

## Child policy changes and estimation of income distribution effects

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**Abstract.** *The paper explores the household income distribution effects of recent changes in social benefit policy for families with children in Romania. The particular changes we examine are the amount growth of the main social benefit for children – the universal state allowance for children – and the increase of income threshold and benefit amount for the support allowance for families with children, an important means-tested social benefit. Our approach relies on ex-post impact evaluation of policy changes through income simulation using microdata at household level. We studied the effects within specific groups of families based on number of children, but we also estimated the effects on single-parent families. The results show that recent changes have contributed to the reduction of income inequalities in general by increasing the income level at the bottom and median of the income distribution. Larger families experience higher relative income growth, as the benefits are linked with family size and their pre-reform income levels are lower.*

**Keywords:** income distribution, family benefits, tax-benefit system, microsimulation, households.

**JEL Classification:** C63, D31, H31, I32.

## 1. Introduction

The wellbeing of children and their families is one of the most relevant social policy goals in any country. The life of the children, present and future, is substantially influenced by the welfare provision during childhood: health care, education, social services and social benefits. But not only the child is influenced by the lack of resources, but also the society as a whole (Esping-Andersen, 2002). In most of the cases, children are more exposed to poverty than the population overall; this being the case of Romania as well, where more than one third of the children live in poverty, while less than one quarter of the population has a precarious material condition. An important policy instrument for welfare provision for families with children is the social benefit system. Family or children related benefits are a form of support in cash or kind for families, directly related to children, in order to cover costs for pregnancy, childbirth, adoption and bringing-up children (Esspros Manual and User Guidelines, 2016). Children related benefits could be contributory or non-contributory, means-tested or non-means-tested.

In this paper, we have examined the changes of the amounts and eligibility rules for two children related benefits. The universal state allowance for children, a non-contributory and non-means tested benefit, being granted to all children up to the age of 18 years, has doubled its amount since 2015. On the other hand, the family support allowance, a means-tested and non-contributory benefit for families with children, has been modified in order to raise its upper income-testing threshold by 43%, while its amount has increased by 64 to 127% depending on the number of children. The interventions are definitely significant; however we aimed at estimating the importance of these changes in the overall disposable income of families with children. To do so, we assessed the ex-post impact of social benefit changes upon the income distribution through the microsimulation of income components. In order to compare the income distribution between the pre and post reform moments, alongside of isolating the policy effects from any other developments, which could affect income levels, we built a counterfactual scenario to frame a picture for what would have happened if the policies had not changed. The indicator that we monitor in order to estimate policy effects is the average disposable income, detailed by income deciles. We used the household equivalised income (OECD equivalence scale) to account for household size and age composition. The microdata we employ is national representative survey data from the EU-SILC (European Union Survey on Income and Living Conditions) and we use the EUROMOD tax-benefit microsimulation model for the simulation of income components.

The paper is organized as follows. The next section reviews the relevant literature on the welfare effects of child policy changes. Section 3 describes the child policies analysed, the methodology and data. Section 4 discusses the main findings and the paper ends with some concluding remarks.

## 2. Welfare effects of social benefits for children – A review of the literature

There is a significant range of studies focused on exploring the link between social benefit provision for children or families with children and their welfare and showing the importance of these transfers in poverty alleviation among children (Matsaganis et al.,

2006; Levy et al., 2007; Immervol et al., 2000; Corak, 2005; Forster and Toth, 2011; Van Mechelen and Bradshaw, 2013; Tarki, 2010; Chzhen and Bradshaw, 2012).

Several studies have examined the distributional impact of income transfers to families with children, such as Matsaganis et al. (2006), who has concluded on data from southern EU countries that the effects are positive, though weak and dependent on the size of transfers. Levy et al. (2007, 2013) explored on the distributional implications of a child basic income operated at EU level and found out that it would be quite effective in reducing both incidence and depth of poverty in poorer member states. That is because the relative size of the transfers is more significant in poorer countries. However, not only the size, but also the design of the family benefits influences the effectiveness of a country's policies in child poverty reduction (Salanauskaite and Verbist, 2013; Immervol, 2000). The demographic characteristics of the targeted population should be taken into consideration at policy design, as there definitely is an interaction between family policies and population characteristics, but also between these two and the wider tax-benefit system (Avram and Militaru, 2016).

