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How could Croatia reform tax-benefit policies for families with children: tackling distributional effects

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ABSTRACT

Abstract: Policies aimed at the family are an important tool for governments to achieve various goals to improve society, manage populations, enhance well-being, and reduce inequality, among other things. Choosing an optimal policy design often constitutes a compromise between different goals and priorities. The Croatian tax allowance for dependent children has often been criticised in the literature for its regressivity, and opacity due to a lack of parliamentary oversight. There is room to improve the child benefit allocation. This research investigates whether Croatia could reform its policies on child benefit and tax allowance for dependent children without increasing the budget, based on family policies that have been implemented in Greece, Germany, the Slovak Republic, Sweden and the United Kingdom. EUROMOD, a widely used European tax-benefit microsimulation model, is used to assess the differences in structure and distributional effects of these 'imported' policies in Croatia. The results highlight that imported policies would make support to families with children more equitable and reduce child poverty.

Introduction

Families with children are the pillars of society. As future taxpayers and workers who will produce goods and services and care for others, children are often the focus of important European Union (EU) and world initiatives that aim at providing equal opportunities for every child and fighting child poverty (European Commission, 2017; United Nations, 2019). Croatia is no exception, as it has developed strategies to address various demographic, social, and economic challenges in the country. Indeed, Croatia has focused on the provision of equal opportunity through education, the enhancement of children's health, and the eradication of child poverty and social exclusion (Ministry of Labour et al., 2021; Narodne novine (Official Gazette),), 2021; Government of the Republic of Croatia, 2021).

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Public policies aimed at families with children that include various cash and in-kind benefits are among the most important tools to fight child poverty and social exclusion. However, family policies also aim at compensating for child-rearing costs, promoting children's well-being, providing fertility support, improving work-family balance, and enhancing gender equity (Letablier et al., 2009).

In Croatia, the principal policies under which families receive cash support are the child benefit policy and the tax allowance for dependent children policy (Croatian Pension Insurance Institute, 2019; Ministry of Finance - Tax Administration, 2019). A family is entitled to child benefit for children under the age of 15 or until children reach the end of secondary education. A means-test is applied: within the household, income per capita must be below HRK 2,328.20. The basic monthly benefit amount per child is determined according to three income groups. That amount ranges from HRK 199.56 to HRK 299.34. Additionally, families that are entitled to the child bene-fit are also entitled to a HRK 500 supplement for their third and fourth child. The most recent change in the child benefit policy was made in 2018, when coverage was expanded for beneficiaries of the child benefit because of an increase in the income threshold (previously, it had been HRK 1,663) in the means test. Parents can also attain tax reductions based on a child tax allowance, whose nominal amount progres-sively increases for each subsequent child (HRK 1,750 for the first child, 2,500 for a second child, etc.), until the child gets his or her first job.

Numerous studies have pointed to fairness issues in the policy that grants cash support to families under the child benefit and tax allowance laws (Puljiz & Zrinščak, 2002; Stubbs et al., 2017; Urban, 2014; World Bank, 2014). By design, the child bene-fit policy is a family policy and a social policy; it is more generous for lower-income households and has a pronatalist slant. In contrast, the tax allowance policy for dependent children provides higher tax reductions for high-income households, and these tax reductions exceed the amount of the child benefit. Such variation in the dis-tribution of cash support calls for a careful investigation of the distributional effects of these policies in Croatia.

Choosing and designing optimal policies (whether they pertain to taxes or benefits) is challenging, not only because of occasional conflicting goals (e.g. promoting female employment vs. work-life balance) but also because of fiscal constraints. To assess the impact of public policies on poverty and income distribution, tax and social benefit microsimulation models are exceptional tools. In the EU, the most readily used and widely known tax-benefit microsimulation model is EUROMOD (Sutherland & Figari, 2012).

In this study, using EUROMOD, microsimulation analyses are performed in five different scenarios, and the introduction and distributional effects of universal and progressive family policies in Croatia are investigated. When importing into the model the major family policies that have been implemented in countries with differ-ent welfare regimes, the results reveal what could have been the effects of alternative reforms to the amendment passed in 2018 to increase the income threshold of the child benefit policy. The countries included in the study have been selected because they offer a variety of instruments and policy goals. In Greece (a Southern European welfare state), child benefit has contributed to equity and fairness and has greatly

Table 1. Socioeconomic indicators.

	GDP per capita (PPS), 2020	Child poverty rate (age < 18), 2020	Expenditure on family cash benefits (% of GDP), 2019
EU 27	100	20.2*	1.4
Croatia	64	16.8	1.2
Slovakia	70	17.0	1.4
Sweden	123	18.7	1.3
Greece	62	20.9	1.4
Germany	123	15.4	2.0
United Kingdom	104	23.5*	1.8*

Source: European Commission. Eurostat (2022a, 2022b, 2022c).
*2018 data.

reduced poverty (Ziomas et al., 2018). Sweden, which represents social-democratic welfare states, has provided universal and generous child benefits, fostered gender equity, and shown weak pronatalist tendencies (Hiilamo, 2004). In Germany, a conservative welfare state, family policies have reduced income inequality between households with and without children and conferred universal benefit that is sufficient to cover the basic needs of children (Wrohlich et al., 2005). The United Kingdom, a liberal welfare state, has given generous but targeted support to families with children as a legacy to Tony Blair's promise to eradicate child poverty (Sutherland, 2006). Slovakia, which among the selection of countries included in this study is the most comparable to Croatia, represents the post-communist welfare regimes (Aidukaite, 2009) and has combined universal support for children with work incentives.

This selection of countries constitutes the first step towards developing a successful evidence-based family policy in Croatia despite the budget constraint there. This study asks whether it is possible for Croatia to reform its family policies in a budget-neutral way to improve the distributional effects of these policies. The analysis adopts a normative perspective to demonstrate how some alternative strategies, based on imported policies from various welfare regimes, can reduce child poverty and achieve a more even and fair distribution of cash support benefits for families. In addition, the analysis is based on a novel methodological approach and provides policy design guidelines.

This paper is structured as follows. After the introduction, the second section reviews the scholarly literature and provides the background to understand family policies in Croatia. The third section constitutes an overview of the data and methods used in the study, and the fourth section presents the results. The paper concludes with a summary and a discussion of the results.

