Interactions between policy effects, population characteristics and the tax-benefit system: An illustration using child poverty and child related policies in Romania and the Czech Republic

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Interactions between policy effects, population characteristics and the tax-benefit system: An illustration using child poverty and child related policies in Romania and the Czech Republic[1]

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Abstract
We investigate the impact of the Romanian and Czech family policy systems on the income distribution and poverty risk of families with children. We focus on separating out the effects of the policy design itself, size of the benefits and the interaction between policies and population characteristics. We find that interactions between population characteristics, the wider tax benefit system and child related policies are pervasive and large. Both population characteristics and the wider tax-benefit environment can dramatically alter the antipoverty effect of a given set of policies.

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1 Introduction

The past twenty years have witnessed prominent policy initiatives to tackle child poverty both at the European and national levels (for example, the Lisbon strategy or the Labour government pledge to halve child poverty in the UK by 2020). However, despite these efforts, child poverty rates have remained stubbornly high. Even more worryingly, they have increased in some countries especially in comparison with overall poverty rates (Oxley et al. 2000; Van Mechelen and Bradshaw 2013). For example, between 2005 and 2012, poverty among children in the 27 Member States has broadly remained stable around 28% whereas poverty among the population as a whole fell from 26% to 25% (EUROSTAT).

A large body of scholarly work has linked poverty, and low income in general, to deleterious consequences on child developmental trajectories and educational attainment (Black et al. 2000; Engle and Black 2008; Najman et al. 2009; Petterson and Burke Albers 2001) , health status (Aber et al. 1997; Case et al. 2002), as well as adulthood outcomes (Duncan et al. 1998; Duncan et al. 2010).

Given the consequences of material deprivation both on current well-being and future capability and the fact that children generally have little control over what economic resources are available to them, there is overwhelming agreement that child poverty is an area necessitating public intervention. To mitigate child poverty, governments can resort, among other tools, to various forms of income support and child contingent transfers.

Previous scholarly work has found considerable evidence that child contingent transfers do have a substantial effect on child poverty outcomes, with typically large cross-national variation in policy effects (Matsaganis et al. 2007; Barrientos and DeJong 2006; Bradshaw 2006; Immervoll et al. 2000; Whiteford and Adema 2007). These studies usually use either pre-transfer post-transfer comparisons or a microsimulation-based approach and attribute any differences in observed poverty or inequality indicators to the policy package they investigate. One aspect left unaddressed in these studies is the extent to which policy effects are shaped by 'outside' factors, i.e. population characteristics and/or the wider tax-benefit system in which they operate. Although these studies generally acknowledge the existence of interactions of various sorts and their potential in shaping the impact of family transfers, they fail to explicitly investigate these issues. As a result, there is little evidence on the sensitivity of estimated policy effects to variation in the population profile and the design of other social and fiscal instruments that are present. For example, can these factors alter the ranking of policy instruments with similar objectives? These issues are all the more important as the European Union (EU) has launched various benchmarking exercises that essentially rely on comparisons between countries with potentially very different demographic, labour market and tax-benefit institutions.

This paper seeks to bridge this gap and contribute to the understanding of the role of interactions between child contingent policies, population characteristics and the wider tax benefit system in shaping the impact of the former on child poverty. In particular, we are interested in assessing the magnitude of changes in estimated policy effects once population characteristics and/or the wider tax-benefit system change. To this end, we take Romania and the Czech Republic as case studies and examine the reduction in child poverty effected by three family transfers and one tax concession (see Table 1). Romania is a country with high levels of child poverty where the support package available to families with children has been found to be not very effective (TARKI 2010). In contrast, the Czech Republic registers low overall and child poverty rates which have been found to be at least partly the result of generous income support (TARKI 2010). Using microsimulation techniques, we examine to what extent these results are driven by the characteristics of the child-related policy instruments themselves as opposed to being the product of the 'fit' between these instruments, other income support measures available to families with children and population features. More specifically, we compute the direct, first-order effect of both the Romanian and the Czech child policy package on relative poverty, while varying the underlying population characteristics and the wider tax-benefit system. Following Salanauskaite and Verbist (2013), we also distinguish between instrument generosity and instrument design in measuring the impact of a given child policy package. The rest of the paper proceeds as follows. Section 2 reviews the existing literature on the links between child related transfers and child poverty. Section 3 describes the Romanian and Czech policies we consider in this exercise. Section 4 describes the data and methods. The various counterfactual scenarios we simulate are explained in section 5. Section 6 discusses our main results. Section 7 concludes.

