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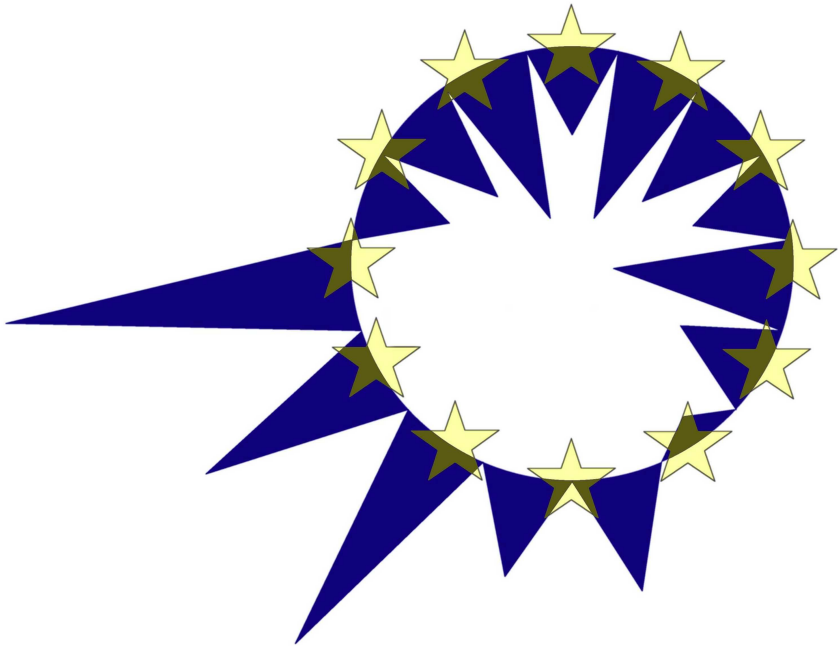

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IS THE "NEIGHBOUR'S" LAWN GREENER? COMPARING FAMILY SUPPORT IN LITHUANIA AND FOUR OTHER NMS

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IS THE "NEIGHBOUR'S" LAWN GREENER? COMPARING FAMILY SUPPORT IN LITHUANIA AND FOUR OTHER NMS[1]

Lina Salanauskaitė and Gerlinde Verbist[2]

Abstract

To what extent can a country's effectiveness in reducing child poverty be attributed to the size of family cash transfers (i.e. both benefits and tax advantages) or to their design? In this paper, we disentangle the importance of each of these two factors, focusing on the family support system in Lithuania and comparing it with four other new member states. Both single and large families have increased susceptibility to poverty in Lithuania. This contrasts with other former communist countries, namely Estonia, Hungary, Slovenia and the Czech Republic which protect these family types much better. This paper examines whether their family transfer systems would achieve similar results in Lithuania. We employ the EUROMOD microsimulation tax-benefit model to swap family policies across countries and to test whether size or design has greater effects on child poverty reduction in Lithuania. Our results point to considerably improving poverty situation among large families under Hungarian, Slovenian and the Czech policies. Single parent families would only gain if Lithuanian spending on family transfers would increase by a large degree. Estonian policies would lead to very mixed results: small gains for large families and losses for single parent families.

JEL Classification: C81, I32, I38

Keywords: child poverty, family benefits and tax advantages, microsimulation, new EU member states

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[1] This paper uses EUROMOD versions F2.38 and F3.0. EUROMOD is continually being improved and updated and the results presented here represent the best available at the time of writing. Any remaining errors, results produced, interpretations or views presented are the authors' responsibility. This paper uses data from the EU Statistics in Incomes and Living Conditions (SILC) made available by Eurostat; a sub-sample of the Population Census merged with Personal Income Tax database, Pension database and Social Transfers database, made available by the Statistical Office of Slovenia; Eurostat does not bear any responsibility for the analysis or interpretation of the data reported here. An equivalent disclaimer applies for all other data sources and their respective provider(s).

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Introduction

Child poverty remains a serious problem across the EU, and especially in the new EU member states (NMS), be it with significant variations in extent and intensity. In the EU, especially children in single parent and large families are the subject of policy concern, given that about half of the poor children in the EU live in these two types of households (Commission of the European Communities, 2008). Compared to other EU countries, Lithuania has "below- (EU) average performance in all dimensions of child poverty and well-being, and particularly in terms of risk of poverty" (TÁRKI, 2011). Poverty in Lithuania is especially concentrated among single parent households and households raising three or more children. The Lithuanian family system design is criticised on poverty effectiveness grounds despite numerous past and recent reforms of state provided income support to families with children (Cornelius, 1995; Kabašinskaitė and Bak, 2006; Salanauskaite and Verbist, 2009). Apparently, the implemented policy reforms are not so poverty reduction effective, especially when compared to the achievements of other new EU member states (NMS), such as Estonia, Hungary, the Czech Republic or Slovenia (TÁRKI, 2011).

Most research on the poverty effectiveness of family support tools has concentrated on Anglo-Saxon countries and 'old' EU member states (Kamerman et al., 2003; Levy et al., 2007; Matsaganis et al., 2007). Research within the NMS region is still quite rare, Förster and Tóth (2001) being one of the few examples. The region though is highly interesting not only because of the fast changing socio-economic environment and demographic conditions (e.g. particularly low fertility rates, high migration), but also because of recent reforms in family policy. Actually, (relative) child poverty rates in some of the selected NMS countries are lower than in a number of richer EU member states.

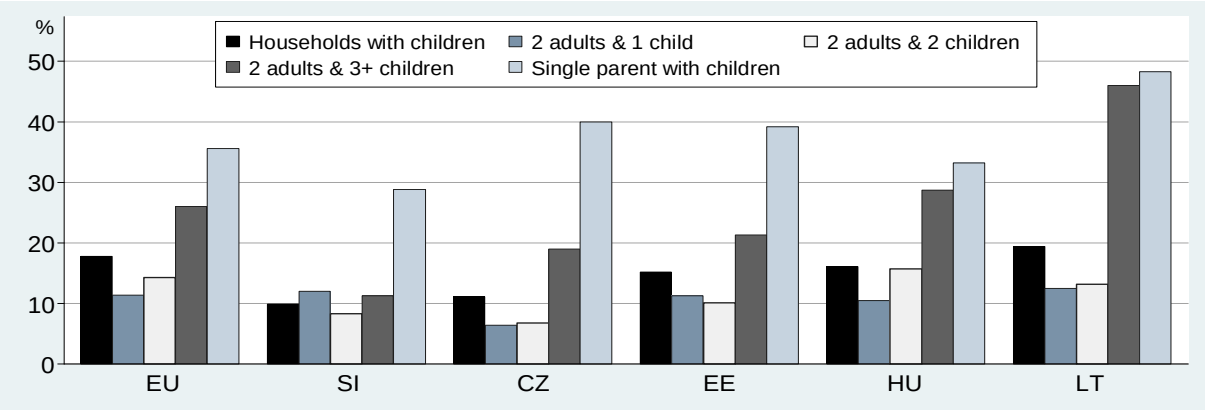
Whereas studies often point to size of family transfers as the key factor to reduce child poverty, we hypothesize that also the interaction with the design of policies is a crucial factor. We investigate this by comparing the child tax-benefit packages in five EU NMS. In this paper we study to what extent one country's success story in achieving low(-er) child poverty rates, and especially among the most vulnerable household types, can be attributed to the size and the design of the transfers, more specifically *child benefits* and *child-related tax instruments*. Our focus is on the Lithuanian system and we compare its effectiveness in combating child poverty to those of Estonia, Hungary, the Czech Republic and Slovenia. These four countries resemble Lithuanian political and socio-economic circumstances in many ways, though there are also important differences (see Annex 1 on socio-demographic backgrounds). All four countries have better child poverty outcomes and more effective family policy measures (TÁRKI, 2011). Furthermore, these four new EU member states are modelled in EUROMOD, our tool of analysis. The study is anchored in 2008, the year when a major family benefit reform has been fully implemented in Lithuania (for more details see Salanauskaite and Verbist, 2009).

The paper starts with background information on child poverty in the five NMS. We also review evidence on the poverty effectiveness of family tax-benefit mechanisms. Next, we describe the methodology of policy swapping scenarios within the microsimulation framework of EUROMOD. We then present and analyse the microsimulation results. Finally, we conclude and suggest some policy lessons.

1. Child poverty and family support systems: existing evidence

In 2008 the at-risk of child poverty rate (or child poverty) in Lithuania is above the EU and just below the NMS average. However, the at-risk-of-poverty rates (or poverty) of large households and single parent households are with over 45% extremely high (Figure 1), despite the state's recognition of these household categories as major poverty reduction targets (e.g. National Report of Lithuania on Social Protection and Social Inclusion Strategies 2008-2010, 2008). This contrasts with most other EU countries, where at least one of these categories has a better income position. Among our five countries, Slovenia performs best for these two most vulnerable household types. In Hungary, similarly to Lithuania, both household types have increased poverty risks, though at much lower absolute levels. Given these outcomes we pay particular attention in our analysis to the poverty outcomes of these two groups.

Figure 1. Poverty among different households with children in the selected countries (2008)

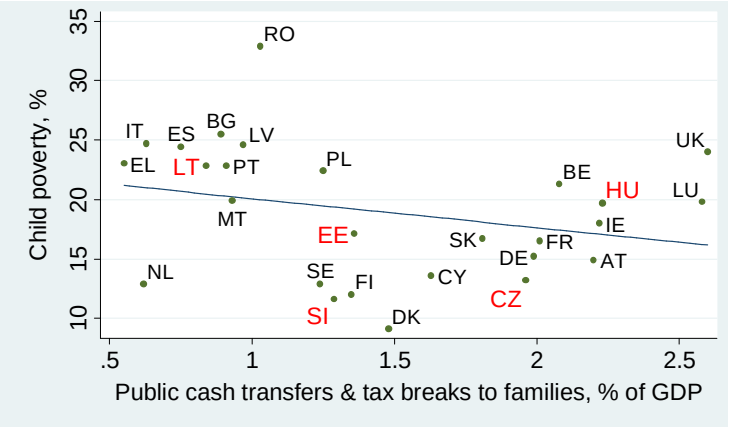


Notes: Countries are ranked by poverty rates for households with children; Poverty is defined as 60% of median equivalised household disposable income; Children: household members under the age of 18, and between ages 18 and 24 if economically inactive.
Source: EUROSTAT

Along with socio-demographic characteristics of the child's family, the labour market situation of parents and overall tax-benefit policies are seen as major determinants of child poverty (Commission of the European Communities, 2008; TÁRKI, 2011). Even though cash family policies in itself are often insufficient and actually not meant to fully eliminate child poverty (Bradbury and Jäntti, 2001; Cantillon and van den Bosch, 2003; Kamerman et al., 2003), their role is of high importance, with size and design as major parameters.

