

**SUPPORTING FAMILIES AND PROVIDING  
EARLY CHILDHOOD EDUCATION AND CARE  
IN EUROPE AND CENTRAL ASIA:  
POLICY AND FINANCING OPTIONS**

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*This report does not necessarily represent the views of UNICEF.*





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## List of Abbreviations

BGN	Bulgarian Lev
CCT	Conditional Cash Transfer
EBRD	European Bank for Reconstruction and Development
ECA	Europe and Central Asia
ECD	Early childhood development
ECEC	Early childhood education and care
EU	European Union
FODI	Child Development Fund (Ecuador)
GAP	Gender Action plan
GDP	Gross domestic product
GYED	Insurance-based Maternity Benefit (Hungary)
HRK	Croatian Kuna
IADB	Inter-American Development Bank
ILO	International Labour Organization
IOM	International Organization for Migration
KESP	Kosovo Education Strategic Plan
LFS	Labour Force Survey
MCE	Multi-Country Evaluation
MICS	Multiple Indicator Cluster Survey
MISSCEO	Mutual Information System on Social Protection of the Council of Europe
MISSOC	Mutual Information System on Social Protection
NGO	Non-governmental organization
OECD	Organisation for Economic Cooperation and Development
PML	Paid maternal leave
PPL	Paid parental leave
PPP	Purchasing power parity
RON	Romanian Leu
SDG	Sustainability Development Goal
SILC	Statistics on Income and Living Conditions
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNICEF	United Nations Children's Fund
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
USD	United States Dollar
WMS	Welfare Monitoring Survey

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## Glossary of Terms

**Birth grant:** Lump sum amount paid once at or around childbirth.

**Early childhood development (ECD):** The physical, cognitive, linguistic, and socio-emotional development of a child from the prenatal stage up to age eight. ECD encompasses a number of distinct sub-stages, each of which presents particular needs: Pregnancy and peri-natal: prenatal care, attended births, registration, postnatal care; 0 to 3 years: parent education, early stimulation and nutrition interventions, home-based care, crèches; 3 to 6 years: parent education, preschool; 6 to 8 years: transition to formal education, improved early primary school

**Early childhood education and care (ECEC):** Any regulated arrangement that provides education and care for children from birth to compulsory primary school age. This includes centre- and family-day care, privately and publicly funded provision, pre-school and pre-primary provision

**Maternity leave:** A job-protected period of leave for employed women prior to and after childbirth, and in some countries around adoption, sometimes with some type of public income support provided.

**Parental leave:** Long-term leave available to parents to allow them to take care of an infant or young child a period of time. This is usually granted in addition to maternity/paternity leave.

**Paternity leave:** A job-protected period of leave for employed men, with income support provided in some cases.



# Executive Summary

In the Europe and Central Asia (ECA) region, many mothers find it difficult to return to work while their children are young. This is often because the families and children have limited access to full-day care, babysitting and early education (henceforth early childhood education and care, or ECEC), that enables parents to combine employment and caring responsibilities. Children who are disadvantaged due to ethnicity, household poverty, disability or rural residence are least likely to be able to access such services. Mothers' ability to return to work may also be limited by prevailing attitudes and social expectations that ascribe unpaid household work to women. This has a negative impact on child and inter-generational poverty, as well as on the empowerment of women. In some countries long periods of paid parental leave act as a disincentive to returning to work.

UNICEF's Europe and Central Asia Regional Office commissioned this study to better understand how the social protection benefits that mothers and families in the region receive could be reframed in order to increase access to early childhood education and care services and enable mothers to return to work. The results may be useful for policy makers, particularly those interested in family policies, early childhood development and gender equality, and the nexus between these policy areas. The study may also be useful for professional and advocacy organizations in promoting work-life balance and early childhood development policies in the ECA region.

The study shows that countries in the Europe and Central Asia region have the potential to simultaneously expand access to early childhood education and care, increase female employment and reduce child poverty and offset some of the costs through increases in tax revenues and in some cases reduced expenditure on parental leave.

## Methodology

An initial desk review was conducted of social protection systems for children, paid and unpaid parental leave, and state subsidies for early childhood education and care in the region. This was followed by development of policy options for investment in ECEC support for women wanting to return earlier to work. Then the impact of these policy options was simulated in four countries, Romania,

Croatia, Bulgaria and Georgia, taking into account female employment, poverty, access to daycare and the public budget. Start-up costs, for example infrastructure and teacher training, are not included, and neither are potential employment effects from the expansion of childcare facilities, which would increase demand for childcare staff.

## Findings from the literature review

The implications of mothers staying out of work for extended periods are far-reaching. Their human capital depreciates during elongated maternity breaks, leading to lower future earnings and higher risk of poverty and social exclusion. Limited access to early childhood education and care deepens the deprivation of disadvantaged children, affecting their well-being and skills development, as well as their later school performance and labour market opportunities. Lack of public provision that supports work-life balance may also encourage women to choose between either work or family, and thus may contribute to low fertility rates.

A large body of empirical literature confirms the strong impact of family policies on both female employment and child poverty. Social insurance systems that generate maternity or parental benefits linked to previous earnings increase female labour supply, while affordable and flexible early childhood education and care promotes mothers' employment and equal opportunities for child development and reduces child poverty. Investing in women's economic empowerment and child development together may maximize the potential returns in both policy areas. This view is also reflected in the United Nations Sustainable Development Goals 4, 5 and 8 concerning inclusive and equitable quality education, gender equality and decent work. The European Union has endorsed numerical targets for increasing access to early childhood education and care and legislated for minimum levels of maternity and parental leave.

All the countries in the ECA region have a history of state-sponsored social protection systems, characterized by relatively high female employment and generous welfare provision for families and children. Most countries in the region experienced increases in unemployment during the transition to a market economy and, in most cases, female employment recovered much more slowly



than male employment. The transition involved a profound restructuring of welfare systems, which typically entailed a reduction in early childhood education and care services for children under the age of three, while cash benefits for mothers remained in place or were extended in their duration. In a few countries paternity leave policies have been introduced, but fathers rarely take advantage of this benefit.

The existing family support systems in the region can be grouped into three main categories:

- In over half the countries, the family policy system promotes *caregiver parity* (also called the dual earner/dual carer model). This model supports women to retain paid employment by providing paid maternity and parental leave. Availability of full-time early childhood education and care services is also higher than in the other models, except for children aged below three.
- About a third of the countries belong to the so-called *one-and-a-half breadwinner* model. Maternity and parental leave provisions in these countries generally allow mothers to work part-time while at the same time taking care of their children and receiving a benefit. The availability of pre-school care facilities is relatively high but tends to not cover the whole working day, allowing mothers to work but only part-time.
- Lastly, Kosovo,<sup>1</sup> Kyrgyzstan and Turkey represent the *male breadwinner / female caregiver* model. Public policies in these countries give women little choice in work-family reconciliation and, unless extended family support is available, compel them to take the role of primary caregiver. There are no provisions for paid parental leave and access to early childhood education and care services is very limited, making mothers dependent on their partners' income.

## Findings from policy simulations

The existing systems in the region could be made more efficient by strengthening support for caregiver parity. More concretely, this would require provision of paid maternity/parental leave of a more limited duration, together with substantial expansion in early childhood education and care services for children aged under three. An expansion in early childhood education and care may be offered universally or targeted to disadvantaged families, and could be supplemented by further provisions for poor families. This study simulated the impact of selected policy options on employment, access to early childhood education and care for disadvantaged children, and poverty, and looked at the fiscal implications of such policy changes.

The policy options chosen for simulation are summarized in Table 1.

<sup>1</sup> All references to Kosovo in this report should be understood to be in the context of United Nations Security Council resolution 1244, 1999.

**Table 1**  
**Policy options for Europe and Central Asia**

Policy intervention	Main aim and rationale	Limitations / notes
1. Paid parental leave until 15-18 months and support for flexible timing of return	Increase supply of mothers' labour as in most cases paid parental leave would be reduced	Needs to be combined with an extension to childcare capacity
2a. Early childhood education and care subsidy below the age of three (tax allowance)	Increase supply of mothers' labour; affordable early childhood education and care for children below the age of three is limited in most countries	Dependent on flexible supply of early childhood education and care; may not reach low-income parents; quality assurance is difficult
2b. Universal early childhood education and care subsidy below the age of three (quasi-voucher)	Increase supply of mothers' labour	Dependent on flexible supply of early childhood education and care; may require investment in administration
3. Targeted early childhood education and care subsidy below the age of three for parents living in poverty or with low educational attainment	Increase supply of mothers' labour; ensure equal opportunities for disadvantaged children	Dependent on flexible supply of early childhood education and care; political support may be difficult to garner
4. Free meals for disadvantaged children (from 18 months to school age) in public early childhood education and care	Ensure equal opportunities for disadvantaged children	Risk of decline in quality of early childhood education and care, unless supply of childcare can expand flexibly

Paid parental leave and subsidized early childhood education and care may affect families (as well as their communities and the state budget) in several ways. Paid parental leave can improve children's health outcomes and development (by increasing the duration of breastfeeding and the quality of care, and by strengthening the bond between children and their parents). The effects on mothers' subsequent employment and earnings tend to depend on the amount, and especially the length, of the leave: very long leave may depreciate women's skills (in reality, or in the perception of employers) and thus reduce their later job opportunities. Formal early childhood education and care may also improve child outcomes in terms of health, skills, and school performance, and has an unambiguously positive effect on mothers' employment and subsequent earnings. Integrated programmes that combine early childhood education and care facilities, early development and parenting advice may have additional benefits by reducing the risk of a range of social problems typical of marginalized communities.

Based on the simulations, policies for expanding access to early childhood education and care services imply a rise in government spending, and would reduce child poverty

and increase female labour supply. The additional tax revenues from increased employment would offset some of the short-term costs of early childhood education and care expansion, and the medium- and long-term benefits of expanded access outweigh the costs.

In addition, in countries where paid parental leave is currently longer than 15 months (Romania and Bulgaria), shortening paid parental leave leads to savings to the public budget and a substantial rise in female employment, but it may also increase child poverty in the short run.

The short-term cost-benefit outcomes depend mainly on the initial level of employment, the educational attainment of mothers, the wage levels of early childhood education and care professionals and the income tax system. The long-term benefits depend on the quality of early childhood education and care. Therefore it is vital to invest in staff training and quality assurance systems.



**Table 2**  
**Short-term impact of particular family policy measures**

	ECEC (all)	ECEC (targeted)	PPL cut
<b>Bulgaria</b>			
public spending*	16.8	17.3	-25.5
female emp+	5.14	2.44	1.25
poverty^	0.00	-0.93	3.34
access to ECEC~	3.33	68.39	0.00
<b>Croatia</b>			
public spending	13.7	15.0	
female emp	1.69	0.63	
poverty	-0.47	-0.47	
access to ECEC	-2.23	36.13	
<b>Georgia</b>			
public spending	18.7	19.2	
female emp	3.53	0.86	
poverty	-0.37	-0.18	
access to ECEC	4.51	97.00	
<b>Romania</b>			
public spending	16.4	17.5	-45.9
female emp	3.47	1.15	1.65
poverty	-1.31	-3.04	8.58
access to ECEC	0.56	36.36	0.00

**Note:** ECEC (all) refers to universal tax credit (policy 2a); ECEC (targeted) refers to targeted subsidy (policy 3); PPL refers to reduction in paid parental leave (policy 1).

\* Public spending: percentage of total spending on parental leave benefits and ECEC

+ Female employment: change in percentage points

^ Child poverty: change in percentage points;

~ Access to ECEC: change in access for disadvantaged children in percentage points

**Sources:** The simulations of the impact of ECEC expansion are based on Calderón (2014). All calculations were based on EU SILC and EU LFS for Bulgaria, Croatia and Romania and WMS for Georgia. Further details are provided in the Annexes 1, 3, 5 and 6.

For example, in Bulgaria, cutting paid parental leave would imply a 26 per cent reduction in public spending on family policies and an increase in female employment of 1.3 percentage points, but at the cost of a 3.3 percentage point increase in child poverty in the short run. However, if about a fifth of the savings on paid parental leave is invested in targeted expansion of early childhood education and care facilities, female employment would increase by a further 2.4 percentage points and would offset the damage of shorter paid parental leave by reducing child poverty by 0.9 percentage points. Access to early childhood education and care for disadvantaged children would increase by 68 percentage points.

The magnitude of the impact of expanding access to early childhood education and care depends on the targeting of the policies. Universal access tends to favour educated women and this implies higher benefits in the short run. The policies targeting disadvantaged children yield smaller benefits in the short run, which are offset by higher gains in the long run in terms of improved school performance, better health and higher future earnings. This is because targeted support for early childhood education and care serves as an incentive for poor mothers to enroll their children in formal care, and disadvantaged children have above-average gains from good quality formal early childhood education and care. In broad terms, smaller gains in the short run (1-2 years) are offset by larger expected gains in the long run (20 years). Therefore the choice between these policies depends on the extent to which policy makers are making policy for short-term or long-term purposes.

Even with the relatively small impact on female employment estimated in the simulations, the benefits gained from tax returns cover a substantial proportion of the cost of early childhood education and care in most simulation countries. Furthermore, such measures are likely to have a higher social return than some of the policies currently in place. However, the immediate fiscal benefits are below the costs in all countries, even if one-off set-up costs are not included. This implies that investment in early childhood education and care requires the political will and foresight to consider medium- and long-term benefits. Since households tend to gain more from expanded access to early childhood education (even for those paying parental fees), this suggests that the median voter will likely support such an investment, if the expected gains are communicated well.

It should be noted that the cost-benefit calculations refer to the separate effects of introducing one or the other policy. The effect of a reform that combines reduced duration of maternity leave with expanded early childhood education and care services may be somewhat larger

than the sum of these separate effects. This is because such a reform would encourage as well as enable women to return to employment, and may also induce a change in social expectations and attitudes regarding the appropriate timing of mothers' return to the labour market.

The simulations illustrate the possible impacts of policy changes, which depend on underlying assumptions about the context and exact design of the policy change. Precise estimates of the potential impact of a similar policy intervention would require ex ante impact analysis using detailed parameters of the policy change and individual level data on potential beneficiaries.

## Potential barriers to policy change

Implementing these policy changes may be hindered by a number of barriers.

First, in some countries it may be difficult to find the resources required to make the initial investment in building new childcare facilities or training staff. These constraints may be lowered by creating a framework that allows the flexible involvement of private investors, local governments, non-governmental organizations and foreign donors, and flexible solutions such as the extension of existing kindergartens and the establishment of family-based early childhood education and care centres. Such flexible solutions are especially important in rural areas, where nurseries cannot be maintained at a reasonable cost.

Second, governments may also face constraints in resourcing the running costs of expanded early childhood education and care. One viable option may be to reduce the public subsidy provided to private non-profit service providers and require a contribution by parents. This option however is likely to increase the segregation of poor children and would lead to suboptimal gains in the long term, as disadvantaged families would continue to have limited access to early childhood education and care. Another imperfect solution is to introduce incentives for local governments to increase early childhood education and care provision. Such incentives may include a partial contribution to the cost of early childhood education and care and a reallocation of central government revenues towards local governments. The central government transfers can be weighted by mother's education level and by the economic conditions of the municipality, to provide an incentive for providing priority access to disadvantaged children and prevent increases in regional inequalities.

Third, in some countries a move towards the caregiver parity model may meet public resistance. Following the

transition, many of the post-socialist states experienced a shift back towards more traditional perceptions of gender roles, in some cases coupled with a revival of religiosity. This return to values under which it is the woman's role to stay at home and rear children also justified budgetary cuts affecting public kindergartens, and led to a decrease in early childhood education and care capacity in all the post-socialist countries. While confronting public attitudes takes considerable political will, there is some evidence that communication campaigns and policy changes can indeed contribute to changing public views on gender roles.

## Recommendations

Based on the study findings it is recommended that countries in the ECA region should review the efficiency and effectiveness of current family policies and consider adjustments to enhance the contribution of these policies to gender equality and child development goals. The following specific recommendations may guide potential policy choices.

In some countries, potential savings could be made on parental leave, as the length of existing schemes exceeds 15 months or the replacement rate is over 80 per cent. These savings should be reallocated to expanding early childhood education and care facilities for children aged 0-2 years. The implementation period would need to be longer if early childhood education and care were to be offered universally, but could be shorter if it were targeted at disadvantaged families.

An expansion of early childhood education and care facilities targeting disadvantaged children is recommended, as this would likely to bring higher benefits in the medium- and long-run in terms of improved child development outcomes and lower risk of child poverty.

Where government resources are limited, it is recommended that governments should seek alternative means to finance pre-school, through both private and public means. A viable option may be to offer a partial public subsidy to private (non-profit) service providers that could be supplemented with co-payment by parents. This could, however, increase the segregation of poor and wealthy children and would lead to suboptimal gains in the long term, as disadvantaged families would continue to have limited access to early childhood education and care. An alternative second-best solution is to introduce financial incentives for local governments to increase early childhood education and care provision. The incentives should be differentiated by the economic conditions of the municipality, in order to compensate for the limited capacity of local governments in poor regions to provide services.