2   Child poverty and public transfers: A review of the literature

There is a long literature trying to evaluate the role social and fiscal policies on the welfare of families with children (Gornick and Jäntti 2010, 2011; Jäntti and Bradbury 2003; Barrientos and DeJong 2006; Figari et al. 2011; Whiteford and Adema 2007; Oxley et al. 2000; Sutherland and Piachaud 2011; Bradbury and Jäntti 2001). These studies usually compare poverty and inequality indicators based on market incomes alone with the same indicators derived based on disposable incomes and find that taxes and transfers play an important role in reducing poverty among families with children, although there is considerable cross-national variation in the extent of this reduction. For example, examining child poverty rates among high income countries, Gornick and Jäntti (2010, 2011) conclude that cross-national variation is explained not so much by demographic factors as by labour market institutions alongside the existing system of transfers.

Similar exercises have been carried out using child related policies (Van Mechelen and Bradshaw 2013; Matsaganis et al. 2007; Förster and Tóth 2001; Immervoll et al.

2000; Bradshaw 2006). Generally, these studies find that transfers targeted at families with children significantly reduces both the prevalence and the depth of child poverty, albeit the size of the reduction varies substantially across countries.

Studies directly looking at infant outcomes such as birth weight and neonatal mortality rates also find positive effects of income support availability to disadvantaged women and parents (Hoynes et al. 2011; Almond et al. 2011). Finally, the availability of income support has been found to positively affect not only outcomes measured during childhood but also long run outcomes such as health and economic self-sufficiency in adulthood (Hoynes et al. 2012).

Although there is general consensus that directing resources to low income families with children is a good way to invest in the next generation, there is less agreement on what aspects make a policy more effective. Some authors stressed the size of the transfer package (Notten and Gassman 2008; TARKI 2010). According to this view, it is mainly the generosity of the transfer system towards families with children that is likely to impact on child poverty rates. However, public child contingent support is rarely equally generous towards all families with children. Explicitly or implicitly, policy instruments are likely to favour families with some characteristics and not others (ex: number and age of children, number of adults/ earners in the household, family income, tax-paying status etc.). Clearly, the effect of a given set of policies on child poverty depends to a large extent on the demographic and labour market characteristics of poor families.

A different strand in the field has argued that in addition to size, policy design plays an important role in determining policy effectiveness (Salanauskaite and Verbist 2013; Levy et al. 2009; Immervoll et al. 2000). Generally, these studies have relied on cross-national comparisons, and/or microsimulation methods to measure the impact of policies, as well as to estimate the effect of alternative policy designs. Although providing important insights into the importance of policy design, these studies usually stop at concluding that one set of policies would likely have been more effective than another in a particular context. There is little potential to generalize *what features* of the design are likely to make a policy more effective than another. More importantly, they fail to consider the sensitivity of the results to the demographic and wider institutional context they have been derived from.

Finally, a large body of the literature has focused on the role of targeting in transfers in general and family benefits in particular in addressing poverty (Atkinson 1995; Jarvis and Micklewright 1995; de Neubourg et al. 2007; Förster and Tóth 2001). While some authors (Nelson 2004; Korpi and Palme 1998) have found evidence of a negative correlation between targeting and the overall budget available for public transfers (the famous redistribution paradox), it is not clear that this relationship holds when child related policies are concerned. On the contrary, countries that combined universal benefits with targeted support for low income families with

children appeared to achieve superior poverty reduction (Van Mechelen and Bradshaw 2013).

To sum up, extensive research in the area of child poverty consistently finds that public transfers can play an important role in shaping poverty outcomes for families with children. Nonetheless, we still understand relatively little about which aspects of transfer policies- beyond size- matter most and how these interact with demographic characteristics and the wider fiscal institutional context in which they operate. This paper partly addresses this gap by examining the extent to which policy impacts are shaped by the characteristics of the population they apply to and the tax-benefit system within which they operate.

3   Child poverty and child support in Romania and the Czech Republic

From a historical perspective, Romania and the Czech Republic share a number of similarities. Both countries have experienced during half a century a foreign-imposed regime based on a command economy combined with suppression of political and civil freedoms. During the nineties, both countries have undergone an extensive political and economic transition that ended with becoming full members of the European Union in 2004 and 2007 respectively. Despite these similarities, the two countries differ in a number of important respects. In particular, the Czech Republic is much richer with a GDP/capita in 2012 of approximately 20700 PPP compared to Romania's 13500 PPP (EUROSTAT). It is also a country with less inequality as measured by the Gini coefficient (25 vs. 33, EUROSTAT). Most importantly, for our purposes, the two countries rank very differently on child poverty indicators (see Figure 1).While in the Czech Repulic poverty rates for chidlren are relatively low in comparative perspective, Romania is one of the EU Member States with the highest prevalence of child poverty.