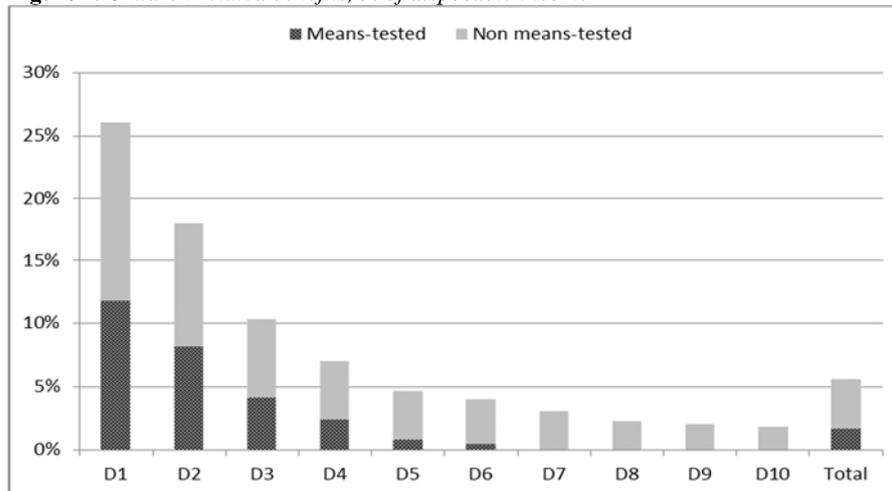
The type of the benefits (universal or means-tested) does matter in poverty reduction effectiveness and income redistribution, as it is revealed by several studies (Corak, 2005; Van Mechelen and Bradshaw, 2013; Figari et al., 2011; Van Lancker and Van Mechelen, 2015) who point out that a combination between universal child benefits and targeted benefits for low income families with children could be more effective. Moreover, others (Bradshaw, 2012; Marx et al., 2016) promote the idea that means-tested family benefits only are inefficient both vertically and horizontally. On the other hand, there could be a significant non take-up issue when dealing with means-tested benefits (Gassman and Notten, 2008) and also associated administrative costs, targeting errors and possible work incentives (Coady et al., 2003; Van Oorschot, 2002). In general, but more specifically when dealing with universal child benefits, there is a convergence of the opinions towards the idea that the size of the transfers matters the most (Gassman and Notten, 2008; Matsaganis et al., 2006), but no general agreement on the design of the social benefit system for families with children. Also, the paradox of redistribution has been put forward by many authors since Korpi and Palme (1998), meaning that very strong pro-poor targeting does not necessarily lead to income inequality reduction (Marx et al., 2016). In general, targeted, means-tested benefits influence vertical equity, universal child benefits relate to horizontal equity (Verbist and Van Lancker, 2016).

As such, the researches have pointed out that regarding the impact of children related benefits, the size, the design of the benefits, as well as the population characteristics and the wider tax-benefit system play significant roles. In our work, we did not disentangle between these factors, instead we attempted to estimate the overall income distribution effects of significant policy changes aimed at improving the material condition of families with children. However, we tried to detect the effects by specific family types, in order to account for demographic characteristics, such as the number of children and the number of adults raising the children. Even though children related benefits are explicitly linked with the number of children, the poverty incidence among large families is the highest, especially because the adults in the household have a weak attachment with the

labour market (TÁRKI, 2010) or because the children live in single parent a families which have a much higher risk to be poor (Chzhen and Bradshaw, 2012). Moreover, there are few studies that address the distributional impact and poverty reduction effectiveness of the child benefit system in Romania (Avram and Militaru, 2016), some of them in a cross country comparative perspective (TÁRKI, 2010), but there is no evidence so far on ex-post impact assessment in policy changes related to families with children, thus our exercise could open up a new path for researches.

### 3. Methodology and data

Our methodology relies on the extensive use of microsimulation methods for income components based on a counterfactual scenario, which attempts to answer the “what... if” question: “What would have been the income distribution parameters if the children related policies had not change?”. So, on one hand, we have the income distribution after the policy change and, on the other hand, we have the income distribution before the policy change, but we do not know how the distribution would have looked like if the policies had not change. For this, we have built the counterfactual scenario departing from the final situation, with the policy change, and, on the same population and market incomes, we have simulated the old tax-benefit system, without the changes in the children related policies. Practically, following this approach, we have separated out the policy effect on incomes from any other effect, which could have occurred in the meantime (Bargain and Callan, 2010). To discuss on the effectiveness of policy changes, we have estimated the household disposable income in both situation, pre and post reform, and compared between averages overall and by deciles. Specific family types have been in our view, such as families with one child, two children, three and more children, but also single parent families. Children are defined according to the Romania legal frame, as being individuals up to the age of 18 years old. The household disposable income has been calculated as market income plus social benefits minus direct taxes on income and social contributions, and has been equivalised to account for household composition and size. We used the dichotomy between means-tested and non means-tested benefits, as the policy changes have envisaged both dimensions. As earlier said, we have estimated the ex-post impact of a change in the following social benefits for children: (1) universal child allowance, which is a non-means-tested benefit, accounting overall for 4% of the average household disposable income and (2) family support allowance, which is means-tested and depends on the number of children, also granting differentiated amounts for single parent families and making up on average merely 2% of the equivalised disposable income of all households. As it can be seen in the figure below (Figure 1), the generosity of these schemes is relatively higher in lower income households, in the poorest decile the two benefits account for almost 26% of the household disposable income, while in the second poorest decile, the benefits constitute around 18% of the disposable income at household level.