The long term benefits of investment in early childhood education and care, and especially of policies targeting disadvantaged families, depends on the quality of the early childhood education and care. This calls for investment in staff training and quality assurance systems.









# Introduction

## Objectives of the study

The objectives of this study were to map the legislative, policy and fiscal framework for support to parents and financial support to early childhood education and care<sup>2</sup> across the Europe and Central Asia region,<sup>3</sup> to review data on the level and adequacy of financial support and equity of access to it, and to identify policy options for financial support to early childhood education and care.

The study was commissioned by UNICEF's Europe and Central Asia Regional Office to contribute to learning around the three strategic objectives identified by UNICEF in connection with support to women's economic empowerment and early childhood care and development:<sup>4</sup>

To **identify** the critical links between women's economic empowerment and early childhood care and development that can be leveraged to yield positive two-generational outcomes for mothers and young children.

To **advocate** for a model of co-responsibility for childcare that empowers women through the redistribution of childcare responsibilities, with clearly defined roles for the state and public policy, as well as for employers, parents and centre-based caregivers.

To **propose** a broadened definition of quality childcare that takes into account women's empowerment in combination with holistic child development, thereby providing a comprehensive and integrated framework for policy and programmatic interventions to benefit women and children.

In particular, the study aimed to assess the potential impacts and the fiscal costs and benefits of policies to enhance access to early childhood education and care and to increase women's ability to combine childcare with employment, linked to the first of the above objectives. The audience for this research is policy makers with a focus

on those interested in family policies, early childhood development, and gender equality, and the nexus between these policy areas. Because of the significance of issues of female employment, fertility and demographic change in the Europe and Central Asia region, a wider group of policy makers may also be interested in the findings, in particular insofar as they may indicate potential labour market and fiscal benefits from these reforms.

The study was intended to address the gender bottleneck related to "the excessive time burden and dual responsibilities faced by women" as well as the 'ideals and expectations of masculinity and femininity'. It supports UNICEF's work in relation to Sustainable Development Goal (SDG) 5, Target 5.4 "Recognise and value unpaid care and domestic work through the provision of public services and social protection policies and the promotion of shared responsibility within the household as nationally appropriate". It also provides evidence in relation to SDG 4, Target 4.2 "....ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education".

Based on the information and research evidence available, the project also models the effects of certain policies on access to early childhood education and care, access to employment (male and female) and, where possible, household and child poverty and the public budget.

The focus of the study is on the demand side of early childhood education and care rather on the direct financial costs of supplying it or the quality of education and care provided, but the quality of services was considered when selecting policy options. The study covers both incentives to work for parents and disincentives (such as extended parental leave grants). Although the gender aspects of work structures and practices (such as the possibility of flexible working hours) also have an important impact on access to employment, these are beyond

2 The definition of early childhood education and care widely accepted by the European Union covers children from approximately six months of age to school entry and provides a range of full-day care, babysitting and early education components to enable women/parents to return to work and for children to be cared for and participate in age appropriate learning activities while they are away from their parents.

3 UNICEF's Europe and Central Asia region includes Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Kazakhstan, Kosovo (as understood in the context of United Nations Security Council resolution 1244 (1999)), Kyrgyzstan, Moldova, Montenegro, North Macedonia, Romania, Serbia, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan.

4 UNICEF (2015) 'Achieving Women's Economic Empowerment and Early Childhood Care and Development as Mutually Reinforcing Objectives: Toward an Integrated Vision of Early Childcare Programming'. UNICEF Technical Note. New York: UNICEF [www.unicef.org/earlychildhood/files/Technical\\_NoteAchieving\\_Womens\\_Economic\\_and\\_ECD.pdf](http://www.unicef.org/earlychildhood/files/Technical_NoteAchieving_Womens_Economic_and_ECD.pdf)

the scope of this study. It is also beyond the terms of the study to look at the implications for women's work of care for others such as elderly and disabled family members.

UNICEF's gender equality strategic framework emphasizes the links between gender equality, women's empowerment and child development. Indeed, a growing body of literature provides evidence of these links and the underlying mechanisms, such as determinants of labour market participation and the quality of employment<sup>5</sup> and the role of social protection in reducing inequalities.<sup>6</sup> This view is also reflected in the Sustainable Development Goals on inclusive and equitable quality education and gender equality (SDGs 4, 5 and 8). Several studies also map policy developments in individual countries or across the region.<sup>7</sup> However, there are relatively few robust estimates of the potential impact of implementing the necessary policies (a notable exception is Ilkcaracan et al (2015)).<sup>8</sup> Such estimates would be necessary both to convince policy makers and stakeholders and to support the planning of policy interventions. This project will help to fill this gap in the existing literature.

## Management of the study

The study was carried out by the Budapest Institute for Policy Analysis under Agota Scharle as the Study Lead. The research team consisted of internal project coordinator and junior expert Tamás Molnár, senior expert Márton Csillag, who was in charge of the simulation methodology, and junior experts Bori Greskovics, Anna Orosz, Veronika Vighová and Aidana Zhalelová, who conducted most of the literature review and data processing under the supervision of the Study Lead. External advisors Maria Herczog child-protection specialist and Maja Gerovska Mitev, expert of social policy in the Balkans, provided comments to the drafts of the interim and final reports. The study was managed under the Social Policy team of the UNICEF Regional Office and overseen by an internal steering group of UNICEF Regional Advisors for Social Policy, Early Childhood Development, and Gender Equality that was responsible for reviewing drafts, liaising with the study team and UNICEF staff in the countries selected for simulations, and managing the overall quality assurance process. The inception report and desk review phase of the study included a webinar with a larger group

of regional advisors and staff of country offices, which made recommendations on policy issues, methodology and the study process, and also reviewed the data on family policies by country. A final phase one report was produced that summarized findings from the literature review, potential policy options for simulation, and availability of data for possible simulations. Country offices were invited to participate in the second phase based on interest, and potential for the study to influence national priorities. Although in the event actual country selection was limited by the availability of data, country office staff from the selected countries were involved and provided data and written feedback on the simulations and findings at the draft stage. The draft report was also shared with representatives of two other United Nations agencies, who provided written feedback that was addressed during subsequent drafts.

## Methodology

This study began with a desk review of the legislative and policy frameworks for support to parents and financial support for access to childcare in the Europe and Central Asia region. This included a review of the historical legacy of childcare in the region and the experience of the post-Soviet era transition, and a review of current legislative and policy frameworks on social protection systems for children (birth grants, childcare grants, cash and/or voucher support for childcare, tax credits and other tax-related incentives / disincentives to work for parents; paid and unpaid parental leave; and state subsidies to private childcare institutions, and employer-provided childcare. The review also covered the Organisation for Economic Cooperation and Development (OECD), European Union and Council of Europe frameworks and guidelines on the topic.

On the basis of the review, data was compiled and quantitative analysis was conducted of data from the region on childcare, employment, and household incomes and poverty to describe patterns and trends and identify potential links between income/wealth, childcare access, employment and child poverty in the region. These findings were used to develop policy options for modelling in the second part of the research project.

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- 5 Verick, S. (2014) 'Female labour force participation in developing countries', IZA World of Labor 87, doi: 10.15185/izawol.87 <http://bit.ly/2ccnbkVW>;
  - Pignatti, N. (2016) 'Encouraging women's labor force participation in transition countries', IZA World of Labor 264 doi: 10.15185/izawol.264. <http://bit.ly/2cKF4vv>
  - 6 UNESCAP (2015) 'Time for Equality: The role of social protection in reducing inequalities in Asia and the Pacific'. Bangkok: UNESCAP [www.unescap.org/sites/default/files/SDD%20Time%20for%20Equality%20report\\_final.pdf](http://www.unescap.org/sites/default/files/SDD%20Time%20for%20Equality%20report_final.pdf)
  - 7 Ibid.
  - 8 Ilkcaracan, I. et al. (2015) 'The Impact of Public Investment in Social Care Services on Employment, Gender Equality and Poverty: The Turkish Case'. Istanbul: Istanbul Technical University, Women's Studies Center in Science, Engineering and Technology (ITU WSC-SET) and The Levy Economics Institute [www.levyinstitute.org/pubs/rpr\\_8\\_15.pdf](http://www.levyinstitute.org/pubs/rpr_8_15.pdf)

In the second half of the project, the impact of policy options was simulated in four countries. The typology was generated on the basis of contextual variables and the features of the family benefit system. However, because of the need for suitable individual level data on mothers' employment, use of childcare and incomes, it was not possible to include all categories. The simulation countries were therefore the four for which such data was available: Romania, Croatia, Bulgaria and Georgia.

The simulations show the potential impact of the four policy options on employment, child poverty and access to ECEC by disadvantaged children, as well as the implications for the public budget. For the calculations we rely on existing impact evaluations of policies in countries with comparable institutional contexts (further details are provided in sub-section 5.2 and Annex 3). We combine these estimates with survey data for the selected countries: European Union Statistics on Incomes and Living Conditions and European Union Labour Force Survey for Bulgaria, Croatia and Romania and the Skills Towards Employment and Productivity survey for Georgia. Using available data from the region we disaggregate the datasets into subgroups of women with the same characteristics in terms of age group, educational attainment and urban/rural residence, where available. We simulate the impacts for each subgroup using coefficients from existing estimates, and compute country-level impacts using population weights.

Start-up costs, for example infrastructure and teacher training, are not included, and neither are potential employment effects from the expansion of childcare facilities, which would increase demand for childcare staff, a generally female-dominated profession (further details are provided in sub-section 5.2 and Annex 5).

## Structure of the report

Chapters 1 to 3 of the report review existing policies in the region, relevant evaluation studies and guidelines on designing family policies. Based on this, Chapter 4 outlines four policy options for promoting access to early childhood education and care for disadvantaged families and simulates their effect on female employment, child poverty, access to early childhood education and care and net costs to public budgets. Finally, the last chapters discuss policy implications and make recommendations on formulating family policies in the region.





# Chapter 1.

## Overview of general literature on improving family policies

Families with young children face increased costs of living and challenges with career development. Poverty risks are highest for families in the period immediately after birth and until children reach the age of three.<sup>9</sup> Family policies should therefore aim to reduce child poverty, promote female employment and gender equity, and enhance the wellbeing of children and parents.<sup>10</sup> Paid maternity and parental leave policies, child benefits and support for public and private early childhood education and care play an important role in achieving these objectives, as adequate income support in the early years of children's lives helps prevent the widening of the gap between rich and poor households.<sup>11</sup> Investing in women's economic empowerment and child development together may maximize the potential returns in both policy areas.<sup>12</sup> The Sustainable Development Goals among others call for inclusive and equitable quality education and lifelong learning opportunities for all (SDG 4), gender equality and empowerment of women and girls (SDG 5) and sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (SDG 8). The OECD provides general recommendations on the design of some policies aimed at gender as well as social equity.

Economic theory, and in particular standard labour supply models, describes labour force participation as the choice of an individual who weighs expected gains against the cost of employment, taking into account that individual's own personal preferences for non-market time. In this framework, the expense of early childhood education and care and the value of household production may be interpreted as a cost or opportunity cost of employment. Further, the value of children may be assumed to increase preferences for time spent at home and outside formal employment.

### Parental leave

Parental leave (or childcare leave) is only one instrument of family policy that can help to either weaken or strengthen traditional gender roles. From the labour market perspective, paid parental leave should not last longer than four to six months. From the child development perspective, paid leave should last at least six months; this also enables exclusive breastfeeding.<sup>13</sup> The European Union (EU) has legislated for at least fourteen weeks of maternity leave, complemented by eighteen weeks of parental leave for both men and women. Ideally, paid parental leave schemes should give parents flexibility to decide about the time to return to work as well as whether the mother or the father (or alternatively a grandparent) should take advantage of paid leave. A mix of shortened parental leave (about one year), increased payment rates and the possibility of taking part-time leave or working part-time while still receiving a benefit and the guaranteed (same) position after return, also makes use of parental leave more attractive for fathers.

Long care leave, taken mostly by mothers, tends to break their career patterns and leave them in financial difficulties or even in poverty in case of divorce or separation.<sup>14</sup> These harmful consequences may be minimized by compensating employers through the tax-benefit system and encouraging re-entry options, training and part-time or flexible work opportunities for those on lengthy leaves.<sup>15</sup>

### Early childhood education and care

The quality of early childhood education and care is very important and needs to be encouraged. The five most important factors that ensure good quality early childhood

9 OECD (2011) *Doing Better for Families*. Paris: OECD Publishing. <http://dx.doi.org/10.1787/9789264098732-en>

10 OECD (2001) *Starting Strong: Early Childhood Education and Care*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264192829-en>.

11 OECD (2011) *Doing Better for Families*.

12 UNICEF (2015) 'Achieving Women's Economic Empowerment and Early Childhood Care and Development as Mutually Reinforcing Objectives: Toward an Integrated Vision of Early Childcare Programming'.

13 Most studies find that maternal employment may harm the child's cognitive development below age 6-12 months, while negative impacts are small or insignificant above age 12. Enrolment in formal care tends to increase cognitive development over age 2. OECD (2007) *Babies and Bosses – Reconciling Work and Family Life: A Synthesis of Findings for OECD Countries*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264032477-en>.

14 OECD (2006) *Starting Strong II: Early Childhood and Care*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264035461-en>.

15 UNIFEM (2006) 'The Story behind the Numbers: Women and employment in Central and Eastern Europe and the Western Commonwealth of Independent States', Bratislava: United Nations Development Fund for Women.



recent study shows that well-designed supply-side subsidies may be more effective than targeted (supply-side) vouchers.<sup>20</sup> Financial support, leave arrangements, and especially the early childhood education and care available are also considered important in that they support the reconciliation of work and family, and thus can increase birth rates.<sup>21</sup> An expansion of access to early childhood education and care can also lead to an expansion of employment in early childhood education and care services.

## Child cash and in-kind benefits

Both cash and in-kind benefits are recommended during early childhood. While a broader range of risks is better covered by cash benefits, delivery of services for higher-risk families is more effective using in-kind benefits. Conditional cash transfers can be also explored where services are provided free of charge to high-risk families but not fully taken advantage of. Income supplements should be directed at the mother or the person who takes care of the children in order to foster child development.<sup>22</sup> In order to achieve better access to child benefits, especially for the most vulnerable families, simplification of administrative requirements is essential. This goes hand in hand with building the capacity of local governments and reducing administrative costs.<sup>23</sup>

## Potential impacts of child-related policies

Paid parental leave and subsidized early childhood education and care may affect families (as well as their communities and the state budget) in several ways. Paid parental leave may improve child health outcomes and child development (by increasing the duration of breastfeeding and the quality of care, and by strengthening the bond between children and their parents). It has mixed effects on mothers' subsequent employment and earnings.<sup>24</sup>

Formal early childhood education and care may also improve child outcomes in terms of health, skills, and school

24 Carneiro, P., Katrine V. Loken and Kjell G. Salvanes (2015) A Flying Start? Maternity Leave Benefits and Long-Run Outcomes of Children. *Journal of Political Economy* 123(2): pp 365-412.

performance and has an unambiguous positive effect on maternal employment and subsequent earnings. Integrated childcare programmes that combine day care facilities, early development and parenting advice may have further benefits by reducing the risk of a range of social problems typical of marginalized communities.<sup>25</sup> A review of programmes in the United States found that investment in such integrated programmes may yield a “profit” of up to 16 per cent when looking at the earnings and tax contributions of former participants 23 years after the programme.<sup>26</sup> Some of these additional effects also apply to some extent in the case of public early childhood education and care facilities (even if not combined with par-

enting advice), if the quality of care is high and if priority is given to disadvantaged families. Some recent studies confirm that the positive impacts on school performance about 3-10 years later are also significant for investment in early childhood education and care facilities in developing countries.<sup>27</sup> Table 3 below summarizes the potential direct effects and spill over benefits of ECEC. It is important to note that in this study we only simulate the immediate benefits flowing from the increased employment of mothers and the associated decrease in the risk of poverty (as marked in grey in the table below).

**Table 3**  
**Quantifiable outcomes and benefits of early childhood education and care programmes**

Who is affected			Who receives the benefit?				
Parents	Children	Next generation*	Outcome	Spillover benefits (or costs)	State	Participants	Local community
X			Expansion in early childhood education and care capacity	Value of subsidized early childhood education and care for parents and children		X	
	X	X	Decrease in child abuse	Reduced public expenditure on child protection	X		
	X	X	Decrease in accidents	Reduced public expenditure on health services	X		
	X	X	Decrease in early pregnancy	Reduced public expenditure on health and social services	X	X	
	X	X	Decrease in grade repetition	Fewer years spent in primary education (per child)	X		

25 Karoly, L. A., M. R. Kilburn, and J. S. Cannon (2005) Early childhood interventions: Proven results, future promises. Santa Monica, CA, US: RAND Corporation.

26 Rolnick, A. and R. Grunewald (2003) Early Childhood Development: Economic Development with a High Public Return. Minneapolis: The Federal Reserve Bank of Minneapolis: pp.6-12.