[FIGURE 1 AROUND HERE]

Since family benefits have been shown to be able to significantly influence poverty and inequality (see section 2), the large discrepancy in child poverty outcomes may partly be explained by differences in child related public transfers. Obviously, children can be made better off through a variety of public measures benefiting their families, ranging from income transfers, to tax advantages and concession, to subsidies or in-kind provision of goods and services[2]. In this paper however, we limit our attention to transfers and tax concessions directly linked to the presence of children. Using 2007 as our reference year[3], we isolate four[4] policies in each of the

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[2] A description of the tax-benefit system in Romania and the Czech Republic in 2007 (our policy year) can be found in the respective EUROMOD country reports (Münich and Pavel 2012; Stroe et al. 2012).
[3] While newer policy years were available in EUROMOD at the time this study started, we chose 2007 to match it with the year of our dataset.

two countries (three transfers and a tax concession) which we collectively term the child support package and which will form the focus of our analysis in the remainder of the paper. Table 1 provides an overview of the main policy elements.

[TABLE 1 AROUND HERE]

In 2007, Romania had three child related benefits. The first is a universal, flat-rate child allowance that covers all children younger than eighteen and pays the same amount irrespective of birth rank. There is however substantial age related variation. Children under two benefit from an increased allowance approximately eight times higher than the one available to older children. In fact, the level of the benefit for young children is unusually high, representing approx. 16% of the average gross wage in 2007. Low income families with children may be entitled to a supplementary allowance. Entitlement is subject to passing an income test which is fairly stringent. The benefit amount depends on the number of children present in the household. However, the benefit increases less than proportionally for higher rank children and is capped after the fourth child. Lone parent families are subject to the same income test but are entitled to higher benefit rates. Finally, in 2007, Romania also had a birth grant which was a lump sum payment to all new-borns equal to approximately 28% of the average gross monthly wage. In addition to these transfers, families with children also qualify for tax relief in the form of a tax allowance on employment income. The level of the tax allowance however is relatively low and its value is further decreased by the low rate of the personal income tax. Receipt of the allowance is income tested and the amount decreases on a sliding scale depending on the value of taxable earnings.

In the Czech Republic, the main child benefit is income –tested. Receipt is restricted to families with an income less than four times the family minimum living standard (MLS). Nonetheless, the income conditionality is largely designed to exclude wealthy families rather than restrict transfers to the poor. The benefit amount depends on the child's age (older children are entitled to increased payments) as well as on family income (families with lower incomes are entitled to more generous benefits). In addition to the main child benefit, low income families may be entitled to an additional income-tested transfer, called social allowance. As in the case of the main child benefit, entitlement and benefit amounts are calculated using the family and child MLS levels. However, eligibility is restricted to families with incomes below 2.2 times the family MLS and any family income reduces the value of the benefit. Similarly to Romania, the Czech Republic has a lump-sum grant payable to all new-borns. However, unlike in Romania, the benefit increases with higher order births. Lastly, families with children are entitled to a generous refundable child tax credit. The tax credit is the same for all children in the family, irrespective of age and birth rank.

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[4] One important policy instrument that is missing from our analysis are maternal/parental leave benefits; we have opted to exclude them in this case because they are only simulated in Romania.

To sum up, the Romanian child support package is relatively universalistic with some limited means-tested elements targeted at very poor families. Its most notable peculiarity is the considerable generosity towards families with very young children. Means-testing is more prevalent within the set of Czech policies. Yet, eligibility thresholds are high enough to allow a significant number of children to become entitled. Furthermore, the most generous child related policy instrument, a refundable tax credit, is not income related.

4   Data and methods

We define children as individuals aged 17 or less, irrespective of their educational or labour market status. Although children may be considered dependent (and thus entitled to child related transfers and tax concessions) up to much older ages in both countries (subject to additional conditions being staisfied), we have opted to circumvent potential incongruities in the way children are defined across countries and across policy instruments by restricting the age range.

Given our interest lies mainly in the anti-poverty potential of child related transfers and tax concessions among families with children, we need to operatioalize poverty. We adopt the current established practice and define poverty in a relative way, based on equivalised household disposable income. Disposable income is calculated as market income plus public transfers minus taxes and social insurance contributions. We use the 'modified OECD'[5] equivalence scale to account for differences in household size as well as economies of scale in consumption. We assume income pooling across household members and attribute equivalised disposable income to each individual including children.[6]. Poverty is operationalized as having an equivalised disposable income less than 60% of the median. To check the sensitivity of our results, we use a second, more stringent, threshold set at 40% of median equivalised disposable income. We use the term severe poverty to denote poverty define using the lower income threshold.

In all cases, we measure the impact of child related policies on a set of three poverty indicators belonging to the Foster-Greer-Thorbecke (FGT) family. More specifically, we compute the relative reduction in the poverty rate (FGT0), gap (FGT1) and severity (FGT2) both for all families with children and for four separate types. These are families with children under 2 (families with young children), single parent families, families with 3 or more children (large families) and families with one or two children. We do so to enable capture of differences in policy effects across different demographic groups.