Background analysis

Croatia is the newest member of the EU and one of the least economically developed members of the Union. Table 1 provides an overview of selected socioeconomic indicators in Croatia and in the countries of interest in this study. Croatia is a post-communist welfare regime that has had an explicit family regime (Baturina et al., 2011; Dobrotić & Vučković Juroš, 2016). Hence, Croatia can be classified as a country that grants benefits to families with children at a relatively low cost. Moreover, in Croatia, it is customary for family members to care for each other.

Table 2. Comparing cash allowances to support families with children in Croatia over time (monthly, HRK).

Year	Number of children	Child tax allowance (nominal amount)	Tax rates (%)	Highest level of tax reduction	Highest basic child benefit amount
1995	1 child	210	25; 35	73.50	189.06
	4 children	1,260		441.00	756.24
2002	1 child	625	15; 25; 35	218.75	299.34
	4 children	4,500		1,575.00	1,197.36
2007	1 child	800	15; 25; 35; 45	360.00	299.34
	4 children	5,760		2,592.00	2,197.36
2018	1 child	1,750	24; 36	630.00	299.34
	4 children	12,500		4,500.00	2,197.36

Source: Author's calculation based on data from Narodne novine (Official Gazette, 1994), Ministry of Finance - Tax Administration (2022), and Uljanić and Bartolec (2015).
Note: Highest level of tax reduction (without surtax) is obtained as a product of the nominal amount of tax allowance and the highest tax rate.

The current tax allowance for dependent children was introduced in 1994 after the Croatian tax system was reformed from a cedular personal income tax (PIT) system to a synthetic PIT system (Petrović, 2007). The nominal amount of the tax allowance for each subsequent child has increased. The child benefit policy was introduced in 1945 and was reformed numerous times until it achieved its current form in 2002, when the income threshold and the sums granted came to be determined as a percentage of the budgetary base (HRK 3,326). Table 2 compares the amount given to parents as cash support after the introduction of the tax allowance, after the 2002 reform on child benefit, after the introduction of the 2007 policy on supplemental child benefits for the third and fourth child, and after 2018, which is the year under analysis in this study.

The table reveals that the greatest level of support under the tax allowance regime (for taxpayers with incomes in the highest bracket) overgrew the amount paid out in child benefit. When the tax allowance for dependent children was introduced, the Croatian system was not designed to provide a high level of support to higher-income households.

Tax allowances are regressive and constitute hidden expenditures for the welfare state (Avram, 2018). On the one hand, tax reductions vary with household income, but they also change with almost every amendment to the PIT, for example amendments about tax rates and personal tax allowances. Over time, the Croatian government has aimed to lower the PIT burden to enhance citizens' income level and standard of living (Uljanić & Bartolec, 2015). This strategy has often led to increased tax reductions for parents. On the other hand, the child benefit policy in Croatia has been dependent on the country's budgetary base, which has not changed since 2002.

The distribution of support for households with children reveals additional issues in Croatia. Urban (2014) emphasised that the support for households with children is unevenly distributed depending on the level of household net income. The World Bank (2014) has advocated for reform in the tax allowance policy due to its highly regressive effect and cost in terms of forgone taxes. Furthermore, the World Bank has emphasised that wealthier parents do not benefit much from the financial incentives to have additional children. The increased income threshold of the means-tested child benefit in 2018 somewhat lessened the issues faced by mid-income households and

increased the number of beneficiaries; yet the relatively modest amount given out in child benefit (it has been the same since 2002) and the regressivity of the tax allowance remain today.

The interplay of the PIT and child benefit policy in Croatia provides greater support for children in higher-income households, which is rather uncommon in European countries. According to the EU's Mutual Information System on Social Protection (MISSOC) (2021), many countries in Europe provide universal benefits schemes and use tax credits more than tax allowances. Figari et al. (2011) concluded that the majority of countries provide greater support to lower-income households, compared to higher-income households (this differential is more or less pronounced), and that in most countries the tax system complements the benefits scheme. Moreover, in some countries, such as Hungary, Greece, Estonia and Spain, higher-income households received greater support, but in parallel changes such as the implementation of a flat-rate tax in Hungary or the reform in child benefit policy in Greece (Ziomas et al., 2018) improved distribution.

Scholars who have explored Croatian family policies have proposed guidelines to be followed and actions to be taken to reduce child poverty; these propositions require an integrated approach, rather than the more fragmented approach that Croatia currently uses. These scholars' recommendations can be summarized as follows: special attention should be given to the problem of child poverty; governments should invest in children, especially Roma children, children in large families, children with disabilities, and children in single-parent families (Ledić, 2018; Stubbs et al., 2017; Stubbs & Zrinščak, 2014; Šućur et al., 2015); policies should be implemented that will enable parents to reconcile work and parental responsibilities (Akrap & Čipin, 2011; Dobrotić & Laklija, 2009); the government should improve access to early childhood education and care (Dobrotić et al., 2018); the government should coordinate the actions of central and local authorities and encourage the action of civil society (Ajduković et al., 2017); and the government should coherently assess support for children and moderate the stigmatization of beneficiaries.

Microsimulation models have been used in Croatia to assess family policies. Urban and Pezer (2020) assessed the distribution of cash support for families in Croatia, Slovenia and Austria and concluded that, although the Slovenian and Croatian systems are relatively similar, Slovenia has managed to provide support more equally because its child benefit and tax allowances have been balanced. In their research, Urban and Pezer (2020) proposed that there could be a significant improvement in the adequacy and evenness of family policies if existing policies in Croatia were replaced by policies resembling those of Slovenia and Austria. Building upon previous research, this study explores policies emanating from different welfare regimes that have different objectives and focuses on the distributional impact of these policies on Croatian families, with special emphasis on child poverty.

Data and methods

The main tool for the analysis in this study is EUROMOD, an EU-wide tax-benefit microsimulation model. EUROMOD enables the simulation of individuals' social

benefit entitlements and tax liabilities in a framework that unifies all EU members, allowing for cross-country comparisons and beyond (Sutherland & Figari, 2012). The analysis makes use of microdata based on Croatian SILC 2018 data (2017 being the income reference period). For each individual and household, microdata provide basic demographic and socioeconomic information. Family policies in use in Croatia in 2018 and policies that were imported from Greece, Germany, Slovakia, Sweden, and the United Kingdom at that time (EUROMOD, 2020) are simulated to reveal what engaging in a major reform of family policies in Croatia, rather than simply increasing the child benefit upper-income threshold from what it was in 2018, could bring.