The size of social spending dedicated to families with children is often considered to be the key factor influencing child poverty (e.g. Bradshaw and Finch, 2003; Notten and Gassmann, 2008). Figure 2 confirms that a higher share of GDP spent on tax breaks and transfers to families with children is associated with lower child poverty rates. Among our five countries, Hungary spends the largest share of GDP on families, and Lithuania the least. Child poverty levels in both countries, though, are somewhat higher in comparison to other countries with similar spending levels. The best performance is noted in Slovenia: a relatively low share of GDP spent on transfers corresponds to a very low child poverty risk.

Figure 2. Generosity of family transfers and (child) poverty in the EU, 2007



Notes: Tax breaks primarily refer to tax credits; tax allowances are excluded (data not available for Greece, Italy, Estonia, Slovenia, Finland, Luxembourg, Hungary, Denmark & Iceland); child poverty calculated on EU-SILC 2008.

Source: EUROSTAT, OECD Family Database & Social Observatory data

Not only spending levels vary, also the benefits' design is very diverse: universal, categorical or income selective (targeted) family benefits[1], as well as support via taxes, such as allowances or credits (also altogether referred to as tax advantages). The latter measures are increasingly used as an important family policy tool (Adema et al., 2009; Figari et al., 2011). A number of studies argue that the size and the design of the systems are actually interlinked, with universal rather than targeted systems having both higher budgets available (i.e. due to broader political support) and larger poverty reduction effectiveness (e.g. Korpi and Palme, 1998; Nelson, 2004). The final poverty outcomes are though highly country specific due to other complexities of national policy systems, socio-demographic environments, original income distributions, social insurance arrangements, etc. The poverty impact of these diverse benefits' designs are often not well assessed, especially for the NMS. Three studies on NMS are particularly interesting in this respect.

Förster and Tóth (2001) study the evolution of benefit types and their effectiveness in reducing poverty in Poland, Hungary and the Czech Republic in the mid of 1990's. They find that large and single parent families became particularly income vulnerable during the economic transitions years, with the most dramatic changes for the latter household type. Most of the benefits' reforms at that time introduced means-testing conditions, which consequently increased poverty reduction effectiveness of the programmes. Nonetheless, a political will for restoration of universal benefits remained and is crystallised in the numerous reforms in economic upturn times (e.g. as of 2004 in Lithuania). Levy, Morawski, and Myck (2009) evaluate the poverty effectiveness of Polish state support to families by comparing it to systems in France, the UK and Austria using EUROMOD. They find that single parents in Poland would benefit most if the French system (using both universal and means tested benefits) were adopted, whereas families with two parents would similarly benefit either under the universal Austrian or the mean-tested British systems. TÁRKI (2011) provides the most extensive evaluation of the EU countries' performances in reducing child

[1] Universal benefits are usually defined as benefits with (almost) a universal entitlement to everyone or to a broad population group – elderly, children, etc. Selective benefits target certain groups of people based on some merit. For example, categorical benefits are given to a group of people considered to have a high probability of income vulnerability (e.g. all large families). Income selective (or means-tested) benefits are targeted only to people who satisfy certain income criteria (e.g. with disposable incomes below a certain poverty threshold). The distinction between these categories, especially between universal and categorical, is often not so clear.

poverty. It finds low-effectiveness of income support to families with children in Lithuania. The means-tested benefits in the Czech Republic and the universal benefits of Hungary are observed to produce similar child poverty outcomes. Social transfers in Slovenia are seen as often not specifically targeted at children, however, their effectiveness in reducing poverty is noted to be high. As such, the latter two studies do not prioritize poverty effectiveness of either means-tested or universal benefits, but rather highlight their greatly varied impacts under particular national designs and different socio-demographic circumstances.

2. Methodology

2.1. EUROMOD

Building further on the insights of the studies discussed in Section 2, we want to use EUROMOD to assess impacts of family policy changes. Using microsimulation models can help to highlight the role of certain family support instruments, be it taxes or benefits, while at the same time allowing for interactions with the remaining tax-benefit structures. This method also enables testing hypothetical public policy designs – a usually complex task due to the effects of various counterfactuals. Similar approaches, as used here, include Matsaganis et al. (2007) for Southern Europe or Immervoll et al. (2001) for a comparison between the UK and the Netherlands.

We use the tax-benefit microsimulation EUROMOD model (versions F3.0 and F2.38), which is a static model. Static means that no behavioural reactions are taken into account. Currently (i.e. 2011), EUROMOD embeds policy designs of 21 EU countries, among them Lithuania, Estonia, Hungary, the Czech Republic and Slovenia[2]. The model was initially designed to cover the 15 "old" EU member states, with the NMS being added progressively. For four countries the policy system of 2008 is included in EUROMOD and used here[3]. As for Slovenia, 2005 is the policy year yet available - we use the annual consumer price index to uprate Slovenian benefits to 2008.

Table 1. EUROMOD included policies & datasets of the selected countries

	Lithuania	Estonia	Hungary	Czech Rep.	Slovenia
Source database(s)	EU-SILC + nat. SILC	EU-SILC	EU-SILC	EU-SILC + nat. SILC	SURS : sample of administrative records
Income reference year	2005	2005	2006	2005	2004/2002
# of households	4660	5623	8737	7483	4777
# of individuals	12098	15755	22271	17793	13798

Source: EUROMOD country reports

In Table 1, we describe EUROMOD input data. Due to earlier implementation, Slovenian policies are simulated on a sample of administrative records (Čok et al., 2008). Other countries use the EU-SILC as basic input dataset. Lithuanian micro-database for EUROMOD is derived from the EU-SILC data with a few imputations on the basis of the national SILC survey (Ivaškaitė-Tamošiūnė et al., 2010). In the Czech Republic, the national SILC additional variables are merged with the EU-SILC data (Münich and Pavel, 2010). "Pure" EU-SILC is used for Estonia and Hungary (Hegedűs and Szivós, 2010; Võrk et al., 2010). As income reference dates are "older" than analysed policies, all countries use adjustment factors to update income levels to a respective

[2] More info is available in Sutherland (2001), Lietz and Mantovani (2007) and at http://www.iser.essex.ac.uk/research/euromod/developing-euromod/euromodupdate

[3] June 30 is the reference date for all policy descriptions.

policy year. This implies that the policy year of 2008 is set on the socio-demographic structure of 2005, but with income levels uprated to 2008. Furthermore, EUROMOD assumes full take-up of benefits and full compliance with taxes and social contributions[4].

2.2. Family cash policies in EUROMOD

We identify four major types of non-contributory 'transfers to children' in the five selected NMS: birth grants, (universal) child benefits, large family allowances (categorical selectivity) and means tested family allowances (income selectivity) [5]. This covers 17 different national benefits[6]. Among them, only one benefit type is not simulated in EUROMOD: an Estonian child benefit supplement for single parents[7]. Benefits are not subject to income taxation. Hungary has one exception: its benefit to large families increases the taxable income base. All countries also use either tax credits or tax allowances to support families with children. These measures are simulated in all countries.

The principal design features and state expenses of both benefit and tax support measures are reviewed in Table 2. Countries are ranked from left to the right based on the extent to which they rely on means-testing. Lithuania has the most universalistic package, closely followed by Estonia. Hungary uses the most complete package of the transfers, with larger expenditure share going to universal/categorical benefits. Slovenia has a dominant means-tested child benefit, but universal/categorical transfers are also employed, especially when tax advantages for families are taken into account. The Czech Republic exclusively relies on means-tested transfers.

Birth grants are found in all countries, with quite similar benefit rules. The benefit is proportional to multiple births in all countries, except in Hungary. The benefit is particularly high in the Czech Republic.

Universal child benefits are provided in Lithuania, Estonia and Hungary, though the rules are quite different both in terms of eligibility and calculation. In Lithuania, the child benefit is provided to all children up to age 18, and up to age 24, if a child is still in education and belongs to a large family. The benefit is increased for children up to the age three if raised in a large family. As such, these two components of the child benefit could be considered as a quasi large family allowance, which Lithuania does not provide separately, indicating that the demarcation between benefit types is not always straightforward. Estonia applies a lower age threshold for children who are still in (higher) education (i.e. under 20), and provides an extra support to very young children in the form of higher benefit rates to those below age of three compared to those younger than eight. In Hungary, child benefit is not directly linked to a specific age threshold, but depends on the child's enrolment in education. The benefit size does not depend on the child's age and has a regressive schedule for numerous children. Overall, Hungary offers the most generous child benefit's structure.

[4] Based on the EUROMOD country reports, full-take up is a plausible assumption for all non-contributory family benefits in the selected countries. Tax revenues is overall well simulated, with the largest deviation (-17%) reported in Hungary and the smallest deviation (+1%) noted in Estonian baseline policies.

[5] Contributory benefits or benefits with eligibility conditional on parents' labour market status are excluded.

[6] The validation parameters of simulated transfers (i.e. ratios indicating how well simulated benefits match other sources of information) are provided in Annex 2 along with their original names in national languages.

[7] This benefit is not simulated in EUROMOD as 'single parent' means strictly no parenthood information on the second parent (e.g. a father is unknown) or assimilated situations (e.g. a fugitive parent), information which is not collected in the EU-SILC.