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[5] The modified OECD equaivalence scale assigns a weight of 1 for the first adult, 0.5 for all subsequent adults and 0.3 for children.
[6] This is often made assumption despite it being innacurate. Some studies (Ward-Batts 2005; Lundberg et al. 1997) have shown that public transfers received by the mother are more likely to be spent on children invalidating the complete intrahousehold redistribution assumption. However, we ignore this issue in this study.

To carry out our simulations, we use EUROMOD[7], the-EU wide tax-benefit microsimulation model (Sutherland and Figari 2013). EUROMOD combines individual and household data from the EU-Survey of Income and Living Conditions (EU-SILC) with detailed information on social and fiscal national legislation to accurately simulate a wide range of transfer entitlements and tax liabilities at the micro-level. We use the Romanian and Czech components of EUROMOD to simulate all counterfactual scenarios. All our results refer to the policy year 2007 and use the 2008 EU-SILC as the underlying micro data. As SILC 2008 contains income information corresponding to the year 2007, there is no time discrepancy between our policy year and our data year. All the simulations assume full compliance with taxes and full take-up of benefits[8]. As a result, simulation results refer to the *intended* rather than actual policy impacts.

5   Overview of policy scenarios

We are interested in the role and interconnections between three distinct elements, namely population characteristics, the features of the tax-benefit system and the policies contained in each country's child support package. To gain a better understanding of how each element affects the others, we simulate all possible combinations between data (Romanian and Czech), tax-benefit system (Romanian and Czech) and child policies (Romanian and Czech –standard and budget neutral).

In each country, in addition to the existing systems in 2007, we simulate three types of policy counterfactuals. We first remove the existing child support package and re-calculating disposable incomes, allowing other elements of the tax-benefit system to react to the changed circumstances of previously eligible families. This scenario provides us with a benchmark against which all policy effects are measured. By comparing it with the original systems, we obtain the net additional effect of the existing child support package on child poverty, conditional on population characteristics and wider tax-benefit context. We then introduce the other country's child related policies, adjusting the monetary parameters in two ways. In the standard policy swap, we transform all policy monetary parameters (income limits, benefit amounts etc.) based on the value of the median equivalised disposable income. This allows us to mirror the generosity of transfers and tax concessions relative to the poverty threshold. Subsequently, we perform a budget-neutral swap where monetary parameters are calibrated so as to keep total aggregate costs constant. Note that budget neutrality is imposed at the tax-benefit system level rather than the child policy package level so as to take into account any potential interactions with the other elements in the system. Finally, we run the original policy system and the simulated counterfactuals using the other country's dataset as input. To perform this last set of simulations, incomes in the input datasets are adjusted based on the

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[7] We use version G1.4.

[8] We opt to assume 100% compliance and take-up rates as there is very little information on which modelling of tax evasion and/or benefit non-take-up can be based.

exchange rate. We also construct a small number of variables needed for the simulations, replicating as much as possible their construction in the other country's dataset. Table 2 presents an overview of all the simulated policy scenarios. Thus, we obtain 16 income distributions that allow as to investigate interactions as follows.

[Table 2 AROUND HERE]

First, we investigate interactions between population characteristics and the wider tax-benefit system by comparing child poverty indicators resulting from combining Romanian population characteristics first with Romanian and second with Czech social and fiscal policies. We then repeat the same exercise using the Czech population. In both cases, we remove child support policies so as to have a clear picture of the 'fit' between population features and other social and fiscal measures that may impact on the economic resources of families with children.

Second, we examine the interaction between child support policies and other elements of the tax-benefit system, given population characteristics. For each population (i.e. Romanian and Czech), we calculate the change in the child poverty indicators generated by the introduction of the Romanian child support package in the Romanian Czech tax-benefits systems. We then repeat the same exercise using the Czech child policy package. Significant differences between the effects of the same child policy package in the context of the Romanian and Czech policy systems would suggest interactions between the child support measures and the general social and fiscal institutions present in the country.

Third, we separate child poverty impacts stemming from benefit generosity from those coming from policy design by comparing the effect of introducing the other country's child support package with monetary parameters adjusted relative to the poverty threshold and relative to the budget size respectively. All policy effects are estimated relative to the scenario that no child support package is present.

6 Results

6.1 Interactions between population characteristics and the tax-benefit system

We start by discussing interaction effects between population characteristics and social and fiscal policies other than the child support package we are interested in. Table 3 shows differences in poverty indicators obtained when applying the Czech and Romanian tax benefit systems (minus the child support package) on both Romanian and Czech data. As expected, poverty is much lower among the Czech population, irrespective of which tax-benefit system is in place. The distribution of

market incomes among households is quite egalitarian ensuring low levels of poverty and inequality before any redistribution effected by the tax-benefit system[9].

