

Alternative tax-benefit strategies to support children in Poland

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ABSTRACT: Eurostat data shows that children and elderly are especially in risk of being in poverty. In 2004 the average rates of poverty risk in the European Union for these groups were about 19%. In Poland, the rate was 29% for children and only 7% for elderly. In this paper we examine what is the role of the tax-benefit system in explaining such situation and how much could this change if the system was reformed. In 2005, families with children were mainly supported by a means-tested family allowance and some supplements. In 2007 this system was reformed with the introduction of a child tax credit. Making use of the European tax-benefit microsimulation model EUROMOD, this paper assesses the impact of the recent introduction of a non refundable child tax credit in Poland and asks what would have been the outcome if instead of that the Polish government had reformed child policies line with the systems of Austria, France and the United Kingdom, as they represent different policy approaches.

1. INTRODUCTION

According to the European Commission document “Child poverty and well-being in Europe” 19 million children lived under the poverty threshold in the EU-27 in 2005. In most EU countries children were at greater risk of poverty than the rest of the population - the rate for children was 19% against 16% for the total population. Exceptions were the Nordic countries, where only 9% to 10% of children lived below the poverty threshold. Countries with the highest levels at-risk-of-poverty rates for children were Romania (25%), Latvia (27%) and Poland (29%).

Poverty among families with children has been identified as a key challenge for a social policy in Poland. In an official document approved by the government entitled “National Report on strategies for social protection and social inclusion” it has been declared that “*comprehensive policy for families with children is the most essential priority for social integration*”. Government agenda includes changes in the system of family benefits as well as in housing benefit and personal income tax regulations. The goal of reforms is to change the structure of social spending since it is estimated that only 4.7% of total social spending (0.8% of GDP) is spent on family and child benefits.

Such agenda finds justification in empirical studies that have shown that countries with the lowest child poverty rates are the ones that allocate the highest proportions of their gross national product to child support (Adamson, Micklewright and Wright, 2000, Bradshaw and Finch, 2002). Also, it has been shown that appropriately designed and well funded policies can have a considerable impact on family incomes and hence on reducing child poverty. Adamson, Micklewright and Wright (2000) note that differences in tax and social expenditure policies can result into different rates of reduction of ‘market child poverty’ ranging from a high of 20 percentage points to a low of 5 percentage points. Such differences in the effect of policies are also reported by Levy, Lietz and Sutherland (2007) who found that in a swap of policies between the UK and Spain, policies from the UK were more effective at reducing poverty levels in Spain even when expenditure levels were held constant.

This paper assesses the impact of the recent introduction of a non refundable child tax credit in Poland and asks what would have been the outcome if instead of that the Polish government had reformed child policies in line with the systems of Austria, France and the United Kingdom. This exercise is possible thanks to the possibility to use the European tax-benefit microsimulation model EUROMOD.

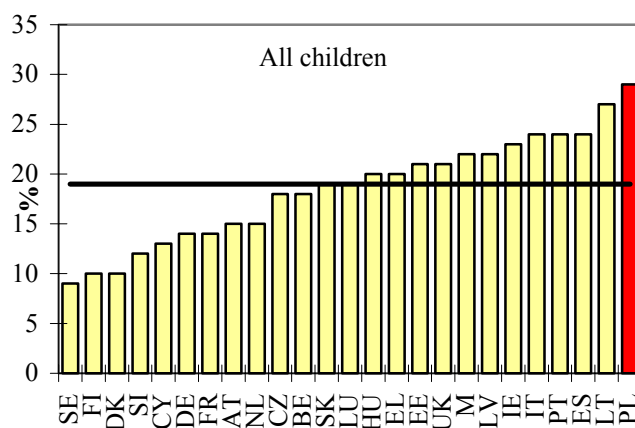
The choice of these three systems is guided by the fact that they represent different approaches in supporting families. The Austrian system gives emphasis to universal credits, the French to tax concessions and targeting large and lone parents families, while the United Kingdom system gives emphasis to means-testing. The Polish and other systems described in the paper are the ones in force in 2005. In the case of the Polish it is based mostly on income-tested benefits.

The paper is organized as follows. Section 2 presents a detailed description of poverty among families with children and social protection in Poland. Section 3 describes the policies to support families with children in Poland, Austria, France and the United Kingdom. Section 4 discusses the methodology used for the assessment of alternative child policy reforms in Poland. Section 5 shows the results. Section 6 concludes.

2. CHILD POVERTY AND SOCIAL PROTECTION IN POLAND

The at-risk-of-poverty rate for children in EU-27 countries in 2005 was 19% (see Figure 1). The highest rate, 29%, was observed in Poland, where the rate was not only above the average level in EU but also children had significantly higher risk of being in poverty than the overall population (21%).

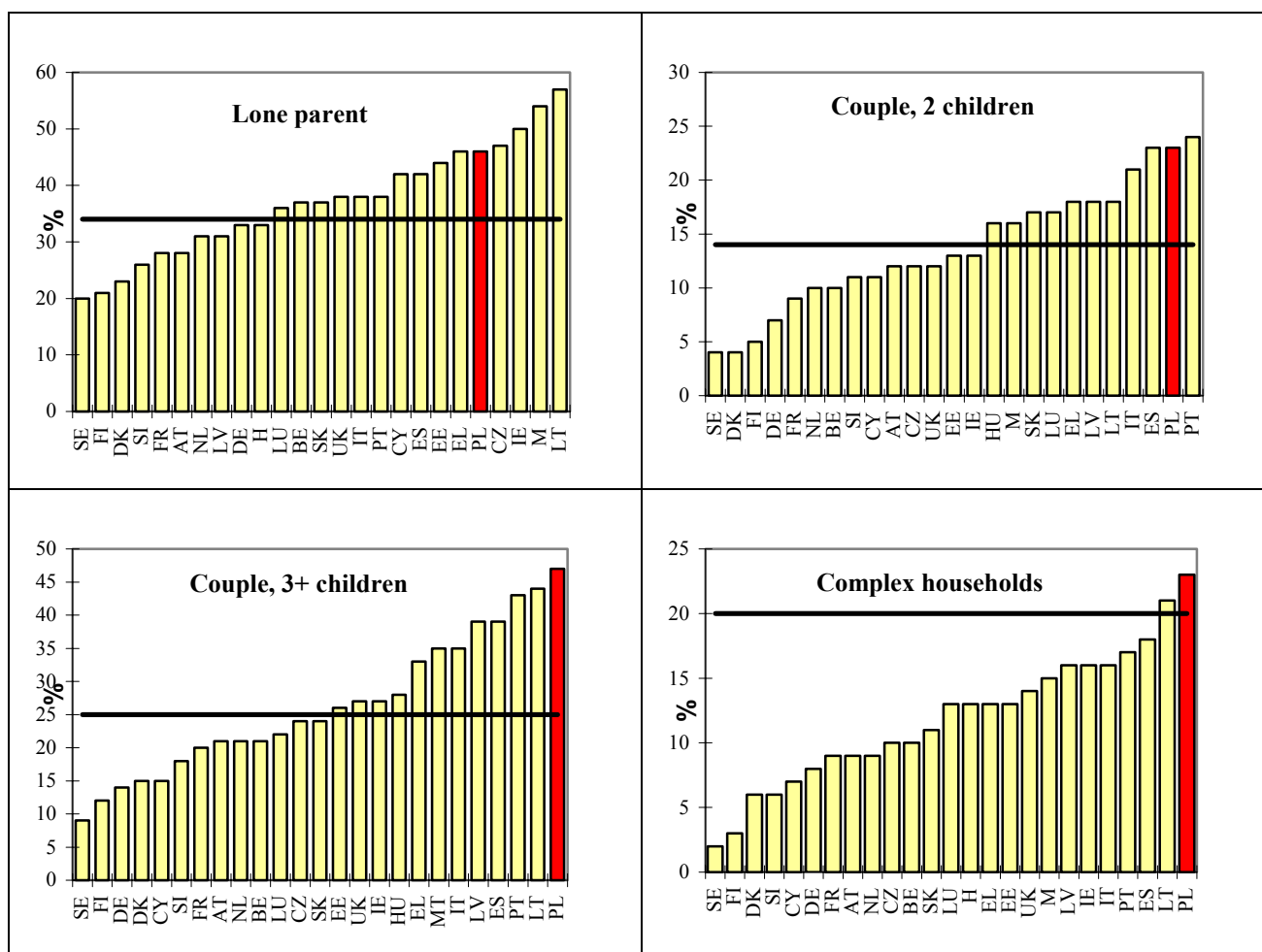
Figure 1 At-risk-of poverty for children in EU25 in 2005, all children.



