MICROSIMULATION OF THE MORTAGE INTEREST DEDUCTION. THE CZECH CASE.

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Abstract

This paper focuses on the mortgage interest deduction for owner occupied housing in the Czech Republic. The main research question concerns the distribution of personal income tax liability given the rather generous interest deduction for owner occupied housing loans and changes to it when restrictions are placed on the interest deduction in 2014. We used data for the Czech Republic from the EU-SILC surveys for our analysis. We estimated the value of this tax expenditure at approximately CZK 5 billion in 2009, with almost half the amount spent by the lowest two deciles in income distribution. Personal income tax reform is slated to begin in 2014, one part of which will be a cap on loan interest. This reform would lead to a decrease in the yearly value of the tax expenditure but will be followed by an increase in the PIT rate. Taken together, this will generate greater tax expenditures. Our computations show that the impact will be negative on households in the highest decile, while other groups will feel some benefit.

Keyword: microsimulation, personal income tax, revenue forgone method, SILC, tax expenditure

JEL Classification: H22, C31, R38

1 Introduction

Tax support for owner-occupied housing is a common public policy objective. It may take markedly different forms in different countries, but a common approach is to take into account interest on housing loans in calculating personal income taxes. In analysing the impact of tax exemptions for housing loans, researchers normally speak of "mortgage interest deductions" (referred to hereinafter as MID). Households permitted to take interest paid on housing loans into account in calculating their tax obligation pay lower personal income tax (hereinafter PIT). This tax revenue reduction is generally called “tax expenditure” and the aim of a MID policy is to ease property acquisition for home-owners. Such policy is rather expensive and we can see raising discussion on reduction of the maximum amount of support given to the individual households. This debate gains on significance in the times of problems with public finance sustainability and when it seems there exists causal relationship to public support of homeownership, “mortgage bubble” and following economic slump. Distributional aspect might be seen as consequent question to budgetary cost of MID. When the costs of this policy are borne by the whole society, beneficiaries seem to be concentrated among the richest members of the society. One may ask than what the results of such a policy are. Why should public support benefit individuals who could take care of their living anyway?

Knowing the answer to the extent of support of MID policy, its distribution among different income groups in the society and knowing what might be the impacts of MID policy change is important for many governments in developed countries. Austerity measures in public finance induce changes in the tax policy and restriction in MID is one of the possible way of the reform. Experience from countries which already changed their MID policy show that there are various options for MID reform and therefore diverse outcomes might be expected. Our paper will argue what outcomes could be expected in the Czech Republic when sharp reduction in MID is being decided upon.

The goal of this paper is to calculate current budget costs of mortgage interest deduction, and to discuss the distribution of the support among households in the Czech Republic. Integral to this will be an assessment of changes in the MID after adoption of proposed changes to the income tax law. In order to achieve the goal we precede with following sub-questions: What is known from previous research about the effect of MID and its

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reforms on tax revenue? Do we have the data and is possible to analyse them in the research objective? What does such an analysis prove?

In the first section we discuss pros and cons of present different models of MID. The discussion of MID as an important tax expenditure policy and its distributional aspects is broadened to the other aspects which are important when considering policy change and which are dealt in present literature. At the same time we discuss different calculation methods of MID and their impact on budgetary costs and distributional aspects. In the second section we present data and methodology of calculation which we employ for finding the value of MID and for its distribution in the Czech society. In the third section of this paper we present the main results of our calculations. We deal mainly with budgetary costs of MID policy, its distribution in the Czech society and compare results to the previous studies also outside the Czech Republic. At the same time we discuss the impact of the policy change on public budget revenue and its distribution. In the last section we sum up main findings of our paper and discuss research question which emerge after having the answer to the main question of our paper.