27 Cortázar, A. (2015) Long-term effects of public early childhood education on academic achievement in Chile. *Early Childhood Research Quarterly* 32(3): pp.13–22. <https://doi.org/10.1016/j.ecresq.2015.01.003>; Berlinski, Samuel, Sebastian Galiani and Marco Manocorda (2008) Giving Children a Better Start: Pre-school attendance and school-age profiles. *Journal of Public Economics* 92: pp.1416-1440. <http://personal.lse.ac.uk/manacorda/preschool.pdf>; Zhang, Shiyong (2017) Effects of attending preschool on adolescents' outcomes: evidence from China (March 18, 2016). *Applied Economics*, 2017 49(27): <http://dx.doi.org/10.2139/ssrn.2766202>

Who is affected					Who receives the benefit?		
Parents	Children	Next generation*	Outcome	Spillover benefits (or costs)	State	Participants	Local community
	X	X	Reduced use of special education	Reduced public expenditure on special education	X		
X	X	X	Increased completion of secondary education	(More years spent in secondary education)	(X)		
X	X	X	Increased entry to tertiary education	(More years spent in tertiary education)	(X)	(X)	
X	X	X	Increased labour force participation and earnings	Increased lifetime earnings and tax revenues, reduced risk of poverty	X	X	
X	X	X	Reduced use of welfare programmes	Reduced administrative costs and expenditure on welfare programmes *	X	(X)	
X	X	X	Reduced crime and contact with criminal justice	Reduced costs for criminal justice and lower crime victim costs	X		X
X	X	X	Reduced incidence of smoking and substance abuse	Lower costs for public healthcare and premature death	X	X	
X	X	X	Improved pregnancy outcomes	Lower medical costs due to fewer low-weight babies	X		

**Note:** Parentheses denote spillover costs as opposed to benefits.

\* For participants, this implies a reduction in incomes in the sense that they receive less means-tested welfare payments (as their incomes are more likely to rise above the threshold).

**Source:** Karoly et al (2005) Early childhood interventions: Proven results, future promises. Table 4.1: pp 90-91.









## Chapter 2.

# Current family policies in Europe and Central Asia

With Turkey as an important exception, the countries in the region once had Soviet-type systems, characterized by relatively high female employment and generous welfare provision for families and children. Most of the region's countries suffered significant falls in employment during their transition to market economies and, though the initial shock was typically larger for men, in most cases female employment recovered much more slowly.<sup>28</sup> The transition included profound restructuring of welfare systems. With regard to families, this typically involved a sharp reduction in early childhood education and care services, especially for children under the age of three. At the same time, cash benefits for mothers remained in place or were even extended.<sup>29</sup> Apart from fiscal constraints, this was motivated in part by fears that growing unemployment would generate social tensions (which could be eased by reducing the labour supply of mothers), and partly by the emergence on the political agenda of pro-natalism.<sup>30</sup>

As shown in Table 1 below, the region's countries may be grouped into three categories according to the main features of their family policies (country-specific information and sources are provided in Annex 2).<sup>31</sup> In most of the countries, the family policy system supports caregiver parity at least when compared to other countries in the region.<sup>32</sup> In contrast to the male breadwinner/female caregiver model, this model supports women to retain paid employment by providing paid parental leave either as a flat rate benefit, or as a high proportion of the former wage. Availability of early childhood education and care programmes is also higher but generally not for the children under the age of three. With very scarce public as well as private nurseries, care for children under three remains with the family.<sup>33</sup>

**Table 4**  
**Categorization of the region's countries by family policy and contextual factors**

Male breadwinner/female caregiver	Caregiver parity (dual earner-dual carer)	One-and-a-half breadwinner
Kosovo, Kyrgyzstan, Turkey	<i>Albania</i> , Armenia, Azerbaijan, <i>Bulgaria</i> , Georgia, Montenegro, North Macedonia, <i>Romania</i> , Serbia, Tajikistan, Turkmenistan, Uzbekistan,	<i>Belarus</i> , <i>Bosnia and Herzegovina</i> , <i>Croatia</i> , <u>Kazakhstan</u> , <u>Moldova</u> , Ukraine

**Note:** The countries in italics have pre-school enrolment rates for children over three years of age of higher than 80 per cent (2014); those underlined have percentages of pre-school enrolment in private institutions of higher than 10 per cent (2012, 2013 or 2014). More details are provided in Annex 2.

28 World Bank (1995) 'Poverty, Inequality, and Social Policy in Transition Economies', Policy Research Working Paper No. 1530. Washington DC.: The World Bank; Pignatti, N. (2006), Encouraging women's labor force participation in transition countries.

29 UNICEF (2006) 'Reinvesting in children? Policies for the very young in South Eastern Europe and the CIS', Innocenti Working Paper No. 2006-01. Florence: UNICEF Innocenti Research Centre. pp. 9, 43.

30 UNICEF (2009) Innocenti Social Monitor 2009: Child Wellbeing at a Crossroads: Evolving Challenges in Central and Eastern Europe and the Commonwealth of Independent States'. Innocenti Social Monitor. Florence: UNICEF Innocenti Research Centre. pp. 62, 104.

31 The categories are defined by Ciccio, R. and I. Bleijenbergh (2014) After the Male Breadwinner Model? Childcare Services and the Division of Labor in European Countries. Social Politics 21 (1): pp.50-79. <https://doi.org/10.1093/sp/jxu002>

32 Compared to the highly developed Nordic countries, most of the ECA region's countries would belong to the male breadwinner model. This typology aims to highlight variation within the ECA region.

33 Ciccio, R. and I. Bleijenbergh (2014): 'After the Male Breadwinner Model?'

Several countries follow the one-and-a-half breadwinner model. Women in these countries generally have opportunities to work part-time while at the same time taking care of their children and receiving child-rearing allowances. The availability of early childhood education and care facilities is higher than for the other categories, thus allowing mothers to actually take advantage of part-time working arrangements.<sup>34</sup>

Lastly, Kosovo, Kyrgyzstan and Turkey represent the male breadwinner/female caregiver model. Public policies in these countries give women little choice of work-family reconciliation and force them to take the role of primary caregiver. There are no provisions for paid parental leave and access to early childhood education and care, whether private or public, is very limited. With limited possibilities for early childhood education and care and no financial support during the first years of the child's life, women are dependent on their husbands' income.

## Maternity leave

Maternity protection<sup>35</sup> is the first step in protecting children even before they are born. The requirements of International Labour Organization (ILO) Convention 183 state that maternity leave should be provided "for at least 14 weeks at a rate of at least two-thirds of previous earnings, paid by social insurance or public funds or in a man-

ner determined by national law and practice where the employer is not solely responsible for payment."<sup>36</sup> All the region's countries provide paid maternity leave. However, they differ in the length of the paid leave (between 14 and 20 weeks in most cases, with a maximum paid leave of one year in Albania, Bosnia and Herzegovina, Bulgaria and Montenegro) and the replacement rate of maternity benefit (between 50 per cent and 100 per cent). Leave provisions are above the international average.<sup>37</sup>

All the countries regulate the division of maternity leave for the period before and after giving birth, with the latter being longer. Some of the region's countries – such as Albania, Bosnia and Herzegovina, and Montenegro – set the mandatory length of leave at 42-45 days after giving birth, and afterwards leave the decision about returning to work to the mother, providing also the option of obtaining additional social insurance benefits until the end of the maximum length of maternity leave (one year). In most countries the leave is covered by social insurance. In Republika Srpska (Bosnia and Herzegovina), Montenegro and Serbia maternity benefit is covered for at least a short period of time (30 days in the case of Republika Srpska) by the employer, but is then reimbursed by the Public Child Protection Fund (Republika Srpska) or the state budget (Montenegro and Serbia). Kosovo is the only country or territory in the region that obliges employers to compensate the wages of employees on maternity leave – at 70 per cent replacement rate for six months (without reimbursement).<sup>38</sup>

<sup>34</sup> See Annex 2 for a more detailed description and sources.

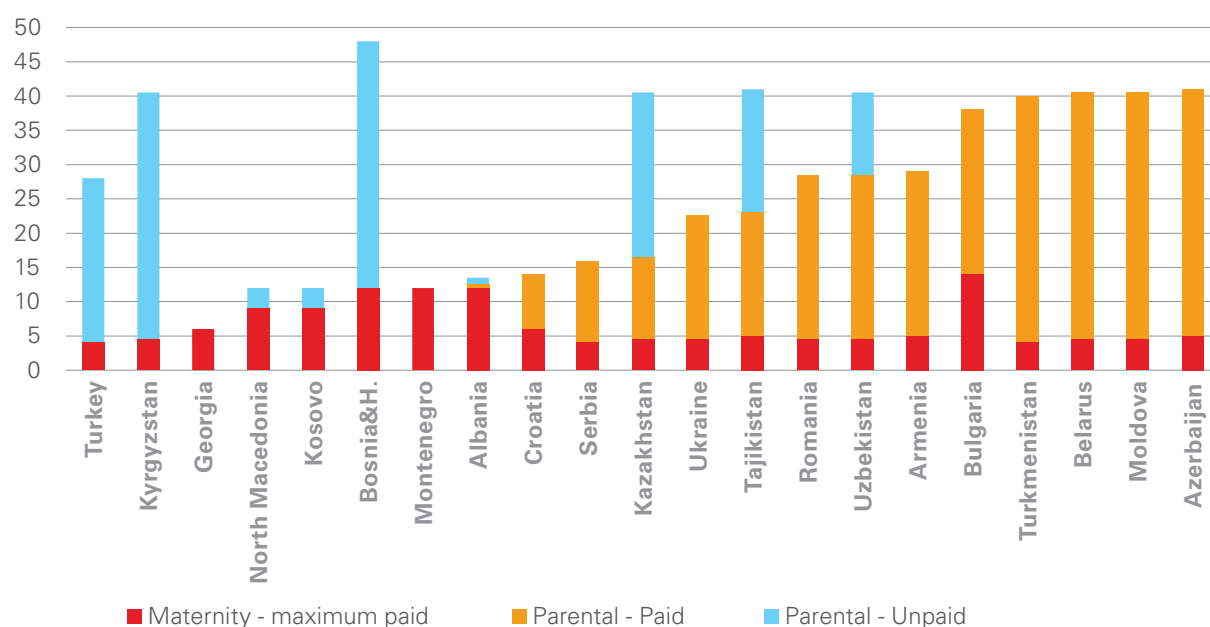
<sup>35</sup> "Special protection for pregnant women and women workers who recently gave birth or are breastfeeding to prevent harm to their or their infants' health, and at the same time ensure that they will not lose their job simply because of pregnancy or maternity leave." Source: European Institute of Gender Equity (n.d.) 'Glossary and Thesaurus'. <https://eige.europa.eu/rdc/thesaurus/terms/1287>

<sup>36</sup> ILO (2014) Maternity and paternity at work: law and practice across the world. Geneva: International Labour Office. [www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms_242615.pdf)

<sup>37</sup> ILO (2016) Women at Work: Trends 2016. Geneva: International Labour Office [www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms\\_457317.pdf](http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms_457317.pdf)

<sup>38</sup> For details and references on each country included in this section please see Annex 2

**Figure 1**  
**Summary of leave provisions in Europe and Central Asia (in months)**



**Source:** Authors' calculations based on several sources listed in Annex 2.

## Parental leave

Unlike maternity leave, parental leave (a benefit that can be used by either parent, and in some cases by grandparents as well) is not paid in all of the region's countries, and if paid it also varies from a flat-rate benefit to an insurance-based benefit with varying replacement rates. The length of paid leave varies from six months (in Croatia) to three years (in Azerbaijan). In cases where the parental leave provision is longer, the benefit is usually only paid for a certain period of it. Most of the countries, however, allow the combination of leave with part-time work. Flexibility is also granted in terms of use by another family member – usually the father or a grandparent. In countries where parental leave is unpaid, parents generally have the right to work part time for the period of parental leave or for a shorter period of time.

## Paternity leave

Like paid parental leave, paid paternity leave is not available in all the countries. Only about half the countries provide paid paternity leave of 5 to 15 days, designed solely for the period shortly after the child is born. The leave can

be taken by employed fathers, who are entitled to 90-100 per cent of previous earnings for the length of the leave.

## Special maternity allowances

Some of the region's countries provide benefits specifically for certain categories of mothers, or for certain situations. Kazakhstan grants a benefit to mothers of six or seven children. In Romania, maternal risk allowance is provided for up to 120 days to mothers and pregnant women whose employers cannot guarantee working environments and conditions free of health risks to them or their children. The allowance is equivalent to 75 per cent of earnings over the period of 10 months before the request for the allowance. In Albania, a pregnant woman is paid the difference between her previous and present wage when she is forced to accept a lower paid job due to pregnancy. The ceiling for the benefit is set at 50 per cent of the total annual wage in respect to which contributions were paid. In Bulgaria, all mothers of three or more children receive an allowance for free travel by bus or rail once per calendar year. Belarus pays a prenatal care grant to pregnant women as a lump sum before the date of the birth, if they are registered in the state health care system.

## Birth grants

Of the 21 countries or areas in the region, 19 provide one-off lump sum birth grants to parents of newborn children (the exceptions are Kosovo and Romania). In Uzbekistan the size of the birth grant depends on the time the mother spent in employment, while in Albania and Croatia only insured parents are eligible. In half the countries, the birth grant varies by number of children (Serbia, Armenia, Belarus, Bulgaria, Kazakhstan, Moldova, Tajikistan, Turkey and Turkmenistan). The size of the birth grant largely varies across the region with amounts from about €40 to €1,000.

## Child cash benefits and tax credits

Both cash benefits and tax credits are in place to support the incomes of families in the region (see Annex 2), with the former more widespread. Means-tested cash benefits prevail in the region, with only a few of the countries also providing universal cash benefit (such as Belarus and Romania) or a non-income-related cash benefit for larger families (such as Ukraine and Georgia). Means-tested benefits are provided for the most vulnerable families. Accessing child cash benefits generally depends on the age of children (mostly up to the age of 18) and enrolment in primary or secondary school. Other conditions may also apply: for example parents in Romania must pay their local taxes and levies in order to receive the family support benefit.

## Early childhood education and care facilities

Attendance at early childhood education and care facilities in the year before entering primary school is obligatory in less than half the countries in the region: Bosnia and Herzegovina, Bulgaria, Croatia, Kazakhstan, Moldova, Romania and Serbia. Children in these countries are enrolled in preparatory pre-school classes at the age of five or six, a year before they enter compulsory primary

education. Coverage tends to be higher in Central and Eastern Europe than in other countries in the region and tends to be lower among children from poor and minority ethnic families and in rural areas.<sup>39</sup> In some countries (Bosnia and Herzegovina, Croatia, Kazakhstan and Turkey) a significant share of care providers are private. A recent evaluation shows that even though there is a great variation in preschool enrolment rates, these have increased over the past decade in all six countries in the region that the evaluation covered.<sup>40</sup>

The availability of early childhood education and care facilities for children below the age of three is generally limited, but there is significant variation between and also within countries. Enrolment rates are somewhat higher at between 15 and 23 per cent in Central and Eastern Europe (except Romania where the rate is 3 per cent), and lower in the other countries in the region, ranging between 2 and 15 per cent (except for Belarus, where it is 29 per cent).<sup>41</sup> In most cases local government provides public early childhood education and care facilities, with no earmarked central funding. Some of the countries also have private providers, typically serving high-income families. Quality assurance is underdeveloped.<sup>42</sup> Access to early childhood education and care tends to be especially limited among children facing inequities due to ethnic background, poverty or disability.<sup>43</sup>

## Childcare subsidies

Most countries where preschool attendance is obligatory also provide early childhood education and care subsidies to cover low-income families' tuition fees. This is true for Bulgaria, Croatia (for children in early childhood education and care centres), Kazakhstan and Serbia. Public pre-school education between the age of three and primary school is free-of-charge in six countries in the region. Romania provides a conditional cash transfer to low-income families in the form of a "social coupon" to purchase food, clothing or hygiene products for children attending kindergarten (between the ages of three and six).<sup>44</sup>

39 UNICEF (2015) 'Achieving Women's Economic Empowerment and Early Childhood Care and Development as Mutually Reinforcing Objectives'.

40 The study covered Armenia, Bosnia and Herzegovina, Kosovo, Kyrgyzstan, Moldova and North Macedonia. Enrolment doubled in Kyrgyzstan (from around 10 per cent to almost 20 per cent) and increased by a third in North Macedonia (from just above 20 per cent to almost 30 per cent). The increase ranged between 1 and 10 percentage points in the other countries. Wood, John, et al. (2014) 'RKLA3 multi-country evaluation: increasing access and equity in early childhood education – final evaluation report'. Geneva: UNICEF [www.unicef.org/evaldatabase/files/RKLA3\\_MCE\\_-\\_ELSR\\_final\\_-\\_volume\\_1\\_final\\_version\\_with\\_cover.pdf](http://www.unicef.org/evaldatabase/files/RKLA3_MCE_-_ELSR_final_-_volume_1_final_version_with_cover.pdf)

41 Based on data for 17 of the region's countries. UNECE (n.d.) Statistical database – Child care enrolment and availability rates'. [http://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT\\_30-GE\\_98-GE\\_LifeBalance/0104\\_en\\_GELB\\_Child\\_CARE\\_r.px/?rxid=01da080b-f645-482b-98d2-46bf6e7af9dc](http://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT_30-GE_98-GE_LifeBalance/0104_en_GELB_Child_CARE_r.px/?rxid=01da080b-f645-482b-98d2-46bf6e7af9dc)

42 UNICEF (2015) 'Achieving Women's Economic Empowerment and Early Childhood Care and Development as Mutually Reinforcing Objectives'.