Source: Child Poverty and Well-Being in the EU. Current status and way forward, European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, 2008

Significantly lower poverty rates for children in Czech, Hungary and Estonia suggest that other than purely historical reasons explain high levels of child poverty in Poland.

Figure 2 At-risk-of poverty for children in EU25 in 2005, types of families



Source: Child Poverty and Well-Being in the EU. Current status and way forward, European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, 2008

In comparison to other EU member states, the relative position of children living with lone parents in Poland is relatively better than in other household groups (see Figure 3). The poverty rate of 46% is similar to those in Cyprus, Spain, Estonia and Greece, and lower than in Czech, Ireland, Malta and Lithuania. However, only 8% of poor children live in lone parent type of household while the average for the EU-25 is 23%. Among large households (couples with 3 and more children) and complex households (more than one family) the child poverty risk in Poland is the largest and well above the EU average. While in Poland the poverty rate is 34% for “couples with 3 and more children” is and 25% for “complex households with children”, the EU25 average is 27% and 11%, respectively.

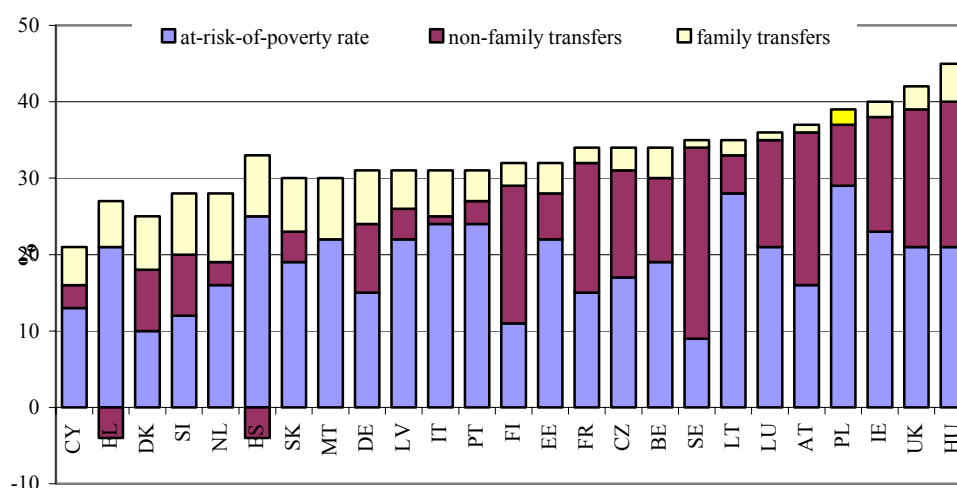
Having work is thought to be an effective security against poverty. In Poland in-work poverty remains a problem. For example, the at-risk-of-poverty rate among couples with 3 or more children

where both parents work full time is 30% (the EU-25 rate - 13%), while with one parent working full-time and the second one part-time the rate rises to 41% (10% in the EU)¹.

The amount of social transfers in Poland was equal to 19.6% of GDP in 2005. Similar fractions were spent in Hungary (21.9%), Czech Republic (19.1%) and Slovakia (16.9%). Social spending in Poland is characterized by large share of expenditures related to old-age, sickness and disability pensions. Family and childcare benefits account only for 0.8% of GDP. This reaches 1.4% of GDP in the Czech Republic and 2.5% in Hungary. As it was shown earlier a significant share of poor children live in complex families. This, together with low relative spending on family benefits and large relative spending on pensions, makes old-age pensions and disability pensions an important source of gross income for poor households with children. Old-age pensions account for 9.1% of gross income for these households while 8.5% come from sickness and disability pensions. Respective average shares for the EU-25 were only 3.2% and 3.3%. On the other hand the share of family allowances for poor households with children was 9.9% while 15.8% for the EU-25².

Low impact from transfers on decreasing at-risk-of-poverty rate is not surprising when low social spending on family benefits is taken into account (Figure 3). At-risk-of-poverty before transfers in Poland was lower than in the UK, Ireland and Hungary. However, the rate after transfers was the highest in the EU-25. Overall social expenditure decreased child at-risk-of poverty rate by 26% - from 39% to 29% - in Poland. This was similar to the impact observed in Italy (23%) and Portugal (23%) and was larger than in Lithuania (20%), Spain (14%) and Greece (9%). In Hungary and Czech Republic the at-risk-of-poverty felt by more than 50% as the result of social transfers.

Figure 3 Child at risk of poverty rates - impact from family and non-family transfers in 2005.



Source: Child Poverty and Well-Being in the EU,, European Commission, 2008

¹ European Commission, (2008), Poverty and Well-Being in the EU. Current status and way forward., p.169

² European Commission, (2008), Poverty and Well-Being in the EU. Current status and way forward., p.158

One may think that low share of family spending in total social expenditures may be due to low number of children. After correcting for the share of children in the population, the relative spending on the family and child benefit is the second lowest and about half the EU average.

A few findings identified in this part should be considered while analyzing the poverty among children in Poland. At first, a significant share of complex, agricultural households may lead to overestimation of the poverty rates since own consumption and imputed rents are usually not taken into account. Secondly, intra-family transfers may play important role in the Polish households. This is important since old-age and disability pensions may be finance consumption of other people in a household.

3. POLICY DESCRIPTION

In the analysis which follows we describe in detail the cash benefits and direct personal taxes enforced in 2005 which are specifically designed for the support of children and their families in Poland, Austria, France and the United Kingdom.