2 Mortgage interest deduction as a tool of public policy

The issue of public support and its distribution is one often addressed by researchers, particularly in a situation in which countries are undergoing MID reform. For example, Italy adopted changes to MID after 1992 ending ties between tax exemptions and the marginal tax rate. Jappelli and Pistaferri (2007) evaluate the impact of this change on Italian households. Another example is given by Bourassa and Grisby (2000), who discuss the impact of modifications to MID in the US.

Pelegrino, Piacenza, Turati (2012) study the actual and distributive impact of housing taxation and alternative approach on Italian households. The used microsimulation model, which is described in details in the previous authors' work, considers as input data those provided by the Bank of Italy from 2008 in its Survey on Households Income and Wealth (hereafter SHIW). A contrary to SILC this survey include: the interests paid on mortgage, and the initial mortgage debt. In the alternative approach they take into account the imputed rent from owner – occupied dwelling as a component of gross income for the purpose of personal income tax calculation.

Authors mention that, the share of Italian households with a mortgage is only 8.1 per cent, whereas in Germany it is 25 per cent, in Great Britain and US 50 percent and according to Czech SILC survey it is 14 per cent in the Czech Republic. Their conclusions are: overall inequality in Italy measured by the Giniho coefficient is reducing, however, when considering the net cash income (instead of broad definition of income) the greatest negative impact čeho is on elderly people.

T. Jappelli, L. Pistaferri (2006) use data the SHIW from 1989 to 2002 to evaluate of the impact of tax system changes on the propensity to borrow in Italy. They assumed that the reform should have an impact on high – income taxpayers and multiple income households by reducing the propensity to borrow in comparison with other population groups. However, they didn't find evidence that tax considerations shape the demand for mortgage debt, either at the extensive or the intensive margin.

We can find many diverse models of mortgage interest deduction among different countries. The simplest version is that taxpayer deduct all mortgage interest from his income. If progressive personal income tax applies subsidy from mortgage interest deduction depends only on marginal income tax rate. In this easy-form system high income home owners usually gain higher benefit than middle income ones who are common focus group of public policies of home-ownership living. Lowering the public support may be realized by the appropriate combination of following measures. First of all, the maximum value of mortgage interest deduction may be reduced. This aims at large mortgages which are drawn by households with higher incomes on larger houses. Second way of public support lowering may be found in separating of the public support value off the marginal tax applied on personal income. Saarima (2010) states that before tax reform from 1993, the average deduction rate exceeded 50 %. Tax reform has introduced single flat rate tax 25 %, which is applied against mortgage interest paid. Third possibility of public support reduction relies on further restriction of who may be eligible to apply MID and on which circumstances. This may involve reduction of MID only for mortgage, which where the public support was previously authorized or where recipient was agreed. Finally, MID may be accounted only against capital income, which may include imputed rental income from owner-occupied housing.

One may found more motivations for mortgage interest deductibility reform. In many case the purpose of the reform is not stipulated or more often is not followed only single reason of the reform. Yet, following argument can be found in the literature: better aiming of the public support, or even demand of distributional fairness, improving efficiency of the tax system or the need for tax revenue increase. Saarima (2010) argues that the main goal of the Finish tax reform from 1993 was to improve fairness in capital income taxation by reducing possibilities for tax arbitrage. The reform has insisted on introduction of dual income tax system where interest expenses may be deducted mainly from capital income and where applied tax rate is flat - 25 %. Gervais,

Pandey, (2008) present, that official governmental estimate of U.S: revenue loss exceed $74 billion in 2006. The authors mention, that elimination of MID provision from tax system would therefore increase tax revenue. But due to expected change of capital composition of affected households authors argue that real cost of this provision is much lower than the governmental estimate is.