43 Wood, John, et al. (2014) 'RKLA3 multi-country evaluation: increasing access and equity in early childhood education'.

44 European Commission (2016) 'Education and Training Monitor 2016 - Romania'. Luxembourg: Publications Office of the European Union [https://ec.europa.eu/education/sites/education/files/monitor2016-ro\\_en.pdf](https://ec.europa.eu/education/sites/education/files/monitor2016-ro_en.pdf)







## Chapter 3.

# Impact of current policies and contextual barriers

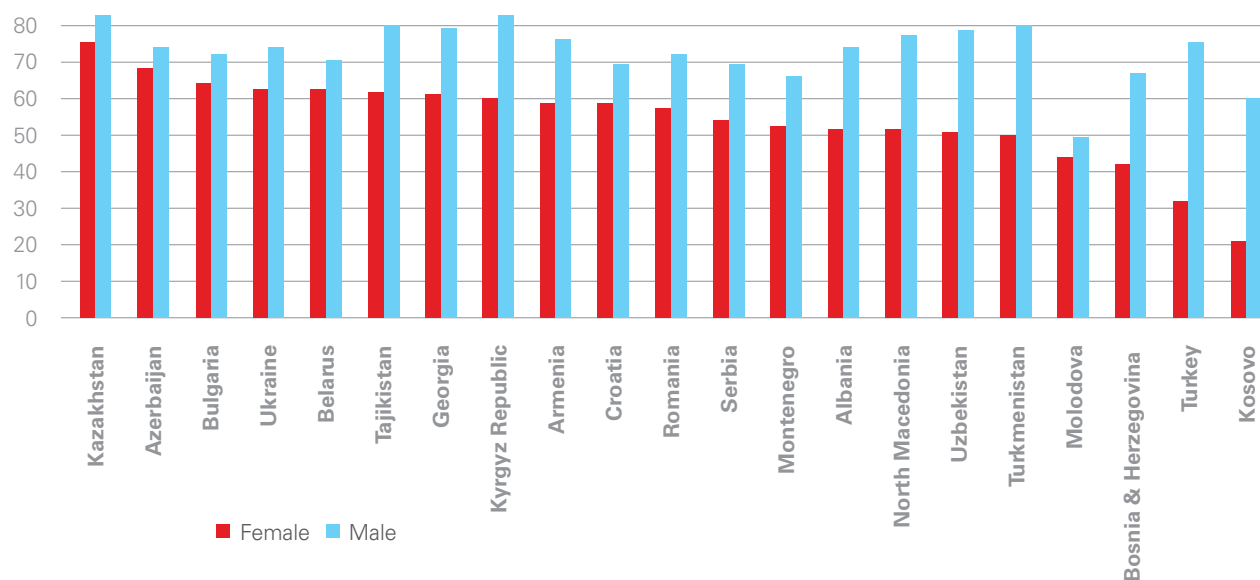
### Impact of current policies

A large body of literature confirms the strong impact of family policies on both female employment and child poverty. First, having affordable and flexible early childhood education and care available promotes mothers' employment and equal opportunities for child development, while it also reduces child poverty by increasing mothers' income. Second, family-friendly insurance systems and work arrangements increase female labour supply.<sup>45</sup> These correlations are likely to apply to the Europe and

Central Asia (ECA) region as well, but are difficult to assess because of the lack of comparable data.

As Figure 2 below shows, there is a significant male/female participation gap in most countries in the region. It is also worth noting, however, that there is much more variation in the female participation rate than in the male rate. Female labour force participation ranges between 21 per cent in Kosovo and 75 per cent in Kazakhstan, while the male rate ranges between 49 per cent in Moldova and 83 per cent in Kazakhstan and Kyrgyzstan.

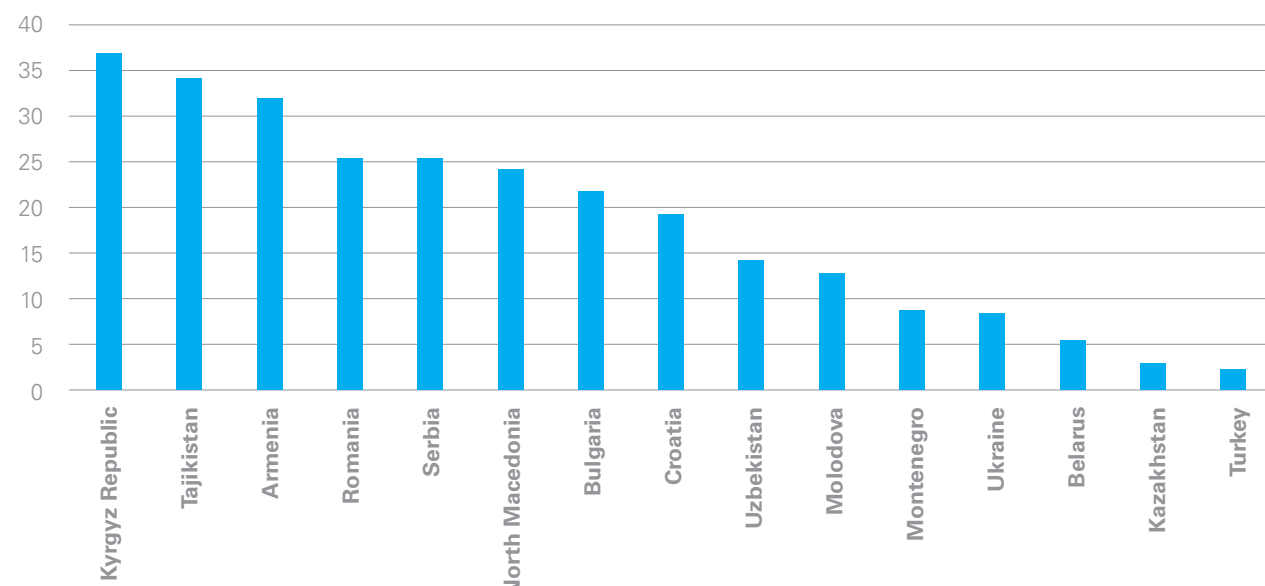
**Figure 2:**  
**Labour force participation by gender**



**Source:** World Bank Population aged 15-64, 2014. Gashi and Rizvanolli (2015) for Kosovo figures for 2013.

45 For a review, see Annex 3 and Olivetti, Claudia and Barbara Petrongolo (2017) *The Economic Consequences of Family Policies: Lessons from a Century of Legislation in High-Income Countries*, Journal of Economic Perspectives, American Economic Association 31(1), Winter 2017: pp.205-230.

**Figure 3:**  
**Poverty headcount ratio at national poverty lines (% of population), including incomparable values, 2013**



z

**Note:** The national poverty headcount ratio is the percentage of the population living below the national poverty lines. National estimates are based on population-weighted subgroup estimates on household surveys. Comparable data were unavailable for the other six countries/areas with UNICEF offices.  
**Source:** World Bank data from <https://data.worldbank.org/indicator/SI.POV.NAHC?locations=TR>

Comparable data on poverty is scarce in the ECA region. A recent World Bank publication provides information on poverty rates as defined by national poverty lines. These suggest exceptionally large variations (ranging from 2 per cent in Turkey to 37 per cent in Kyrgyzstan: see Figure 3). However, comparability is questionable as national definitions of the poverty line also vary considerably.

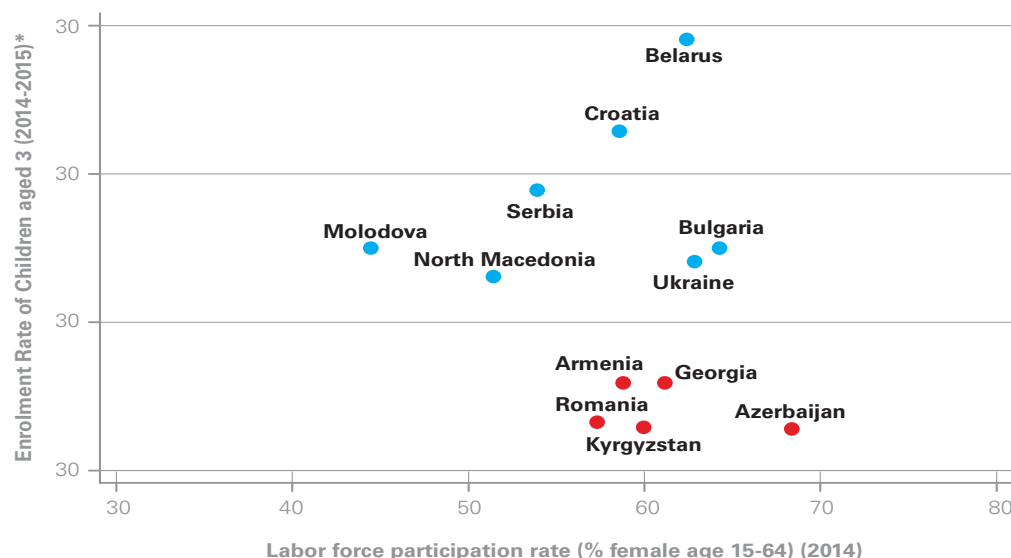
Existing studies have highlighted that availability of early childhood education and care for children aged below three years is an important determinant of female labour supply, and that access is particularly limited for disadvantaged families.<sup>46</sup> Figure 4 illustrates this using aggregate data on female employment (that is, not only mothers). However, the aggregate data also suggest that other factors beyond family policy also affect female employment, such as the overall level of economic development, or education.<sup>47</sup>

<sup>46</sup> See, for example, Wood, John, et al. (2014) 'RKLA3 multi-country evaluation: increasing access and equity in early childhood education'.

<sup>47</sup> Pignatti, N. (2016) 'Encouraging women's labor force participation in transition countries',



**Figure 4:**  
**Enrolment in formal early childhood education and care under the age of three and female labour force participation**



**Note:** Countries where the share of women working in agriculture exceeds 25 per cent of the female labour force are marked by red dots. Comparable data were unavailable for the other 9 countries with a UNICEF office.

**Source:** Authors' calculations based on World Bank data for 2014-2015

### Contextual barriers to reforming family policies in the region

As a region's political, institutional and economic characteristics have a major impact on the transferability of policies, in this section we provide a brief overview of the key contextual barriers that need to be taken into account in the countries being reviewed. Located in south-eastern Europe and Central Asia, these mostly post-socialist states have gone through a major transformation in recent decades, with a shift from centralized planned economies to market economies, liberalization of economic policies and democratization of political systems, which was then followed by a wave of centralization and an authoritarian turn in some cases.

A few of the region's countries (specifically Croatia, Bulgaria and Romania) are member states of the EU: this means that their legal systems and to some extent their

institutional settings are harmonized with the EU's common standards, and that they have access to Cohesion and Structural Funds for certain development projects.<sup>48</sup> Others were in the Soviet Union and many are now members of the Commonwealth of Independent States, though this has less implications for standardization of their legal systems than EU membership. The third group of countries is located in the Balkans and, with the exception of Turkey, they are also post-socialist states, most of them formerly part of Yugoslavia.

#### Socialist legacy

Although the region's countries show considerable differences in their current policies, the socialist legacy (with a few exceptions) is a common pattern influencing current institutions and early childhood education and care. Socialist policies promoted the labour force participation of women and supported the development of public early childhood education and care facilities.<sup>49</sup>

48 Over half of European Union funding is channelled through the five European structural and investment funds. They are jointly managed by the European Commission and the EU countries. The purpose of all these funds is to invest in job creation and a sustainable and healthy European economy and environment. For more, see [https://ec.europa.eu/info/funding-tenders/funding-opportunities/funding-programmes/overview-funding-programmes/european-structural-and-investment-funds\\_en](https://ec.europa.eu/info/funding-tenders/funding-opportunities/funding-programmes/overview-funding-programmes/european-structural-and-investment-funds_en)

49 UNICEF (2009) Child Well-Being at a Crossroads: Evolving challenges in Central and Eastern Europe and the Commonwealth of Independent States, Innocenti Social Monitor. Florence: UNICEF <https://www.unicef-irc.org/publications/series/innocenti-social-monitor/>



At the same time, it is important to note that the traditional gender roles changed less during the socialist era than the radical shift in policies might suggest. This effectively placed a triple burden on women in most of the countries: while they were expected to work and to be active in the political sphere, at the same time in most families they were still expected to carry out most household chores, including tasks related to childcare.<sup>50</sup>

### Cultural norms and religion

Following the transition, many of the post-socialist states experienced a shift back towards more traditional perceptions of gender roles. On the one hand religion started to regain some of its earlier importance in the region. In countries in the Balkans the main religion is Orthodox Christianity, while in Central Asia and Turkey most of the population identifies as Muslim. On the other hand, Hungarian sociologist Zsuzsa Ferge argues that childbearing has become an ideologically loaded issue, where a return to traditional gender roles is a form of opposition to the former communist state ideology.<sup>51</sup> This return to values under which the woman's role is to stay at home and rear children also justified budgetary cuts affecting public kindergartens, and led to a decrease in early childhood education and care capacity in all the post-socialist countries.<sup>52</sup> In addition, policy changes that occurred in some post-socialist states mostly favour the middle class and those who are employed, and there are no strong actors that advocate for the interests of low-income families.<sup>53</sup> Even though over the last decade there has been some improvement in rebuilding early childhood education, considerable equity gaps continue in access and coverage remains low in many regions.<sup>54</sup>

Data on perceptions of gender roles are scarce. In Albania, a 2016 UNDP survey found that approximately 70 per cent of respondents agreed or strongly agreed with the statement "it is better for the whole family if the husband has a job and the wife takes care of the family".<sup>55</sup> The low employment rate of Albanian women in Kosovo may at least be partly explained by cultural norms.<sup>56</sup> According to

a European Commission report, in North Macedonia childcare duties are also traditionally allocated to women, and this also plays a role in their relatively low labour market participation rate.<sup>57</sup>

### Gender equality

According to the World Economic Forum Global Gender Gap Report<sup>58</sup> differences are relatively large among the region's countries with regard to the situation of women and gender equality. While in certain countries – such as Belarus, Bulgaria and Moldova – the institution's Global Index indicates a relatively small gender gap, in others – such as Armenia and Turkey – the gap is considerably larger. Even though in most countries there are no major gender gaps in educational attainment, and in many countries more women than men attend tertiary education, this does not translate fully into labour market participation. According to the Economic Participation and Opportunity Index of the World Economic Forum, women are at a serious disadvantage on the labour market compared to men in several countries in the region, such as Bosnia and Herzegovina, Montenegro and Kyrgyzstan.

Survey data on wages for similar work also reveal a considerable gender pay gap in most countries in the region, which might discourage women from participating in the labour market, or delay their return after giving birth. Another important factor is the unequal distribution of unpaid care work, a major cause of gender inequality in participation rates in the primary labour market.<sup>59</sup>

### Economic characteristics

Most (but not all) of the region's countries are upper middle-income countries according to the World Bank classification, with considerable variation within the region. Gross domestic product (GDP) per capita in purchasing power parity terms ranged from around USD 3,000 (Tajikistan) to more than USD 26,000 (Kazakhstan) in 2017.<sup>60</sup> In terms of the Human Development Index, which takes into account health care and education among other factors, the differences are somewhat smaller, but most

50 LaFont, S. (2001) One step forward, two steps back: women in the post-communist states. *Communist and Post-communist Studies* 34(2) 2001: pp. 203–20.

51 Zsuzsa, Ferge (1997) A szociálpolitika paradigmaváltása – A társadalmi individualizálása, Évköny '98. A nemzetközi munkásmozgalom történetéb. I. Budapest: Magyar Lajos Alapítvány, 1997: pp. 31–63

52 UNICEF (1997) 'Children at Risk in Central and Eastern Europe: Perils and Promises', The MONEE Project Regional Monitoring Report No. 4. Florence: UNICEF.

53 Inglot, Szikra, and Rat (2012) Reforming Post-Communist Welfare States 27. *Problems of Post-Communism* 59(6), November–December 2012: pp. 27–49.

54 Wood, John, et al. (2014) 'RKLA3 multi-country evaluation: increasing access and equity in early childhood education'

55 UNDP (2016) 'Public Perceptions and Attitudes towards Gender Equality in Albania'. Tirana: UNDP [www.al.undp.org/content/dam/albania/docs/STU-DIMI\\_PERCEPTIMET\\_eng.pdf](http://www.al.undp.org/content/dam/albania/docs/STU-DIMI_PERCEPTIMET_eng.pdf)

56 Gashi, Ardiana and Artane Rizvanolli (2015): 'The Cost of Patriarchy: Excluding Women from the Workforce is the Main Bottleneck to Development', Prishtinë: Demokraci për zhillim.