3.1 Poland

In 2005, support to families in Poland consisted mainly in two policies: joint taxation in personal income tax available for couples and lone parents, and an income-tested family allowance with supplements.

- Joint taxation ('łączone opodatkowanie dochodów'): personal income tax is individual but couples and single parents may fill in a joint tax return with their partners or children, respectively. In both cases and independently of the number of children, joint taxation applies a splitting rule - by which only half of the family income is subject to the tax schedule and the resulting tax liability is then multiplied by two - and doubles the amount of the universal tax credit. The income tax schedule consists of three bands: 19 percent up to 9,167 euro per year (37,024 PLN) , then 30 percent up to 18,334 euro, and 40 percent beyond. Under income tax rules, dependent children are defined as (i) child aged 18 or below, (ii) child disabled regardless of age but entitled to nursing allowance (see below), or (iii) child aged 25 or below, in education and with income below a limit.
- Family allowance ('zasiłek rodzinny'): beneficiaries are families with children whose monthly income in the previous year did not exceed 125 euro (504 PLN) per capita. The monthly amount is 11 euro (43 PLN) for a first and a second child, 13 euro (53 PLN) for the third and 16 euro (66 PLN) for each consecutive one. The allowance is paid until the end of the child's education

at school (usually to the age of 18), in case the child continues education at school or university the allowance is paid until the age of 24. In 2005, about 5.2 million children (about 56-58% of children in age below 18) received the Family allowance.

- Parental Leave Allowance ('dodatek z tytułu opieki nad dzieckiem w okresie urlopu wychowawczego'): is a supplement to family allowance granted to a parent, factual or statutory guardian of a child, who takes parental leave to take care of at least one child aged 6 years or less. The monthly amount is 99 euro (400 PLN) per month.
- Supplement for child birth ('dodatek z tytułu urodzenia dziecka'): one time lump sum grant of 124 euro (500 PLN) upon the birth of a child.
- Supplement for starting the school year ('dodatek z tytułu rozpoczęcia roku szkolnego'): 22 euro (90 PLN) once a year payment for each child in primary and secondary school.
- Supplement for Education of Disabled Child ('dodatek z tytułu opieki i edukacji dziecka niepełnosprawnego'): granted until the child reaches the age of 16 or 24 if in education and subject to moderate or severe degree of disability. The monthly amount is 12 euro (50 PLN) per child under age 5 and 17 euro (70 PLN) per child aged 5 to 24.
- Supplement for Lone Parents ('dodatek z tytułu samotnego wychowywania dziecka'): granted to lone parents who are not receiving alimony because the child's father is dead or unknown. Eligibility is not granted if alimony is legally determined but father does not pay (in this case, the mother receives payments from the state alimony fund). The monthly amount is 42 euro (170 PLN) per child and 62 euro (250 PLN) per disabled child, with a maximum of 186 euro (750 PLN) per family.
- Nursing benefit ('świadczenie pielęgnacyjne'): granted to a parent (either in couple or single family) in case of resignation from employment to take care of a disabled child. There is no condition on the child age to qualify. The amount of the benefit is 104 euro (420 PLN) per month.
- Nursing Allowance ('zasilek pielęgnacyjny'): a benefit granted to a handicapped child, a handicapped person over 16 years of age who possesses a medical certificate confirming the significant degree of disability or to a person who is over 75 years old. The benefit may also be granted to a person above than 16 years of age with a medical certificate of moderate disability if disability occurred before the attainment of 21 years of age. The allowance is paid monthly and is equal to 144 PLN per month.

In 2007, a non-refundable child tax credit was introduced. The amount of the tax credit is twice the universal tax credit (573 PLN) which is equivalent to 25 euro (95 PLN) per month.

Figure 4 illustrates the structure of child protection in Poland using two synthetic family types: a lone parent and a one-earner couple with two children aged 9 and 3. This gives an indication of the relative size of each policy element and how it is targeted by parental income for these family types. Being contingent on the presence of a dependent child, we treat the advantage to lone parents of being taxed under joint taxation as a policy targeted to protect children. Although couples can also take advantage of joint taxation this is not treated as a “child policy” as they could be taxed in this way whether or not they have children. Low income lone parent families are also covered by the supplement for lone parents. The figure also suggests that the introduction of the child tax credit has considerably increased the expenditure and extended the range of families covered.

Figure 4 Poland, 2005/07 policies for two family types



Lone parent with children aged 9 and 3

Couple with children aged 9 and 3

Notes: The first family type consists of a 41 year-old, employed single mother. The second family type consists of a couple with a 41 year-old employed husband and a 41 year-old non-working wife. In both cases, individual original income is computed as the product of multiplying a fixed hourly wage (€11.54 per hour) times an increasing number of working hours. All families are assumed to be tenants paying a rent of €300 per month.

Acronyms: FA: family allowance; ED: supplement for starting the school year; LP: lone parent supplement; T_LP: tax relief due to joint taxation; and CTC: 2007 child tax credit (in 2005 prices); APW: Eurostat’s gross earnings of a one-earner married couple, at 100% of average production worker, with two children

Source: EUROMOD

3.2 Austria

Austria has one of the most generous child protection systems in Europe. According to Eurostat (2005) social expenditure on policies to protect families with children account for 3 percent of the GDP, this figure is only exceeded by Denmark, Luxembourg and Germany. Child protection is provided mainly through universal benefits that are complemented, by central and regional

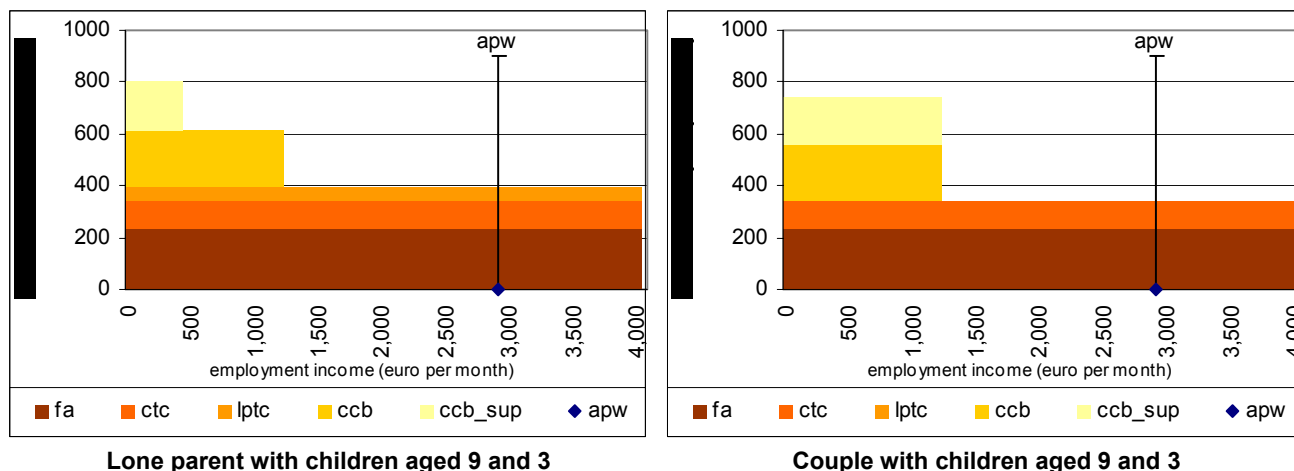
governments, for groups with special needs or high vulnerability.³ There is no standard definition of dependent children in the Austrian system. However, the most commonly used includes children up to the age of 17, and below 25 if in full-time education and income below a given limit.