Table 2. State annual expenses & beneficiaries of 'transfers to children', in EUR (2008) [1]

		LT	EE	HU	SI	CZ
Birth grant	Benefit per recipient, EUR	301.1	317.4	270.4	212.0	544.1[2]
Child benefit	Age thresholds	18 (24)	17 (20)	~17 (~20)		
	Size: Δ with child age	↓	No	No		
	Size: Δ with # of children	↑	↑	↓		
	Extra1: for single parents	No	Yes	Yes		
	Extra2: for young children	Yes	Yes	No		
	Extra2: age thresholds	3	3 (8)	No		
	Benefit per recipient[3]	388.1	332.1	1117.6		
Allowance to large families	Age thresholds		17 (20)	17 (25)	18 (26)	
	Eligibility: # of children		>=7	>=3	>=3	
	Benefit per recipient		277.6	1426.0	334.2	
Means tested allowance	Age thresholds			17(25)	18 (26)	18 (26)[7]
	Income threshold			1.25*OAP	Avg. wage	2.4*MLS
	Size1: Δ # of children			No	Yes	Yes
	Size2: Δ other factors			No	↓ income	↑ age
	Benefit per recipient			756.4[4]	1031.9	353.6
Tax support: allowances or credits	Allowance (A)/credit (C)	A	A	C	A	C
	Age thresholds	18	18	17 (25)	18 (26)	18(26)
	Eligibility: # of children	>=1	>=1	>=3	>=1	>=1
	Size: Δ with # of children	Yes	Yes	No	Yes	Yes
	Extra: for single parents	Yes	No	No	No	No
	Means tested	No	No	Yes	No	Yes
	Support per recipient	48.1	459.0	307.6	738.1	421.1
Country population, mln. people		3.3	1.4	10.1	2.0	10.2
Expenses on benefits, mln. EUR (B)		150.0	94.0	1866.9	282.7	369.5
Per capita benefits, EUR		45.5	69.6	185.8	124.2	36.2
Expenses on tax support, mln. EUR (T)		25.2	79.2	52.9	237.8	594.1
Per capita tax support, EUR		7.6	58.7	5.3	118.9	58.2
Total "transfers to children": B+T[5]		175.2	173.2	1919.8	486.1	963.6
Per capita "transfers to children", EUR		53.1	128.3	191.1	243.1	94.5
Per capita "transfers to children", PPS[6]		88.5	175.8	285.2	319.8	152.4

Notes: [1] Information refers to actual state expenses, unless otherwise stated; SI data refers to 2005; national currency rates have reference date of June 30, 2008; [2] No data available for 2008; estimation based on [benefit amount, 2008] x [# of beneficiaries, 2005]; [3] Benefit per recipient included benefits on the main benefit and extras, unless otherwise stated; EE supplement to the single parents is excluded (~15% of the child benefit expenses). [4] No administrative data available; EUROMOD simulated expenses used instead. [5] Administrative costs excluded. [6] PPS is a common currency that eliminates differences in price levels between countries allowing more meaningful international volume comparisons. The used PPS and currency rates for selected countries are provided in Annex 1. [7] The category pools two means-tested benefits: child allowance (*prídavek na díte*) and social allowance (s*ocialni priplatek)*. Both are given only to families with children. The rules in this table refer to the larger benefit – child allowance. Stricter means testing threshold (i.e. 1.6* MLS) is used for social allowance. Benefit per recipient is estimated as total expenses of both benefits divided by recipients of child allowance (five time numerous compared to social allowance).
Source: EUROMOD Country reports and MISSOC

Categorical selectivity is most explicit in the form of specific allowances for large families in three countries: Estonia, Hungary and Slovenia. The Estonian benefit is targeted towards families raising seven or more children. In Hungary, families with three children or more are entitled, but only if the youngest child is between three and seven years old. In Slovenia all families with three or more children are eligible. In all three countries, the allowance's size is uniform per eligible family. Hungary offers the most generous support.

Income selectivity is applied in Hungary, Slovenia and the Czech Republic through means-tested child allowances. In the Czech Republic, this is the only benefit type, aside the birth grant, available (i.e. both child and social allowances are means tested). Here, the means-tested income threshold is family specific and is set in relation to the state determined minimum living standard (MLS, a parameter that depends on the age and the number of family members)[8]. The benefit's size is set per child and increases with age. Hungary applies the most simple benefit calculation rules: any family with per capita incomes lower than 125% of the minimum old-age pension (OAP[9]) is entitled to a uniform benefit amount. Slovenian means-tested threshold is much higher than in Hungary. The benefit size depends on per capita family income and is gradually withdrawn to zero, when reaching 99% of the average gross-wage[10]. Due to the use of per capita incomes in benefit size's calculations, larger families receive proportionally bigger benefits.

Lithuania, Estonia and Slovenia have personal income taxation systems, which use tax allowances (i.e. income-independent amounts deductible from taxable income). Allowances are increased for families with children. The rules of family tax allowances are relatively similar, though levels differ. Lithuanian tax allowances differ by family type: the most generous support goes to large families, followed by the support to single parent families and, finally, families with up to two children. Estonian family tax allowance assigns an identical amount per each child. Slovenian family tax allowance increases with each subsequent child. Using EUROMOD to calculate the value of these measures, the Slovenian system appears to be the most generous. Here, the tax support amount is actually the second largest state support to families (after the means tested allowance). The Lithuanian tax allowance is relatively small compared to the state expenses on benefits. In Estonia, expenses on family tax allowance almost reach the level of the state's spending on the family benefits.

Hungary and the Czech Republic have tax credits for families with children (i.e. deductions from tax liabilities). In Hungary, only families with three or more children are entitled to receive a lump-sum family tax credit: around 2% of total population. The amount is income dependent. If tax liability is smaller than the tax credit, nothing is paid. Both small and large families are entitled to an income-dependent tax credit in the Czech Republic. The credit amount is proportional to the number of children and is subject to a maximum yearly amount. If the tax liability is lower than the tax credit, the difference is paid to the taxpayer.

Overall, Hungary has the most extensive support using benefits (see Table 2): about 186 EUR per capita. However, when tax concessions are also taken into account, Slovenia is taking the lead in generosity with 243 EUR per capita. Lithuania has with 53 EUR the lowest spending on transfers to children. Taking into account differences in purchasing power standards (PPS), the per capita transfer to children slightly reduces from 1:4.6 (in EUR) to 1:3.6 (in PPS) across the selected countries. Still, this indicates high disparities in the generosity levels of the identified family benefit systems. Furthermore, Section 1 presented observation that systems with the most universal design of benefits tend to have the largest available budget does not hold for the selected countries. Here, countries with at least some means-tested benefits also have the highest budgets available.

[8] For example, MLS for a child under the age of six equals to about 70 EUR per month, for a child aged 6 to 9 years – about 80 EUR per month, for the first adult – about 120 EUR per month.
[9] OAP is around 15% of gross national average wage in 2008 (OAP ≈ 120 EUR per month).
[10] About 1160 EUR per month.

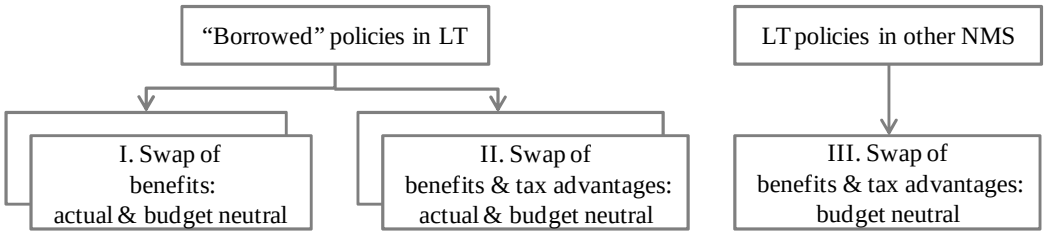
2.3. Microsimulation scenarios

Microsimulation models allow testing distributional impacts of both existing and "what-if" policies. In this article, we exploit both options.

In order to check how effective selected transfers to children (see Section 4.1) are in reducing child poverty within the national circumstances, we "eliminate" them within the country's tax-benefit system. For this, we use EUROMOD, which means that the other tax-benefit rules still play a role in further increasing or decreasing household income (e.g. the social assistance safety net may compensate part of abolishing family transfers). Other national parameters, such as original income distribution or socio-demographic structure, are of high importance too. By comparing poverty outcomes with and without transfers to children we evaluate the first-order poverty effects of existing arrangements[11].

Swapping policies means that family benefits of a 'donor' country are integrated into the tax-benefit system of a 'recipient' country instead of the existing family benefit system (see results in Sections 4.2 & 4.3). Such swapping allows testing the effectiveness of a specific 'donor' policy given interactions with the remaining tax-benefit structure and socio-demographic features of the 'recipient' country. We analyse three major policy swapping scenarios (see Figure 3), distinguishing between the actual and budget neutral implementation[12].

Figure 3. Simulation scenarios



Source: own presentation

In all three swapping scenarios we rely on national monetary references (i.e. average gross wage), when converting intermediary monetary parameters (i.e. income brackets, eligibility thresholds,

[11] Though outside the scope of this evaluation, behavioural effects are likely to occur especially if considerable changes in benefits' entitlements would be implemented.

[12] Other scenarios have been considered and implemented, but are left outside the scope of this study. For example, we have considered swapping definitions only (without changing the rules of transfers): the definition of a child, a family, etc. Small poverty effects are associated with these changes. We also considered simulation of the Lithuanian original policies, but at the budget levels as observed in the other countries. Under this scenario, the Lithuanian budget would have to increase by approximately 1.8 times to reach the spending level of Estonia, by about 7 times – for a spending level of Slovenia, and by even higher levels – for the spending patterns of Hungary and the Czech Republic. Here, an increase of Lithuanian budget is matched to the spending observed with the actual implementation of the other countries' policies in Lithuania (Scenarios I and II, budget estimates are provided in Annexes 5 and 6). The increase up to the Estonian spending would produce small but positive poverty effects for large families and almost negligible (but still positive) effects for single parent families. Positive outcomes of the budgetary increases would start declining dramatically after implementation of Slovenian budgetary spending – mainly due to Lithuanian incomes' incapacity to absorb ever increasing tax advantages (aside considerations of behavioural effects). With the spending level of Slovenian policies, poverty in large families would be halved; poverty in single parent levels would remain around 40%. In order to reach similar poverty outcomes, as achieved with the budget neutral implementation of Slovenian policies (Scenarios I and II), the Lithuanian budget would have to increase from about 3 to 4 times.

etc.). This allows (at least partial) policy "adaptation" to national circumstances. The sizes of entitlements depend on the scenario. We also employ the annual consumer price index (CPI) to update Slovenian transfers (of 2005) to account for changes in purchasing power by 2008. This allows a more coherent swap of Slovenian 2005 policies into the Lithuanian tax-benefit environment of 2008.

In **Scenario I**, we implement the benefits of the four other countries (as listed in Table 2) in Lithuania[13]. Swapping of tax support measures is excluded here. In the *actual* swap of policies, the benefit amounts are introduced at the original levels, except of the adjustment for PPS and currency rates (as of June 30) among the analyzed countries. This actually implies an increase in total benefits' expenses compared to original Lithuanian settings from 1.7 times under Estonian policies to 3.7 times – under Hungarian. In the *budget neutral* scenario the simulated state expenses (as in the actual implementation scenario) are further adjusted by scaling each benefit's size (up/down) by the country specific budgetary adjustment factor (F_{jl})[14]:

$$F_{jl} = \sum_i^n y_{jk} \Big/ \sum_i^n y_{lk}$$

where: j – is a country, from which policies are borrowed; *l* –Lithuania; *n* - number of simulated recipients given Lithuanian population qualities; *k* – number of transfer types (k); *y* – total simulated state expenditures.