Individuals under the age of 18 are considered children. Because their parents receive benefits on their account, also included in this category are young economically inactive (unemployed, in school, sick or with a disability) dependent adults who are less than 25 years-old and do not have a partner. The study is conducted at the household level and assumes that resources are shared within the home; hence, disposable household income measures the well-being of each household member. The OECD modified equivalence scale, which is among the most widely used scales in the literature, is used to calculate equivalised incomes. The OECD modified equivalence scale assigns a value of 1 to the first adult member (14 years of age or older), 0.5 to each additional adult member (14 years of age or older), and 0.3 to each child (13 years of age or younger).

Different definitions and notions of income are used. Pre-fiscal income is equivalent to gross market income (wages, return on property investment, capital revenues, and private transfers) and pensions after contributions have been paid. Disposable income (post-fiscal income) represents pre-fiscal income minus taxes plus social benefits. Also used in this study is the concept of pre-support income, which is equal to disposable income minus the amount received in child-contingent payments.

The analysis is based on the determination of the monetary amount received in child support in total and through each fiscal instrument. While the amount of support received through benefits, such as the child benefit scheme, is easy to determine, it is not as easy to determine the amount received through tax allowances and deductions. Child-contingent payments are widely used as a way to calculate monetary amounts that households receive through various fiscal instruments that take into account the presence of children (Corak et al., 2005; Figari et al., 2011; Urban & Pezer, 2020). This calculation is accomplished through a microsimulation model that determines all tax liabilities and benefit entitlements as if there were no children in the household (as a counterfactual scenario). The net payments are then compared to those obtained when children are present in the household (as in the actual scenario). It is expected that households with children receive more in social benefits and pay lower taxes than childless households. Additionally, based on children's birth order within the household, child-contingent payments are calculated to assess changes in support that come with each additional child and whether policies are pronatalist. In line with Pezer's (2022) methodology, these changes are calculated by comparing the amount in child-contingent payments to each household with $n + 1$ and n children, from the first to the fourth child, starting with the counterfactual scenario, in which there are no children, and adding in one child with each iteration.

Child poverty is assessed either by counting the number of poor children or by determining the poverty gap (Foster et al., 1984). The poverty line is calculated and fixed at the 60% median in households' equivalised disposable income in Croatia in 2018. The overall impact on income inequality is estimated using the Gini index, which ranges from 0 (complete equality) to 100 (complete inequality).

To determine what would happen if Croatia introduced family policies borrowed from other countries, the importing of such policies from country A to country B is simulated. Based on the experience of these other countries, the simulation indicates future desirable directions for change and reform. The analysis provides a better understanding of the different forms and types of family policies and their impact on a population that differs from the population of the country from which the policies are imported. Urban and Pezer (2018) provided a review of microsimulation studies on child benefits, which included policy import and policy swapping analyses. The first child benefits policy swap using EUROMOD was done in the UK and the Netherlands (Immervoll et al., 2000), and it provided useful guidelines for child poverty reduction. Various other studies (Levy, 2003; Levy et al., 2009; Matsaganis et al., 2006) have revealed how often a combination of universal and means-tested support has proven to be the most successful approach to reduce poverty. However, the design and budget of (imported) family policies must be considered in combination with the characteristics of the population, the overall tax-benefit system and income inequality to achieve the greatest reduction in child poverty (Avram & Militaru, 2016; Salanauskaite & Verbist, 2013).

In Croatia, policies have been imported in such a way that existing family policies (child benefit and tax allowance) have been abolished and replaced by fiscal instruments borrowed from other countries. Only instruments providing direct support to families with children have been imported. Simulations in policy importation are conducted and show no significant additional budget expenditures (reaching budget neutrality, see Table A3 in Supplemental material) because the analysis aims to investigate the impact of different fiscal instruments rather than the level of expenditure. In the simulation, in line with the approach described by Levy et al. (2007), the import of foreign policies is achieved as follows. Original Croatian policies are removed, and new policies are imported and adjusted. The income thresholds and tax allowances that are imported into Croatian policies are equal to the ratio of Croatian and foreign values of median equivalised disposable income, multiplied by the value of the threshold or allowance in the country from which the policy was borrowed. Other monetary parameters of imported instruments are multiplied by the exchange rate and then scaled by a common factor to maintain the budget expenditures. This approach to income thresholds and tax allowances is applied to better determine where a particular instrument intervenes in the distribution of income. Although tax allowances and tax credits are simulated, no changes are made to the existing tax system in terms of tax rates, brackets, tax bases, etc., but the necessary elements in the overall tax and social benefit system are adjusted in the model to accommodate for the new instruments. Notes on imported policies by country appear in the Supplemental material. While budget neutrality is achieved, some minimal deviations are attributed to rounding the amounts and thresholds to two decimals.

Imported tax-benefit policies supporting families WITH children

First, this section summarises and compares Croatian policies with policies imported from selected European countries based on EUROMOD Country reports (EUROMOD., 2020). Second, this section provides an overview of the main findings about the distribution of policies and the impact of these policies on child poverty and income inequality.

Family policies in question

In Croatia, families with children receive a set of various social benefits, such as grants for newborns, maternity and parental leave, survivors benefits, and local government allocations. This study focuses on child benefit (*doplatak za djecu*) and tax allowance for dependent children (*osobni odbitak za uzdržavanu djecu*). In addition to the benefits obtained through these central policies, parents also receive additional funds through the guaranteed minimum income policy (*zajamčena minimalna naknada,* ZMN), based on the presence of children in the household and is accounted for in the analysis. However, in the simulation, imported policies replace only child benefit and tax allowance.

Basic family policy in Greece constitutes a means-tested child benefit policy. The amount of the benefit is determined according to an income test based on households' equivalised income: 1 is assigned to the head of household, 0.5 to the spouse, and 0.25 to each dependent child. The benefit is paid out to families with a yearly equivalised income of up to EUR 15,000. The amount of the benefit decreases as income rises and doubles with the third child, ranging from EUR 28 to EUR 140 per child. Additionally, unlike childless households, households with children see their employment income tax credit increase by up to EUR 50 per child annually (Leventi et al., 2020).