- Family allowance ('Familienbeihilfe'): universal benefit paid per child. The basic amount is 105 euro per month and it increases with age, disability and number of children in the family. An additional 36 euro supplement for the third and following children is available for families with income below 3,630 euro per month.
- Child tax credit ('Kinderabsetzbetrag'): refundable tax credit paid per child. The amount is 51 euro per month.
- Lone parent tax credit ('Alleinerzieherabsetzbetrag'): refundable tax credit for lone parents. The basic monthly amount is 30 euro, plus 11 euro for the first child, 15 for the second and 18 per subsequent children.
- Child care benefit ('Kinderbetreuungsgeld'): paid to one of the parents of children aged up to 3 years whose income does not exceed 1,217 euro per month. The income test is applied at the individual level, i.e., the income of the other parent is not considered. The monthly amount of the benefit is 442 euro.
- Child care supplement ('Zuschuss zum Kinderbetreuungsgeld'): supplement of 184 euro per month for parents receiving the universal child care benefit and with family income below 433 euro per month.
- Family bonus ('Familienzuschuss'): income-tested benefit provided by provincial governments. In Vienna, it is paid to families with children aged 1 or 2. The amount of benefit per child depends on the family income and family composition (e.g., a couple with a child and monthly income less than 769 euro, would receive up to 153 euro).

Figure 5 illustrates how Austrian child protection is dominated by universal policies and complemented by generous benefits to lower income families. Of course the shape of this figure is contingent on the family types used in the illustration particularly to the age of children. Had the youngest child been aged 4 instead of 3, only the universal benefits would apply.

³ For more details about the Austrian tax-benefit system and its recent reforms see Fuchs and Lietz (2007).

Figure 5 Austria, 2005 policies for two family types



Notes: see notes to Figure 4

Acronyms: FA: family allowance; CTC: child tax credit; LPTC: lone parent tax credit; CCB: child care benefit; CCB_SUP: child care supplement; APW: Eurostat's gross earnings of a one-earner married couple, at 100% of average production worker, with two children

Source: EUROMOD

3.3 France

Policies to support families with children are also quite generous in France, and are particularly supportive for families with two or more children, producing clear incentives to larger offspring. The French system combines universal, income-tested benefits and non-refundable tax concessions.

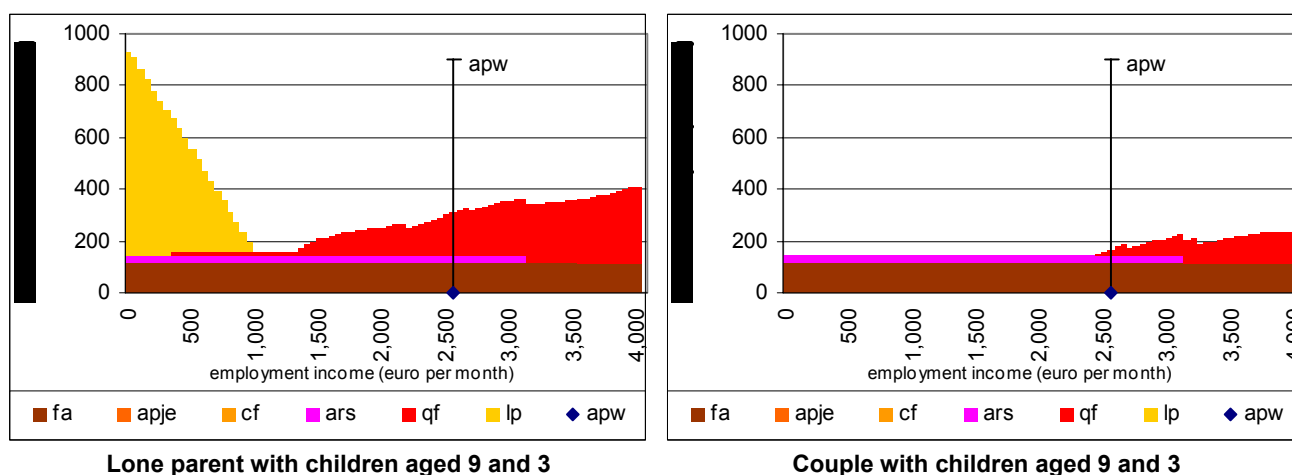
- Joint taxation ('Quotient familial'): this instrument is similar to the Polish income tax splitting system. However, the amount of the 'splitting factor' (used to divide the tax base by and then to multiply the resulting tax liability) changes with family composition and increases with the number of children.
- Family allowance ('Allocation Familial'): universal benefit for families with 2 children or more. The basic amount for a family with two children aged below 11 is 115 euro per month. The amount increases considerably with age and number of children in the family.
- Young children allowance ('Allocation Pour Jeunes Enfants'): income-tested benefit for children less than 3 years of age. The benefit amount (165 euro per month) is fixed independently of the number of children. But the income test varies with the type of family (lone parent or couple) and the number of earners and children.
- Family Complement ('Complement Familial'): income-tested benefit for families with 3 or more dependent children aged 3 or more. As in the young children allowance, the benefit amount (150 euro per month) is fixed independently of the number of children, but the income

test varies with the type of family (lone parent or couple) and the number of earners and children.

- Education related benefit ('Allocation de Rentr e Scolaire'): income-tested benefit for children aged 6 to 17 to support for expenses on school material. Again, the benefit amount (equivalent to 30 euro per month) is fixed independently of the number of children, but the income test varies with the type of family (lone parent or couple) and the number of earners and children.
- Lone parent benefit ('Allocation de parent isol '): income-tested benefit for lone parent families. In 2005, the basic benefit amount was 720 euro per month. The amount increases with each additional child but it is reduced on a euro per euro basis with family income.

Figure 6 illustrates the structure of French child policies. It reflects the relatively higher generosity towards low income lone parent families. Differently from Polish income tax, the French splitting factor (*quotient familial*) increases with the presence of children also in the case of couples. However, the factor is considerably higher for the first child in a lone parent family.

Figure 6 France, 2005 policies for two family types



Notes: see notes to Figure 4

Acronyms: FA: family allowance; APJE: young children allowance; CF: family complement; ARS: education related benefit; QF: joint taxation (*quotient familial*); APW: Eurostat's gross earnings of a one-earner married couple, at 100% of average production worker, with two children

Source: EUROMOD

3.4 United Kingdom

Aiming to tackle significantly high levels of child poverty, over the last decade the UK government has reinforced considerably policies to protect families with children.⁴ Although the system counts with a universal child benefit, the main bulk of the protection is through means-tested benefits. The

⁴ See, for example, Piachaud and Sutherland (2001), Myck (2000) and Brewer et al (2006).