**Figure 1.** Children related benefits, % of disposable income

**Source:** authors' own calculations based on EU-SILC data and EUROMOD ver. G.1.4

Our simulations made use of the EUROMOD tax-benefit microsimulation model (Sutherland and Figari, 2014), through which tax liabilities and social benefit entitlements can be estimated for the EU countries, based on EU-SILC (European Union – Survey on Income and Living Conditions). In the case of Romania, the social and fiscal policies are implemented for 2007-2016, but for our work we used the 2014 and 2015 tax-benefit systems, as the changes have occurred in 2015. The microdata we used were collected in 2014 (with 2013 income levels), so there is a discrepancy between the policy year when the changes took place (2015) and the income reference year (2013). We have overcome this drawback by updating income levels from 2013 to 2015 by detailed income source, based on official statistics from other sources.

We must mention as a caveat that the behavioural changes following a policy reform have not been taken into consideration in our estimations, our aim being that of examining the static, direct, first-order effects of social policy changes.

#### 4. Main findings

The policy changes are progressive as one would expect, because poorer households benefit more as the family support allowance is targeted based on means-testing, while the universal child allowance depends on the number of children which is higher in poorer families. Overall, the household disposable income increases by 2.1%, meaning that the material condition of household in Romania has been positively affected by the children related policy changes in 2015. The income changes by income decile can be viewed below (Table 1), where also the changes in the amounts of means-tested and non means-tested benefits, respectively are presented. The deciles have been constructed based on the equivalised disposable income of household. So, in the first decile, households benefit of 11% increase of disposable income, while the second decile display a 9.7% higher income than in the initial situation, and so on, higher the decile lower the

effects. These evolutions clearly indicate that the income distribution has shifted to a more egalitarian one.

**Table 1.** Household disposable income changes as a result of children related policy reform, % of initial disposable income

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	Total
Disposable income	11.0	9.7	6.1	4.5	3.1	1.7	1.6	0.7	0.7	0.5	2.1
Means-tested benefits	6.4	5.7	3.4	1.6	2.1	1.4	1.3	0.6	0.5	0.1	1.4
Non means-tested benefits	1.4	2.7	3.0	2.2	2.1	0.5	0.5	0.1	0.1	0.1	0.7

**Source:** authors' own calculations based on EU-SILC data and EUROMOD ver. G.1.4

We have separated the effects by income components, namely means-tested benefits and non-means-tested benefits in order to investigate the contribution of each to the overall impact (see Table 1). The amount of means-tested benefits increases as a result of policy measures by 1.4% of initial disposable income, which actually means 50% of the initial amount of means-tested benefits. This is the direct effect of the increase of amount and income testing threshold for the family support allowance. As for the non-means tested benefits, multiplying the amount of the universal state allowance for children is conducive to less than 1% increase of the total amount of non-means tested benefits at household level as share of initial disposable income and around 19% increase as share of the total non-means tested benefits. As expected, the changes are differentiated by deciles, clearly progressive for the means-tested benefits and inverted U-shaped for the non-means tested benefits. Strong effects are noted in the bottom deciles (up to the third decile), while in the richer deciles the impact is almost null. The U-shape induced by the change in the universal child allowance can be explained by the decile distribution of families with children.

As also said earlier, we tried to detect the effects upon specific family types, in order to account for demographic characteristics, such as the number of children and the number of parents raising the children. We focused on families with one child, families with two children, families with three or more children, and on single parent families, respectively. The results are shown below (Table 2).

**Table 2.** Household disposable income changes as a result of children related policy reform, % of initial disposable income, by family types

Disposable income	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	Total
Families with one child	12.1	10.5	5.2	5.1	3.6	1.8	1.3	0.6	0.9	0.6	2.5
Families with two children	14.6	11.0	6.0	3.8	2.9	1.3	2.6	0.9	1.2	0.8	5.6
Families with three children +	15.8	10.0	4.8	2.8	0.4	-1.1	1.2	3.5	0	0	15.0
Single-parent families	13.2	10.7	-1.2	3.4	1.5	-0.8	2.0	1.9	1.7	1.5	6.5

**Source:** authors' own calculations based on EU-SILC data and EUROMOD ver. G.1.4

We find that families with three or more children benefit mostly of the policy reform, as they experience almost 15% average increases of their disposable income. The effects are also visible for single parent families (6.5% increase in disposable income), families with two children (5.6% increase in disposable income) and less for families with one child (2.5%). The distribution of results by deciles of income show the same progressive pattern with large effects in the bottom deciles (1<sup>st</sup> and 2<sup>nd</sup>) and decreasing impact at the middle, while almost null influences in the richer half of the income distribution.