Mortgage interest deduction has been part of the law in the Czech Republic since 1998, when taxpayers were first allowed to reduce their tax base by the amount of interest on housing loans paid up to CZK 300,000. The answers to the question "who is the recipient of such a policy and what are the budgetary costs" is rarely found for the Czech Republic. The first comprehensive evaluation of tax expenditures in the CR was in Kubatova and Jares (2011), where authors discuss various viewpoints on tax expenditures and methods for measuring them. Their approach to quantification tax expenditure is generally known as "foregone revenue method". Yet the results of their study of 210 tax exemptions in the CR have primarily illustrative character, since they don't discuss distributional effects. Moreover their methodology and assumptions of calculations are simplistic, since their main goal is to study all tax exemption which can be found in the Czech tax system. Distributional effects of different residential tools and their effectiveness in the CR was analysed by Lux, Sunega and Boelhouwer (2009). Even their methodological approach, which led them to the claim of highly unequal distribution, might be questioned. According to them, taxpayers from the 10th income decile benefited most from the tax relief, their share is equal to 84 per cent of total tax relief. They state, that data from tax declaration in 2002 were used for calculation, but they don't discuss nature of these data and where do they get it from.

3 Material and Methods

A primary reference used by the authors is data from the EU-SILC survey European Union Statistics on Income and Living Conditions for the CR from 2005-2010. The EU-SILC database provides comparable, cross-sectional data on income, poverty, social exclusion and living conditions in the European Union. The SILC sample contains approximately 10,000 Czech households (for more on EU-SILC survey methodology, see CZSO 2011).

The model used is based upon a simplified version of the Czech tax system. A study carried out by the Ministry of Finance of the CR (Jares, pp. 77-103, 2010) showed that the value of some deductible items and tax credits is negligible compared to total tax revenues. The model therefore employs only deductible items for interest on housing loans, along with the following tax credits: the basic credit (for individuals), the tax credit for low-income spouses and the child tax credit starting in year 2006. Before the year 2006 a mix of tax credits and tax allowances was applied.

The dependence of tax expenditures on housing loans may be expressed using the following equation:

$$T_{0,1} = f(I_0, TA_{0,1}, TS_{0,1}) \quad (1),$$

$$\mathrm{T}^{*}_{0,1} = \mathrm{f}(\mathrm{I}_0, \mathrm{TA}^{*}_{0,1}, \mathrm{TS}_{0,1}) \quad (2),$$

$$\mathrm{TE}^{\mathrm{H}}_{0,1} = \mathrm{T}^{*}_{0,1} - \mathrm{T}_{0,1} \quad (3),$$

where $T_{0,1}$ In Equation (1) represents the household tax obligation at time 0 or time 1. The household tax obligation is influenced by the amount of its taxable income I_0, in this case only at time 0, because the taxable income at time 1 is unknown. Time period 1 need not be entered into the calculations if we calculate the amount of tax expenditure only for period 0. But since this article presumes a change in tax policy it wishes to analyse, we will expand our calculations to include period 1. Another factor influencing the household tax obligation is the way the tax system is set up. For purposes of the equations, the focus is on the means by which tax is calculated from the tax base TS taking into account tax exemptions TA. The means for calculating tax from the tax base TS ordinarily presumes that the appropriate taxation rates will be applied to the tax base. Tax exemptions TA, then, ordinarily take the form of items reducing the tax base (deductible items) or items which reduce the tax obligation calculated (tax credits). The calculations must then take into account the method by which taxable income is transformed to the tax base. The above indicated procedure for calculating the tax obligation presumes that the unit of taxation is the household, which was indeed the case in the CR in 2005-2007. If the unit of taxation is the individual, calculations proceed analogously but the tax obligation of households then consists of the sum of tax obligations of their individual members. The above indicated schematic procedure for calculating income tax is given in detail for the CR in OECD (2010). A survey finds the same calculation approach for other OECD countries, as well as a description of any deviations from the above indicated general procedure.

In Equation (2), the hypothetical household tax obligation is given for situation in which the taxpayer cannot reduce the tax base by the amount of interest paid on the housing loan. In such a situation, there is a higher tax obligation and lower net household income. Equation (3), then, expresses the value of the tax expenditure made

by the household taking into account the potential reduction in tax due to housing loan interest. The following table 1 summarizes the basic characteristics of the tax system with the respect to MID in the Czech Republic.