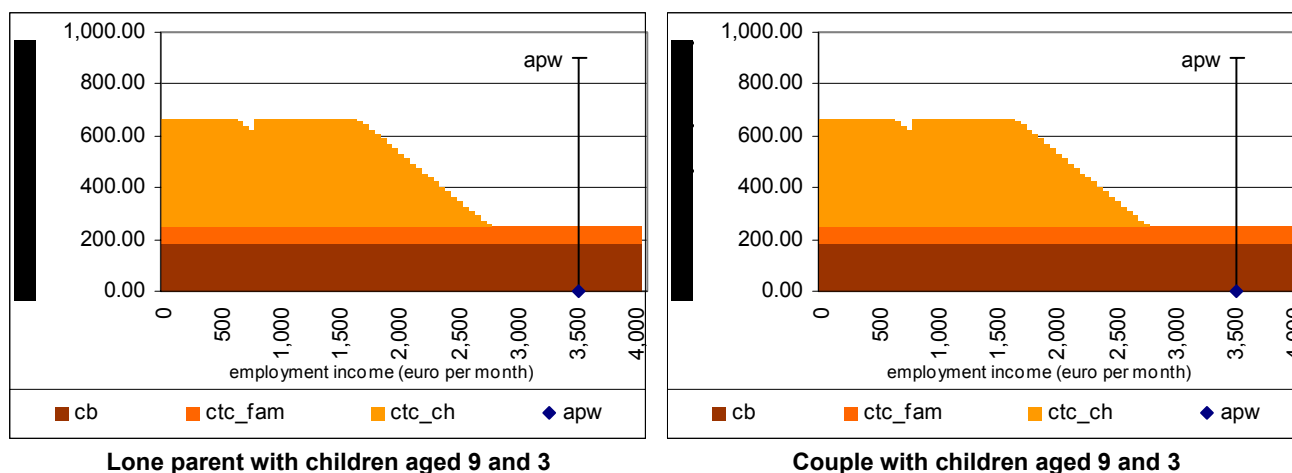
UK uses a single definition of dependent children in all benefits: children below the age of 16 or 19 if in full-time secondary education.

- Child benefit: universal benefit paid per child. The benefit amount is 109 euro per month (17 GBP per week) for the first child and 73 euro (11.4 GBP per week) for the following children.
- Child tax credit: income-tested refundable tax credit divided in two elements. The family element is a fixed amount equivalent to 67 euro per month (545 GBP per year)⁵ paid to all families below an income limit equivalent to 6,151 euro per month (50,000 GBP per year) and then reduced at a 6.7 percent rate. The child element is equivalent to 208 euro per month per child (1,690 GBP per year) and reduced at a 37 percent rate for families with income above 1,711 euro per month (13,910 GBP per year).

Other benefits that explicitly or implicitly also take into account the presence of dependent children are the social assistance and unemployment benefit *income support*, the *housing benefit* and the in-work benefit *working tax credit*.

Figure 7 shows how the British system, mainly through the child element of the child tax credit, is quite generous to lower income families.

Figure 7 United Kingdom, 2005 policies for two family types



Notes: see notes to Figure 4

Acronyms: CB: child benefit; CTC_FAM: child tax credit, family element; CTC_CH: child tax credit, child element; APW: Eurostat's gross earnings of a one-earner married couple, at 100% of average production worker, with two children

Source: EUROMOD

⁵ Double in case of a new born child.

4. METHODS

4.1 Model and Data

This paper makes use of EUROMOD a static tax-benefit microsimulation model that currently covers 19 Member States of the European Union (all 15 previous to 2004 and 2007 enlargements plus Estonia, Hungary, Poland and Slovenia)⁶. It is a multi-country microsimulation model that has been designed to be flexible enough to take into account the particularities of different national policies but also to provide a common framework for the implementation of policies and the production of results.⁷ This guarantees comparability of outputs and transferability of policies across countries, therefore making it possible to analyze the effects of the application of policies from country A on the population of country B. EUROMOD is unique for a wide range of analysis for international comparative research on the effects of policies and policy reform on income, welfare, poverty, inequality and social inclusion.

The micro-data used were derived from the 2005 Polish Household Budget Survey (Badanie Budżetów Gospodarstw Domowych - BBGD). The choice of this data source is based on national judgement as the most suitable dataset that is available for scientific research. The survey was the only large household survey conducted in Poland until 2005 and all official poverty statistics were calculated using the PHBS –after 2005 new poverty statistics are also published based on SILC. The reference time period for income variables in the dataset is the current month, income are annualised based on the assumption that reported monthly income is representative for the whole year.

4.2 Simulation

In the following section, different policies to protect families with children are simulated in the Polish database. These policy reforms consist on eliminating all 2005 Polish child policies simulated in EUROMOD (including lone parent joint taxation) and replacing them by the 2005 policies of Austria, France and United Kingdom. Monetary amounts of policies ‘borrowed’ from other countries are scaled by GDP per capita ratio after applying the exchange rate.⁸ Tax concessions are also scaled, but no adjustment is made to the tax schedule or the tax base. The child tax credit, implemented in Poland in 2007, is also simulated as a ‘reform’ by adding it to 2005

⁶ See Sutherland (2001).

⁷ See Immervoll and O’Donoghue (2001) and Lietz and Mantovani (2007) for technical information on EUROMOD framework.

⁸ According to Eurostat, in 2005 the GDP per capita was 6,405 euro in Poland, 29,797 euro in Austria, 27,348 euro in France and 29,968 euro in the United Kingdom.

system after indexing its amount to 2005 prices.⁹ Throughout we consider as if all policies (original and simulated) and incomes were as on 30th of June 2005. No adjustment is made for changes in population composition or income across the year.

The budget effect of each policy (as well as its impact on household income) is measured as the difference between household disposable income including and excluding the analysed benefits and tax concessions. Policies or elements of policies that are not targeted at children, according to our common definition remain in place and interact with the reformed policies.

The simulations do not control for benefit targeting failure tax avoidance or evasion. Thus it is assumed that the legal rules apply and that the costs of compliance are zero. This can result in the over-estimation of taxes and benefits. More generally we make the strong assumption that individual behaviour such as benefit take-up, tax evasion and other relevant socio-economic decisions (e.g., labour supply, family formation) do not change as a result of the policy changes that are modelled.

4.3 Measurement

Following the United Nations Convention on the Rights of the Child, our definition of children is people aged under 18 (i.e. aged 0-17).¹⁰ We generally assume that income is shared within the household such that household disposable income can be used to indicate the economic well-being of each individual within the household (the ‘within household’ incidence is not considered). The unit of analysis is the individual.