Potential changes in taxes or other transfers (e.g. social assistance) are not accounted for. Annex 4 illustrates a stylized simulation procedure of both budget neutral and actual implementations. In the Czech Republic and Hungary the above presented formula serves as the first step in making budget neutral calculations. Due to non-linear interactions among benefits (some of the benefits are on the list of means-testing for the other benefits), empirical calibration is also used in finding the final adjustment factor (see Annex 5 on intermediary parameters of Scenario I).

In **Scenario II**, we replace both Lithuanian benefits and tax advantages to children with the respective policies of the other countries (see Table 2)[15]. Compared to the previous scenario, this swap shows both the influence of tax support measures alone and the effect of benefits and tax measures together. The comparison between the Scenarios I & II enables highlighting effects of the additional influence of the tax support instruments. *Budget neutrality* implies that both simulated state expenses and income taxation revenue is kept at the same level as under the original Lithuanian settings. Budgets for expenses and tax revenue are kept calibrated separately. This means that proportional spending between tax advantages and benefits, as observed in Lithuania, is imposed on the foreign policies too. The scaling factors to achieve budget neutrality are applied in the following way: first, the same budgetary adjustment factors are used to scale benefits as in Scenario I; then, scaling factors for tax support instruments are estimated using

[13] Swapping benefits' packages is feasible, as selected transfers represent comparable structures: all countries have general provision to children (i.e. birth grants, child benefits); they also give an additional support to vulnerable groups, though designs of these transfers are different. For example, though Lithuania does not have an explicit benefit to large families, its child benefit includes special treatment for large families. The same logic applies when swapping benefits and tax support measures.

[14] The factor could only be applied if there are no interactions between benefits. For example, a different factor should be considered as a child benefit is included into the income list of means tested allowances in the Czech Republic. In this case, we take the estimated scaling factor as a starting point, with the final factor found during the calibration procedure.

[15] Other parameters (tax rate, basic allowance, etc.) of the Lithuanian income taxation system remain unchanged.

empirical calibration due to non-linearity in income tax calculation (see Annex 6 for the Scenario related intermediary parameters).

In **Scenario III**, we shift Lithuanian transfers and tax instruments for children to the other four countries, while keeping the remaining tax-benefit structure of those countries unchanged (see Annex 7 for Scenario related intermediary parameters). We focus on the budget neutral swapping impacts, using analogous assumptions as already described in the Scenarios I and II. This scenario shows the extent of Lithuanian policies' effectiveness given different socio-economic and demographic settings, as well as interactions with the remaining tax-benefit system. Due to budget neutral condition, the composition of spending on benefits and tax advantages is matched to the proportions observed in the recipient country.

2.4. Policy effectiveness indicators

We evaluate swapped programmes' effectiveness by their impact on the two measures of poverty (i.e. poverty headcount and gap) before and after implementation of a certain scenario (see formulas in Annex 3). Poverty headcount measures the prevalence of poverty and is expressed as a percentage of the (total) population with incomes below the certain poverty line. Poverty gap points to the shortfall from the poverty line for those people identified as poor. Thereby, poverty gap measures both the depth and the prevalence of poverty.

We present these two poverty indicators for the entire population, all children and children in large and single parent families. We use the relative poverty concept with the poverty line (60% of the median equivalised income) being recalculated for each scenario (see thresholds in Annex 3). In comparison to the poverty line in original Lithuanian settings (about 216 EUR), it decreases by maximum 2% (Scenario III, Estonia) or increases by maximum 5% (Scenario II – actual implementation, the Czech Republic) for different scenarios. Disposable income is the annual sum of total household income from labour earnings, plus income from investment and savings, plus all types of simulated or observed contributory and non-contributory benefits, minus simulated social contributions, minus simulated final taxes. Income is equivalised with the EU scale, also called the modified OECD equivalence scale. Standard errors (with a 95% confidence level) of poverty indicators are estimated in STATA using DASP programme[16].

A comparison of the poverty outcomes in the baseline and simulation scenarios gives the effect of implementing the foreign system. By simulating the budget neutral implementation, we can distinguish between the design (the baseline in comparison to the budget neutral implementation) and the size (the budget neutral in comparison to the actual implementation) effects. Statistically significant changes between poverty estimates of different scenarios are determined at the 95% confidence level (more information on this estimation could be found in Annex 8).

3. Simulation results

3.1. Poverty impacts of baseline policies

If not for transfers to children all countries would have higher poverty levels for all groups of interest (see Table 3).The smallest effect is observed in Lithuania (a 7% reduction in child poverty

[16] More details in Araar and Duclos, 2007.

rate). The largest role is played by the Hungarian system, with a child poverty reduction of around 40%. The analysed systems have varied poverty gap and headcount effects for vulnerable household types.

The Slovenian system is particularly effective for large families, reducing the pre-transfer poverty rate from 45% to 16% (a reduction of more than 60%). Overall, all countries but Lithuania seem to be able to manage poverty risk of this household type with transfers to children: a reduction of around 50% in Estonia and Hungary, and 36% in the Czech Republic. The poverty reduction rate of large families in Lithuania is only 8%. The same holds for single parent families. Generally, the latter group has lower income protection in comparison to large families in all countries. The largest reduction is achieved by Slovenian (36%) and Hungarian systems (32%). The Estonian (18%) and the Czech systems (15%) have a smaller effect. As such, previous literature (e.g. Korpi and Palme, 1998; Nelson, 2004) presented observations on the greater targeting achieving less poverty alleviation are not supported by empirical findings on these five selected countries.

Table 3. Poverty headcount and gap in pre- and post- transfer systems

	LT-pre	*LT-post*	*EE-pre*	*EE-post*	*HU-pre*	*HU-post*	*SI-pre*	*SI-post*	*CZ-pre*	*CZ-post*
Poverty headcount, %										
Total	20.8	20.3	18.5	17.5	17.8	13.3	18.3	15.7	9.8	8.5
	(0.78)	*(0.78)*	*(0.59)*	*(0.59)*	*(0.52)*	*(0.47)*	*(0.57)*	*(0.54)*	*(0.50)*	*(0.47)*
Children	28.2	26.2	26.5	20.1	32.6	19.6	23.6	15.0	15.3	10.8
	(1.63)	*(1.61)*	*(1.22)*	*(1.13)*	*(1.18)*	*(1.02)*	*(1.18)*	*(0.98)*	*(1.07)*	*(0.97)*
- in large (3+) families	48.0	44.3	40.1	20.2	60.2	30.6	44.9	16.2	31.8	20.5
	(6.22)	*(6.27)*	*(4.59)*	*(3.41)*	*(3.48)*	*(3.39)*	*(5.57)*	*(4.17)*	*(4.78)*	*(4.55)*
- in single parent families	49.3	45.1	55.7	45.6	44.5	30.2	39.8	25.6	32.9	27.9
	(6.29)	*(6.40)*	*(4.48)*	*(4.62)*	*(3.93)*	*(3.54)*	*(5.01)*	*(4.79)*	*(3.50)*	*(3.41)*
Poverty gap, %										
Total	6.3	5.9	5.3	4.9	6.0	3.2	4.7	3.4	1.7	1.5
	(0.41)	*(0.39)*	*(0.28)*	*(0.26)*	*(0.29)*	*(0.16)*	*(0.22)*	*(0.15)*	*(0.14)*	*(0.13)*
Children	8.7	7.5	8.3	6.2	12.0	4.5	6.5	2.5	2.7	1.9
	(0.76)	*(0.68)*	*(0.57)*	*(0.50)*	*(0.67)*	*(0.30)*	*(0.45)*	*(0.19)*	*(0.28)*	*(0.26)*
- in large (3+) families	14.8	12.0	10.9	5.2	26.1	6.3	12.3	1.9	6.0	4.3
	(2.49)	*(2.19)*	*(1.54)*	*(0.99)*	*(2.17)*	*(0.83)*	*(2.03)*	*(0.55)*	*(1.26)*	*(1.24)*
- in single parent families	13.9	13.1	18.0	14.1	18.2	6.7	11.3	3.1	5.3	3.7
	(2.07)	*(2.01)*	*(1.89)*	*(1.85)*	*(2.33)*	*(1.14)*	*(2.18)*	*(0.61)*	*(0.73)*	*(0.62)*

Note: Here and further on: standard errors in parentheses; children defined as persons under the age of 18. Shaded cells indicate significant changes between pre- and post- scenarios.
Source: own calculations using EUROMOD

Slovenia also shows a large capacity of cutting poverty depth for large families (by 85%), and for single parent families (by 73%). These achievements bring the poverty gap indicators for these two family types to the lowest levels among our countries. The Hungarian transfers to children are important not only in combating child, but also for overall poverty. The poverty gap among large families is also reduced drastically here (by 75%). In the Czech Republic the pre-transfer poverty gap is already small. Its means-tested system, though, achieves less for large and single parent families compared to the Slovenian system. The Estonian system halves the poverty gap among children in large families. A smaller effect is achieved among the other groups. Results on Lithuania reveal the lowest poverty gap reducing capacities.

3.2. "Borrowed" policies in Lithuania

Table 4 displays the poverty outcomes of swapping foreign policies – both benefits and tax advantages - into Lithuania. Our findings show that the relative importance of the size and the design effects of the simulated changes depends on the system the household type and the poverty index.

The actual implementation scenarios indicate that three systems lead to significantly better poverty outcomes than the existing Lithuanian system: the Hungarian, Slovenian and Czech systems. This is the case for the swap of benefits, as well as for the combined swap of benefits and tax advantages. These three countries include means-tested transfers in the child transfer package. The poverty effects under the Estonian system, that resembles the Lithuanian design most closely, are highly heterogeneous: no significant changes are noted for population and child poverty with swapped benefits only, overall relatively small but significant poverty reduction - for children in large families, and relatively small but significant increase in poverty – for children raised by single parents. .

Under the actual implementation, the introduction of the Slovenian system leads to the best results for large families: poverty is halved, both for the benefits-only and for the combined benefit-tax advantage scenarios. Much smaller poverty changes are noted for single parent families, and across all swapped systems. . The overall results indicate that the effect of the benefit swapping tends to be stronger than the effect of swapping tax advantages (only a small additional poverty effect for tax advantages is noted). Exceptions here are the Hungarian and the Czech systems, where adding tax advantages leads to a significant reduction in poverty risk for single parents. Remember that Hungary and the Czech Republic have a tax credit rather than a tax allowance.