Table 1: Recap of chief tax system parameters for calculating employee income tax

	Period 0 (2005-2007)	Period 1 (2008-2012)	Period 2 (2013-2014)	Period 3 (2015)
Tax Base	Gross Wage	Supergross Wage	Supergross Wage	Wage
Tax exemption employed	Mix of deductible items and exemptions	Tax credits	Tax credits	Tax credits
Interest on housing loans figured into tax base	max. CZK 300 000/yr	max. CZK 300 000/yr	max. CZK 300 000/yr	max. CZK 80 000/yr
Tax rate on tax base	Progressive scale	Flat rate 15%	Flat rate 15% + solidarity tax 7% (on income exceeding 48 times monthly average wage)	Flat rate 19% + solidarity tax 7% (on income exceeding 48 times monthly average wage)

Source: Czech legislation

Because of changes in tax system and and limitations on figuring interest into the tax base, we simulate 3 states according Table 1 (period 1, 2 and 3)[3], There will also be a change in the amount of tax exemptions for taxpayers. The first change is the implementation of new tax rate from 2013. This new tax rate is called "solidarity tax" and is paid from income exceeding 48 times average monthly wage. Further on the tax base is no longer calculated as the labor cost of employees, but rather as the simple gross wage. Reducing the tax base, however, will also lead to growth in tax rate – from 15 % to 19 %. The analysis will thus also indicate the impact of the proposed changes on the effective amount of the instrument being analysed and its distribution in society.

In the succeeding step, we apply the above calculation procedure for tax exemptions to the SILC survey data to calculate the overall tax exemption for the CR and its distribution among individual groups of households.

The SILC 2010 household survey data codes for whether households employ a mortgage or other form of loan for housing purposes, but the data matrix does not indicate what the effective exemption amount is. Also missing is data on total loan payments for 2009, as well as interest payments for the same period. The Czech Statistical Office determines the answers to these questions but does not provide them to analysts (allegedly because of the low data validity). Because of this, data concerning yearly housing loan interest had to be imputed into the matrix by the model. It is described in the following equations:

$$\mathrm{MIV^i} = \emptyset\mathrm{MV^i} * \mathrm{IR^i} \quad (4),$$

$$\emptyset\mathrm{MV^i} = \mathrm{V^i} * \frac{\mathrm{MV_*^i}}{\mathrm{V^i}} * \frac{\emptyset\mathrm{MV^i}}{\mathrm{MV_*^i}} \quad (5),$$

in which Equation (4) shows that interest payments on mortgages (housing loans) MIV^i for each household are equal to the average amount of the mortgage for the year in question $\emptyset MV^i$ and the interest rate for that year $\mathrm{IR^i}$. Equation (5) then specifies the average amount of the mortgage in greater detail, as given by the market value of the residence V^i, the share of the market price of the residence covered by the original mortgage $\frac{MV_*^i}{V^i}$, And the share indicating what portion of the mortgage remains unpaid for the year in question $\frac{\emptyset MV^i}{MV_*^i}$.

The SILC 2010 data contains only information on the estimated market value of household residences. We have used this in unchanged form in place of market values to determine the amount of interest payments. We start from the fact that households making payments on housing loans have the best information on the market value of their residence and have no reason not to divulge this information to a survey. Further, the housing loan depends upon the residence in which the household currently lives (a necessary condition for taking into account loan interest on housing loans in determining income taxes). As regards the interest rates paid by a household, it may be noted in general that the interest rate correlates negatively with the amount of income and differs with respect to period during which the loan was taken out, the length of time for which the rate remains fixed and

[3] Act No. 458/2011 Coll., amending laws related to the establishment of a single tax collection point.

the percentage of the market value covered by the loan. This information is not contained in the SILC survey. This required that we replace the individual interest rate with a uniform rate of 5 % p.a. The average rate is given as the weighted average of the Mortgage index ("Hypoindex") for new loans made between 2006-2010. The average rate of interest ranges between 4.7 % and 5.2 %, depending upon the weighting method used. We chose a rate of 5 % partially because it lies within this interval.