Household disposable income is defined as original income plus private transfers (e.g. alimony), replacement income (e.g. pensions and contributory benefits) and social benefits minus taxes and social contributions added up at the household level. Non-cash benefits are not included. Household disposable incomes are equivalised using the modified OECD equivalence scale, as recommended by Eurostat.¹¹

Poverty is measured following the Laeken at-risk of poverty approach defined as those living in a household with equivalised household disposable income below 60 per cent of the median. The at-risk-of-poverty threshold, based on the EUROMOD (‘baseline’) simulation of the 2005 tax-benefit

⁹ According to Eurostat, inflation in Poland (measured by the HICP) between 2005 and 2007 was 4.1 percent.

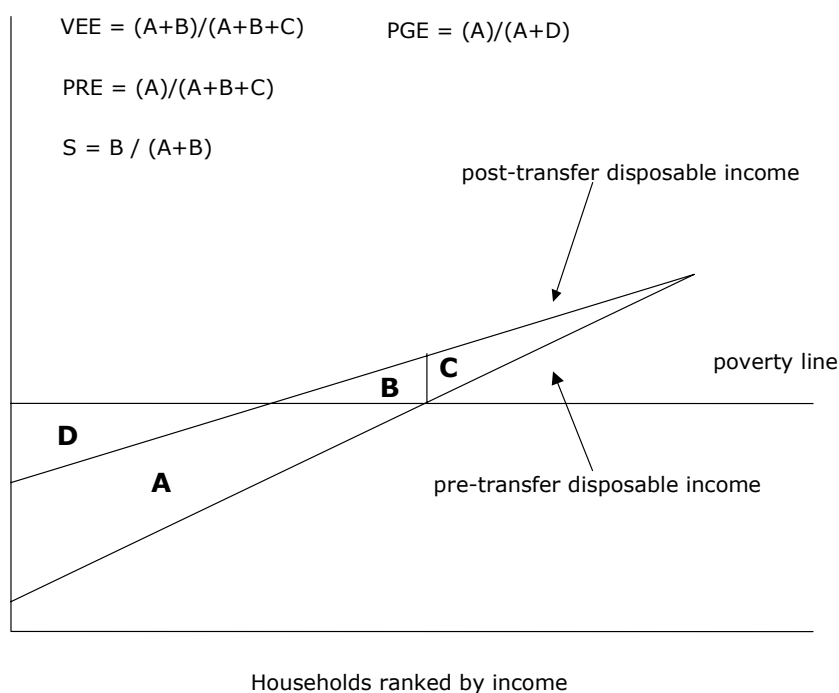
¹⁰ Note that this diverges from the definition of a child used in the tax and transfer rules of our analysed countries (as would any common definition). Hence, our analysis does not consider part of the expenditure on these policies as support to children.

¹¹ This assumes single person=1; additional people aged 14+ = 0.5; additional people aged under 14 = 0.3.

system is equivalent to 141.53 euro per month (571.61 PLN). This threshold is maintained fixed in the assessment of all reform scenarios. Poverty incidence, intensity and severity are measured using FGT indexes $\alpha=0$ to 2 (Foster et al, 1984).¹²

The efficiency of policies in alleviating poverty is measured through a set of indicators proposed by Beckerman (1979). These are graphically represented in Figure 8. Vertical Efficiency (VEE) measures the proportion of total transfers received by the poor. Poverty Reduction Efficiency (PRE) is the proportion of total transfers that effectively contributes to reduce the poverty gap. Spillover (S) is the amount of transfers paid to the poor that exceeds the poverty line, normalized by the amount of total transfers paid to the poor. Poverty Gap Reduction Efficiency (PGE) measures the extent to which the transfers succeed in filling the aggregate poverty gap.

Figure 8 Target efficiency of social transfers



¹² See Lambert (2001, chapter 6) for a survey on poverty measurement.

5. THE EFFECT OF ALTERNATIVE CHILD POLICIES IN POLAND

5.1 Coverage and Expenditure

The spending and coverage level of a policy is essential for achieving any significant outcome. Estimates from EUROMOD depicted in Table 1 show that one third of Polish children are not covered by the 2005 child policies and that the monthly average spending is equivalent to about 16 euro per child. The introduction of the child tax credit (the simulated system “Poland 2007” in Table 1) increases considerably the coverage and almost doubles the expenditure.

In spite of that, expenditure on child policies in Poland falls short if compared to those from Austria and the United Kingdom, even when controlling for differences in GDP per capita. If implemented in Poland, the UK and Austrian systems would be spend almost 50 euro per child. Interestingly, controlled by GDP per capita difference the cost of the French system would be lower than PL2007. It is also remarkable that, analysing 2003 policies, Levy et al (2007) find that when applied on their own countries the expenditure on child support in Austria (220 euro per child) is considerably higher than the UK (174 euro). This reflects that the distribution of children’s characteristics in Poland is quite different from in these countries. In particular, in comparison to these countries there is a higher concentration of children in the bottom of income distribution in Poland, thus increasing the cost of means-tested benefits.

Table 1 Coverage and expenditure

	Poland 2005	Poland 2007	Austrian system	French system	UK system
Coverage (% of children)	67.3%	97.4%	100.0%	81.3%	99.9%
Average spending per child (euro per month)	15.8	29.4	47.7	29.2	49.0

Source: EUROMOD

In order to analyse what would have happened if instead of introducing the 2007 child tax credit the Polish government had reformed the child protection system in line with the systems of Austria, France or the UK, the monetary amounts of the child policies from the three countries were adjusted by factors that made the overall social expenditure budget-neutral with respect to Polish 2005 system after introducing the child tax credit (“Poland 2007”). The overall expenditure level depends on elements whose distribution is quite irregular, in particular the characteristics and circumstances of the children and their families and the interaction between child policies and the rest of the tax-benefit system. Thus, finding the factors that achieve budget neutrality cannot be obtained

analytically but requires an iterative exercise. The factors derived from this exercise are presented in Table 2.

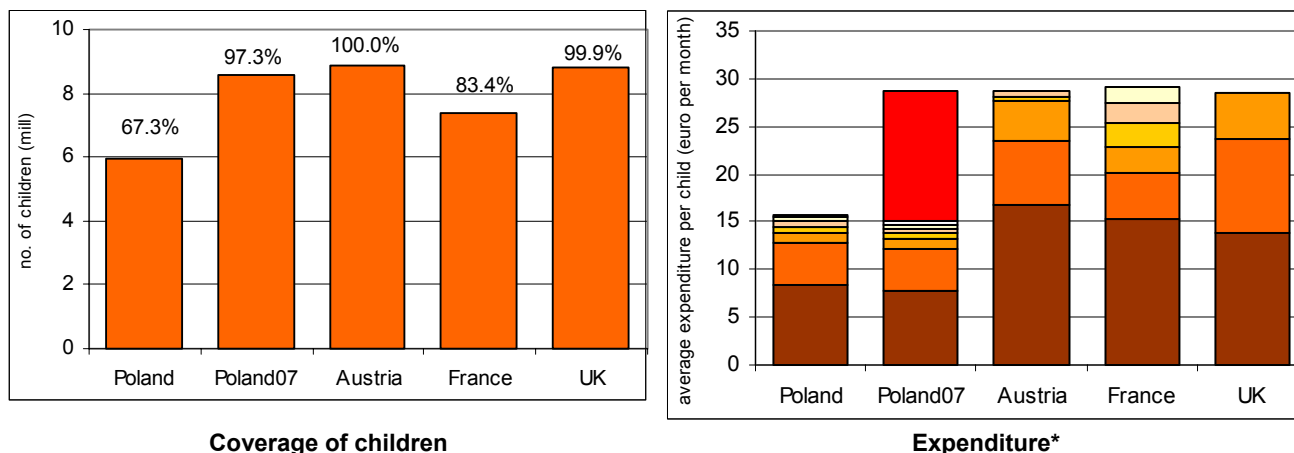
Table 2 Factors applied at policy monetary amounts

