: ARCDATA [online] [cit. 2015-01-20]. Available from Internet: http://www.arcdata.cz/produkty-a-sluzby/geograficka-data/arccr-500/

[2] Aten, B. H., E. B. Figueroa and T. Martin. 2013. *Real Personal Income and Regional Price Parities for States and Metropolitan Areas, 2007–2011.* Washington, USA: U.S. Bureau of Economic Analysis. [online] [cit. 2014-06-04]. Available from Internet: http://www.bea.gov/scb/pdf/2013/08 August/0813_regional_price_parities.pdf

[3] Bajgar, M. and P. Janský. 2014. *Regionální rozdíly v kupní síle: Ceny, platy, mzdy a důchody*. Praha: IDEA CERGE-EI Working Paper No. 7.

[4] Czesaná, V. et al. 2009. *Ročenka konkurenceschopnosti České republiky 2007-2008.* Praha: Linde.

[5] CZSO. 2015a. *Average monthly gross wages of employees by CZ-ISCO-08 major group and by region in 2011.* Praha: Czech Statistical Office [online] [cit. 2015-06-15]. Available from Internet: https://www.czso.cz/csu/czso/101011-12-r_2012-09

[6] CZSO. 2014. Data from *Internal Database of Czech Statistical Office*. Praha: Czech Statistical Office.

[7] CZSO. 2015b. *Podíly zaměstnanců, placený čas a hrubé měsíční mzdy podle hlavních tříd CZ-ISCO a pohlaví.* Praha: Czech Statistical Office [online] [cit. 2015-06-15]. Available from Internet: https://www.czso.cz/csu/czso/struktura-mezd-zamestnancu-2011-2is0s97v2h

[8] Čadil, J., P. Mazouch, M. Musil and J. Kramulová. 2012. The issue of regional PPS indicators - case study of the Czech Republic, in Beauclair, A. – Mitchell, E., ed., *Networked Regions and Cities in Times of Fragmentation: Developing Smart, Sustainable and Inclusive Places,* Seaford: Regional Studies Association. pp. 29 – 39

[9] Gajdoš, P. and J. Pašiak. 2006. *Regionálny rozvoj Slovenska z pohladu priestorovej sociológie*. 1. ed. Bratislava: SAV.

[10] Gibbons, S., H. Overman and G. Resende. 2011. *Real Earnings Disparities in Britain.* Spatial Economics Research Centre Discussion Paper, vol. 65, 44 pgs.

[11] Harrop, J. 1996. *Structural Funding and Employment in the European Union. Financing the Path to Integration*. Brookfield, VT: Edward Elgar Publishing.

[12] Kahoun, J. 2010. *Regionální ekonomická výkonost a disponibilní důchod domácností*. Research Centre for Competitiveness of Czech Economy Working Paper No. 41.

[13] Kocourek A. and J. Šimanová. 2015. Nominal vs. Real Regional Income Disparities in Selected Cities of the Czech Republic. In *Proceedings of the 12th International Conference Liberec Economic Forum.* Liberec: Technical University, in print.

[14] Kocourek, A., J. Šimanová, and J. Kraft. 2014. Regionalization of the Consumer Cost-of-Living Index in the Czech Republic. In *The 8th International Days of Statistics and Economics Conference Proceedings.* Praha: University of Economics, pp. 1487 – 1496.

ISBN xxxxxxxxxxxxxxxxxxx
Conference Proceedings

[15] Kosfeld, E., H. Eckey, and J. Lauridsen. 2008. Disparities in Prices and Income across German NUTS 3 Regions. *Applied Economics*, vol. 54, pp. 123-141.

[16] Kosfeld, R. and H. Eckey. 2010. Market access, regional price level and wage disparities: the German Case. *Jahrbuch für Regionalwissenschaft*, vol. 30, issue 2, pp. 105-128.

[17] Kutscherauer, A. et al. 2007. *Identifikace, klasifikace a hodnocení regionálních disparit*. Ostrava: VŠB-TU [online] [cit. 2014-05-18]. Available from Internet: http://disparity.vsb.cz/vysledky/01_rocni_zprava_2007.pdf.

[18] Kutscherauer, A. et al. 2010. *Regionální disparity: Disparity v regionálním rozvoji České republiky – pojetí, teorie, klasifikace a hodnocení*. Ostrava: VŠB-TU [online] [cit. 2014-05-18]. Available from Internet: http://disparity.vsb.cz/vysledky/15_zaverecna_zprava_2010.pdf.

[19] Schultze, C. L. 2003. The Consumer Cost-of-Living Index: Conceptual Issues and Practical Suggestions. *Journal of Economic Perspectives*, vol. 17, issue 1, pp. 3-22.

[20] Tuleja, P. 2011. Modelové regiony a možnosti jejich využití při hodnocení regionálních disparit. *Acta academica karviniensia*, issue 3, pp. 134-149.

[21] Viturka, M. 2007. Konkurenceschopnost regionů a možnosti jejího hodnocení. *Politická ekonomie*, vol. 55, issue 5, pp. 637–658.

[22] Viturka, M. and V. Klímová. 2006. *Globálně orientované hodnocení konkurenční pozice krajů ČR.* Research Centre for Competitiveness of Czech Economy Working Paper No. 20.

[23] Vodohospodářství ČR. 2015. [online] [cit. 2015-05-10]. Available from Internet: http://www.vodarenstvi.com/vodarenstvi-cr-2015.php