The key value for further calculation is the average amount of unpaid loans for 2009 and this value as a share of the market price of the residence. In general, this amount is a function, for households with mortgages, to the initial mortgage amount (at the time the loan was taken out by the household), the anticipated repayment period, the period of time for which the household has already been repaying the loan and the interest rate. Unfortunately, these data, too, are missing from the SILC survey. To model the average unpaid loan amount, we have therefore used CNB statistics as a basis. As part of the ARAD system, total housing loans for the population are recorded. As of 28/2/2010 (the SILC survey took place in spring of 2010), households in the CR had been provided housing loans in a total amount of CZK 687 billion. Development of the amount of housing loans for the population is indicated in Table 2.

Table 2: Amount of loans to the populace as of 28/2 in billions CZK

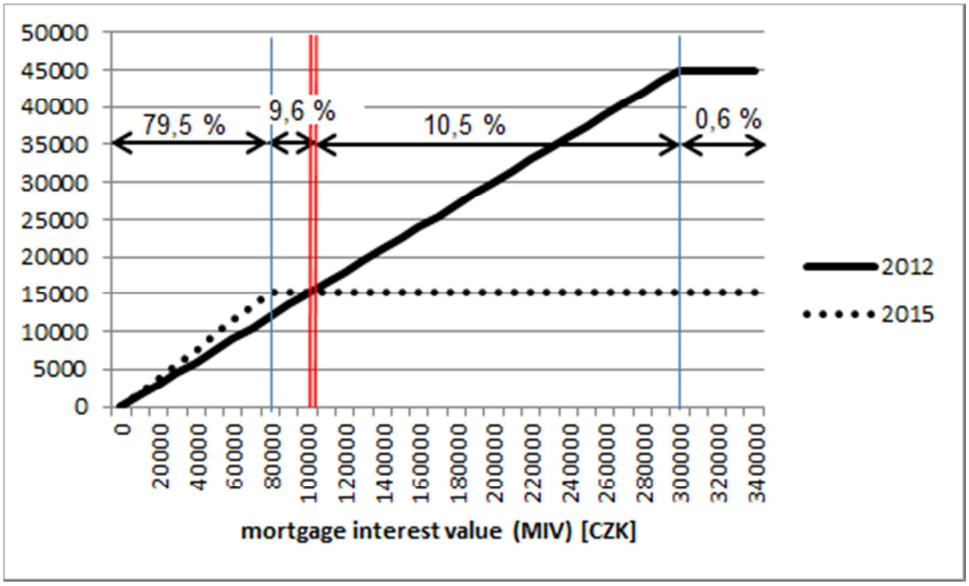
Year	Loan amount
2010	687.0
2009	621.8
2008	524.1
2007	383.1
2006	289.4
2005	214.7

Source: CNB (2012)

With the SILC 2010 data, we have therefore modelled the average amount of unpaid loans so that their sum for all households is set equal to CZK 687 billion. Under the formula, we have anticipated that the unpaid loan amount for each household would consist of a fixed percentage of the market value. Since the data doesn't provide information on mortgage interest paid, we use the same percentage of the market value for all households with mortgage. In order to reach the amount indicated above of CZK 687 billion, we estimate each household with a mortgage has an average amount still to repay on the loan equal to 46.8 % of the market price of the residence. In our previous paper (Jahoda, Godarova, 2013) we have discussed different method for mortgage interest paid based on the length of period for which household lives in the flat. It may be said that both methods of MIV calculation makes similar results.