In Germany, families are entitled to child benefit or tax allowance for children, whichever has a higher yield (Granados & Olthaus, 2020). The child benefit policy is universal and the amount of the benefit ranges from EUR 194 for a first and second child to EUR 225 for a fourth and each subsequent child. Parents in higher-income brackets usually gain more from the annual tax allowance of EUR 7,428 per child (of which EUR 4,788 is the main allowance and EUR 2,640 is the school allowance). The allowance can be split between the two parents. Single parents are entitled to an annual tax allowance of EUR 1,908 per child (increased by EUR 240 for each subsequent child). Additionally, families whose revenues are not sufficient to cover the basic needs of their children are entitled to an additional monthly child benefit allocation of up to EUR 170 per child. School-attending children whose parents receive certain social benefits are entitled to an annual education benefit of EUR 100.

Slovak families receive a universal monthly child benefit of EUR 23.68 per child. Employed or self-employed parents, whose annual revenues are greater than six times the minimum monthly wage in Slovakia, are entitled to a monthly refundable tax credit of EUR 21.56 per child. In addition to the child benefit allocation, pensioners who are not entitled to the tax credit can receive an additional EUR 11.1 per child every month (Mikloš & Paur, 2020).

Table 3. Overview of original and imported family policies, rounded amounts in HRK, monthly.

	Croatia	SK import	SE import	EL import	DE import	UK import
Means-tested cash child benefits						
Age limit	15 (19/21)	–	–	18 (23)	17 (24)	15 (18)
Amount	299; 249; 200	–	–	635; 381; 254	320	820
Income thresholds	543; 1120; 2328	–	–	3141; 5234; 7851[1]	1925; 1283[2]	3835
Δ of amount	D↑, SP↑; C+↑	–	–	C+↑	–	D↑
Non-means-tested cash child benefits						
Age limit	–	15 (25)	15 (18)	–	17 (24)	15 (18)
Amount	–	213	414	–	395	265
Δ of amount	–	♣↑	C+↑	–	C+↑	D↑, C+↓
Taxable	–	No	No	–	●	Yes
Tax allowances						
Age limit	–	–	–	–	17 (24)	–
Nominal amount	C1: 1750; C2: 4250; C3: 7750 …	–	–	–	1424	–
Tax credits						
Age limit	–	15 (25)	–	–	–	–
Amount	–	194	–	–	–	–
Refundable	–	Yes	–	–	–	–

Source: Author's calculation.
Notes: The table provides a simple summary of imported family policies by country. D – disability; SP – single-parent household; Cn – n[th] child; C + – additional child; [1] Greek policy: thresholds for the equivalised household income; [2] Germany: lower income threshold for a couple (single parent), the top limit varies with the number of children and housing expenditures; ♣ Slovak policy: pensioners (not eligible for the tax credit for children) receive an additional allowance of HRK 100; ● Germany: parents are eligible for either child benefit or tax allowance

The Swedish central family policy grants a universal child benefit monthly allocation of SEK 1,250 per child, accompanied by a sizeable family supplement for parents with two or more children (ranging from SEK 150 to SEK 1,250). For parents of children older than 15, the benefit is received 10 months out of the year (Wallera et al., 2020).

In the United Kingdom (UK), policies provide families with a child benefit allocation and a child tax credit (Reis & Tasseva, 2020). The universal weekly child benefit is equal to GBP 20.7 for the first child and GBP 13.7 for every subsequent child. However, there is a high-income child benefit charge for revenues over GBP 50,000. That charge is equal to 1% of the child benefit allocation for every GBP 100 over the threshold, which means that for people who earn more than GBP 60,000, the penalty is equal to the benefit. The child tax credit is a means-tested benefit based on various elements, and the amount of the benefit diminishes for households with revenues above a certain threshold.

Table 3 provides an overview of original and imported family policies in Croatia. It compares monetary amounts and key eligibility requirements in imported policies. The Supplemental material provides more details on the process of importing foreign policies.

Comparative analysis of distributional effects of alternative family tax-benefit policies in Croatia

This subsection covers the analysis of imported policies and their distributional effects. Table 4 shows the annual values of monetary indicators in the different reform scenarios. The baseline scenario is after the 2018 change in child benefit. The

Table 4. Monetary indicators for reform scenarios in family policies in Croatia in 2018, measured annually in HRK.

	Croatia	SK import	SE import	EL import	DE import	UK import
Median equivalised disposable income	52,614	52,907	52,619	52,626	52,568	52,152
Disposable income per capita	37,770	37,770	37,770	37,770	37,770	37,770
Pre-support income per capita	36,665	36,665	36,664	36,667	36,675	36,665
Tax reliefs support per capita	736	613	117	29	78	145
Child benefit per capita	346	469	966	1,050	993	936
Social assistance support per capita	24	24	24	24	24	24
Total support per capita	1,105	1,105	1,106	1,103	1,095	1,105
Total support in disposable income (%)	2.9	2.9	2.9	2.9	2.9	2.9

Source: Author's calculation.

median equivalent disposable income changes only slightly (up to 1%) and appears as the most prominent in the two scenarios that are based on policy imports from Slovakia and the UK, mainly due to slight deviations (up to 0.005%) in achieving perfect budget neutrality (see Table A3 in Supplemental material) and to the effects of the imported policies. A comparison of the per capita tax relief reveals how these policies change according to different scenarios and that are most prominent in the current Croatian system and the Slovak import scenario. In imported systems that do not extend tax relief for families with children, the support received through the tax system pertains to younger dependent adults who receive support through the Croatian tax deduction for dependent persons scheme. As expected, in such scenarios, cash benefits for children are much more important, as they are in the Swedish, Greek, German and UK imported policies. The social assistance benefits are not imported, and since the income test for ZMN does not include family benefits, there are no differences between scenarios. The total amount of average support per capita varies slightly by country, but the relative share of support in disposable income is 2.9% across all scenarios.

Figure 1 shows the structure and amount of child support in the different reform scenarios. The dashed line shows the distribution of total support by decile income groups in the current Croatian system. Slovak, Swedish and German import scenarios are much more balanced than the current Croatian system, and the support per child is approximately HRK 400 in those three countries. In contrast, the Greek and UK scenarios are extremely progressive (i.e. providing high support to lower-income households). Support to households in the Greek and UK scenarios reaches approximately HRK 800 for households in the lowest 10% income group, but support for households with revenues above the median differs across scenarios.