[TABLE 3 AROUND HERE]

Examining results in Table 3, it is clear that any poverty reduction effected by the tax-benefit system is heavily dependent on population characteristics. For example, using both the Romanian and the Czech datasets, the Czech tax-benefit system is more effective at reducing poverty rates. However, its effectiveness is greatly enhanced when applied on the Czech population. For example, among families with children in Romania, the Czech taxes and benefits generate severe poverty rates (based on the 40% median equivalised household disposable income threshold) that are approx. 11% lower compared to the corresponding rates generated by Romanian taxes and benefits. However, in the case of Czech families with children, the same difference increases to 56%. Thus, Czech taxes and benefits are able to reduce poverty rates much more among the Czech population, especially when poverty is measured using the more stringent threshold.

The interactions between population characteristics and the tax-benefit system become even more apparent when examining differences in the poverty gap and the poverty severity. In the case of the Czech population, the Czech system is much more effective at improving all poverty indicators compared to the Romanian system. However, where the Romanian population is concerned, results are more mixed. For example, poverty gaps are lower for families with three or more children under the Czech system but families with 1 or 2 children are better off under the Romanian system. This is not because the Czech system is especially good at protecting large families whereas the Romanian system focuses more on smaller families (although there is some evidence in favour of the former). *Czech* families with 1 or 2 children are better protected against poverty not under the Romanian but under the Czech system. Thus, although the family structure is similar (adults plus 1 or 2 children), there must be important differences between families falling under this type in the two countries which affect the poverty mitigation ability of taxes and transfers. Overall, the 'fit' between population characteristics and the design of the tax benefit system appears to be superior in the case of the Czech Republic compared to Romania.

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[9] Of course, it is possible that the egalitarian distribution of pre-tax and transfer incomes is itself the result of the existing tax-benefit system in place in the Czech Republic.

6.2 Interactions between policies and the tax benefit system given population characteristics

Next, we examine the interactions between the child support packages available in the two countries and the respective tax-benefit systems. We start with the effect of introducing the Romanian child support policies into the Romanian and Czech policy systems respectively, using first Romanian and then Czech data. As shown in Table 4, the anti-poverty effect of the Romanian policies is much stronger when they are introduced in the Romanian tax-benefit system. This is true irrespective of using the Romanian or the Czech datasets and concerns almost all poverty indicators. For example, severe child poverty is reduced by 27% when introducing the Romanian child support package in the Romanian system but only by 17% when introduced in the Czech system. Similarly, in the case of the Czech children, severe child poverty is reduced by 69% when policies are combined with the Romanian tax-benefit system but only 39% in combination with the Czech system. A similar pattern is observed when analysing the poverty gap or the poverty severity. For example, Romanian child related policies reduce the poverty gap by 41%-72% (depending on population characteristics) when introduced in the Romanian system as opposed to 23%-42% when introduced in the Czech system.

The Czech child related transfers and tax concessions are also generating stronger poverty reduction when used within the Romanian tax-benefit system. Table 4 illustrates the reduction in child poverty indicators when introducing the Czech child-related policies in the Romanian and Czech tax-benefit systems respectively. For example, using Romanian data, poverty in households with children is reduced by 16% when the policies are introduced in the Romanian system but only by 8% when introduced in the Czech system. The difference in the effectiveness of the Czech policy bundle appears even stronger when simulations are performed using Czech data. Again, although the differences vary from indicator to indicator, generally, policies are more effective when introduced within the Romanian tax-benefit system rather than the Czech one. To illustrate, severe poverty among families with children is reduced by 75% when pairing policies with the Romanian system. In contrast, introducing the policies within the Czech system reduces severe poverty by around 36%.

[Table 4 AROUND HERE]

To sum up, the Romanian tax-benefit system appears to magnify the anti-poverty effects of child income support measures, regardless of population characteristics. Both the Romanian and the Czech child related packages have enhanced effects when applied on top of the Romanian tax-benefit rules. This pattern confirms that, excluding child related instruments, the Romanian tax-benefit system is less able to

reduce child poverty. As a result of the ineffectiveness of the other instruments in the Romanian tax-benefit system, 'more poverty' is left to be dealt with by the child related instruments and hence, the latter appear to be more effective.

However, from a policy perspective, it is probably more interesting to find out which set of policies is more effective in a given system, given that radical overhauls of the entire tax-benefit set of rules are unlikely. From this perspective, the Romanian child support package should be swapped with the Czech one as the latter is more effective at improving almost all poverty indicators. This result holds when inputting both Romanian and Czech data into the simulated counterfactuals. Thus, given the characteristics of the Romanian tax-benefit system and of the Romanian population, Czech policies are able to effect greater poverty reduction among families with children. Nevertheless, this finding does not entail that Czech policies are *always* more effective at reducing child poverty, irrespective of context. On the contrary, when looking in the context of the Czech tax-benefit system, the performance of the two sets of policy packages is very similar. In fact, the Romanian set of policies is more effective at reducing poverty rates, gap and severity for some groups such as families with very young children (results not shown). This is the case both when policies are applied to the Romanian and Czech populations. A clear interaction between the tax-benefit system as a whole and the child support policy package becomes apparent. In the context of the Romanian tax-benefit system, Czech policies are more effective. However, in the context of Czech fiscal and social rules, the two sets of policies generate similar anti-poverty effects, with the Romanian package outperforming the Czech one on some indicators.