Figure 1 indicates the amount of tax exemptions in dependence upon the amount of interest paid on housing loans without presence of "solidarity tax" rate and its distribution within Czech society based on SILC 2010 data.

Figure 1: Household tax exemptions as a function of interest paid on housing [CZK yearly]



Source: Author's calculations based upon SILC 2010 data

4 Results and Discussion

In this section, we indicate the basic statistics for the amount of tax exemption for housing loans (i.e., tax charges connected to this deductible item). We will use SILC 2005-2010 data (or 2004-2009) to show the development in numbers of families with mortgages, as well as the development of the amount of total tax exemption for housing loans. We will carry out a basic overview of tax exemptions in 2009 (using SILC 2010 data), its distribution by decile groups in society, by number of children in the household, type of municipality and type of household. In concluding the section, we describe the impact of planned legislative changes in this area and the amount and distribution of the effective exemption.

4.1 Development in the Number of Households with Housing Loans and Effective Tax Exemption 2004-2010

One may note in the following table a growth trend in the number of households using mortgages to finance their housing. In 2005, the proportion of households with a mortgage was not quite 10 % of all households in the CR. By 2010, this share had already exceeded 14 %. As has already been noted above, the SILC data does not contain information on the amount of loans or interest paid, making it impossible to state with certainty whether the loan amount is also growing. However, using the model as described, we have estimated the annual amount of tax expenditure during individual years.

Table 3: Development of nos. of households with mortgages, potentially incl. tax exemptions 2004 - 2010

year	SILC Data	No. of households		share	tax expenditure		
		total	with housing loan		Nominal [mil. CZK]	year-on-year change	per household with loan
2004	2005	4 012 695	378 573	9,43 %	n.a.		
2005	2006	4 027 670	422 622	10,49 %	n.a.		
2006	2007	4 043 341	405 293	10,02 %	n.a.		
2007	2008	4 081 852	445 704	10,92 %	3 082	-	6 915
2008	2009	4 116 364	521 212	12,66 %	4 639	1 577	8 900
2009	2010	4 149 665	593 803	14,31 %	4 959	320	8 351
2010	2011	4 180 620	611 902	14,64 %	5 263	305	8 602

Source: Author's calculations based upon SILC 2005-2011 data

The table thus indicates that between 2004 and 2006, there are no data on value of the residence in SILC surveys. After 2006 the total number of loans provided grew, to greater expansion in the number of housing loans. The amount of effective exemption per household also grew, influenced on the one hand by growing real estate prices and thus housing loans, and on the other by the enrichment of Czech society, with taxpayers moving into higher brackets within a progressive tax system. The trend was not dampened by the replacing the progressive tax scale by a proportional 15 % tax in this case also played a significant role.

4.2 Basic Overview of the Distribution of Exemptions for 2009

The introduction to this article noted that a negative characteristic of tax expenditures is their reduced transparency. In this section we look at this in greater detail. Below we indicate the current distribution of tax exemptions among Czech households and discuss the impact of the reforms under preparation. The following table indicates the number of households with a housing loan, the total number of exemptions used by these households, and the average amount of exemption per household with a housing loan.

Table 4 gives a breakdown of tax exemptions by deciles (according to disposable income per consumption unit). It is no surprise that the greatest portion of tax exemption is claimed by the tenth income decile, both in terms of absolute numbers (almost 30 % of the total) and on a relative basis per household – CZK 13,000 in 2009. The table shows that the amount of exemption correlates positively with household income. This is due to the fact that as households obtain greater income, it becomes easier to pay back loans and thus take them out (there are four times as many households with housing loans in the tenth decile then in the first). One may further say that higher incomes influence the amount of loans, and the household may thus apply a greater tax exemption.