The estimated effects cover the interaction between tax-benefit elements, such as an increase in the level of a non means-tested benefit could lead to the loss (or amount reduction) of a means-tested benefit. In our case, it is possible that the doubling of the universal child allowance to cause the loss of eligibility for family support allowance. As it can be seen in Table 2, there are a couple of negative effects which could be either result of benefit loss or could simply mean that families have moved between deciles. Practically, the deciles do not consist of the same families between the two moments.

We separated the effects between means-tested and non means-tested benefits, as it can be seen in the table below (Table 3).

**Table 2.** Household disposable income changes as a result of children related policy reform, % of initial disposable income, by family types

Means-tested benefits	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	Total
Families with one child	-0.1	2.1	3.3	2.9	1.7	0.5	0.4	0	0	0	0.7
Families with two children	6.2	6.3	5.4	3.7	6.7	2.8	1.3	0	0	0	2.1
Families with three children+	7.4	7.5	7.7	12.1	5.7	2.3	3.1	0	0	0	5.5
Single-parent families	5.9	-0.7	8.2	6.6	5.5	3.1	1.4	0	0	0	2.6
Non means-tested benefits	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	Total
Families with one child	6.2	4.5	3.3	2.5	2.3	1.8	1.6	1.3	1.1	0.8	1.7
Families with two children	12.1	8.6	5.3	4.5	3.7	3.2	2.4	1.9	2.0	1.3	3.5
Families with three children+	14.1	12.9	9.1	7.0	5.8	2.4	4.2	3.5	0	0	9.6
Single-parent families	10.7	8.8	3.9	3.9	5.4	3.1	2.2	1.9	1.4	1.5	3.9

**Source:** authors' own calculations based on EU-SILC data and EUROMOD ver. G.1.4

The following findings have emerged. For families with one child, the effects are around 1% for both benefit types; it seems that some of the families in the first decile lose some very small share of the family support allowance as their income from other benefits increases. We note slightly more significant effects for the 2<sup>nd</sup> and 3<sup>rd</sup> deciles, determined by the income testing threshold increase. For families with two children the effects are more pronounced, on the average, the amounts from means tested benefits increase by 2%, and those from non-means tested benefits by 3.5%. Again, the same pattern of increased effects towards the 3<sup>rd</sup> to 5<sup>th</sup> deciles as a result of family allowance income testing threshold increase is visible. On the other hand, the effects on the non means tested benefits are strictly decreasing by deciles, with the first deciles benefiting the most. As one had expected, larger families with low income levels would be mostly influenced by the child policy reforms. But, not only poor families benefit, but also middle income families, such as placed in the 4<sup>th</sup> decile, which experience the highest means-tested income increase (12% of the initial disposable income). The change of the family support allowance has widened the mass of the beneficiaries through the broadening of the income testing threshold. This can be noted also for single-parent families.

To sum up, our results show that the child policy reform that took place in 2015 has been beneficial for families with children, whose disposable income has increased progressively, more in the poorer deciles and less or at all in the richer deciles, more for larger families and single parent families and less for families with one child. Also, on the whole, the income distribution has become slightly less unequal, following these changes.

## 5. Conclusions

In this paper we attempted to examine the income distribution implications of child policy changes. The reform under analysis took place in 2015 and consisted of two major decisions: the universal child benefit was doubled in amount and the family support allowance was broadened as threshold for income testing and enlarged in amount. We used income microsimulation techniques on national representative household data and built a counterfactual scenario in order to separate out the child policy effect on incomes from any other effect which could have occurred in the same period of time.

The effectiveness of policy changes has been assessed by estimating the pre and post reform household disposable income, calculating average changes between the two situations, overall and by deciles. We have separated the effects by benefit types: means-tested and non means-tested. Also, specific family types have been considered for the analysis, such as families with one child, two children, three and more children, but also single parent families. The results have clearly pointed out that the reform has been in favour of poor families with two, three or more children, but also single-parent families have improved their disposable income quite significantly. The most important changes in the income distribution were due to the reform of family support allowance which is targeted to poor families and has a supplement for single parent families. In addition, the overall income distribution has become more egalitarian as a result of child policy changes.

Though, we must mention as a caveat that the behavioural changes following a policy reform have not been taken into consideration in our estimations, our aim being that of examining the static, direct, first-order effects of social policy changes. Also, there was a discrepancy between the policy year when the changes took place and the income reference year of survey data, which has been overcome through the updating of income levels by detailed income component, based on official statistics from other sources.

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