A quick glance at Table 4 would tempt the reader to think that the transfer *size* is the major determinant for the reduction of the poverty risk, as budget-neutrality leads to fewer significant changes: e.g. the Czech system under the budget-neutral scenarios reveals only insignificant poverty results for vulnerable groups. Having said that, we want to make some qualifications regarding the perceived dominance of size (i.e. comparison between the budget-neutral and actual scenarios or between the actual scenarios). First, the results are dependent on the system's design. For example, overall child poverty reduction is comparable across all borrowed systems (except of Estonia), however the Slovenian benefits' (only) system leads to a significant and large reduction in poverty risk of large families too. Second, when tax advantages are included, all systems achieve significant changes in child poverty. The direction of the changes between the two actual implementation scenarios is, though, heterogeneous: adding Slovenian tax advantages slightly increases poverty estimates for single parent families, Estonian single parents still experience higher poverty compared to the Lithuanian baseline, while the Czech system achieves coherent and large poverty drop for all concerned groups. Third, the use of indicator matters too: with the poverty gap we measure significant reductions for all three 'successful' systems (HU, SI, CZ) and both under budget neutral or actual implementation scenarios. Note that the poverty gap indicator points to varied changes for different categories: all groups become much better protected especially under Slovenian benefits (adding tax advantages produces mixed and slightly worsening results in this case); Hungarian (particularly under the budget neutral conditions) and the Czech benefits improve incomes of large families considerably, while single parent families are the primary beneficiaries of tax measures under both systems and the Czech system in particular.

While overall *design* effect (i.e. difference between baseline and budget neutral swap) tends to be smaller than the size effect (i.e. difference between actual and budget neutral swaps), the result is highly dependent on the population group and the system. For example, under the Slovenian regime, both the design and the size effects are of equal importance for large families (each effect achieves around a 12 percentage points reduction from the baseline poverty rate). For the poverty gap indicator the design effect is even stronger. As was discussed in section 3.2, Slovenia pays considerable attention to large families. It offers an allowance to large families as well as a means-tested child benefit. The latter benefit is advantageous to large families as it has a high threshold for means-testing and its size is linked to per capita income. The Hungarian tax credit design also performs particularly well for large families, as only large families are eligible. Furthermore, Hungarian tax and benefit measures reveal equally important size and design effects for this category's poverty risk (about 10 percentage points each) too. Overall, the design effect reveals to be considerably interlinked with the size effect of the policies: the systems with the strongest *design* effects (i.e. Slovenia and Hungary) for large families are also able to achieve the strongest *size* effects.

The fact that the budget-neutral swap of the Czech system does not give significant changes in the risk of poverty for both vulnerable groups (hence the size effect is dominant) may come as a surprise, given the fact that it only has means-tested transfers. The difference from the better scoring Slovenian system relates to benefit size determination: the size of the Czech means-tested transfers is not differentiated according to income. Also, the income threshold here is family type specific (uniform thresholds are applied in Slovenia and Hungary). Czech tax measures under the actual implementation, though, achieve the best poverty headcount score for single parent households. This is partly due to the fact that the tax credit is non-wastable, i.e. when the tax credit exceeds tax liabilities the difference is paid to families.

In general, the situation of children living in single parent households is least or even negatively (i.e. under the Estonian system) affected by the policy swaps. Under the budget-neutral scenario, no significant improvements of poverty risk are noted. This is in line with the designs of the systems, which hardly have advantageous provisions for single parent families (especially in comparison to large families). Furthermore, original Lithuanian measures include preferential tax rather than benefit advantages for single parents. In parallel, the largest relative income improvement for this family type is noted under Hungarian and Czech tax measures, but with a considerable increase in the tax support size if compared to the Lithuanian baseline.

Table 4. Poverty headcount and gap under the "borrowed" policies

	LT base-line	Scenario I: Swap of Benefits								Scenario II: Swap of Benefits & Tax Advantages							
		Budget neutral				Actual				Budget neutral				Actual			
		EE	HU	SI	CZ	EE	HU	SI	CZ	EE	HU	SI	CZ	EE	HU	SI	CZ
Poverty headcount, %																	
Total	20.3	20.3	19.9	18.9	19.4	20.1	18.5	17.6	17.1	20.3	19.6	18.9	19.6	20.0	18.4	18.5	16.9
	(0.78)	*(0.78)*	*(0.78)*	*(0.78)*	*(0.78)*	*(0.78)*	*(0.78)*	*(0.78)*	*(0.78)*	*(0.78)*	*(0.79)*	*(0.79)*	*(0.78)*	*(0.78)*	*(0.78)*	*(0.78)*	*(0.78)*
Children	26.2	26.8	25.6	23.1	24.7	25.9	20.4	18.6	18.9	26.8	24.4	23.0	25.4	25.5	19.7	18.6	16.6
	(1.61)	*(1.62)*	*(1.60)*	*(1.57)*	*(1.62)*	*(1.61)*	*(1.52)*	*(1.49)*	*(1.53)*	*(1.62)*	*(1.57)*	*(1.56)*	*(1.62)*	*(1.60)*	*(1.46)*	*(1.47)*	*(1.50)*
- in large (3+) families	44.3	42.6	40.3	32.6	42.9	41.2	24.9	20.4	27.2	42.6	34.4	31.1	45.0	41.2	24.1	19.8	25.3
	(6.27)	*(6.29)*	*(6.27)*	*(6.08)*	*(6.29)*	*(6.29)*	*(5.82)*	*(5.60)*	*(5.88)*	*(6.29)*	*(6.11)*	*(6.07)*	*(6.27)*	*(6.29)*	*(5.80)*	*(5.55)*	*(5.85)*
- in single parent families	45.1	49.3	45.9	45.0	43.6	48.1	39.5	38.1	40.2	49.8	45.3	45.2	44.7	47.8	33.2	39.8	29.2
	(6.40)	*(6.29)*	*(6.38)*	*(6.40)*	*(6.44)*	*(6.33)*	*(6.29)*	*(6.50)*	*(6.53)*	*(6.28)*	*(6.39)*	*(6.40)*	*(6.41)*	*(6.34)*	*(5.78)*	*(6.46)*	*(6.66)*
Poverty gap, %																	
Total	5.9	6.0	5.7	5.4	5.4	5.9	4.9	4.8	4.4	6.0	5.6	5.4	5.4	5.9	4.8	5.0	3.9
	(0.39)	*(0.39)*	*(0.37)*	*(0.35)*	*(0.35)*	*(0.38)*	*(0.32)*	*(0.31)*	*(0.29)*	*(0.39)*	*(0.36)*	*(0.35)*	*(0.35)*	*(0.38)*	*(0.31)*	*(0.32)*	*(0.26)*
Children	7.5	7.7	7.1	6.2	6.7	7.5	4.9	4.3	4.3	7.9	6.6	6.1	6.6	7.4	4.3	4.4	2.9
	(0.68)	*(0.69)*	*(0.65)*	*(0.56)*	*(0.62)*	*(0.67)*	*(0.48)*	*(0.43)*	*(0.46)*	*(0.69)*	*(0.59)*	*(0.56)*	*(0.61)*	*(0.67)*	*(0.42)*	*(0.45)*	*(0.32)*
- in large (3+) families	12.1	12.1	10.7	7.5	10.6	11.1	5.9	3.1	5.7	12.4	8.5	7.2	10.5	10.9	3.8	3.3	3.4
	(2.19)	*(2.20)*	*(2.16)*	*(1.63)*	*(2.02)*	*(2.10)*	*(1.45)*	*(0.99)*	*(1.38)*	*(2.23)*	*(1.82)*	*(1.61)*	*(1.98)*	*(2.08)*	*(0.97)*	*(1.09)*	*(0.84)*
- in single parent families	13.1	14.3	12.1	12.0	11.9	14.7	8.8	9.5	9.0	14.6	11.0	12.1	11.5	14.8	7.8	10.1	4.8
	(2.01)	*(2.10)*	*(1.82)*	*(1.83)*	*(1.92)*	*(2.16)*	*(1.50)*	*(1.58)*	*(1.77)*	*(2.11)*	*(1.73)*	*(1.85)*	*(1.82)*	*(2.18)*	*(1.56)*	*(1.68)*	*(1.02)*

Note: Shaded cells indicate significant changes between baseline and swap scenarios (Annex 8 provides more details on calculation of significantly different poverty changes across the scenarios).
Source: own calculations using EUROMOD

3.3. Lithuanian policies in other countries

Across all countries, the budget neutral implementation of Lithuanian policies worsens child poverty, though to different degrees.

We observe the largest deterioration in poverty rates and for all concerned groups in the Czech Republic, even though the budget neutral Czech policies did not achieve significant poverty changes for vulnerable groups in Lithuania. Poverty rates in Hungary and Slovenia would also increase under Lithuanian policies. In both countries, however, the relative position of the single parent families does not change, showing that neither of these countries has a more effective state support package for this group. Estonian budget neutral policies had mixed results in Lithuania. The reverse swap worsens poverty situation slightly, except of the insignificant change for single parent families. Note, that Estonian policies implied a worsening poverty situation for Lithuanian single parent families.

The trends in poverty gaps point to larger and negative changes for children, particularly if raised in large families, for all systems. (The worst performance would occur in Slovenia. The poverty gap would also widen for single parent households (though to a lesser degree than for large families), especially in Hungary and Slovenia. This is also a somewhat surprising effect, as a much smaller effect was detected when swapping foreign policies into Lithuania.