57 European Commission (2012): 'The Current Situation of Gender Equality in the Former Yugoslav Republic of Macedonia (FYROM) - Country Profile 2012'. Brussels: European Commission.

58 World Economic Forum (2016) The Global Gender Pay Gap 2016. Geneva: World Economic Forum. [www.weforum.org/reports/the-global-gender-gap-report-2016](http://www.weforum.org/reports/the-global-gender-gap-report-2016)

59 OECD (2015) 'SIGI Regional Report - Europe and Central Asia' [www.oecd.org/dev/development-gender/SIGI-BrochureECA-2015-web.pdf](http://www.oecd.org/dev/development-gender/SIGI-BrochureECA-2015-web.pdf)

60 World Bank Open Data Portal, <https://data.worldbank.org/indicator/ny.gdp.pcap.pp.cd>

Central Asian countries (with the exception of Kazakhstan) still have lower scores than the south-eastern European states covered.<sup>61</sup>

There are also relatively large cross-country differences in the sectoral composition of the economy: in the Caucasian countries, Albania and some of the Central Asian countries, according to World Bank data, a large share of women (30-50 per cent and above) work in agriculture, and this proportion is usually higher than for men in the same country.<sup>62</sup>

The share of the informal economy is relatively large in the region compared to the EU. While in recent years the share of the shadow economy has been around 20 per cent of GDP in the EU, in the Balkan region the figure ranges between 25 and 30 per cent in Croatia, Romania and Bulgaria.<sup>63</sup> The share is significantly higher in Central Asia, reaching almost half of GDP in many countries.<sup>64</sup> This is also reflected in the share of informal employment:<sup>65</sup> almost a third of employees work in the informal sector in Ukraine and Kazakhstan, and the figure is even higher in Armenia and Albania.

### Migration and demographics

Most of the countries are experiencing significant net outflow migration according to International Organization for Migration (IOM) data. In some cases, such as Albania and Bosnia and Herzegovina, almost a third of citizens live outside the country.<sup>66</sup> On top of total fertility rates dropping below two children, this has led to a decline in populations in Central and Eastern European countries. This is creating a growing pressure on pay-as-you-go pension systems and hence underlines the need for policies that support mothers' employment and reduce the cost of raising children. In Central Asia, this is a smaller concern, as total fertility rates are above two children per woman in most of the countries, leading to population growth.<sup>67</sup>

Most of the countries are relatively urbanized, with more than 50 per cent of the population living in urban areas, but there are considerable differences. While in Bulgaria and Turkey the urban population exceeds 70 per cent, in certain Central Asian states, such as Tajikistan and Kyrgyzstan, the figure is below 40 per cent.<sup>68</sup> This implies that in this region policies that are more efficient in urban settings – such as the use of early childhood education and care institutions that require large pools of children in their proximity – might be less successful.

### Governance structure

In most of the countries in the region financial subsidies, such as social and child benefits, are administered by the Ministry of Labour or another responsible ministry, often through regional or local offices, while the operation of childcare institutions is in most cases the responsibility of the Ministry of Education. While in countries where local governments have relatively higher autonomy – such as Bosnia and Herzegovina and the EU member states – policies could be piloted in some regions, in most of the countries (especially in Central Asia) the highly centralized state administration might make this more difficult.

61 United Nations Development Programme, Human Development Data, <http://hdr.undp.org/en/data>

62 World Bank Open Data Portal, <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS>

63 Schneider, Friedrich (2015) Tax Evasion, Shadow Economy and Corruption in Greece and Other OECD Countries: Some Empirical Facts. *Global Business & Economics Anthology* 2015(1): pp. 217-226

64 Schneider, Friedrich (2012) The Shadow Economy and Work in the Shadow. What we do (not) know. IZA discussion paper series. IZA DP No. 6423. March 2012. <http://ftp.iza.org/dp6423.pdf>

65 ILO data, [www.ilo.org/ilostat-files/Documents/Excel/MBI\\_3\\_EN.xlsx](http://www.ilo.org/ilostat-files/Documents/Excel/MBI_3_EN.xlsx)

66 IOM data, <https://migrationdataportal.org>

67 World Bank Open Data Portal, <https://data.worldbank.org/indicator/sp.dyn.tfrt.in>, <https://data.worldbank.org/indicator/sp.pop.grow>

68 World Bank Open Data Portal, <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS>





# Chapter 4.

## The simulation

### Identifying policy options

Based on the review of existing policies in the region and other countries with comparable institutional contexts, we identified four policies using the following criteria:

1. cost effectiveness (taking into account quality and long-term social returns);
2. transferability: can be adapted to other countries, taking into account the institutional and social context;
3. scalability: can be implemented at national level or expanded in terms of volume and accessibility;
4. sustainability: can be maintained over time (especially regarding funding); and
5. variation: varied in terms of type and institutional context.

These criteria ensure that all the region's countries will find at least one of the examples relevant and feasible. During

the selection process, we first identified seven policy options and then invited UNICEF core steering group (Regional Advisors Social Policy, Early Childhood Development and Gender) to evaluate these against the above criteria. The policy options that were not explored further were: (a) (almost) universal unconditional child benefit, (b) childcare allowance conditional on kindergarten attendance for low educated parents, and (c) compulsory pre-school for children aged 4-5. The number of options was reduced mainly for practical reasons: the universal child benefit and compulsory pre-school options were considered to be more complex in terms of sustainability; while targeted conditional childcare allowance is similar to the targeted subsidy so only one of these was chosen.

The four policy options are summarized in the table below and are explained in more detail below the table. The exact design of these options was determined following discussions at a workshop with UNICEF staff and was based on the empirical evidence briefly summarized in Section 2.



**Table 5**  
**Policy options**

Policy intervention	Main aim and rationale	Limitations / notes
<b>1. Paid parental leave until 15-18 months and support for flexible timing of return</b>	Increase supply of mothers' labour as this would equate to shorter paid parental leave in most cases	Needs to be combined with an extension of early childhood education and care capacities
<b>2.a. Subsidy for early childhood education and care below the age of three: tax allowance</b>	Increase supply of mothers' labour; affordable early childhood education and care for children below the age of three is in short supply in most countries	Dependent on flexible supply of early childhood education and care; may not reach low income parents, quality assurance is difficult
<b>2.b. Universal early childhood education and care subsidy below the age of three: quasi-voucher</b>	Increase supply of mothers' labour	Dependent on flexible supply of early childhood education and care; may require investment in administration
<b>3. Targeted early childhood education and care subsidy below the age of three for parents with low incomes or low educational attainment</b>	Increase supply of mothers' labour, ensure equal opportunities for disadvantaged children	Dependent on flexible supply of early childhood education and care, political support may be difficult to garner
<b>4. Free meals for disadvantaged children (aged between 18 months and school age) in public early childhood education and care *</b>	Ensure equal opportunities for disadvantaged children	Risk of decline in quality unless supply of early childhood education and care can expand flexibly

**Note:** \*Not conditional on actual attendance; also available in accredited private institutions eligible for state subsidies

**Option 1:**  
**Paid parental leave until the child is aged 15-18 months, with incentives for returning to the labour market**

- Combined length of maternity and parental leave of 15 months, with gradual introduction
- Replacement rate of around 80-90 per cent
- Father or grandparents can also claim

Paid maternity and parental leave and subsidized early childhood education and care may affect families (as well as their communities and the state budget) in several ways. They may improve child health outcomes and child development (by increasing the duration of breastfeeding and the quality of care, and by strengthening the bond between children and their mothers and fathers). The effects on the mothers' subsequent employment and earnings depend on the amount and especially the length of the

leave: very long leave may depreciate women's skills (in reality or in the perception of employers) and thus reduce their later employment opportunities. The OECD recommends that paid leave be around 15 months, in order to prevent the negative impacts of a long career break for mothers (please see Section 2 for more detail on the underlying evidence and guidelines).

**Option 2a:**  
**Subsidy for care of children below the age of three for families: tax allowance**

- Combined with financial support for early childhood education and care centres
- Require formal institutions in order to ensure quality
- Parent can choose among accredited childcare institutions
- Level of subsidy: roughly a third of total cost

**Option 2b:****Subsidy for care of children below the age of three for families: quasi voucher**

- Combined with financial support for early childhood education and care centres
- Require formal institutions in order to ensure quality
- If possible, involve local government
- Subsidy paid directly to early childhood education and care provider. Parent can choose among accredited institutions
- Level of subsidy: roughly a third of total cost, or two-thirds for parents with low educational attainment

Formal early childhood education and care of adequate quality improves child outcomes in terms of health, skills, and school performance, and has a positive effect on mothers' employment and subsequent earnings. Integrated early childhood education and care programmes that combine day care facilities, early development and parenting advice have further benefits because they reduce the risk of a range of social problems typical of marginalized communities. Some of these additional effects also apply to some extent to day care facilities, if the quality of care is high and priority is given to disadvantaged families. Early childhood development is significantly increased for disadvantaged children enrolled in quality early childhood education and care. OECD research shows that public provision of early childhood education and care is better than private provision because it can be better monitored and supported for quality assurance by experts.

**Option 3.****Targeted subsidy for education and care of children below the age of three for parents with low educational attainment**

- Combined with financial support for early childhood education and care centres
- Require formal institutions in order to ensure quality
- If possible, involve local government
- Level of subsidy: two-thirds of total cost

When provision of early childhood education and care is free or cheap but limited in capacity, higher educated women tend to benefit disproportionately. This is partly because they often have better connections and partly because they are more motivated to return to work. Also, if early childhood education and care is not fully subsidized, women and their families from upper income quintiles can usually cover parental fees from the mother's earnings. These considerations suggest that ensuring the same opportunities for children from lower- and middle-income and marginalized communities requires a targeted approach rather than a universal one, at least until enrolment can be granted to all children.

**Option 4.****Free meals for children of parents with low educational attainment attending public or accredited private early childhood education and care (eligible for state subsidy)**

- State reimburses cost of meals directly to provider
- Entitlement administered by local government

Free meals for children attending public childcare may increase enrolment by poor children and thus improve the targeting of childcare services. This option may be combined with the ones above or used independently as a first step in countries where the scope to increase government spending on childcare is limited.

In both the tax allowance and quasi-voucher option, a third of the total cost of running the early childhood education and care centre would be covered by the family, and the remaining two-thirds by the state, possibly shared between the central government and the local municipality. In some countries there is a parental fee (usually around a third of the total cost), while in others early childhood education and care services are currently free of charge and so in these cases our proposal would imply introducing a parental fee. In the proposed tax allowance scheme for families with low incomes or low educational attainment, two-thirds of the total cost of running an early childhood education and care centre would be covered by the tax allowance. Also, in countries where the current system is financed by municipalities (and parents), the options would entail the introduction of a subsidy by the central government, which should be available to all accredited providers, whether public or private.

The main differences between options 2a and 2b are that (1) 2a is easier to administer (as it goes through the taxation system) but (2) 2a would only reach parents with earned incomes. The quasi voucher scheme would require some administrative capacity at local level, but would make it easier to identify disadvantaged families and provide them with higher subsidies.

In countries where early childhood education and care is currently free, introducing a parental fee would mainly affect higher-income families (as the limited number of places are typically taken up by such families) who could finance it from either the mother's wage or other family income. At the same time, parental contributions would free up government resources that could be used to further expand early childhood education and care facilities and to provide fully subsidized access to disadvantaged families.

## Simulation method

### Choice of simulation countries

The simulation countries were chosen based on a typology of countries to ensure that at least one of the simulation results was potentially relevant for each country in the region. The typology was based on contextual variables (described in detail in Annex 4), and the features of

the family benefit system described in Section 2. It also took account of availability of suitable individual level data on mothers' employment, use of early childhood education and care and incomes: this proved to be a strong limitation as the study had to concentrate on where data was available (see Annex 1 for more details). The simulation countries are thus Romania, Croatia, Bulgaria and Georgia. More information on the four countries is provided below.

**Table 6**  
**Categorization of ECA countries by family policy and contextual factors\***

Clusters based on context	Male breadwinner/ female caregiver	Caregiver parity	One-and-a-half breadwinners
C1	Kosovo	Albania, <b>Romania</b> , Montenegro, Serbia, North Macedonia	Bosnia and Herzegovina, <b>Croatia</b> , Moldova,
C2	Turkey	<b>Bulgaria</b> , Armenia	Belarus, Ukraine
C3	Kyrgyzstan	Azerbaijan, <b>Georgia</b> , Tajikistan, Turkmenistan, Uzbekistan	Kazakhstan

**Note:** \*The context-based clusters are defined in Annex 4, while the grouping of family policies is explained in Section 2.

## Bulgaria

### Maternity leave

Mothers in Bulgaria are entitled to 410 days of maternity leave. Of the 410 days, 45 must be taken before the child is born, and so maternity leave lasts until the child reaches the age of one. If the father is married to the child's mother (or lives with her in the same household and recognizes the child as his own), he may also take on care for the child after the child reaches the age of six months, and receive the benefit for the rest of the maternity leave. Similarly, grandmothers and grandfathers may take on care for the child after the child reaches the age of six months. The maternity benefit of insured mothers is 90 per cent of the average daily income in the 24 months preceding the start of the maternity leave with a ceiling of BGN 2,340 (about €1,200 per month). If the mother did not contribute for maternity to the National Insurance Fund for at least 12 months or is uninsured for

maternity, the maternity benefit is means tested. In such cases, monthly per capita income must be below BGN 350 (about €180) and the benefit amounts to BGN 100 (about €51) for 12 months (until the child reaches the age of one).<sup>69</sup>

### Paid parental leave

Insured parental leave in Bulgaria starts at the end of maternity leave (after the child turns one year). The leave is available to either parent, an adoptive parent or a guardian. Parents are entitled to take paid parental leave until the child reaches the age of two. The benefit is a flat-rate benefit set each year by the State Social Insurance Budget Act and amounted to a monthly BGN 340 (approximately €174) in 2016.<sup>70</sup>

### Early childhood education and care

Children in Bulgaria between the ages of three months and three years may attend so-called "detska yasla" or

<sup>69</sup> European Commission, [Bulgaria – Maternity and paternity](#), [Bulgaria – Family child benefits](#)

<sup>70</sup> European Commission, [Bulgaria – Maternity and paternity](#)

nursery groups in kindergarten for children between 10 months and 3 years.<sup>71</sup> These are financed by local authorities, which are also responsible for monitoring their capacity. Parental fees in public settings range between BGN 25 and 60 (about €13-30) per month in 2014/2015 (including food), with an average of BGN 45 (about €23) per month.<sup>72</sup> For children under two years of age, the participation rate in early childhood education and care was 12.5 per cent in 2016. Meanwhile, the participation rate of children aged 3-5 years was 78.7 per cent in 2016.<sup>73</sup> The maximum number of children per group varies with the age of the children: it is 8 for those below one year, 16 for children aged one or two years and 22 for three-year-olds. Demand for places in detska yasla and nursery groups is generally higher than supply, but in rural areas it may be easier to find places for children than in big cities, where the demand is even higher. According to a new law on ECEC and school education, children aged two years can be accepted in kindergartens provided there are not enough places in detska yasla. Kindergarten attendance is compulsory for children aged five and six years, for 20 and 24 hours per week respectively.<sup>74</sup>

## Croatia

### Maternity leave

All employed and self-employed pregnant women are entitled to maternity leave, which should start 28 days before the date of birth. Mandatory maternity leave then lasts for 70 days after giving birth, and can be extended until the child reaches the age of six months. The benefit during this period amounts to 100 per cent of the claimant's wage with no ceiling if she meets the condition of at least 12 months of pensionable service, or alternatively 18 months during the last two years in the case of interruptions. Uninsured mothers may receive a flat-rate cash benefit that currently amounts to HRK 1,663 (€218) per month.<sup>75</sup>

### Paid parental leave

In Croatia the length of parental leave varies with the number of children and depends on how parents divide it. If only one parent uses it, parental leave is six months for

the first and second child and 30 months for the third and each subsequent child, or for twins. If the parents decide to divide the parental leave between them the length is eight months for the first and second child.<sup>76</sup> The income replacement during the first six or eight months of parental leave is 100 per cent of previous monthly income with a ceiling of HRK 3,991 (€522 – as of 1 July 2017). If the leave is longer than six or eight months the benefit falls to HRK 2,328 (€305). Parents who do not meet the insurance conditions are eligible for a flat rate benefit of HRK 2,328 (€305). Special rules apply for children with severe disabilities.<sup>77</sup>

### Early childhood education and care

Children below the age of seven in Croatia attend so called “dječji vrtić”. These facilities are a unitary system of early childhood education and care in which aged children between six months and seven years can be enrolled. Local authorities finance all early childhood education and care, and thus prices may vary across localities. Demand for early childhood education and care is generally higher than supply. Local authorities give priority to children with disabilities, special needs or health problems, as well as children of war veterans. The age of the child, socio-economic criteria, family status and the employment status of parents may also be considered. In 2011, the participation rate of children under one in early childhood education and care was 0.5 per cent, while it was already 19 per cent for one-year-olds, 29 per cent for two-year-olds and 52 per cent for three-year-olds. Meanwhile, the participation rate for 5 year-olds was 62 per cent. Since 2014/15 all the children must participate in a pre-primary programme for one year at the age of five.<sup>78</sup>

## Georgia

### Maternity leave

Employed women in Georgia have the right to take paid maternity leave for 183 days. For this period the mother receives 100 per cent of her daily wage, with a ceiling of GEL 1,000 (€370) a month. While this amount is paid from the state budget, some private sector employers may provide additional payments during maternity leave

71 Besides the separate settings for younger children there are settings that are intended for both younger and older children, between the age of 10 months and 7 years where children are divided according to age groups (under 3 years, 3-5 years and 5-7 years).