The figure also reveals potential 'winners and losers' in the case of similar reforms. In every imported scenario, the majority of households with above-median revenues on average receive less support. In these scenarios, the situation of median and below-median income households improves or at least does not worsen. Figure A1 in the Supplemental material depicts which households win and lose across income quintiles and scenarios. If the loss or gain of HRK 30 is considered the status quo, in each scenario, there is on average 39% of winners (dominantly in lower quintile groups) and 45% of losers (dominantly in higher quintile groups).

Taking into account the birth order, the change in the amount of support per child in different scenarios is shown in Figure 2. The average support allocated for
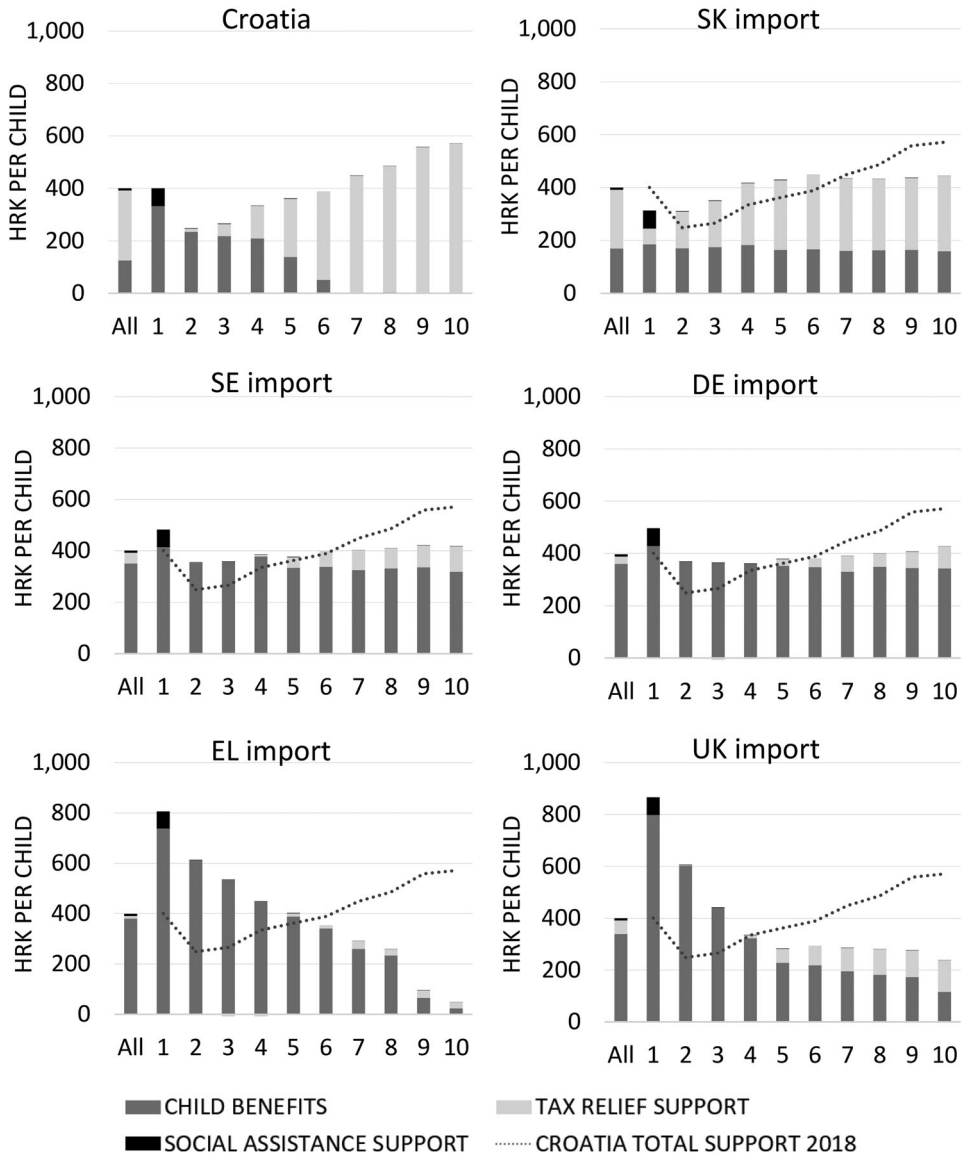
Figure 1. Structure for the support to children through pre-fiscal income decile groups in Croatia in different reform scenarios, assessed monthly in HRK for 2018.
Source: Author's calculation

the first and second child is similar across all scenarios. However, the average support granted for a third and fourth child shows much greater differences across the different scenarios. Recall that the child benefit policy in Croatia provides a supplemental HRK 500 for the third child and an additional HRK 500 for the fourth child, and the tax allowance increases for every subsequent child. The Slovak import scenario is the only one that provides almost equal amounts to all households for each child. The figure depicts an increase in the support for a third and fourth child in the Swedish
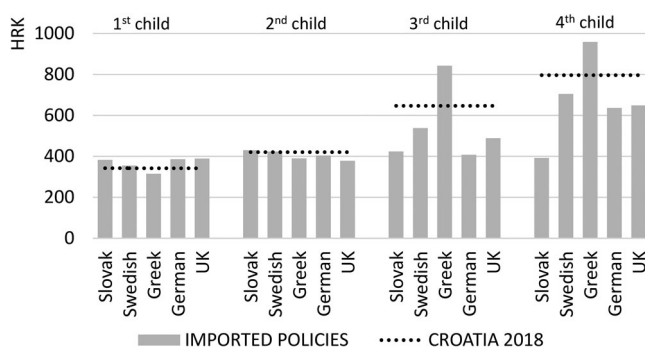
Figure 2. Support for children by birth order in 2018, average monthly value in HRK.
Source: Author's calculation

Table 5. Child poverty and income inequality comparison.

	Croatia	SK import	SE import	EL import	DE import	UK import
Child poverty headcount (%)	18.1	17.5	16.8	12.1	16.5	12.5
Child poverty gap (%)	5.0	5.4	4.4	2.7	4.3	2.6
Income inequality (Gini index)	28.8	28.6	28.4	27.4	28.4	27.7

Source: Author's calculation.

and German import scenarios, where the benefits increase for each new child due to large family incentives. The Greek import scenario provides the highest level of support for a third and fourth child. Despite the decrease in the amount of child benefit in the UK import scenario for second and subsequent children, large families also receive higher support due to their lower average revenues.