	Austrian system	French system	UK system
GDP per capita neutral	4.6522	4.2697	4.6788
Budget neutral	7.4411	3.4116	6.7234

Source: EUROMOD

Figure 9 shows the decomposition of total spending by each policy instrument. In the case of the Austrian system the family allowance makes up 58 percent of total spending, this is followed by the refundable child tax credit (24 percent) and the child-care benefit (14 percent). The child care supplement, family bonus and the lone-parent tax credit are nearly negligible. Accounting for more than half of total expenditure, the family allowance is the most significant French instrument, then followed by the lone parent benefit (17 percent), the young children allowance and education related benefit (9 percent each). As one would expect, the expenditure on the French joint taxation is larger than on the current Polish system. However, the relatively low spending level reflects the fact that the progressivity of tax schedule (e.g., number and amount of tax bands and rates) in the Polish income tax is much lower than in the French. As for the UK system, the universal child benefit contributes with the largest proportion (49 percent) this is followed by the means-tested child element of the child tax credit (35 percent), and then by the “affluence tested” family part of the CTC.

Figure 9 Coverage and expenditure decomposition



Coverage of children

Expenditure*

* List of policies per system in decreasing order of spending (from bottom to top in the figure):

Poland: family allowance, supplement for lone parents, nursing benefit, supplement for starting the school year, joint taxation, supplement for education of disabled child, supplement for child birth;

Poland07: same as before plus child tax credit;

Austrian: family allowance, child tax credit, child care benefit, child care supplement, lone parent tax credit, family bonus;

French: family allowance, lone parent benefit, young children allowance, education related benefit, joint taxation (*quotient familial*), family complement;

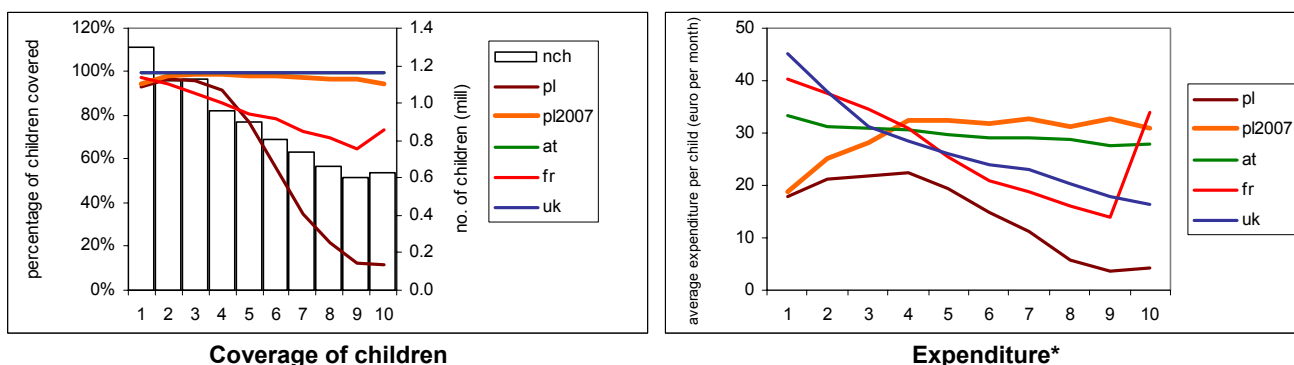
UK: child benefit, child tax credit: child element and family element.

Source: EUROMOD

Figure 10 shows the distribution of child policies by household income level in terms of the percentage of children covered and the average spending per child per decile of equivalised household disposable income. It reveals how coverage and average spending per child of Polish policies decrease with income. This is clearly altered with the introduction of child tax credit.

As for the alternative reforms based on other countries, the Austrian system covers all children and the spending per child is somehow evenly spread over the income distribution, although slightly higher at the bottom. As for the French system, coverage and spending fall with income with the exception of the last decile where both raise as families benefit from the *quotient familial*. The UK system virtually covers all children under 18 and, as expected from a system largely based means-testing, the spending monotonically decreases with income.

Figure 10 Coverage and expenditure per decile



Coverage of children

Expenditure*

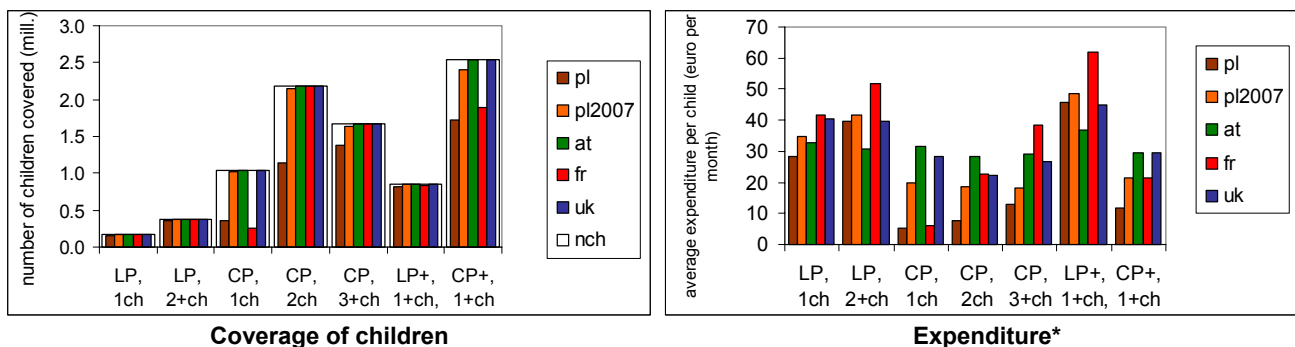
* Deciles of equivalised household disposable income.

Source: EUROMOD

As for the distribution per household type, children with couples tend to be less covered by the 2005 Polish and French systems. The average spending per child is substantially higher in lone parent households in the case of the 2005 Polish and French systems and, to a lesser extent, of the UK and the Polish after including the child tax credit. With the 2005 Polish system, a child in a lone parent household received more than 5 times as much as a child living with both parents. In other systems children in lone parent households also get more than in couples, but the ratio is significantly lower. The Austrian system contrasts with the rest as similar amounts per child are spent across all household types.

In most systems the average spending per child does not change substantially with the number of children in the household. The exception are the French and Polish systems, where an additional child increases spending per child by, in average, from 24 to 276 percent.