72 The fees in private settings are almost ten times higher, at about BGN 417 (about EUR 213).

73 OECD (2019) OECD family database. Chart PF3.2.A and Chart PF3.2.E. <[www.oecd.org/els/social/family/database.htm](http://www.oecd.org/els/social/family/database.htm)> Accessed 15 June 2019

74 European Commission/EACEA/Eurydice/Eurostat (2014) Key Data on Early Childhood Education and Care in Europe. 2014 Edition. Eurydice and Eurostat Report. Luxembourg: Publications Office of the European Union <https://ec.europa.eu/eurostat/documents/3217494/5785249/EC-01-14-484-EN-PDF/cbdf1804-a139-43a9-b8f1-ca5223eea2a1>

75 European Commission: Croatia - Maternity/paternity benefits (rodiljne i roditeljske potpore) & Information received from country experts.

76 The leave may be used until the child's eighth birthday, either fully or in parts. If used in parts it may be used up to two times a year for at least 30 consecutive days each time. Source: Bodiroga-Vukobrat, N. (2016) Croatia: Country Report – Gender Equality. How are EU laws transposed into national law? Brussels: European Commission. <https://www.equalitylaw.eu/downloads/3767-croatia-country-report-gender-equality-2016-pdf-1-32-mb>

77 European Commission: Croatia - Maternity/paternity benefits (rodiljne i roditeljske potpore)

78 European Commission/EACEA/Eurydice/Eurostat (2014) Key Data on Early Childhood Education and Care in Europe



in order to compensate the full amount of salary (above the ceiling). This additional payment is generally included in the employment contract. For public sector employees, the state-paid maternity benefit is supplemented with a payment to compensate for the full salary.<sup>79</sup>

### **Paid parental leave**

In Georgia there is no additional paid parental leave besides paid maternity leave. Unpaid parental leave can last for 730 days (two years).<sup>80</sup>

### **Early childhood education and care**

Children between the ages of two years and six years participate in a nine-hour public programme, which is fully covered by the local authorities (including the cost of food). The maximum number of children per group and per staff member is regulated centrally. The participation rate of three-year old children is 42.8 per cent. The participation rate of 3-5 year olds was 62.3 per cent.<sup>81</sup> Access to kindergartens is poor in rural areas.<sup>82</sup>

## **Romania**

### **Maternity leave**

The length of the maternity leave in Romania is 126 days (about four months)<sup>83</sup> and requires at least one month of social insurance contributions in the 12 months preceding the maternity leave. The maternity allowance is calculated based on the mother's average monthly income in the six months before the maternity leave began. The replacement rate is 85 per cent. The allowance is not subject to income tax, but recipients need to pay a 10.5 per cent contribution to the health insurance system. In addition to the maternity allowance, women may also receive so-called "maternal risk leave" and "maternal risk allowance", if they are not on maternity leave but the employer is not able to guarantee risk-free working conditions.<sup>84</sup>

### **Paid parental leave**

A reform to the child-raising allowance and leave in Romania took effect on 1 July 2016.<sup>85</sup> Paid parental leave is granted until the child reaches the age of two, with a monthly benefit of 85 per cent of average prior monthly earnings. The new law increased the minimum accumulation period of prior employment from one to two years. The minimum level of child-raising allowance and the return-to-work benefit is linked to the minimum gross wage (RON 1063 or about €234 and RON 531 or about €117 respectively). Uninsured parents can receive 35 per cent of the minimum allowance until the child reaches the age of three (RON 372, € 82).<sup>86</sup>

The return-to work benefit is payable until the child reaches the age of three, provided that the parent on leave returns to work at least 60 days before the child turns two. The ceiling for calculating the child-raising benefit was also lifted. One month of the leave must be taken by the other parent (or lost).<sup>87</sup>

### **Early childhood education and care**

Early childhood education and care for children under the age of three is provided in centre-based settings called "creşa". Creşa are financed by local authorities, and are free of charge, except that parents need to pay up to RON 130 (about €29) for meals. In general, early childhood education and care in Romania is underdeveloped and almost non-existent, especially in rural areas and small towns.<sup>88</sup> Despite all early childhood education and care being publicly subsidized and free of charge, there is no legal entitlement that would guarantee a place in centre-based institutions for all children (with the exception of year-old children in a preparatory class). Only 17.8 per cent of children under the age of two participated in early childhood education and care services in 2016. In contrast, the participation rate of 3-5 year-old children was 84.5 per cent.<sup>89</sup> Demand for early childhood education and care is higher than supply for both younger and older children. The nationally determined criteria used by local authorities

79 Council of Europe: 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO)', <http://www.missceo.coe.int/index.aspx> and information received from country expert Tinatin Baum.

80 Information received from country expert Tinatin Baum.

81 UNICEF (2015) 'Welfare Monitoring Survey Georgia'. Tbilisi: UNICEF. <https://www.unicef.org/georgia/media/1161/file/WMS%202015%20Summary.pdf>

82 European Commission (2011) 'Social protection and social inclusion in Georgia'. European Commission <http://ec.europa.eu/social/BlobServlet?docId=6887&langId=en>

83 Of these, 63 days should be taken before giving birth and at least 42 days must be taken after giving birth.

84 The maternal risk allowance may be paid for a period of 120 days and amounts to 75 per cent of the claimant's average monthly earnings over the last 10 months. The mother can request maternal risk leave before maternity leave or after it, if she does not request child-raising allowance for a child up to two years (see Paid Parental Leave). Source: European Commission, *Romania – Maternity*

85 Pop, Luana (2016) 'Child-rearing leave in Romania: an effective instrument for increasing the birth rate and improving child care?', ESPN Flash Report 2016/29. European Social Policy Network, [ec.europa.eu/social/BlobServlet?docId=15797&langId=en](http://ec.europa.eu/social/BlobServlet?docId=15797&langId=en)

86 European Commission, *Romania – Child-raising allowance*; Pop, Luana (2016) 'Child-rearing leave in Romania: an effective instrument for increasing the birth rate and improving child care?' <https://ec.europa.eu/social/BlobServlet?docId=15797&langId=en>

87 Rödl & Partner (2016) 'Tax Alert', Fiscal News, No. 16 –30, April 2016 [www.roedl.net/fileadmin/user\\_upload/Documents/Newsletter/Romania/2016/en/Tax\\_Alert/Tax\\_Alert\\_16th\\_30th\\_April\\_2016.pdf](http://www.roedl.net/fileadmin/user_upload/Documents/Newsletter/Romania/2016/en/Tax_Alert/Tax_Alert_16th_30th_April_2016.pdf)

88 Ibid.

89 OECD (2019) OECD family database. Chart PF3.2.A and Chart PF3.2.E. <[www.oecd.org/els/social/family/database.htm](http://www.oecd.org/els/social/family/database.htm)> Accessed 15 June 2019

to allocate places in creşă are the parents' employment status, family status and socio-economic criteria.<sup>90</sup>

#### *Approach to simulating policy impact*

The simulation of the potential impact of the policies was run for the four selected policies on employment and child poverty. The calculations relied on existing impact evaluations of policies in countries with roughly comparable institutional contexts in Latin America and Europe. These estimates were combined with survey data for the selected countries: the EU Statistics on Income and Living Conditions (SILC) and Labour Force Survey (LFS) for Bulgaria, Croatia and Romania and the Welfare Monitoring Survey (WMS) for Georgia. Using microdata available from the region, the datasets were aggregated into subgroups of women with the same characteristics in terms of age group, level of education, and age group of children.

The impacts for each subgroup were simulated using coefficients from existing estimates and country-level impacts were computed using population weights. Impacts were calculated on employment and child poverty, access to early childhood education and care by disadvantaged children, and the public budget (expenses and revenues).

We only used the coefficients on policy change estimated in the selected papers and predicted the *ceteris paribus* effect of a similar policy change. Rather than replicating the estimates of the original papers on data from another country (which was not feasible due to data limitations), we applied the coefficients to semi-aggregated data from the target countries. This approach allows for heterogeneous effects by level of education and cross-country variation in the educational composition of women and the share of mothers. Further, we calculated the impact in percentages (rather than percentage points), which allows us to abstract from differences in the initial level of employment.

In this approach, we assume that the impact of family policies on female employment can be adequately described by the generic model of labour supply applicable to market economies (i.e. that cash benefits reduce willingness to work while a reduction in the cost of taking up work increases it). The size of the impact may vary with country-specific contextual factors. However, the available impact evaluations typically focus on single countries and thus there is very little (if any) evidence on such cross-country variations. At the same time, country-spe-

cific contextual factors may be taken into consideration in the fine details of designing a particular measure. In the approach outlined above we assume that the estimates for Mexico (or another country outside the ECA) describe the impact of a measure tailored to the Mexican context, and a similar impact can be achieved by a similar measure if it is suitably tailored to, say, the Romanian context.<sup>91</sup>

The simulations model the short-run direct (partial) effects of the policies, and ignore the (mostly positive) indirect and long-run effects. Thus, the results can be interpreted as a lower bound estimate of the total potential benefits for families and society. The simulations evaluate the *direct effect of the policies on the families affected* (those with young children), and how this affects the public budget, but do not take into account broader economy-wide effects. Several other important processes are not included in our calculations (see Annex 5).

#### *Cost and benefit simulations*

In the cost and benefit simulations we primarily assess the impact of the proposed policies from the perspective of the state budget.<sup>92</sup>

Broadly speaking, benefits for the state comprise: (a) additional revenues in the form of personal income taxes and social security contributions from the increased employment of mothers; (b) lower spending on parental leave benefits and other welfare benefits; (c) higher consumption tax revenues due to increased income of mothers and higher taxes on company profits from the increase in the number of early childhood education and care providers. As we focus on the direct effect of the policy changes, we exclude revenues from consumption and corporate taxes on firm profits in our calculations.

The costs of alternative policies for the state comprise: (a) direct costs, which can include (i) payments of parental benefits, (ii) childcare subsidies to families and early childhood education and care providers, and (iii) free meal subsidies; (b) potentially increased welfare payments because of the shortening of parental leave; and (c) indirect costs related to designing and implementing new policies. Because of lack of information on indirect effects, in our simulations we focus on direct costs. Furthermore, we only consider running costs and ignore the one-time cost of investment in infrastructure, staff training, administration or quality assurance systems.

90 European Commission/EACEA/Eurydice/Eurostat (2019) *Key Data on Early Childhood Education and Care in Europe. 2019 Edition*, Eurydice Report. Luxembourg: Publications Office of the European Union, [https://eacea.ec.europa.eu/national-policies/eurydice/sites/eurydice/files/kd\\_eccec\\_2019\\_report\\_en\\_0.pdf](https://eacea.ec.europa.eu/national-policies/eurydice/sites/eurydice/files/kd_eccec_2019_report_en_0.pdf)

91 Ideally, we would have used the average of coefficients estimated in several papers on the impact of the same policy, however, this was not feasible due to the low number of relevant impact evaluations.

92 It should be noted that some costs might be primarily borne by local governments. In our calculations, we do not differentiate between expenses and revenues of different levels of government.

### Data and limitations

In the simulations, we used large sample surveys to estimate the number and characteristics of women with small children, as well as their labour market status. This allowed us to evaluate impacts by education group. More precisely, we divided our sample into three educational groups (high, middle and low), and estimated their composition and employment rates based on the EU Labour Force Survey (for Bulgaria, Croatia and Romania) and WMS for Georgia. The EU LFS has five-year age bands, thus we focus on mothers with children aged 0-4 years. This is somewhat wider than the coverage of the child-care policies we propose, and likely introduces an upward bias in our estimates.<sup>93</sup>

Unfortunately these large sample surveys do not contain information on earnings, incomes and welfare benefits. Thus, instead of estimating these based on micro data on mothers of young children, we had to rely on official statistics on average earnings of working age women differentiated by educational attainment.<sup>94</sup> In a similar vein, we only had information on the average welfare benefits of women and the average parental benefits of mothers (not disaggregated by educational level). For more on the specific data sources see Annex 1.

### Summary of parameter estimates in existing studies

We simulated the impact of these policy options using existing estimates of the impact of similar policies. These estimates are summarized in the table below.

**Table 7**  
**Summary of labour supply estimates used in the simulations**

Policy option	Policy measure	Impact on what	Main effect	Heterogeneity	Reference, country
1	Paid parental leave: reduce the length and increase the replacement rate	Mother's employment	Phase 3*: 3.33%	By education level and income tercile	Kluve and Schmitz (2014), Germany
2a	Early childhood education and care subsidy - tax allowance	Mother's employment	4.3%	By education level and urban/rural	Calderón (2014), Mexico
		Father's employment	-1.26%		
2b	Early childhood education and care subsidy - voucher	Mother's labour force participation	19%	n.a.	Lovász and Szabó-Morvai (2014), Hungary
3	Early childhood education and care subsidy for low-educated: full-time public ECEC for disadvantaged families' children	Mothers' employment	26.5%	n.a.	de Barros, et al (2010), Brazil
4	Free meals for disadvantaged children	Mothers' employment			No estimates available

**Notes:** \*Phase 3: 25-59 months after childbirth (Kluve and Schmitz 2014). In the other papers, the impact was estimated for mothers with children aged 0-3 years (de Barros et al 2010), 1-3 years (Calderón 2014), or just over 3 (Lovász and Szabó-Morvai 2014). Further detail is provided in Annex 3.

93 Given that the employment rate of women with older children is likely higher, our estimate of the baseline employment rate is expected to be upward biased (due to this composition effect). Since the impact we simulate is a percentage increase, it is likely that the impact is also upward biased.

94 Except for Georgia, where we estimated earnings of women by educational attainment directly from WMS 2013.

The selection of studies for simulation was based on how similar the policy changes were between the counterfactual study and what we proposed. We collected a wide selection of papers covering mainly Latin America, Europe and Central Asia.<sup>95</sup> The search was restricted to quantitative evaluations based on a counterfactual methodology where outcomes in the treated population are compared to outcomes in a similar but untreated population.

We could not find any relevant studies from the ECA region, which may be partly due to the lack of reforms (there were no recent cuts in parental leave duration, and few countries extended daycare capacities for children aged below three years) and partly to the general lack of quantitative policy evaluations in the region. As a second-best solution, we broadened the search to middle-income countries where the social and economic context is broadly similar to the ECA region. As this still did not yield any result for some of the policy options, we extended the search to Europe.

Finally, four impact evaluation studies were identified as a suitable basis for simulating the effects of the four policies on mothers' employment outcomes – these were the only studies that were suitable for our purposes. The selected studies covered Germany, Hungary, Brazil and Mexico. The social and institutional context in Latin American countries and Hungary is broadly comparable to the simulation countries (as defined above) regarding the fertility rate and level of employment. Government effectiveness is generally lower in the ECA region while the share of the rural population is higher in some countries of the region. The comparability is admittedly weaker for Germany in all respects, but there were very few relevant papers on the duration of parental leave, and of these the German study was the closest in terms of the design of the policy change (see further detail in Annex 3).

Kluve and Schmitz studied the impact of a cut in the duration of paid parental leave coupled with an increase in the replacement rate on mothers' employment rate in Germany.<sup>96</sup> Calderón studied how eligible mothers and single fathers of children aged 1-3 changed their behaviour as a result of expansion of a subsidized early childhood education and care programme providing ECEC services for children aged 1-4 in Mexico.<sup>97</sup> Lovász and Szabó-Morvai investigated how mothers' labour force participation reacted to increased early childhood education and care coverage in Hungary.<sup>98</sup> De Barros et al studied the impact of subsidized full-time early childhood education and care specifically targeting disadvantaged (low-income) families in Brazil.<sup>99</sup> For more details on these studies, see Annex 3.

On the basis of these studies, we devised a cost-benefit simulation for each of the policy options for the simulation countries. The detail of the assumptions regarding costs and benefits are provided in Annex 5.

In our proposed paid parental leave scheme, mothers would be able to take paid maternity/parental leave for up to 15 months with a replacement rate of 80 per cent. For Bulgaria and Romania, only the effect of shorter paid parental leave on mothers' labour market outcomes is simulated, as the current replacement rates are close to our proposal. In the cases of Croatia and Georgia, neither of the two policy components is simulated, as the current system is already quite close to what is proposed.