The impact of imported policies on child poverty and income inequality is presented in Table 5. The results of the analysis (point estimates) show that poverty headcount decreases under all reform scenarios. In the simulation, the introduction of fiscal instruments modelled on the UK or Greek system has the strongest effect on the poverty rate, which is expected given the pronounced progressiveness of these systems. A universal system, such as the Swedish system, has a moderate effect on poverty. The almost universal German system, which provides certain households with additional child benefit but also generous savings from the tax allowance for the highest-income households, achieves the similar effects as the Swedish system. Compared to the other scenarios, the Slovak import scenario, although more effective than the Croatian system in reducing poverty, is the least successful. This could be due to the work-incentivised tax credit, which does not include the lowest-income beneficiaries.

The poverty gap mainly follows the same trajectory as the poverty headcount reduction. What particularly stands out is the import of Slovak policies, which are less effective than the current Croatian system. In the Slovak scenario, compared to the current Croatian system, some households get even further into poverty due to a reduction in the amount of support for those in the lowest incomes (see decile 1 of SK import in Figure 1). However, tax credit and child benefit inspired by the Slovak system include households with revenues below the poverty line that are not included in today's Croatian system. This result is reflected in the lower poverty headcount

rate. Highly progressive benefits, such as those in Greece and the UK, have the greatest effect on the poverty gap, and German and Swedish instruments achieve almost identical effects in Croatia.

Income inequality, as measured by the Gini index at the disposable income level, is also reduced across all reform scenarios. However, the reduction is the strongest when UK and Greek policies are imported; in other reform scenarios, the effect is negligible.

Discussion and conclusions

As international organizations have highlighted child poverty reduction as a key goal, they have included in their strategy the position of children in society and the well-being of households with children. Croatia has made certain efforts to achieve these goals. However, the current economic situation does not favour child poverty reduction.

A significant number of Croatian researchers (e.g. Čipin & Međimurec, 2017; Stubbs et al., 2017; Stubbs & Zrinščak, 2014; Šućur et al., 2015) pointed to shortcomings in the family policies that are currently in use in Croatia, such as relatively low child benefit, the prevalence of the ZMN, and unused high tax allowances, and they advocated for universal support with additional targeted benefits. In this study, microsimulations are conducted to investigate the impact of the introduction of universal child benefit policies in Croatia, and these microsimulations are the first step towards planning a successful evidence-based family policy that takes into account limited budget allocations.

In line with the normative perspective that all children have equal worth, universal child benefits are a common form of support for households with children. This study explores three policy scenarios that can be classified as examples of universal support for children: i) the Slovak model, which combines a tax credit with child benefit; ii) the Swedish model, which offers a fully universal child benefit allocation; and iii) the German model, which combines universal child benefit with a tax allowance for children. To achieve budgetary neutrality, there is a redistribution of support from higher-income households to lower-income households. As a result, the poverty rate is reduced, and greater equity and equality in income distribution is achieved.

The other two scenarios are examples of progressive child support policies: iv) the Greek model, which grants child benefit with an income test of equivalised household income and v) the UK model, which combines two kinds of benefits. In these scenarios, too, there is a redistribution of support from higher-income to lower-income households. Given that both systems are extremely progressive, compared to the current Croatian system, they have a very strong impact on child poverty, which is reduced, as is income inequality. However, high-income households lose in pronounced ways; therefore, such reforms would be very unpopular with that population.

This research highlights that child benefit allocations and the non-transparent and regressive tax allowance for dependent children can be abolished and fiscal instruments such as universal child benefit or (refundable) tax credit introduced. In addition, in line with the German or Slovak system, additional targeted benefits or

conditions that encourage employment can be introduced. Perhaps the greatest advantage of the UK system is a gradual reduction in the amount of benefits instead of a sudden elimination of benefits when household income reaches above a certain threshold; this approach should be a feature in all means-tested instruments so that small changes in wages do not result in very large changes in disposable income.

Implementing (budget-neutral) reform in family policies would worsen the financial well-being of some households and, under certain scenarios, even of those households with three or four children. However, the losses experienced by higher-income households could be partially offset by income tax reforms. Targeted social assistance or in-kind benefits could be provided to low-income households with more children.

This research is the basis for potential reform in family policies in Croatia and comes with some limitations. Nevertheless, it shows that the current level of spending on families with children could be fairer and that more can be achieved within the current budget. It is important to set the primary goal of family policy and shape a long-term family policy strategy accordingly: a progressive system, such as the British or Greek systems, is desirable to strongly impact poverty, and a universal approach, such as the Swedish, Slovak or German systems, is best for the well-being of the majority of households with children.

Bearing in mind that most researchers have supported the implementation of a universal system, such a system should be further investigated, including for its impact on parental labour supply. However, child cash benefits should by no means be reduced to a universal benefit policy. Furthermore, it is important to set certain targeted benefits, at least through the social assistance system, because the combination of universal and targeted benefits has been proven to be the most effective approach.

The basic tool of this analysis, the EUROMOD microsimulation model, has certain limitations, as do the assumptions in this analysis. Complete benefit take-up and a lack of tax evasion are assumed (although EUROMOD does enable these features to be simulated). Additionally, in-kind benefits are not simulated. Moreover, certain countries often have very complex fiscal instruments that cannot be simulated due to a lack of data. Based on these assumptions, a number of issues arise. Compared to what using administrative or other data shows, households receiving targeted benefits produce somewhat overestimated results, leading to an overestimation of benefit expenditures and effects on poverty and income inequality. In addition, the model is static (as opposed to dynamic), and it is not behavioural, which means that the behaviour of individuals is not simulated and that this analysis shows only the so-called 'overnight' effects. Reform scenarios in Croatia would certainly have certain effects on individuals' labour supply, which would have a significant impact on all indicators and the budget in the long run. However, these limitations constitute topics for further research. Limitations also stem from definitions and survey data.

Empirical research should, over time, be extended to other family policies, such as maternity, parental, and in-kind benefits. However, such research requires a good knowledge about the policies of other countries, which increases the complexity of calculations. Additionally, reform scenarios in Croatia could be simulated without the budgetary neutrality assumption. A complete policy swap analysis, in which Croatian policies would be simulated in other countries, could provide additional insights.