Figure 11 Coverage and expenditure per household type



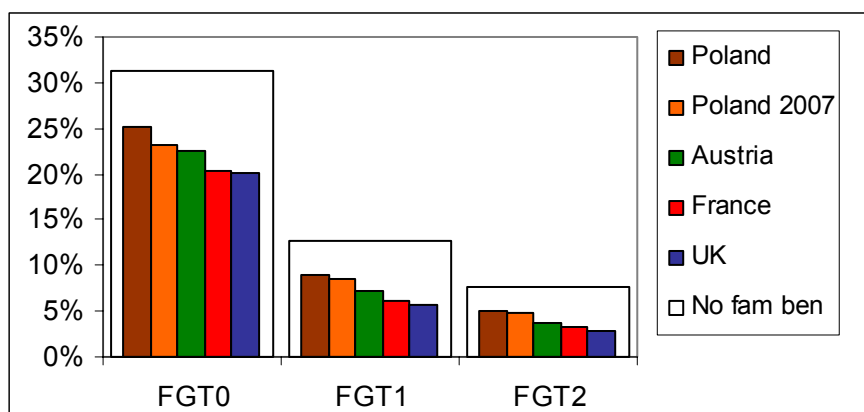
Source: EUROMOD

5.2 Poverty

According to results presented in Figure 12, child policies reduce considerably the risk of falling into poverty. Measured by the headcount index (FGT with $\alpha=0$), the in-risk-of-poverty rate falls 6 percentage points (from 31 to 25 percent) due to the 2005 Polish child policies. Although almost doubling the expenditure, the introduction of the child tax credit reduces the risk of poverty by scarce 2 percentage points (to 23 percent). At the same expenditure level, further reductions could be achieved if the reform had follow the structure of the Austrian (to 22.5 percent), French (to 20.3 percent) or UK (to 20.2 percent) systems.

In relative terms these results are even stronger as one focuses on measures sensitive to the size of the poverty gap. Comparing to the Polish system after introducing the CTC, the normalised poverty gap (FGT with $\alpha=1$) is 15 percent lower with the Austrian, 28 percent with the French and 32 percent with the UK system. Attaching a greater weight to incomes at the bottom of the distribution (FGT with $\alpha=2$), the reduction is by 22, 33 and 40 percent, respectively.

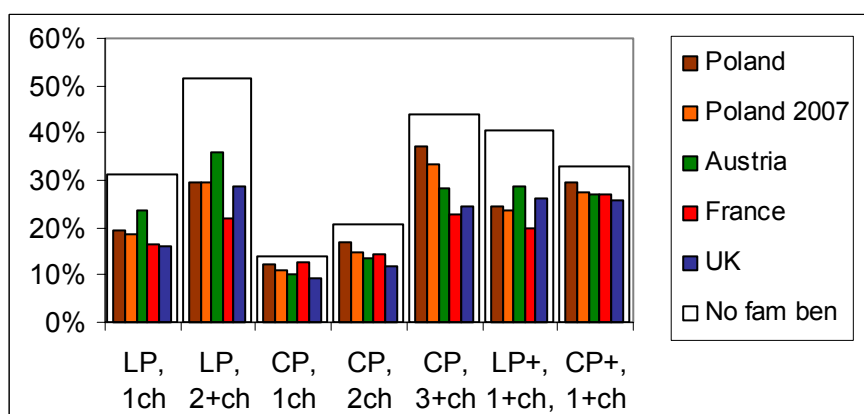
Figure 12 Child poverty risk (FGT indices)



Source: EUROMOD

The impact of policies on child poverty risk by household type is shown in Figure 13. The introduction of the child tax credit seems to be most effective to households with couples. Whereas under the Austrian system child poverty increases among children living in lone parent households, under the French system this group faces a substantial fall.

Figure 13 Child poverty risk per household type (FGT with $\alpha=0$)



Source: EUROMOD

5.3 Poverty reduction efficiency

As the VEE index in Table 3 indicates, a significant part of the Polish child policies are targeted to poor children (47 percent of total expenditure). As one would expect, the targeting level falls considerably (to about 27 percent) with the introduction of the child tax credit. This would be higher if replaced by the Austrian (34 percent), French (44 percent) or UK (46 percent) system. The estimates of PRE and S confirm this general assessment.

Similar conclusions are drawn with regard to the effectiveness of child policies to reduce poverty as measured by the PGE index. The overall poverty gap falls by 21 percent with Polish policies (25

percent after the CTC), 31 with the Austrian, 35 with the French and 39 percent with the UK system.

Table 3 Target efficiency

	Poland 2005	Poland 2007	Austrian system	French system	UK system
VEE	0.4711	0.2716	0.3389	0.4405	0.4562
PRE	0.3901	0.2116	0.2835	0.3348	0.3857
PGE	0.2076	0.2520	0.3059	0.3465	0.3892
S	0.1719	0.2208	0.1635	0.2399	0.1545

For indices definitions see Figure 8.

Source: EUROMOD

6. CONCLUSIONS

In 2005 the relative financial situation of families with children in Poland is worse than in any other of the EU-27 countries, and as we show in the analysis presented above while the preferential tax treatment of those with children (the simulated Poland 2007 system) will improve the situation of many households, it is unlikely to have a very significant effect on the proportion of children in poverty. In the analysis we demonstrated the potential effects of alternative approaches to targeting resources on families with children, by importing three different European tax and benefit systems and replacing the Polish child related policies. These three are characterised by very different emphasis, the Austrian to universal credits, the French to tax concessions and targeting large and lone parent families, while the United Kingdom to means-testing. We have “imported” the three systems in static micro-simulations in such a way so as to keep the level of expenditure in the range of that compared to the Polish system with the child tax credit. This means that the scenarios presented show the static effects that could have been achieved at the same cost had the previous government implemented the child related policies of the three countries rather than kept the 2005 system and extended it by introducing the tax credit.

It is notable that in the case of all three systems the level of expenditure in the bottom three deciles of the income distribution is higher than under the PL2007 system. This is reflected also on the pattern of spending by family type, with lone parents benefiting more under the French system, while couples are being treated more generously under the universal Austrian system and the means-tested British design. The French and the British system reduce poverty risk in almost all types of households relative to the Poland 2007 system, and when the poverty figures are aggregated then all three analysed systems prove more effective in lowering child poverty relative to the introduced policies, as they are more precisely targeted on the poorest households relative to

the new Polish system. The targeting efficiency of the latter is lower even compared to the tax-focused French design and unsurprisingly falls well short of the means-tested British system.

Yet, as always, the policies affecting household incomes should not be entirely separated from the potential effects they may have on the financial incentives to work. As recently demonstrated by Haan, Morawski and Myck (2008) the flip side of the low level of child related benefits in Poland is relatively strong financial incentives on the labour market. Naturally each of the considered systems of support for families would produce a different set of changes to incentives on the labour market. If governments aim to target the combined goal of reduced poverty and increased levels of employment, then the effects future policies have on the financial incentives to work will have to be considered in combination with the way they influence family incomes and change the poverty rate.

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