<sup>95</sup> See Annex 3 for more detail on the search process and outcomes of the literature review

<sup>96</sup> Kluve, J. and Schmitz, S. (2018) 'Back to Work: Parental Benefits and Mothers' Labor Market Outcomes in the Medium Run', *ILR Review*, 71(1), pp. 143–173. doi: [10.1177/0019793917710933](https://doi.org/10.1177/0019793917710933).

<sup>97</sup> Calderon, Gabriela (2014) The effects of child care provision in Mexico. Working Papers No. 2014-07, Banco de México.

<sup>98</sup> Lovász, Anna and Ágnes Szabó-Morvai (2015) Does subsidized childcare matter for maternal labor supply? A credible cutoff-based estimate at a policy-relevant point. HETFA Working paper No. 2015/9. Budapest: HETFA Research Institute

<sup>99</sup> De Barros, Ricardo Paes, Pedro Olinto, Mirela de Carvalho, Trine Lunde, Norbert Schady, Samuel Santos and Andreza Rosalem (2010) 'Impact of free childcare on women's labour market behavior: Evidence from low-income neighborhoods in Rio de Janeiro'. PowerPoint presented at the GAP Workshop June 14, 2010, World Bank Regional Study on Gender Issues in LAC, 2010



**Table 8**  
**Existing and proposed maternity and paid parental leave policies**

	Current length	Proposed length	Current PML+PPL replacement rate	Proposed PPL replacement rate
Bulgaria	12+12	15	90% + flat rate	90%
Croatia	6+8	no change	100% + 100% *	
Georgia	6+0	no change	100%	
Romania	4.5+20	15	85%	85%

**Note:** \*The replacement rate is 50% for the third and every subsequent child. In this case leave is extended to 30 months.

In our proposed tax allowance and quasi-voucher schemes, a third of the total cost of running an early childhood education and care centre would be covered by the family, and the remaining two-thirds by the state, possibly shared between the central government and the local municipality. In Bulgaria and Croatia, the share paid by families would not change as they already pay a third of the total cost. In Georgia and Romania, early childhood education and care is currently free of charge so our proposal would imply introducing a parental fee.<sup>100</sup> In our proposed tax allowance scheme for families with low incomes and low educational attainment, two-thirds of the total cost of running an early childhood education and care centre would be covered by the tax allowance. This would make the service free for families in Bulgaria and Croatia. In Georgia and Romania the contribution of families would not change, as early childhood education and care is already free for them. For all three schemes, municipalities in Georgia would pay less, as the central government and families would cover some of the cost.

9. The table shows the impact of reducing paid parental leave and increasing spending on early childhood education and care by 20 per cent of the current expenditure on paid maternal and parental leave. The impact on the budget is net: the sum of changes to expenditure and revenues. The change in access to early childhood education and care applies to disadvantaged children.

The short-term benefits for the proposed policy options differ:

- Shortening paid parental leave brings immediate savings for the public budget and a significant rise in female employment, but it may also increase child poverty (for the children of mothers who cannot find employment).
- Expanding early childhood education and care services would lead to increased government spending, less risk of poverty and a modest increase in female employment.

In Bulgaria, for example, cutting paid parental leave would reduce public spending on family policies by 26 per cent and increase female employment by 1.3 percentage points, but at the cost of a 3.3 percentage point increase in child poverty in the short run. However, if about a fifth of the savings on paid parental leave were invested in a targeted expansion of early childhood education and care facilities, female employment would increase by a further 2.4 percentage points and would partly offset the damage of the paid parental leave cut by reducing child poverty by 0.9 percentage points. Overall, access to early childhood education and care would increase by 16 percentage points.

## Simulation results

### Overview of the main outcomes

Table 9 provides a summary of the simulated outcomes of three policy options: universal expansion in early childhood education and care, which in effect favours women with higher educational attainment (policy 2a), targeted expansion (policy 3) in which parents with lower educational attainment have free access to early childhood education and care and the duration of paid parental leave is shortened (which is only applicable in two of the simulation countries). The outcomes for all policy options are provided in Annex

<sup>100</sup> The parental fee would mainly affect higher-income families (as the limited number of places are typically taken up by such families) who can finance it from either the mother's wage or other family income. At the same time, parental contributions free up government resources to be used to further expand early childhood education and care facilities and to provide fully subsidized access to disadvantaged families.

**Table 9**  
**Short-term impact of particular family policy measures**

	ECEC (all)	ECEC (targeted)	PPL cut
<b>Bulgaria</b>			
public spending*	16.8	17.3	-25.5
female emp <sup>+</sup>	5.14	2.44	1.25
poverty <sup>^</sup>	0.00	-0.93	3.34
access to ECEC <sup>~</sup>	3.33	68.39	0.00
<b>Croatia</b>			
public spending	13.7	15.0	
female emp	1.69	0.63	
poverty	-0.47	-0.47	
access to ECEC	-2.23	36.13	
<b>Georgia</b>			
public spending	18.7	19.2	
female emp	3.53	0.86	
poverty	-0.37	-0.18	
access to ECEC	4.51	97.00	
<b>Romania</b>			
public spending	16.4	17.5	-45.9
female emp	3.47	1.15	1.65
poverty	-1.31	-3.04	8.58
access to ECEC	0.56	36.36	0.00

**Note:** ECEC (all) refers to universal tax credit (policy 2a); ECEC (targeted) refers to targeted subsidy (policy 3); PPL refers to reduction in paid parental leave (policy 1).

\* Public spending: percentage of total spending on parental leave benefits and ECEC

<sup>+</sup> Female employment: change in percentage points

<sup>^</sup> Child poverty: change in percentage points;

<sup>~</sup> Access to ECEC: change in access for disadvantaged children in percentage points

**Sources:** The simulations of the impact of ECEC expansion are based on Calderón (2014). All calculations were based on EU SILC and EU LFS for Bulgaria, Croatia and Romania and WMS for Georgia. Further details are provided in the Annexes 1, 3, 5 and 6.

The magnitude of these impacts depends on the targeting of the policies. As Table 9 illustrates, universal access tends to favour educated women, and this implies greater benefits in the short run: a larger increase in female employment and a smaller rise in net government spending. The policies targeting disadvantaged children yield smaller benefits in the short run, although it should be stressed again that the latter policies are likely to yield higher gains in the long run, in terms of improved school performance, better health and higher future earnings.

### Impact on female employment

Given our simulation methodology, differences between countries in the simulated outcomes may arise from variation in baseline employment levels, educational attainment of mothers and average earnings of women by educational attainment. Thus, we first provide a brief review of these characteristics of the countries studied: the composition of mothers by educational attainment (Table 10, employment rate (Table 11) and average earnings (Table 12).

### Composition of mothers

The distribution of mothers by educational attainment is similar in the four countries, though there are slightly more mothers with secondary education in Croatia and Georgia than in Bulgaria and Romania (Table 10).

The employment rate of mothers with children under the age of five is lowest in Bulgaria (37.04 per cent) and highest in Romania (49.45 per cent), though this appears linked to overall employment. Employment rates by educational attainment increase very substantially with higher educational attainment (mothers with tertiary education are typically four times as likely to be working as those who did not complete secondary education). However, in Georgia mothers who did not complete secondary education are more likely to be working than mothers with tertiary education (40.33 per cent and 38.14 per cent respectively). This is largely because almost all mothers with lower educational attainment classified as employed work on their own land plots or take care of their own livestock. In Romania the employment rate of mothers with lower educational attainment is also relatively high (36.04 per cent, Table 11).

**Table 10**

### Composition of mothers by level of education, percentages

	Primary education	Secondary education	Tertiary education
Bulgaria	23.90	44.19	31.91
Croatia	14.70	62.23	23.08
Georgia	6.01	60.72	33.27
Romania	26.87	51.03	22.11

Sources: Bulgaria, Croatia, Romania: EU LFS 2012, Georgia: WMS 2013

**Table 11**

### Mothers' employment rate by educational attainment, percentages

	Whole population (15+)	All mothers with children under the age of five	Mothers with primary education	Mothers with secondary education	Mothers with tertiary education
Bulgaria	46.6	37.04	7.30	37.04	61.03
Croatia	58.10	44.35	15.89	45.70	60.12
Georgia	49.83	32.54	40.33	28.70	38.14
Romania	64.80	49.45	36.04	48.58	67.74

Sources: Bulgaria, Croatia, Romania: EU LFS 2012; Georgia: WMS 2013.

**Table 12****Current average earnings of women, and tax revenues on earnings, Euros per month**

	Women aged 20-59		Primary education		Secondary education		Tertiary education	
	Earnings*	Tax revenues**	Earnings*	Tax revenues**	Earnings*	Tax revenues**	Earnings*	Tax revenues**
Bulgaria	287.58	153.12	184.27	98.11	217.42	115.76	334.61	178.16
Croatia	536.25	606.45	394.40	285.36	427.35	483.29	610.40	1,178.07
Georgia	163.99	41.00	61.17	15.29	131.64	32.91	187.77	46.94
Romania	286.88	259.04	153.23	138.36	205.88	185.90	459.68	415.07

**Note:** \* Income: Average monthly net earnings

\*\* Tax revenues: average revenue (taxes and social security contributions) of the state per employed woman.

**Sources** Georgia: ILOSTAT, Bulgaria, Croatia, Romania: EU SILC 2012

The average income of mothers is very similar in Bulgaria and Romania, much higher in Croatia and lower in Georgia. Higher education correlates with higher average income in all the countries. Earnings inequality is particularly pronounced in Georgia<sup>101</sup> and Romania, where women who have not completed secondary education earn less than a third of what graduate women do. Because income tax is progressive in Croatia, tax revenues are relatively higher from mothers with degrees than from mothers with primary education there<sup>102</sup> (Table 12).

### Impact of policies on employment

The simulations show the effects of the various policies on mothers' employment is positive, and would result in increased tax revenues and in some cases an increase in overall employment (Table 13).

**Shortening Parental Leave (1):** Simulation of the effect on mothers' employment of shortening parental leave to 15 months was run only for Bulgaria and Romania, as in Croatia and Georgia paid parental leave is already shorter than our recommendation<sup>103</sup>.

Based on Kluge and Schmitz's 2014 estimates, the employment rate of mothers with children under the age of four would increase by 1.23 percentage points in Bulgaria, implying a 0.26 percentage point rise in the national employment rate. In Romania, shorter parental leave could increase the employment rate of mothers by 1.65 percentage points and the national employment rate by 0.39 percentage points.

As the average monthly net income in Bulgaria of a woman aged between 20-59 years is €287.58 and the tax wedge is relatively low, state tax revenue could increase by €331.72 a month for 100 mothers affected by the policy change, while families' labour income would rise by approximately €603.52 a month (for 100 affected families). In Romania where women's average net earnings is €286.88, and the tax wedge is (relatively) high, monthly tax revenue could increase by €614.02 for 100 affected women, and families' labour income by €680.14. The higher results for Romania are because the employment effects are slightly more pronounced and the tax wedge is higher (Table 13).

<sup>101</sup> Earnings figures for women with lower educational attainment might not be very representative for Georgia, as only 11 per cent of all employed low-educated women report salary income.

<sup>102</sup> The earnings differential between women with higher and lower educational attainment is particularly pronounced in Georgia and Romania. This means that policies favouring mothers with degrees will generate relatively large (average) gains for families. By the same token, given that the tax wedge for women with degrees is so high in Croatia, policies tilted towards them will generate relatively higher tax revenues.

<sup>103</sup> The study only calculates the effect of the policy on tax revenues (and labour income), but not on income (spending) from parental (welfare) benefits.



**Table 13**  
**Impact of Policy reforms on mothers' employment**

**Intervention 1: Impact of shortened parental leave\***

	Women with children aged 0-4 Employment rate		Difference in tax revenues**	All population (15+) Employment rate	
	Observed	Estimated		Observed	Estimated
Bulgaria	37.04%	38.27%	+ €331.72	46.60%	46.86%
Croatia	44.35%	No simulation	No simulation	58.10%	No simulation
Georgia	32.54%	No simulation	No simulation	49.83%	No simulation
Romania	49.45%	51.10%	+ €614.02	64.80%	65.19%

**Impact of shortened parental leave by mothers' education level\***

Education	Women with children aged 0-4 years Below secondary		Women with children aged 0-4 years Secondary education		Women with children aged 0-4 years Higher education	
	Observed	Estimated	Observed	Estimated	Observed	Estimated
Bulgaria	7.30%	7.31%	37.04%	37.59%	61.03%	66.36%
Croatia	15.89%	No simulation	45.70%	No simulation	60.12%	No simulation
Georgia	40.33%	No simulation	28.70%	No simulation	38.14%	No simulation
Romania	36.04%	36.10%	48.58%	49.30%	67.74%	73.66%

**Intervention 2a: Impact of early childhood education and care subsidy (tax allowance or voucher)\***

	Women with children aged 0-4 years Employment rate			Difference in tax revenues **		Whole population (15+) Employment rate		
	Observed	Estimated <sup>1</sup>	Estimated <sup>2</sup>	Estimated <sup>1</sup>	Estimated <sup>2</sup>	Observed	Estimated <sup>1</sup>	Estimated <sup>2</sup>
Bulgaria	37.04%	37.74%	38.64%	+€105.18	+€243.15	46.6%	46.75%	46.94%
Croatia	44.35%	45.19%	46.26%	+€584.33	+€1,357.21	58.10%	58.34%	58.64%
Georgia	32.54%	33.16%	33.94%	+€22.91	+€53.32	49.83%	49.87%	49.92%
Romania	49.45%	50.39%	51.58%	+€231.10	+€537.32	64.80%	65.08%	65.44%

**Impact of tax allowance if mothers with higher education are more affected\*\*\***

	Women with children aged 0-4 years Employment rate		Difference in tax revenues **	Total population (15+) Employment rate	
	Observed	Estimated		Observed	Estimated
Bulgaria	37.59%	39.69%	+€346.62	46.60%	46.72%
Croatia	44.65%	46.77%	+€1,844.66	58.10%	58.74%
Georgia	32.54%	34.01%	+€58.32	49.83%	49.92%
Romania	49.45%	51.82%	+€721.48	64.80%	65.42%

**Intervention 2b: Impact of quasi-vouchers if mothers with low educational attainment are more affected \*\*\*\***

	Women with children aged 0-4 years Employment rate		Difference in tax revenues **	Total population (15+) Employment rate	
	Observed	Estimated		Observed	Estimated
Bulgaria	37.59%	39.01%	+€206.56	46.60%	46.72%
Croatia	44.65%	46.47%	+€1,230.36	58.10%	58.76%
Georgia	32.54%	33.97%	+ €51.28	49.83%	49.92%
Romania	49.45%	51.50%	+€471.85	64.80%	65.42%

**Intervention 3: Impact of early childhood education and care subsidy for mothers with low educational attainment\***

	Women with children aged 0-4, with primary education as highest educational attainment Employment rate		Difference in tax revenues **
	Observed	Estimated	
Bulgaria	7.53%	7.73%	+€19.58
Croatia	15.89%	16.31%	+€120.16
Georgia	32.54%	33.07%	+€16.34
Romania	36.04%	37.00%	+€132.14

**Notes:** \*Confidence intervals are provided in Annex 6.

\*\* Difference between the current and the estimated amount of monthly tax revenues of the state from 100 mothers

\*\*\* Mothers with higher education are twice as likely to be affected as their proportion in the total population. Changes in observed employment rates are caused by missing data on educational attainment

\*\*\*\* Low educated mothers are affected 1.5 times more than their proportion of the total population. Changes in observed employment rates are caused by missing data on educational attainment

1 based on the results of Lovász and Szabó-Morvai (2014)

2 based on the results of Calderón (2014)

**Sources:** Bulgaria, Croatia, Romania: EU LFS 2012, Georgia: WMS 2013.

In both Bulgaria and Romania, shorter parental leave and increased benefits favouring high-income families would affect mothers with higher education the most, given their relatively high baseline employment rates. Based on their estimates, shortening paid parental leave could increase the employment rate of mothers with higher education in Bulgaria by 5.33 percentage points and in Romania by almost 6 percentage points.

#### Early Childhood education and care subsidy (2a and 2b):

Calderón (2014) found that an early childhood education and care subsidy paid directly to mothers covering 90 per cent of early childhood education and care costs increases mothers' probability of working by 4.3 per cent for every 10 percentage points rise in coverage. Based on Calderón's results, in Bulgaria the employment rate of mothers of children aged 0-4 years would increase from 37.04 per cent to 38.64 per cent with a 10 percentage point increase in early childhood education and care coverage. This would increase total employment by 0.34 percentage points. In Croatia, the employment rate of mothers would increase by 1.91 percentage and national employment by 0.54 percentage points. The corresponding figures are 1.4 percentage points and 0.09 percentage points for Georgia, and 2.13 percentage points and 0.64 percentage points for Romania. These increases would imply monthly rises in tax revenue per 100 affected women of €243.15 in Bulgaria, €1,357.21 in Croatia, €53.32 in Georgia and €537.32 in Romania. The lower-bound estimates based on Lovász and Szabó-Morvai (2014) are roughly half of these, both for mothers' employment and for tax revenues.