Family policy decisions are a compromise between different conflicting goals and priorities. However, policy planning based on evidence and a good understanding of fiscal instruments and their redistributive effects is an important prerequisite. This research sheds some light on possible directions for future reforms.

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References

Aidukaite, J. (2009). Old welfare state theories and new welfare regimes in Eastern Europe: Challenges and implications. *Communist and Post-Communist Studies*, *42*(1), 23–39. https://doi.org/10.1016/j.postcomstud.2009.02.004

Ajduković, M., Matančević, J., & Rimac, I. (2017). Siromaštvo djece iz perspektive stručnjaka: učinci i mogućnosti djelovanja. *Annual of Social Work*, *24*(2), 277–308. https://doi.org/10.3935/ljsr.v24i2.182

Akrap, A., & Čipin, I. (2011). Usklađivanje poslovnoga i obiteljskoga života u Hrvatskoj: utjecaj na fertilitet. *Drustvena Istrazivanja*, *20*(1), 47–68. https://doi.org/10.5559/di.20.1.03

Avram, S. (2018). Who benefits from the 'hidden welfare state'? The distributional effects of personal income tax expenditure in six countries. *Journal of European Social Policy*, *28*(3), 271–293. https://doi.org/10.1177/0958928717735061

Avram, S., & Militaru, E. (2016). 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. *Social Indicators Research*, *128*(3), 1365–1385. https://doi.org/10.1007/s11205-015-1083-6

Baturina, D., Bežovan, G., & Matančević, J. (2011). *Local Welfare Systems as part of the Croatian Welfare State: Housing, employment and child care (No. 5)*. http://www.wilcoproject.eu/wordpress/wp-content/uploads/WILCO_WP2_Report_05_CR.pdf

Čipin, I., & Međimurec, P. (2017). Fertilitet i obiteljska politika u Hrvatskoj. *Političke Analize*, *8*(31), 3–9.

Corak, M., Lietz, C., & Sutherland, H. (2005). The impact of tax and transfer systems on children in the European Union. In *Innocenti Working Paper No. 4*. UNICEF Innocenti Research Centre.

Croatian Pension Insurance Institute. (2019). *Doplatak za djecu*. Retrieved September 3, 2019, from http://www.mirovinsko.hr/print.aspx?id=5

Dobrotić, I., & Laklija, M. (2009). Korelati sukoba obiteljskih i radnih obveza u Hrvatskoj. *Revija za Socijalnu Politiku*, *16*(1), 45–63. https://doi.org/10.3935/rsp.v16i1.799

Dobrotić, I., & Vučković Juroš, T. (2016). Who should finance childcare? Multilevel analysis of 24 countries. *Revija za Socijalnu Politiku*, *23*(3), 323–357. https://doi.org/10.3935/rsp.v23i3.1392

Dobrotić, I., Matković, T., & Menger, V. (2018). *An analysis of the accessibility, quality, capacities and financing of the early childhood education and care system in Croatia*.

EUROMOD. (2020). *Country reports*. Retrieved January 21, 2021, from https://www.euromod.ac.uk/using-euromod/country-reports

European Commission. (2017). *European pillar of social rights* (pp. 1–23). https://doi.org/10.2792/95934

European Commission. Eurostat. (2022a). *At-risk-of-poverty rate by poverty threshold, age and sex - EU-SILC and ECHP surveys (ILC_LI02)*. https://ec.europa.eu/eurostat/databrowser/view/ILC_LI02__custom_2089659/default/table?lang=en

European Commission. Eurostat. (2022b). *Expenditure: Main results (SPR_EXP_SUM) - Family/children*. https://ec.europa.eu/eurostat/databrowser/view/SPR_EXP_SUM__custom_2089844/default/table?lang=en

European Commission. Eurostat. (2022c). *GDP per capita in PPS (TEC00114)*. https://ec.europa.eu/eurostat/databrowser/view/TEC00114__custom_2863116/default/table

Figari, F., Paulus, A., & Sutherland, H. (2011). Measuring the size and impact of public cash support for children in cross-national perspective. *Social Science Computer Review*, *29*(1), 85–102. https://doi.org/10.1177/0894439310370104

Foster, J., Greer, J., & Thorbecke, E. (1984). A class of decomposable poverty measures. *Econometrica*, *52*(3), 761–766. https://doi.org/10.2307/1913475

Government of the Republic of Croatia. (2021). *National Recovery and Resilience Plan 2021-2026*. https://planoporavka.gov.hr/

Granados, P. G., & Olthaus, R. (2020). *EUROMOD Country Report Germany 2017-2020*. https://www.euromod.ac.uk/sites/default/files/country-reports/year11/Y11_CR_DE_Final.pdf

Hiilamo, H. (2004). Changing family policy in Sweden and Finland during the 1990s. *Social Policy and Administration*, *38*(1), 21–40. https://doi.org/10.1111/j.1467-9515.2004.00374.x

Immervoll, H., Sutherland, H., & de Vos, K. (2000). Child poverty and child benefits in the European Union. In *EUROMOD Working Papers (No. EM1/00)*. Institute for Social and Economic Research.

Ledić, M. (2018). Income and multidimensional poverty of children in Croatia. *Economic Trends and Economic Policy*, *26*(2), 7–58. https://doi.org/10.15179/pkiep.26.2.1

Letablier, M.-T., Luci, A., Math, A., & Thévenon, O. (2009). *The costs of raising children and the effectiveness of policies to support parenthood in European countries: A literature review*. European Commission.

Leventi, C., Flevotomou, M., Matsaganis, M., Andriopoulou, E., & Petrocheilos-Andrianos, I. (2020). *EUROMOD Country Report Greece 2017–2020*. https://www.euromod.ac.uk/sites/default/files/country-reports/year11/Y11_CR_EL_Final.pdf

Levy, H. (2003). Child-targeted tax-benefit reform in Spain in a European context: A microsimulation analysis using EUROMOD. In *EUROMOD Working Papers (EM2/03)*. EUROMOD at the Institute for Social and Economic Research.

Levy, H., Lietz, C., & Sutherland, H. (2007). Swapping Policies: Alternative Tax-Benefit Strategies to Support Children in Austria, Spain and the UK. *Journal of Social Policy*, *36*(4), 625–647. https://doi.org/10.1017/S0047279407001213

Levy, H., Morawski, L., & Myck, M. (2009). Alternative tax-benefit strategies to support children in Poland. In O. Lelkes & H. Sutherland (Eds.), *Tax and benefit policies in the enlarged Europe: Assessing the impact with microsimulation models*. Ashgate.