Table 4: Estimated yearly tax exemption for 2009 by income decile

SILC 2010		Percentile Group of cpp_sj										
		1	2	3	4	5	6	7	8	9	10	Total
with mortgage	No. of households	27 746	31 295	31 775	45 471	50 923	63 246	74 658	72 964	89 112	106 612	593 803
	Ø mortgage value [mil.CZK]	0.724	0.929	0.897	0.997	0.843	1.009	0.995	1.212	1.159	1.793	1.157
Estimated yearly tax exemption	Mean [CZK]	4 746	5 977	6 079	6 536	5 889	7 540	7 272	8 806	8 690	13 254	8 351
	Sum [mil. CZK]	132	187	193	297	300	477	543	643	774	1 413	4 959
	Row Sum [%]	2.7 %	3.8 %	3.9 %	6.0 %	6.0 %	9.6 %	10.9 %	13.0 %	15.6 %	28.5 %	100.0 %

Source: Author's calculations based upon SILC 2010 data

Our estimate of yearly tax exemption is 4 % lower than was presented in study of Jares (2010, p.70). In his study different method of calculation was applied, which doesn't allow evaluation of distributional aspects of this public policy. According to our calculations, almost 60 % of the tax expenditure connected with MID may be attributed to last three income decile groups. One may think that these individual doesn't deserve public support since they take care of their living anyway.

4.3 Income Tax Reform and Tax Exemptions for Housing Loans

The following tables show the impact of changes in the tax system as was descried in the Table 1. The chief points include: implementation of solidarity tax in period 2, than a reduction in the maximum amount of deductible items to CZK 80,000, a change in the calculation of the tax base and an increase in tax rate to 19 % in period 3. As shown in Figure 2, households with yearly interest up to CZK 80,000 make up almost 80 % of the total. For these households, the changes will bring higher tax exemptions (resulting in a reduced tax obligation). The total impact of the reforms on public finance remains unknown, but the total tax exemption will be increased from the original CZK 4.959 billion to CZK 5.116 billion under conditions in the period 2 or CZK 5.394 billion in the period 3 (see Table 5).

Table 5: Estimated yearly tax exemption before and after reform by income decile (SILC 2010 data)

SILC 2010		Percentile Group of cpp_sj										
		1	2	3	4	5	6	7	8	9	10	Total
Count		414 877	415 089	414 764	415 224	414 819	415 099	414 918	414 922	415 062	414 891	4 149 665
Count (mortgage=1)		27 746	31 295	31 775	45 471	50 923	63 246	74 658	72 964	89 112	106 612	593 803
Estimated yearly tax exemption in period 1	Mean CZK	4 746	5 977	6 079	6 536	5 889	7 540	7 272	8 806	8 690	13 254	8 351
	Sum mil. CZK	132	187	193	297	300	477	543	643	774	1 413	4 959
	Row Sum [%]	2.7 %	3.8 %	3.9 %	6.0 %	6.0 %	9.6 %	10.9 %	13.0 %	15.6 %	28.5 %	100.0 %
Estimated yearly tax exemption in period 2	Mean CZK	4 746	5 977	6 079	6 536	5 889	7 540	7 272	8 806	8 705	14 717	8 616
	Sum mil. CZK	132	187	193	297	300	477	543	643	776	1 569	5 116
	Row Sum [%]	2.7 %	3.7 %	3.8 %	5.8 %	5.9 %	9.3 %	10.6 %	12.6 %	15.2 %	30.7 %	100.0 %
Estimated yearly tax exemption in period 3	Mean CZK	5 709	7 023	7 504	7 141	7 156	8 555	8 536	9 801	9 760	12 430	9 084
	Sum mil. CZK	158	220	238	325	364	541	637	715	870	1 325	5 394
	Row Sum [%]	2.9 %	4.1 %	4.4 %	6.0 %	6.8 %	10.0 %	11.8 %	13.3 %	16.1 %	24.6 %	100.0 %

Source: Author's calculations based upon SILC 2010 data

From a decile standpoint, a greater negative impact from the reforms may be observed for the tenth decile. All other deciles will benefit from increased tax exemptions under the reform. From the standpoint of income tax reform and the impact of changes in tax deductibility for housing loan interest, we would maintain that our analysis demonstrates that the proposed change in tax exemptions will be insignificant. The analysis also shows that, even if the change in the amount of tax exemption not entirely mimic the distribution of exemptions before reform, the reforms will not bring about any essential change in redistribution.