Lastly, it should be noted that population characteristics play a very important role in shaping the impact of policies. Both the Romanian and Czech child support policies were much more effective in reducing poverty and severe poverty rates when applied to the Czech population, irrespective of the wider tax-benefit system. In some cases, the differences were strikingly large. For example, the reduction in poverty among families with children obtained when introducing Romanian child policies in the Romanian tax benefit system is 14% when using the Romanian sample. The same indicator increases to 36% when using the Czech sample. The corresponding figures for severe poverty rate are 27% and 69% respectively. A similar pattern emerges in the case of Czech policies. Thus, it appears that features of the Romanian population make it harder to achieve poverty reduction for any set of policies aimed at families with children.

6.3 Generosity vs. policy design

The last issue we investigate is the role of policy design versus the generosity of the child support package. Admittedly, the size of the transfers/ tax concessions is a feature of the policy, and thus could be considered as part of policy design. However, since budgetary resources are not unlimited, it is useful to separate out policy effects due to simply increased spending. To this purpose, in addition to our 'standard'

policy swaps, we simulate corresponding counterfactuals where all monetary parameters have been adjusted so that the total spending equals the cost of the policies we are replacing (for similar studies see (Salanauskaite and Verbist 2013; Levy et al. 2009)). Two things should be noted. First, since we are simultaneously replacing four policies, there are potentially a very large number of possibilities to obtain a budget neutral counterfactual. We solve this problem by adjusting all the parameters by the same ratio. This strategy also has the advantage that it keeps the relative sizes of the four policies we introduce equal to those in the original system. Second, the budget neutrality is enforced at the tax-benefit system level, not at the policy level. In taking this approach, we account for all budgetary effects generated by interactions between the new policies and the rest of the fiscal and social rules. To give an example, the introduction of more generous child benefits will increase the direct costs. However, if these child benefits are taxable/ included in the means-test of other benefits, part of the increased costs will be offset by increased revenue/smaller outlays in other policy areas.

[TABLE 5 AROUND HERE]

Comparing standard and budget-neutral scenarios of the Czech policies in Romania, the latter are clearly more effective in all dimensions (see Table 5). The differences are rather large for all indicators, averaging around 10 percentage points. While the Czech system relies on income-testing quite a lot, the Romanian one is more universalist with the result that it is generally more expensive. Thus, swapping the Romanian child package for the Czech one and adjusting the monetary parameters based on the values of the poverty thresholds actually costs *less*. Therefore, to achieve budget neutrality, the parameters from the 'standard' scenario need to be scaled up by 22%. As a result, the child benefit package is more generous in the budget neutral scenario and thus achieves better poverty reduction. Coming back to results presented in Table 4, the Czech set of policies (in the 'standard' version) outperforms the Romanian one *despite* a lower budget.

Since the Romanian system is generally more expensive, its parameters need to be scaled down compared to the standard scenario to achieve budget neutrality. Indeed, the adjustment factor is 0.62 indicating that the needed reduction is quite substantial. Based on this downward adjustment, we would expect the budget neutral swap to perform worse compared to the standard one. Indeed, this is the case when we look at poverty rates defined using the 60% of median income threshold. Nevertheless, differences are small despite the large correction factor. Moreover, both the poverty gap and poverty severity are better mitigated in the budget neutral scenario, despite lowering amounts disbursed via child benefits. In addition, all three poverty indicators show that severe poverty drops much more dramatically in the budget neutral scenario compared with the standard swap. This finding may seem counterintuitive. However, remember that budget neutrality is attained at the system, not at the policy level. It is possible that lower outlays in the form of child related

transfers and tax deductions are compensated by increases in other elements of the tax-benefit system. Indeed, disposable income in the first three deciles is virtually unchanged between the two counterfactuals whereas the poverty line is higher (as expected) in the standard scenario (results not shown). This finding highlights (again!) the importance of policy interactions in shaping the overall effect. The capacity of the Czech system in reaching the poor (see section 5.1) combined the untargeted nature of Romanian policies mean that reducing the latter and increasing parts of the former may lead to better anti-poverty results.