Table 5. Poverty headcount and gap, swapping Lithuanian policies into four NMS

	EE		HU		SI		CZ	
	post	*LT*	*post*	*LT*	*post*	*LT*	*post*	*LT*
Poverty headcount, %								
Total	17.5	17.9	13.3	13.8	15.7	17.5	8.5	10.6
	(0.59)	*(0.58)*	*(0.47)*	*(0.50)*	*(0.54)*	*(0.55)*	*(0.47)*	*(0.50)*
Children	20.1	21.0	19.6	21.3	15.0	17.8	10.8	15.9
	(1.13)	*(1.15)*	*(1.02)*	*(1.06)*	*(0.98)*	*(1.05)*	*(0.97)*	*(1.07)*
- in large (3+) families	20.2	21.4	30.6	36.8	16.2	23.8	20.5	31.9
	(3.41)	*(3.47)*	*(3.39)*	*(3.51)*	*(4.17)*	*(4.94)*	*(4.55)*	*(4.74)*
- in single parent families	45.6	47.1	30.2	32.2	25.6	26.7	27.9	35.8
	(4.62)	*(4.60)*	*(3.54)*	*(3.68)*	*(4.79)*	*(4.80)*	*(3.41)*	*(3.55)*
Poverty gap, %								
Total	4.9	5.1	3.2	3.7	3.4	4.1	1.5	1.9
	(0.26)	*(0.26)*	*(0.16)*	*(0.18)*	*(0.15)*	*(0.18)*	*(0.13)*	*(0.14)*
Children	6.2	6.7	4.5	5.6	2.5	4.0	1.9	2.8
	(0.50)	*(0.52)*	*(0.30)*	*(0.38)*	*(0.19)*	*(0.29)*	*(0.26)*	*(0.29)*
- in large (3+) families	5.2	6.6	6.3	10.0	1.9	5.2	4.3	5.7
	(0.99)	*(1.21)*	*(0.83)*	*(1.24)*	*(0.55)*	*(1.15)*	*(1.24)*	*(1.29)*
- in single parent families	14.1	14.8	6.7	9.4	3.1	6.1	3.7	5.8
	(1.85)	*(1.86)*	*(1.14)*	*(1.51)*	*(0.61)*	*(1.29)*	*(0.62)*	*(0.78)*

Source: own calculations using EUROMOD

4. Conclusions and policy suggestions

This study is the first attempt in applying a full tax-benefit microsimulation model for testing family transfers' effectiveness within a comparative setting of five NMS. For this task, we employ EUROMOD, the European static tax-benefit model, which allows swapping policies from one country to another. Though a number of limitations are associated with using such a model, the advantage is its comprehensive structure in handling cross-national analysis on distributional policy impacts. The policy systems differ across five countries in terms of size and design of their non-contributory transfers to children: birth grants, universal child benefits, large family allowances (categorical benefit), means tested child allowances and tax advantages to families. An advantage of using EUROMOD is that also the distribution of tax measures can be captured, a factor that is often neglected and which can significantly impact poverty, as was illustrated by our results from the Czech and Hungarian systems.

Literature usually points to the size of the transfers as the major determinant of child poverty. Our results confirm it is of high importance. Nevertheless, we find the design effect could be of equal significance. This depends on the system (e.g. under Hungarian and Slovenian child transfer packages, especially for large families). The strength of the size and the design effects are highly dependent on the composition of the selected policy measures (universal, categorical, income selective) and the parametric choices of the policies' inner design (i.e. thresholds, benefit size determination, etc.). The design is also noted to have a size reinforcing effect.

The best poverty score is not necessarily achieved by the most extensive or exclusively means tested transfers. On the other hand, "pure" universal systems are found to be the least poverty effective. On this, our results do not align with previous literature observations (e.g. Korpi and Palme, 1998; Nelson, 2004) that a higher targeting to the lower incomes leads to less effective poverty alleviation. In our study of the five NMS countries, opposite observations are confirmed both by the analysis of baseline and simulated systems.

A mix of means-tested and categorical benefits, sensitive to characteristics of the poor families, can act as highly effective tools. This is the case with the large family allowance in Slovenia or the tax credit to large families in Hungary. The common features of these two transfers are a high reach of large families and a non-age dependent benefit's size calculation. As families with older kids could be as prone to poverty as those with younger kids, the policy design sensitive to the age rather than the number of children seems to be counter-effective. A higher threshold for means-tested benefits also ensures a higher reach of the most vulnerable families. The combination of a generous means-testing threshold with benefit's size dependence on per capita family income seems to be the key behind the Slovenian child benefit's design. This is a major difference with the other means-tested benefits, found in the Czech Republic or Hungary where the benefit size respectively depends on the child's age or is uniform for all eligible families.

Our simulations do not reveal any significant design features that would reduce child poverty among single parent families in Lithuania, even though we would have expected more positive outcomes given that the analysis of baseline policies raised larger expectations (e.g. Slovenia's system reduces the poverty gap for single parents with 73%). Apparently, only an increase in size is able to improve the situation for single parents in Lithuania, as was illustrated by the outcomes of the actual policy swaps. Poverty gap analysis reveals small positive changes, except under the

Estonian system. The latter design worsens both poverty score and depth among single parent families both under budget neutral and actual implementation settings.

It is essential to stress that aside benefit design and size criteria, policy alignment to national characteristics is of high importance. Although Lithuania and Estonia have the most similar non-contributory family benefit and tax measures (universal and/or categorical), Estonia achieves a much better poverty reduction for both large and single parent families. If implemented in Lithuania, their poverty effectiveness would be negligible or even negative due to different socio-demographic circumstances and the interactions with the rest tax-benefit system. Lithuanian policies in Estonia would slightly worsen poverty situation too.

Summarising, we argue that Lithuanian policy makers can indeed learn from foreign experiences, if they want to improve poverty outcomes for Lithuanian children. It is important to keep in mind though that these lessons need to consider the specific socio-demographic characteristics and the wider tax-benefit system of Lithuania.

Annex 1: Socio-demographic profiles of the selected countries

Annual gross earnings and purchasing power standards, 2008

	EU	*NMS*	LT	EE	HU	CZ	SI
EUR exchange rate, June 30 (2008/2005 in SI)	*n.a.*	*n.a.*	*3.4528*	*15.647*	*242.963*	*23.893*	239.57
National currency unit	*n.a.*	*n.a.*	*LTL*	*EEK*	*HUF*	*CZK*	*SIT*
PPS	*1.00*	*n.a.*	0.60	0.73	0.67	0.62	0.79
Mean equivalised net annual income, in EUR	*16,756*	*4,713*	4,932	6,331	4,827	6,810	11,709
Mean equivalised net annual income, in PPS	*16,756*	*n.a.*	8,221	8,665	7,235	10,910	14,817

Note: Exchange rate between Euro and EEK and between Euro and LLT is fixed.

$PPS_{LT}\ multiplier = PPS_{[of\ LT]}/PPS_{[of\ EU\ country]}$,

so that $PPS_{LT}\ multiplier * Y_{[EUR\ amount\ in\ EU\ country]} = X_{[in\ EUR\ \&\ PPS\ adjusted\ amount\ in\ LT]}$

Source: EUROSTAT and European Central Bank

Labour market situation of parents, 2007

	Children in couple households, %				Children in sole parent households, %		
	Both parents full-time	One parent full-time	Neither parent working	Other	Parent working full-time	Parent working part-time	Parent not working
EU	*43.6*	*31.7*	*4.4*	*20.3*	*52.1*	*14.4*	*34.1*
Lithuania	61.0	22.0	4.8	12.2	65.2	8.3	26.5
Estonia	49.0	38.4	2.8	9.8	67.9	5.7	26.4
Hungary	39.4	44.7	10.4	5.5	52.2	3.7	44.2
Slovenia	76.2	14.9	1.3	7.6	84.3	3.1	12.6
Czech Rep.	46.6	41.6	3.7	8.1	54.3	6.5	39.2

Note: children defined as household members aged 0-14; "Other" category includes households with 1 parent working full-time & 1 parent working part-time, plus other working or not-working arrangements.
Source: OECD Family Database

Full-time work: the highest rate of children (76%) living with both working parents is noted in Slovenia; the respective rate is also high Lithuania; full-time work of single parents is most common in Slovenia, followed by Estonia and Lithuania. **Part-time work:** part-time work by one of the two partners is of high importance in the Czech Republic and Hungary; part-time work by single parents is highest in Lithuania, followed by the Czech Republic. **Jobless households:** Hungary has the highest rate of children living in jobless households (with both or one parent); this ratio for single parent households is very high in the Czech Republic too.

Selected demographic figures, 2007

	Share of children living in:			Share of families raising:			Share of families with children	Mean age of women at birth of the 1st child
	Sole parent families	Couple families	Other families	1 or 2 children	3+ children	Child under age 6		
Lithuania	18.3	79.0	2.6	74.2	25.9	49.6	54	25.0
Estonia	24.0	71.9	3.8	73.9	26.1	57.5	43	25.1
Hungary	14.4	83.0	2.5	66.5	33.5	51.8	48	27.2
Slovenia	15.5	83.3	0.7	78.2	21.9	54.5	50	28.2
Czech Rep.	20.8	78.3	0.9	80.1	19.9	52.4	47	27.3

Source: OECD Family Database

In all countries, except of Estonia, around 80% of children live with both parents. In Estonia, around a quarter of all children live in sole parent families – the highest share across our countries. Families with three children are dominant in Hungary - approximately one third of all families. Living in small families is the most prevalent arrangement in Slovenia and the Czech Republic. Lithuania has the smallest share of families with children under the age of 6. The largest share of families with children is also observed in Lithuania: 54% of all Lithuanian households. On average women have the first child at the age of 25 in both Lithuania and Estonia. The first child is usually born around 2 to 3 years later in Hungary, Slovenia and the Czech Republic.

Annex 2. EUROMOD: validation parameters & original names of "transfers to children"

Simulation ratios / original name*	*Lithuania*			*Estonia*			*Hungary*			*Czech Rep.*			*Slovenia***		
	Recipients	Expenses	Sim./ Input	Recipients	Expenses	Sim./ Input	Recipients	Expenses	Sim./ Input	Recipients	Expenses	Sim./ Input	Recipients	Expenses	Sim./ Input
Birth grant	0.87	0.89	1.00	0.78	0.78	n.a.	0.95	0.93	n.a.	0.81**	1.02**	0.82	1.11	1.26	n.a.
	Vienkartinė išmoka gimus vaikui			*Sünnitoetus*			*Anyasági támogatás*			*Sünnitoetus*			*Pomoč ob rojstvu otroka*		
Child benefit	1.33	1.12	1.12	1.06	1.04	n.a.	1.03	1.07	n.a.						
	Išmoka vaikui			*Lapsetoetus*			*Családi pótlék*								
Child benefit supplement				0.98	1.04	n.a.									
				Lapsehooldustasu											
Large family allowance				1.12	1.05	n.a.	1.08	1.07	n.a.				1.07	1.07	n.a.
				Seitsme-ja enamalapselise pere vanema toetus			*Gyermeknevelési támogatás*						*Dodatek za veliko družino*		
Means tested allowance							n.a.	n.a.	n.a.	0.76	1.26	1.00	1.20	1.17	n.a.
							Rendszeres gyermekvédelmi kedvezmény			*Prídavek na díte*			*Ootroški dodatek*		
										2.02	1.35	1.72			
										Socialni priplatek					
Single parent allowance				Not simulated											
				Üksikvanema lapse toetus											

Notes: *Simulation ratios: Ratio 'recipients'=simulated recipients/actual recipients (i.e. administrative data information); Ratio 'expenses' = simulated expenses/actual recipients; Ratio 'sim./input' = simulated expenses/expenses estimated from(survey) input data; ** Reference date – 2005; all other information refers to 2008.
Source: EUROMOD country reports and MISSOC database

Major observations on reasons behind over/under simulation:

- *Lithuania. Birth grant*: under-estimation occurs as the actual number of children has increased from 2005 to 2008; *child benefit*: over-estimation in the number of recipients could occur due to inability distinguishing between full-time and part-time studying status. The assumption is made that all students study full time, which is also an eligibility condition.
- *Slovenia. Birth grant*: over-estimation is largely due to the assumption that newly born babies are all children born from 2001 to March 2002. C*hild benefit:* over-estimation is mainly due to differences in observed family structures and family units which apply for child benefits.
- *Czech Republic.* Birth grant: under-estimation is mainly due to under-estimated number of newborns in the input data. Child and social allowances (means tested): EUROMOD simulation is not able to capture the drop in number of actual recipients in 2008.
- *Estonia.* Child birth allowance: Small benefit groups, such as childbirth allowance, have some problems with precision but their impact on overall expenditures is relatively small.
- *Hungary.* Official social statistics is not collected for the Hungarian means tested allowance.