5 Conclusions

Tax support for owner-occupied housing is one of the most common focuses of research. In times when austerity measures in public finance are posed one may suggest MID reform which would cut back budgetary cost of this policy. During the previous 20 years we can see various attempts of such reforms with different outcomes. Some countries limited maximum amount of MID when defining tax base. Not only maximum amount of MID might

be limited but also maximum value of the support might be set. When there is a question of progressive personal income tax, some countries separated the value of the support from the influence of the actual rate of tax.

When we take into account present problems with public finance sustainability, which could be seen in most developed countries, question on budgetary costs of MID policy arises. What are the present costs of MID policy and what would be the savings when this policy is changed? Who are the present beneficiaries and what would be the change of their position after reform is being implemented? These are the questions which are the concern of present governments and which we solved in our article.

Public support of housing is broadly discussed in the Czech Republic. Government uses several tools to influence cost of housing or tenure status of households. Mortgage interest deduction, or generally interest deduction on housing loans, is the instrument with large-scale budgetary cost. Therefor one may be surprised that Czech government doesn't ask questions on budgetary cost, distributional impact and effectiveness of such public support. Our results show, that MID policy belongs among the most expensive public policies, which are performed through the tax system. We calculated the amount of exemption at CZK 4.959 billion for the Czech Republic; this value is based upon a "foregone revenue method" of calculation.

In comparison with Jares's studies (Kubátová and Jareš, 2011 and Jareš, 2010), we believe our method of calculation provides a more precise estimate of the tax exemption, even though our calculation method is not based upon interest payment records. This paper is based upon SILC survey data which monitors whether households are making use of housing loans. The amount of interest is then modelled using the value of the residence occupied by the household. There are two methodological points in our research which might be discussed in future research. The first one is the question of the lack of transparency – the amount of support and its distribution are not recorded in data, but have to be modelled. The second one is the budget impact on tax inflows, which is connected with the foregone revenue method of calculations. Tax exemptions for housing loans among households influence tenure choice, which is not neutral. The amount of exemption is dependent in particular upon the marginal tax rate on incomes. Changes thus influence household demand for loans and thereby including behaviour changes of households into calculations could slightly change the outcomes of the analysis. Yet according our belief, we present most accurate budgetary estimate of MID policy in the CR and provide its distribution aspects in the Czech society. Our paper hasn't ambition to tackle question of public support effectiveness.

Also in the CR there is currently a discussion about reducing the maximum amount of MID taxpayers may use in calculating their tax. Tax reform, which is spread out in the period 2013-2015, is based on reducing amount of MID from CZK 300,000 to CZK 80,000 per year and on change of tax base definition accompanied by tax rate increase. According to our calculations, these changes will negatively impact on approximately 10 % of households making use of housing loans. This relatively light impact, according to our calculations, results from two facts – on the one hand, almost 80 % of households will not be impacted by the change in amount of interest deduction, because their MID are already lower than CZK 80,000. On the other hand, there is the fact that the reform is likely to increase the tax rate from 15 % to 19 %, resulting in growth in effective support for smaller loans. Together with new "solidarity tax rate" (7 % surcharge) the reforms could even lead to a small total increase in the amount of tax exemptions of approximately CZK 400 million and a more even distribution of the exemptions in society. When evaluating achievements of this policy, one should be aware that if there was no restriction on MID, tax expenditure increase would have been even CZK 1500 million and there would have been no change in distribution in society.

Our conclusion is that lowering the upper limit of MID will especially hurt those people who don't need public support in any way, whereas those people who need it will hardly suffer from such measures. They may even be better off.

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