Matsaganis, M., O'Donoghue, C., Levy, H., Coromaldi, M., Mercader-Prats, M., Rodrigues, C. F., Toso, S., & Tsakloglou, P. (2006). Reforming family transfers in Southern Europe: Is there a role for universal child benefits? *Social Policy and Society*, *5*(2), 189–197. https://doi.org/10.1017/S1474746405002873

Mikloš, M., & Paur, D. (2020). *EUROMOD Country Report Slovak Republic 2017-2020*. https://www.euromod.ac.uk/sites/default/files/country-reports/year11/Y11_CR_SK_Final.pdf

Ministry of Finance - Tax Administration. (2019). *Osobni Odbitak*. Retrieved August 30, 2019, from https://www.porezna-uprava.hr/baza_znanja/Stranice/OsobniOdbitak.aspx

Ministry of Finance - Tax Administration. (2022). *Program permanentnog istraživanja poreznog sustava: Hrvatski porezni sustav - kronološki pregled od 1994. - Porez na dohodak*. Institut za javne financije.

Ministry of Labour, Pension System, Family and Social Policy. (2021). *National Plan for Combating Poverty and Social Exclusion for the period from 2021 to 2027 - proposal*. https://esavjetovanja.gov.hr/ECon/MainScreen?entityId=18807

Mutual Information System on Social Protection. (2021). *Comparative tables*. Retrieved June 1, 2022, from https://www.missoc.org/missoc-database/comparative-tables/

Narodne novine (Official Gazette). (1994). *Odluka o iznimnom usklađivanju doplatka za djecu od 1. listopada 1994.* (NN 85/1994). https://narodne-novine.nn.hr/clanci/sluzbeni/1994_11_85_1492.html

Narodne novine (Official Gazette). (2021). *National Development Strategy of the Republic of Croatia until 2030*. https://narodne-novine.nn.hr/clanci/sluzbeni/2021_02_13_230.html

Petrović, S. (2007). Porez na dohodak i doprinosi za socijalno osiguranje u Hrvatskoj, 1994.-2007. *Revija za Socijalnu Politiku*, *14*(3), 415–426. https://doi.org/10.3935/rsp.v14i3.732

Pezer, M. (2022). Public policies supporting families with children across welfare regimes: An empirical assessment of six European countries. *Journal of European Social Policy*, *32*(3), 254–269. https://doi.org/10.1177/09589287221080700

Puljiz, V., & Zrinšćak, S. (2002). Hrvatska obiteljska politika u europskom kontekstu. *Revija za Socijalnu Politiku*, *9*(2), 117–137. https://doi.org/10.3935/rsp.v9i2.170

Reis, S., & Tasseva, I. (2020). *EUROMOD/UKMOD Country Report 2018-2024*. https://www.euromod.ac.uk/sites/default/files/country-reports/year11/Y11_CR_UK_Final.pdf

Salanauskaite, L., & Verbist, G. (2013). Is the neighbour's grass greener? Comparing family support in Lithuania and four other new member states. *Journal of European Social Policy*, *23*(3), 315–331. https://doi.org/10.1177/0958928713480066

Stubbs, P., & Zrinšćak, S. (2014). *Ulaganje u djecu kako - kako nadvladati zamku deprivacije: Hrvatska*. Belgium.

Stubbs, P., Ledić, M., Rubil, I., & Zrinšćak, S. (2017). *Dječje siromaštvo i strategije nošenja sa siromaštvom kućanstava u Hrvatskoj EIZG i Zaklada Adris*. http://www.sinisazrinscak.com/wp-content/uploads/2012/12/Djecje-siromastvo_HR.pdf

Šućur, Z., Kletečki Radović, M., Družić Ljubotina, O., & Babić, Z. (2015). *Siromaštvo i dobrobit djece predškolske dobi u Republici Hrvatskoj*. (N. Pećnik & V. Puljiz, Eds.). UNICEF Office Croatia.

Sutherland, H. (2006). Can child poverty be abolished? Promises and policies in the UK. *The Economic and Labour Relations Review*, *17*(1), 7–31. https://doi.org/10.1177/103530460601700102

Sutherland, H., & Figari, F. (2013). EUROMOD: The European Union tax-benefit microsimulation model. *International Journal of Microsimulation*, *6*(1), 4–26. https://doi.org/10.34196/ijm.00075

Uljanić, I., & Bartolec, S. (2015). Osobni odbitak značajke, povijesni pregled i izmjene. *Porezni Vjesnik*, *24*(1), 46–72.

United Nations. (2019). *About the sustainable development goals - United Nations Sustainable Development*. Retrieved July 11, 2019, from https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Urban, I. (2014). Potpore za kućanstva s djecom. *Newsletter : povremeno Glasilo Instituta za Javne Financije*, *16*(88), 1–11. https://doi.org/10.3326/nlh.2014.88

Urban, I., & Pezer, M. (2018). Microsimulation of child benefits: A review of studies. *International Journal of Microsimulation*, *11*(3), 134–169. 10.34196/IJM.00191

Urban, I., & Pezer, M. (2020). Compensation for households with children in Croatia, Slovenia and Austria. *Social Indicators Research*, *147*(1), 203–235. https://doi.org/10.1007/s11205-019-02150-8

Wallera, A., Holm, G., Collado, D., & Framarin, N. (2020). *EUROMOD Country Report Sweden 2017-2020*. https://www.euromod.ac.uk/sites/default/files/country-reports/year11/Y11_CR_SE_Final.pdf

World Bank. (2014). *Croatia public finance review: Restructuring spending for stability and growth (Report No. 78320-HR)*. World Bank.

Wrohlich, K., Dell, F., Baclet, A., Zimmermann, K. F., Wagner, G. G., & Wey, C. (2005). Income taxation and its family components in France and Germany: A comparison of distributional effects. *Weekly Report*, *1*(31), 349–356.

Ziomas, D., Bouzas, N., Capella, A., & Konstantinidou, D. (2018). *New reform of the family benefits scheme in Greece (ESPN Flash Report 2018/28)*. https://www.researchgate.net/publication/333421414_New_reform_of_the_family_benefits_scheme_in_Greece