Annex 3: Poverty measures

1. **At-risk-of-poverty rate:** the percentage of persons, over the total population, with an income below the 'at-risk-of-poverty threshold (poverty line)', set at 60% of the median disposable income (EUROSTAT, 2005):

$$P_0 = \frac{\sum_{persons\ with\ y<z} w'i}{\sum_{Total\ population} w'i} * 100$$

2. **Poverty gap** measures the average difference between the income of poor people (people with income below the at-risk-of poverty threshold) and poverty line.

$$P_\alpha = \frac{1}{\sum_{Total\ population} w'i} * \sum_{persons\ with\ y<z} w'i \left(\frac{z - y_i}{z} \right)^\alpha \text{, where } \alpha=1 \text{ indicates poverty gap index}$$

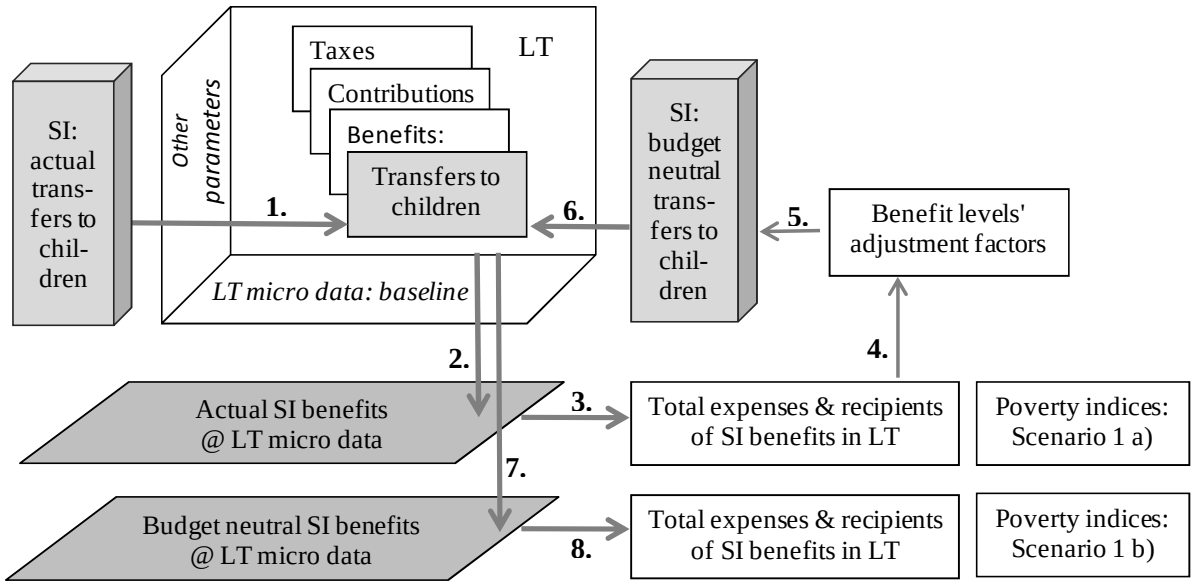
3. **Poverty line of each scenario:**

	Lithuania + Country X aspects (in LTL)						*Country X + LT policies (in EUR)*		
	pre	*post*	*1A*	*1B*	*2A*	*2B*	*pre*	*post*	*3*
LT	98.04%	215.7							
EE			100.1%	99.4%	100.5%	99.4%	95.4%	298.5	99.7%
SI			101.5%	99.3%	104.5%	99.4%	94.4%	400.9	99.9%
HU			103.0%	99.7%	103.1%	99.9%	94.6%	228.1	100.4%
CZ			102.8%	99.9%	104.8%	99.9%	95.9%	348.7	99.2%

Note: "post" – refers to the original country settings (with original benefit-tax policies). These poverty thresholds are presented in EUR. "Pre" – refers to the original country settings without (original) benefits and tax advantages to families. The poverty threshold for 'pre" & 1, 2, 3 Scenarios are expressed as a share of a relevant "post" poverty threshold.

Annex 4: Main simulation steps

Example using Scenario 1, Slovenian benefits in Lithuania: main simulation steps



This figure illustrates a stylized simulation procedure of swapping Slovenian benefits to Lithuanian settings, with both actual and budget neutral scenarios sequencing indicated. Figure numbering "1 to 8" refers to the order of simulation steps.

Annex 5: Intermediary parameters - Scenario I

Scenario 1A – actual implementation of benefits (3.4528 LTL=1 EUR)

	LT "post"	EE	HU	SI	CZ
Birth grant:					
Annual expenses, mln. LTL	32.2	41.5	30.5	28.3	57.0
Mean annual grant, LTL	1040.0	1377.6	711.0	937.4	1941.2
# of beneficiary families[1]	30147	30147	30147	30147	29348
Child benefit:					
Annual expenses, mln. LTL	538.0	866.4	2004.0		
Mean annual benefit, LTL	94.0	149.4/172.7[2]	344.1		
# of beneficiary families	477450	483431/ 109777 [3]	486362		
Allowance to large families:					
Annual expenses, mln. LTL		2.7	42.2[4]	76.4	
Mean annual benefit, LTL		708.8	3792.0	106.5	
# of beneficiary families		316	7822	59762	
Means tested allowance:					
Annual expenses, mln. LTL			38.5	1043.1	1321.5[5]
Mean annual benefit, LTL			14.5	353.5	156.1/171.7[6]
# of beneficiary families			223157	245915	432549[7]
Total expenses, mln. LTL	570.2	910.6	2115.2	1147.8	1378.5

Notes: [1] - Definition of "family" (or benefit incidence assessment unit) is country and policy specific. [2]- 149.4 LTL is the mean benefit of child benefit; 172.7 LTL is the mean benefit of child benefit supplement. [3] – the first number refers to the recipients of the child supplement; the second number refers to the recipients of the child benefit supplement. [4] - This benefit is included into the taxable income list, but not taxed (i.e. treated as tax credit). Hence, it has an impact on tax revenues too. In Scenario 1A changes in tax revenues are not taken into account. [5] – The means tested allowance includes expenses on two benefits (759.0 mln. LTL on child allowance + 562.5 mln. LTL on social allowance). [6] - 156.1 LTL is the mean benefit of child allowance; 171.7 LTL is the mean benefit of social allowance. [7] – the first number refers to the recipients of the child allowance; the second number refers to the recipients of the social allowance.

Scenario 1B – budget neutral implementation of benefits

	LT (base)	EE	HU	SI	CZ
Applied budgetary adjustment factor (F_{jl})	1.0	0.7418	0.3330*	0.4968	0.4054*

** - Additional calibration (aside the mathematical formula presented in Section 3.3) of the F_{jl} factor was needed due to interactions among benefits: e.g. child benefit is included in the income list when calculating eligibility to a means tested allowance in CZ; allowance to large families is a taxable benefit in HU; allowance to large families, child benefit and birth grant are counted as income sources for the means tested benefit in HU.*

Annex 6: Intermediary parameters - Scenario II

Scenario II – actual implementation of taxes and benefits (3.4528 LTL=1 EUR)

	LT "post"	EE	HU	SI	CZ
State income tax revenue, mln. LTL	7549.2	7372.0	7491.6	7012.5	6730.6
Mean monthly tax paid*, LTL	443.0	435.9	445.6	425.3	420.7

** Only positive amounts in income tax paid are taken into account.*

Scenario II – budget neutral implementation of taxes and benefits*

	LT "post"	EE	HU	SI	CZ
Budgetary adjustment factor for family tax advantages (F_{jl})	1.0	0.3569	0.7009	0.3927	0.1091

** Budget neutral scenario is calculated by aligning total tax revenue figures only (to the level of the LT "post" environment). Budgetary adjustment factor for the benefits remains the same as in Scenario 1B.*

Annex 7: Intermediary parameters - Scenario III

Lithuanian tax-benefit measures to families in Estonia

	EE post	EE+LT (budget neutral)
Annual (simulated) total expenses on benefits, mln. EUR	96.3	96.3
- Birth grant	*4.0*	*5.9*
- Child benefit	*75.0*	*90.4*
- Child benefit supplement	*16.9*	
- Large family allowance	*0.4*	
Budgetary adjustment factor for benefits (F_{jl})	-	1.2805
Annual state income tax revenue, mln. EUR	921.8	921.8
Mean monthly tax paid, EUR	111.5	115.6
Budgetary adjustment factor for family tax advantages (F_{jl})	-	2.8793

Lithuanian tax-benefit measures to families in Hungary

	HU post	HU+LT (budget neutral)
Annual (simulated) total expenses on benefits, mln. EUR	1613.6	1613.6
- Birth grant	*23.8*	*92.8*
- Child benefit	*1488.0*	*1520.8*
- Large family allowance	*63.5*	
- Means tested allowance	*38.3*	
Budgetary adjustment factor for benefits (F_{jl})	-	3.0392
Annual state income tax revenue, mln. EUR	4941.8	4941.8
Mean monthly tax paid, EUR	170.1	169.2
Budgetary adjustment factor for family tax advantages (F_{jl})	-	0.7170

Lithuanian tax-benefit measures to families in Slovenia

	SI post	SI+LT (budget neutral)
Annual (simulated) total expenses on benefits, mln. EUR	288.6	288.6
- Birth grant	*4.8*	*9.4*
- Large family allowance	*9.0*	*279.2*
- Means tested allowance	*274.8*	
Budgetary adjustment factor for benefits (F_{jl})	-	1.2783
Annual state income tax revenue, mln. EUR	1607.5	1607.5
Mean monthly tax paid, EUR	163.5	172.15
Budgetary adjustment factor for family tax advantages (F_{jl})	-	8.0528

Lithuanian tax-benefit measures to families in the Czech Republic

	CZ post	CZ+LT (budget neutral)
Annual (simulated) total expenses on benefits, mln. EUR	552.3	552.3
- Birth grant	*44.7*	*30.9*
- Means tested allowance (child allowance)	*328.8*	*521.4*
- Means tested allowance (social allowance)	*178.8*	
Budgetary adjustment factor for benefits (F_{jl})	-	1.2076
Annual state income tax revenue, mln. EUR	3596.6	3596.6
Mean monthly tax paid, EUR	79.8	81.8
Budgetary adjustment factor for family tax advantages (F_{jl})	-	31.8468

Annex 8: What are statistically different poverty rates across simulation scenarios?