7   Discussion and conclusions

This paper has examined the anti-poverty effect of child contingent policies in Romania and the Czech Republic, paying particular attention to their sensitivity to population characteristics and the wider tax-benefit system they are embedded in. We find that both population characteristics and the other fiscal and social policies exert a substantial influence on policy effects. For example, both the Romanian and the Czech child contingent transfers are more effective when applied in the Romanian tax-benefit system. On the other hand, when applied in the Czech tax-benefit system, both sets of policies have similar effects. This suggests that the Czech tax-benefit system is effective on its own (even in the absence of the child related policies) in reducing poverty thus limiting any policy effects coming from the policies themselves. Conversely, the Romanian tax-benefit system has a smaller effect leaving more leeway for policies to have an impact. Thus, it makes little sense to examine the impact of a policy in the abstract as interactions with the other elements of the tax-benefit system are pervasive and play a significant role in determining impact.

We find that quite apart from size, policy design matters on its own. As the case of the Czech policies demonstrates, it is possible to achieve enhanced anti-poverty results on a *lower* budget. Moreover, it is not clear that increasing the size of the transfers will *always* lead to better poverty related outcomes. On the contrary, as shown in the case of the Czech Republic, there may be substitution and trade-offs at the bottom of the income distribution that are less likely to occur in the middle or at the top, especially if targeting is used extensively. As a result, in the absence of co-ordination with other instruments, increased spending on some transfers may be compensated by lower benefits/ higher taxes in another area.

One consistent finding emerging from our analyses is the role of population characteristics. Both the Romanian and the Czech policy packages achieve larger poverty reduction in the case of the Czech population. Our results do not explicitly show which features of the Czech population are responsible for this result, but we can hypothesize that the much lower inequality of market incomes in the Czech Republic plays a role. If this is the case, it suggests that poverty mitigation is likely to be much harder when the incomes of the poor and the rich are far apart *regardless*

of what transfer instruments are in place. It may be thus more efficient for public policies to focus on limiting inequality of market incomes in the first place (through such measures as activation policies, minimum wage setting, steep taxation of very high incomes to discourage their occurrence etc.) rather than trying to trying to direct more resources to the poor via transfers. In particular, our results point to the importance of tackling low-pay and unemployment not only due to their direct effect on poverty but also because they may diminish any anti-poverty effects of existing public transfers.

Finally, we conclude with some caveats. First, our simulations, although as thorough as possible, rely on some assumptions. In particular, we assume full tax compliance and full take-up of benefits. While lack of information on evasion and take-up in the two countries on gives us little choice, this assumption is clearly not fully met and may affect our results. Second, we do not consider the issue of policy administration costs. For example, it has long been acknowledged that administering targeted benefits is much more burdensome compared to administering universal ones, albeit the difference will depend on many factors such as the incentives to comply, the professionalization of the service administering delivery etc. Perhaps most importantly, to keep the complexity of our analysis manageable, we abstract from any behavioural changes triggered by replacing one set of policies with another. From a policy perspective however, behavioural responses clearly cannot be ignored.

Overall, our results point to the importance of interactions between the various policy instruments operating within the same system, as well as to complex linkages between population characteristics and policy design. In principle, the effect of a given set of policies in a particular context cannot be inferred from the effect of the same set of policies in a different context. Unfortunately, these complexities make policy benchmarking and policy learning all the more difficult. What seems to be working very well in one context may not work in another. EU-wide policy reviews recognize these issues explicitly or implicitly when they recommend an 'appropriate policy mix' (TARKI 2010). However, what an 'appropriate policy mix' should contain still eludes us. Future research should focus on disentangling which population and system characteristics 'fit' with which types of policies.

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Table 1: Policy instruments included in the child package

Policy	Eligibility	Amounts	% of children in families receiving[*]
Romania			
Allowance for new born children and the outfit for the new born children	Universal entitlement for all new-borns	Lump sum of approx. 354 RON	3%
Universal child benefit	Age <18 or in high school	Per month/ 200 RON for children under 2; 25 RON for children 2 and older	98%
Means-tested family benefits	Means-tested; monthly income less than 176RON per person; children are persons <16 or <18 and with income less than 50 RON/month	Between 36 - 52 RON/ month, depending on the number of children for 2 parent families and between 52-79RON per month for single parent families	52%
Czech Republic			
Child allowance	Means-tested; family income is less than 4 times the family minimum living standard level; children are individuals younger than 18 or younger than 26 and in education	Between 16-36% of the child's minimum living standard (which depends on age), depending on family income	72%
Social allowance	Means-tested; income is less than 2.2 times the family minimum living standard; children are individuals younger than 18 or younger than 26 and in education	Child's minimum living standard from which a share may be deducted based on the size of family income relative the family's minimum living standard level	15%
Birth grant	Universal entitlement for all new-borns	Lump sum between 17760-79680 KOR, depending on number of children in the family	9%

Note:* percentages calculated based on reported receipt in EU-SILC rather than entitlements calculated by EUROMOD; children are considered to be individuals aged 17 or less

Source: Authors' compilation based on EUROMOD G1.4

Table 2: Overview of simulated scenarios

	Data	T-B system	Child policies
1	RO	RO	None
2	RO	RO	RO
3	RO	RO	CZ(standard)
4	RO	RO	CZ(budget neutral)
5	RO	CZ	None
6	RO	CZ	CZ
7	RO	CZ	RO(standard)
8	RO	CZ	RO (budget neutral)
9	CZ	RO	None
10	CZ	RO	RO
11	CZ	RO	CZ(standard)
12	CZ	RO	CZ (budget neutral)
13	CZ	CZ	None
14	CZ	CZ	CZ
15	CZ	CZ	RO(standard)
16	CZ	CZ	RO(budget neutral)

Source: Authors' compilation.

Table 3: Anti-poverty effects of the tax-benefit system across population characteristics (Czech system vs. Romanian system)

Indicators	RO population					CZ population				
	A	B	C	D	E	A	B	C	D	E
Change in poverty (60% median income)										
FGT0	-3.6	-4.5	-2.0	-1.2	-4.3	-7.9	-31.3	6.7	-6.5	-3.7
FGT1	-2.4	-5.9	-4.8	8.9	-10.2	-33.1	-47.0	-33.1	-29.1	-30.7
FGT2	4.9	-5.9	-12.4	24.3	-9.3	-48.2	-58.3	-53.3	-44.4	-46.6
Change in severe poverty (40% of median income)										
FGT0	-11.5	-6.3	-13.6	-1.5	-16.0	-56.2	-55.4	-56.4	-55.0	-48.6
FGT1	2.3	-6.8	-20.2	24.0	-11.9	-66.6	-72.5	-73.9	-66.2	63.9
FGT2	31.1	-2.0	-18.5	71.0	-0.9	-76.2	-88.3	-81.4	-75.0	-80.4

Note: figures represent difference between the Czech and Romanian systems relative to the Romanian system; .A=all families with children; B=families with children below 3; C=single parent families; D=families with 1 or 2 children; E=families with 3 + children

Source: Authors' calculations based on EUROMOD G1.4

Table 4:Anti-poverty effects of child related policies across tax-benefit contexts and populations characteristics

Indicators	Effect of RO policies				Effect of CZ policies			
	RO TB sys		CZ TB sys		RO TB sys		CZ TB sys	
	RO pop	CZ pop	RO pop	CZ pop	RO pop	CZ pop	RO pop	CZ pop
Poverty-60% of median income								
FGT0	-13.86	-35.77	-11.04	-32.24	-15.72	-43.36	-7.84	-38.18
FGT1	-26.87	-46.49	-16.92	-33.81	-33.41	-56.78	-18.81	-38.20
FGT2	-35.47	-56.17	-22.11	-36.26	-44.20	-61.70	-26.41	-38.05
Severe poverty-40% of median income								
FGT0	-27.40	-69.18	-17.49	-38.80	-34.05	-74.64	-22.38	-36.15
FGT1	-41.15	-72.20	-23.14	-41.96	-52.78	-78.19	-29.01	-44.25
FGT2	-49.45	-76.94	-30.93	-41.01	-60.28	-81.75	-37.41	-43.70

Note: all policy effects have been calculated relative to the scenario when no benefits are present (keeping population and the tax-benefit system constant); all figures refer to households with children
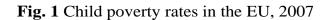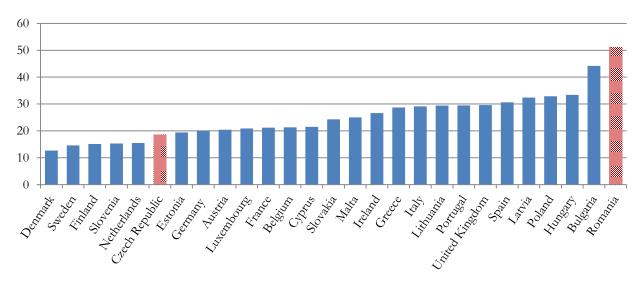
Source: Authors' calculations based on EUROMOD G1.4

Table 5:Policy generosity vs. policy design: anti-poverty effect of 'standard' vs. budget neutral policy swaps

Indicators	RO policies in the CZ TB sys		CZ policies in the RO TB sys	
	Standard	Budget neutral	Standard	Budget neutral
Poverty-60% of median income				
FGT0	-32.24	-26.58	-15.72	-21.42
FGT1	-33.81	-42.82	-33.41	-39.68
FGT2	-37.28	-54.28	-41.19	-51.21
Poverty-40% of median income				
FGT0	-38.80	-69.09	-34.05	-41.96
FGT1	-41.96	-78.65	-52.78	-61.07
FGT2	-41.01	-80.54	-58.93	-67.98

Note: Policy effects have been computed relative to the scenario when no benefits are present (keeping population and the tax-benefit system constant); all figures refer to households with children

Source: Authors' calculations based on EUROMOD G1.4

Fig. 1 Child poverty rates in the EU, 2007

Source: EUROSTAT database,
http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database