Tax-benefit microsimulation models are often used to evaluate (child) poverty effectiveness of hypothetical public policies (e.g. Immervoll et al., 2001; Corak, Lietz and Sutherland, 2005; Levy et al., 2009; Figari et al., 2011; etc.). The usual way of evaluating different simulation scenarios is by directly comparing obtained point estimates (i.e. poverty headcount, poverty gap, mean income, etc.) rather than by evaluating standard errors (confidence intervals) of the difference between the results. The same practice is observed not only in (child) poverty simulations, but also in the broader simulation field.

In this analysis, we improve the existing practice of comparing point estimates only: we do take into account the co-variation between the baseline and the simulations results, when establishing if the difference between the two selected poverty estimates is statistically significant. As both baseline and simulation results are estimated on the same sample (plus, simulation is a static one, without any random draws), the standard error of the difference between the two point estimates of different scenarios is smaller than the one reported for a single point estimate (when comparing across different population groups within the same scenario).

In the two tables below, we present an example of calculations for establishing a statistically significant difference between the poverty scores of different simulation scenarios, as presented in Table 4. We evaluate the difference between the observed (baseline) and the simulated variable (i.e. poor people/poverty depth under EE, HU, SI or CZ policies). The evaluation is conducted on the individual level. We report the average difference from the baseline scenario (in percentage points) and the confidence interval (in parentheses below) of this difference. Statistically significant (average) poverty changes are shaded. Under the LT baseline, we also report the point estimates and associated standard errors (in parentheses below, at the 95% significance level).

Swap of benefits, budget neutral implementation: poverty headcount, %

	LT baseline	*EE*	*HU*	*SI*	*CZ*
Total	20.3 *(0.78)*	-0.0 *(-0.28; 0.10)*	0.3 *(0.15; 0.49)*	1.4 *(1.07; 1.67)*	0.9 *(0.71; 1.09)*
Children	26.2 *(1.61)*	-0.5 *(-1.14; 0.07)*	0.7 *(0.11; 1.21)*	3.1 *(2.13; 4.11)*	1.5 *(0.95; 2.04)*
- in large (3+) families	44.3 *(6.27)*	1.7 *(-0.22; 3.63)*	4.0 *(0.82; 7.08)*	11.7 *(6.52; 16.8)*	1.4 *(-0.18; 2.99)*
- in single parent families	45.1 *(6.40)*	-4.2 *(-6.79; -1.69)*	-0.8 *(-1.9; 0.32)*	0.0 *(-0.64; 0.68)*	1.4 *(-0.26; 3.16)*

Swap of benefits, budget neutral implementation: poverty gap, %

	LT baseline	*EE*	*HU*	*SI*	*CZ*
Total	5.9 *(0.39)*	-0.1 *(-0.08; -0.02)*	0.2 *(0.15; 0.22)*	0.5 *(0.47; 0.60)*	0.5 *(0.45; 0.53)*
Children	7.5 *(0.68)*	-0.2 *(-0.32; -0.10)*	0.4 *(0.29; 0.53)*	1.4 *(1.14; 1.57)*	0.8 *(0.74; 0.94)*
- in large (3+) families	12.1 *(2.19)*	0.0 *(-0.47; 0.43)*	1.3 *(0.70; 1.93)*	4.5 *(3.61; 5.38)*	1.4 *(1.06; 1.76)*
- in single parent families	13.1 *(2.01)*	-1.2 *(-1.85; -0.64)*	1.0 *(0.58; 1.44)*	1.0 *(0.57; 1.49)*	1.1 *(0.79; 1.47)*

References

Adema, W., del Carmen Huerta, M., Panzera, A., Thevenon, O., and Pearson, M. (2009) 'The OECD Family Database: Developing a Cross-National Tool for Assessing Family Policies and utcomes', *Child Indicators Research*, 2(4): 437-460.

Araar, A. and Duclos, J.Y. (2007) *DASP: Distributive Analysis Stata Package*. Université Laval, PEP, CIRPEE and World Bank.

Bradbury, B., and Jäntti, M. (2001) 'Child Poverty across the Industrialized World: Evidence from the Luxembourg Income Study', in K. Vleminckx and T. M. Smeeding (eds) *Child Poverty, Child Well-being and Child Policy in Modern Nations: What Do We Know?* Bristol Policy Press.

Bradshaw, J. and Finch, N. (2003) 'Child Benefit Packages in 22 Countries', paper prepared for the 4th International Research Conference on Social Security, Antwerp, Belgium.

Cantillon, B. and van den Bosch, K. (2003) 'Social Policy Strategies to Combat Income Poverty of Children and Families in Europe', in P. Krause, G. Bäcker and W. Hanesch (eds) *Combating Poverty in Europe: The German Welfare Regime in Practice*. Aldershot: Ashgate.

Čok, M., Kump, N. and Majcen, B. (2008) *EUROMOD Country Report: Slovenia (2005)*.

Commission of the European Communities (ed) (2008) *The EU Social Protection and Social Inclusion Process. Thematic study on policy measures concerning child poverty, Vol. 10.*

Corak, M., Lietz, C. and Sutherland, H. (2005) 'The Impact of Tax and Transfer Systems on Children in the European Union', Innocenti Working Paper No. 205-04, Florence.

Cornelius, P. (1995) 'Cash Benefits and Poverty Alleviation in an Economy in Transition: the Case of Lithuania', *Comparative Economic Studies*, 37: 49-70.

EUROSTAT (2005) 'Continuity of Indicators Between end-ECHP and start-SILC: Algorithms to Compute Cross-Sectional Indicators of Poverty and Social Inclusion Adopted under the Open Method of Coordination', accessed March 2008 at: [http://www.insee.fr/en/insee-statistique-publique/colloques/pauvrete/pdf/Eurostat_social_indicators_EN.pdf].

Figari, F., Paulus, A. and Sutherland, H. (2011) 'Measuring the Size and Impact of Public Cash Support for Children in Cross-National Perspective', *Social Science Computer Review*, 29(1): 85-102.

Förster, M. and Tóth, I. (2001) 'Child Poverty and Family Transfers in the Czech Republic, Hungary and Poland', *Journal of European Social Policy*, 11(4): 324-341.

Hegedűs, P. and Szivós, P. (2010) *EUROMOD Country Report: Hungary (2005-2008).*

Immervoll, H., Sutherland, H. and de Vos, K. (2001) 'Reducing Child Poverty in the European Union: the Role of Child Benefits', in K. Vleminckx and T. M. Smeeding (eds) *Child Poverty, Child Well-being and Child Policy in Modern Nations: What Do We Know?* Bristol: the Policy Press.

Ivaškaitė-Tamošiūnė, V., Lazutka, R. and Salanauskaitė, L. (2010) *EUROMOD Country Report: Lithuania (2005-2008)*.

Kabašinskaitė, D. and Bak, M. (2006) 'Lithuania's Children's Policy in the Period of Transition', *International Journal of Social Welfare*, 15(3): 247-256.

Kamerman, S., Neuman, M., Waldfogel, J. and Brooks-Gunn, J. (2003) 'Social Policies, Family Types and Child Outcomes in Selected OECD countries'. OECD Social, Employment and Migration Working Papers No.6, OECD, Employment, Labour and Social Affairs Committee.

Korpi, W. and Palme, J. (1998) 'The Paradox of Redistribution and Strategies of Equality: Welfare State Institutions, Inequality, and Poverty in the Western Countries', *American Sociological Review*, 63(5): 661-687.

Levy, H., Lietz, C. and Sutherland, H. (2007) 'Swapping Policies: Alternative Tax-Benefit Strategies to Support Children in Austria, Spain and the UK', *Journal of Social Policy,* 36(04): 625-647.

Levy, H., Morawski, L. and Myck, M. (2009) 'Alternative Tax-Benefit Strategies to Support Children in Poland', in O. Lelkes and H. Sutherland (eds.) *Tax and Benefit Policies in the Enlarged Europe: Assessing the Impact with Microsimulation Models*. European Centre Vienna: Ashgate.

Lietz, C. and Mantovani, D. (2007) 'A Short Introduction to EUROMOD: an Integrated European Tax-Benefit Model', in O. Bargain (ed) *Microsimulation in Action: Policy Analysis in Europe Using EUROMOD*, Elsevier Ltd.

Matsaganis, M., O'Donoghue, C., Levy, H., Coromaldi, M., Mercader-Prats, M., Rodrigues, C.F., et al. (2007) 'Child Poverty and Family Transfers in Southern Europe', in A. Spadaro (ed), *Microsimulation as a Tool for the Evaluation of Public Policies*: *Methods and Applications*, Bilbao.

Münich, D. and Pavel, J. (2010) *EUROMOD Country Report: Czech Republic (2005-2008).*

National Rreport of Lithuania on Social protection and Social Inclusion Strategies 2008–2010 (2008). Accessed Nov. 2009 at: [http://www.socmin.lt/index.php?-311688494].

Nelson, K. (2004) 'Mechanisms of Poverty Alleviation: Anti-Poverty Effects of Non-Means-Tested and Means-Tested Benefits in Five Welfare States', *Journal of European Social Policy,*14(4): 371-390.

Notten, G. and Gassmann, F. (2008) 'Size Matters: Targeting Efficiency and Poverty Reduction Effects of Means-tested and Universal Child Benefits in Russia', *Journal of European Social Policy*, 18(3): 260-274.

Salanauskaite, L. and Verbist, G. (2009) 'Reforming Child Allowances in Lithuania: What Does Microsimulation Tell Us?', in O. Lelkes and H. Sutherland (eds) *Tax and Benefit Policies in the Enlarged Europe: Assessing the Impact with Microsimulation Models*, European Centre Vienna: Ashgate.

Sutherland, H. (2001) *Final Report EUROMOD: An Integrated European Benefit-Tax Model*, EUROMOD Working paper EM9/01, ISER, University of Essex.

TÁRKI (2011) 'Child Well-Being in the European Union - Better Monitoring Instruments for Better Policies', report prepared for the State Secretariat for Social Inclusion of the Ministry of Public Administration and Justice, Budapest.

Võrk, A., Paulus, A. and Lüpsik, S. (2010). *EUROMOD Country Report: Estonia (2005-2008).*