If the ECEC subsidy is paid as a tax allowance it is more likely to affect mothers with higher education than mothers with lower educational attainment. The study assumes that highly educated mothers are twice as likely to be affected as the general population.<sup>104</sup> As these women earn more and their baseline employment rate is much higher than the average of all mothers, the early childhood education and care subsidy would increase the national employment rate and the tax revenues more significantly if it allowed children of mothers with higher education to be overrepresented in early childhood education and care. Nevertheless, mothers with lower educational attainment are in greater need of support, given their lower average

incomes and baseline employment rates. Therefore, a second exercise targets mothers with low educational attainment. In this case we assumed that children of mothers with low educational attainment would be 1.5 times more likely to enrol in early childhood education and care than their proportion in the population (this could arise, for example, from modified admission rules). The increases in total tax revenues and employment are slightly lower in this scenario.

ECEC Subsidy for disadvantaged mothers: De Barros et al. (2010) found that among disadvantaged mothers (mothers with primary education) the policy implementation would lead to a rise of 26.5 per cent in employment. Using these results we estimated that in Bulgaria the employment rate of mothers with low educational attainment would rise from 7.5 per cent to 7.73 per cent for mothers with primary education with a 10 percentage point growth in childcare coverage. Given that the average income of a woman with low educational attainment aged 20-59 years in Bulgaria is €184.27, this policy could increase state tax revenue by €19.58 for every 100 affected mothers. The effects would be similar in Georgia, as the average income of women with low educational attainment in the country is very low while their employment rate is very high. The increase in tax revenues would be markedly higher in Croatia and Romania. In the former, this is due to the relatively high earnings of women with low educational attainment and high tax rates, while in the latter there is a comparatively large increase in the employment rate. However, compared to the rise in tax revenue in any other policy scenarios, this rise is small.

#### **Impact of early childhood education and care subsidy on male employment**

Estimating the change in the employment rate of fathers, Calderón (2014) found that with every 10-percentage-point increase in early childhood education and care coverage, the employment rate of fathers decreases by 1.26 per cent. Thus early childhood education and care subsidy policies could slightly reduce the overall employment rate, as men's baseline employment rate is significantly higher than women's. This would also reduce tax revenue, as average male income is much higher than female income (Table 14).

<sup>104</sup> This assumption is based on the proportion of children with mothers with higher education, in early childhood education and care in Croatia compared to the children of mothers with primary or secondary education. OECD (2018) OECD Family Database – PF3.2: Enrolment in childcare and pre-school. OECD. [www.oecd.org/els/soc/PF3\\_2\\_Enrolment\\_childcare\\_preschool.pdf](http://www.oecd.org/els/soc/PF3_2_Enrolment_childcare_preschool.pdf)

**Table 14**  
**Impact of early childhood education and care subsidy on father's employment**

	Men with children aged 0-4 years Employment rate		Difference in tax revenues ***	Total population (15+) Employment rate	
	Observed	Estimated	Estimated	Observed	Estimated
Bulgaria	76.75%	75.79%	-€172.68	46.60%	46.43%
Croatia	78.15%	77.17%	-€637.59	58.10%	57.84%
Georgia	73.39%	72.47%	-€5.89	49.83%	49.78%
Romania	82.69%	81.65%	-€295.29	64.80%	64.50%

**Notes:** \* In Georgia the result is the average employment rate of all fathers

\*\* Difference between the current and the estimated amount of monthly tax revenues of the state per 100 fathers

**Sources:** Bulgaria, Croatia, Romania: EU LFS 2012, Georgia: WMS 2013.

#### Impact of policies on access to early childhood education and care by disadvantaged children

The effect on access by disadvantaged children (defined as children of mothers with primary or lower secondary education) varies considerably across policy options.<sup>105</sup> As expected, targeted options may induce a very substantial increase in access, but universal options only have a modest effect. Thus, for example, in Bulgaria free early childhood education and care for parents with low edu-

cational attainment would increase access among disadvantaged children from 5.6 per cent to 74 per cent, while a tax allowance mainly used by educated mothers would increase access by disadvantaged children from 5.6 to 8.9 per cent. These results are based on simple assumptions, as we had no household-level information to simulate the response of parents to changes in the availability and cost of early childhood education and care (see further detail in Annex 5).

**Table 15**  
**Increase in access by disadvantaged children, percentage points**

	Current average enrolment	2a: Tax allowance	2b: Quasi- voucher	2a: Tax allowance, tilted to highly educated	2b: Quasi- voucher favouring less educated	3: Free early childhood education and care for less educated
Bulgaria	11.2	12.3	30.1	3.3	48.0	68.4
Croatia	16.9	4.0	16.4	-2.2	28.8	36.1
Georgia	6.0	12.0	27.0	4.5	42.0	97.0
Romania	12.4	7.3	20.9	0.6	34.4	36.4

**Notes:** The current average enrolment rate refers to all children. In the 2a option tilted towards highly educated mothers, we assume that highly educated mothers are twice as likely to use the tax allowance. In the 2b option favouring less educated mothers we assume that access by these mothers is 1.5 times the average. Further details on these calculations are provided in the country summary tables in Annex 6.

<sup>105</sup> The calculations on change in access to ECEC are based on the assumption that public spending on daycare increases by 20% of the current public spending on paid leave. This is estimated current spending on leave policies (see details in Annex 5).



### Impact of policies on poverty

Before turning to the impact of different policies on poverty, we briefly discuss income distributions in the countries of the region. In Croatia households with young children have higher incomes than the general population, and so the poverty rates in these households are the lowest. Interestingly, in Romania, while median and mean

household incomes are lower among families with young children, their poverty rates are lower than for the general population, indicating that relatively few such households have very low incomes. By contrast, poverty rates in households with young children in Bulgaria and Georgia are almost 50 per cent higher than in families without young children.

**Table 16**

### Equivalent household income in € (monthly), and poverty rates in 2012

	All households			Households with a child aged 0-2		
	Median equivalent income	Mean equivalent income	Poverty rate (%)	Median equivalent income	Mean equivalent income	Poverty rate (%)
Bulgaria	222.1	261.9	21.72	230.9	254.9	25.15
Croatia	424.6	480.8	20.96	478.2	544.2	13.44
Georgia	87.2	120.3	20.62	83.0	108.9	27.03
Romania	185.1	210.9	22.04	140.6	176.4	16.36

Authors' calculations based on EU-SILC for Bulgaria, Croatia and Romania; based on WMS for Georgia (2013).

In line with our expectations, shortening the entitlement period for parental leave – given that it leads to a loss in income – leads to increased poverty among households with young children. This negative result is more pronounced in Romania than in Bulgaria, primarily because child-related benefits make up a larger part of household income (22 per cent and 15 per cent respectively). As seen above, the employment response of mothers is larger in Romania, but this increase in labour income does not compensate families for their loss in parental benefits.<sup>106</sup>

Increasing early childhood education and care subsidies has a low impact on poverty among children (Table 17).

This is likely to be because the baseline employment rates of women with low educational attainment (with the exception of Romania) are very low. The free meal subsidy (policy 4) for children attending ECEC for poor (low educational attainment) households has a negligible effect on poverty among households currently raising young children. The effect depends on current participation rates in early childhood education: as these are very low a conditional transfer is very likely to benefit very few of the poor. A substantial (10 percentage point) increase in nursery school attendance combined with free meals would decrease poverty rates slightly.

<sup>106</sup> The assumption should be recalled that no families would be eligible for minimum income benefits after the parental leave had been shortened. Therefore, the results are an upper bound on the increase in poverty rates.

**Table 17a**

**Impact of early childhood education and care expansion policies on the proportion of households with children aged 0-2 who are poor, in percentages**

	<b>Observed poverty rate</b>	<b>Estimated poverty rate, Policy 1</b>	<b>Estimated poverty rate, Policy 2, lower bound</b>	<b>Estimated poverty rate, Policy 2, upper bound</b>	<b>Estimated poverty rate, Policy 3</b>
Bulgaria	25.15	28.49	24.22	25.15	25.15
Croatia	13.44	-	12.97	13.44	12.97
Georgia	27.03	-	26.85	26.85	26.85
Romania	16.36	28.23	15.06	15.06	15.06

**Table 17b**

**Impact of meal subsidy on the proportion of households with children aged 0-2 who are poor**

	<b>Observed poverty rate</b>	<b>Estimated poverty rate, current nursery school attendance</b>	<b>Estimated poverty rate, nursery school attendance + 10 percentage points</b>	<b>Estimated poverty rate, full nursery school attendance</b>
Bulgaria	25.15	25.15	25.15	25.15
Croatia	13.44	13.02	13.02	8.79
Romania	16.36	16.36	16.36	15.06

**Note:** the results for Bulgaria depend on the distribution of poor households: few such households were observed in the SILC sample and most of them had incomes significantly below the poverty threshold. This explains why full attendance combined with free meals does not yield better results than a partial extension. Note that the top panel, lower bound for Policy 2 means using Calderón's (2014) estimate, while the lower bound is using the results from Lovász and Szabó-Morvai (2014).

**Source:** Authors' calculations based on EU-SILC (Bulgaria, Croatia and Romania) and WMS 2013 (Georgia).

### **Monetary costs and benefits of increased participation in early childhood education and care**

This section contrasts the costs of increased access to early childhood education and care with the benefits to both of government and household budgets. The calculations are presented per 10 children enrolled and per 100 mothers affected (further details are provided in Annex 9).

Table 18 presents government contributions to the cost of pre-school education per child per month in the simulation countries. The figures are calculated using World Bank data on total government expenditure on pre-school education, divided by the total number of children enrolled in pre-school facilities.

**Table 18****Government expenditure on pre-school education per child per month**

	Government contribution** to the cost of pre-school education in €, 2012 (child/month)	Adjusted government contribution to child-care cost in € (child/month)***	Maximum number of children per group*		
			Aged 4-5	Aged 3	Aged 2
Bulgaria	157.22		24	22	16
Croatia	219.12		23	14	12
Georgia (2013)	34.57	40.94	30	25	25
Romania	56.09	176.04	20	17	15

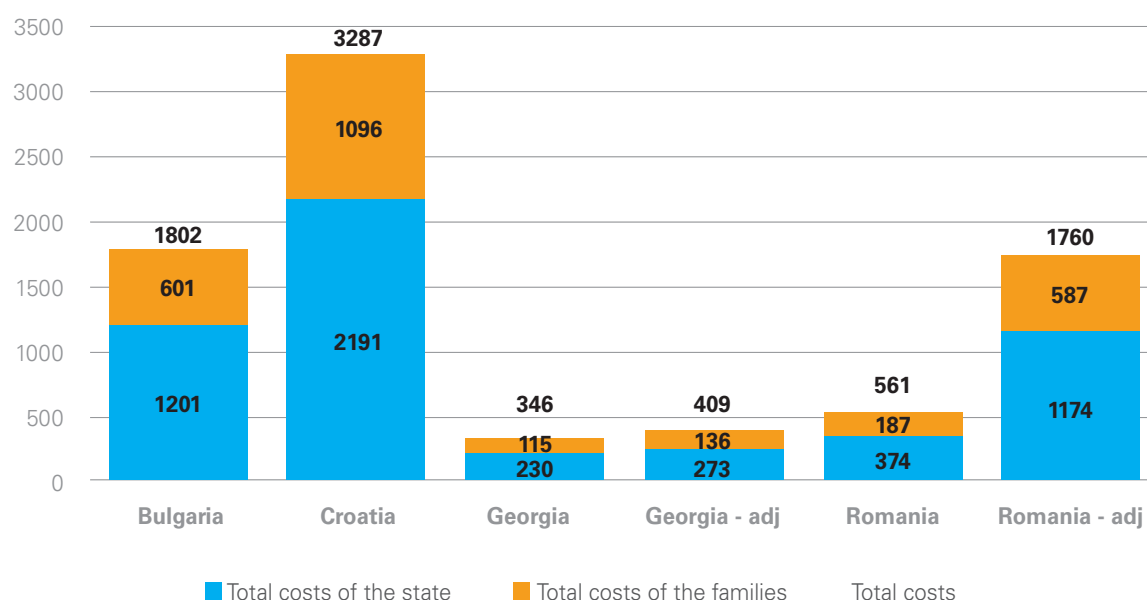
**Note:** \*\*Government expenditure refers to local, regional and central governments. Pre-school covers age 3 to school age.

**Sources:** \*Bulgaria, Croatia, Romania: Eurostat 2014. Georgia: Law on Early and Preschool Education 2016. \*\* World Bank online database, data for 2012, \*\*\* Authors' calculation.

In order to obtain a more reliable estimate of costs, we recalculated the government contribution to ECEC costs (child/month) for Georgia, based on personnel costs. As a result, the adjusted government contribution turned out to be slightly higher (€40.94/child/month). In the case of Romania, we used the cost of Bulgaria because in these two countries the ECEC systems are very similar. Then we adjusted the personnel cost to take account of the difference in average female earnings in the two countries.

This gave us a much higher childcare cost (€176.04/child/month) in Romania.

The costs of ECEC – even with the adjustments – significantly differ in the four studied countries. The costs are particularly high in Croatia, possibly due to the relatively high average wages. The figures are also based on the assumption that a third of the total cost of early childhood education and care is borne by families in the form of fees (Figure 5).

**Figure 5****Total cost of early childhood education and care (€ / month per 10 children enrolled)**

Using the above-outlined information on costs, the costs and benefits were calculated of increasing early childhood education and care (policies 2 and 3) per 100 women affected, in five scenarios (Table 18). The first two scenarios are based on lower-bound (Lovász-Szabó-Morvai) and upper-bound (Calderón) estimates of the labour supply response of mothers, assuming that access to early childhood education and care does not depend on mother's educational attainment. In the third scenario, we use the upper-bound estimate and assume that educated mothers are twice as likely as others to have access to early childhood education and care. This can be interpreted as an upper-bound estimate for the increase in female labour supply. In the fourth scenario, we assume preferential admission rules for mothers with lower educational attainment (increasing their access by 50 per cent more than the average). This can be interpreted as an upper-bound estimate for reducing poverty in policy 2. The final scenario simulates costs for policy 3, in which disadvantaged families have fully subsidized access to early childhood education and care.

In Bulgaria, the state's benefit is very low compared to the cost in all policy variations on childcare per 100 affected women (costs are typically four to six times as high as tax revenues).<sup>107</sup> The main reasons for this gap are the high cost of early childhood education and care and low average income coupled with relatively low tax rates. As tax rates are very low in Bulgaria compared to Croatia and Romania, the gap between the cost of early childhood education and care and the benefit is not particularly wide for families.

As tax rates in Croatia are very high, the total cost of early childhood education and care and benefits are very close especially where those with high incomes are more affected, because of the progressive taxation system. In Croatia, family benefits almost meet the total cost of early childhood education and care as the average wage is much higher than in the other three countries.

In Georgia, the cost of early childhood education and care is very low, and so are tax rates. Therefore state benefits are less than both the original and the adjusted early childhood education and care costs, and families' benefit exceeds the cost in every policy variation except the first one (lower-bound estimate of mother's labour supply response).

In Romania, with the adjusted early childhood education and care cost the gap between cost and benefit to the state is very wide for every policy option. Nevertheless it is assumed that the adjusted costs are more accurate than the original ones. The gap between early childhood education and care costs and benefits is not that wide for families in Romania. However benefits only exceed costs where mothers with high educational attainment are over-represented among those with access to early childhood education and care.

107 Note that in all calculations, we display results per 100 affected women, and 10 additional early childhood education and care places.



**Table 19**  
**Effect of Policy reforms on short term public and private costs and benefits**  
**of early childhood education**

			Policy 2 (Lovász- Szabó- Morvai)	Policy 2 (Calderón)	Policy 2 (Higher Educated mothers)	Policy 2 (Lower Education mothers)	Policy 3
Bulgaria	State	Cost	1201	1201	1201	1201	1802
		Benefit	105	243	347	207	20
	Family	Cost	601	601	601	601	
		Benefit	198	457	651	388	37
Croatia	State	Cost	2191	2191	2191	2191	3287
		Benefit	584	1357	1845	1230	120
	Family	Cost	1096	1096	1096	1096	
		Benefit	409	957	1126	875	166
Romania	State	Cost	374	374	374	374	561
		Adjusted Cost	1174	1174	1174	1174	1760
		Benefit	231	537	721	472	132
	Family	Cost	523	523	523	523	
		Adjusted Cost	587	587	587	587	
		Benefit	256	595	799	523	146
Georgia	State	Cost	230	230	230	230	346
		Adjusted Cost	273	273	273	273	409
		Benefit	23	53	140	123	16
	Family	Cost	115	115	115	115	
		Adjusted Cost	136	136	136	136	
		Benefit	92	213	561	493	65







## Chapter 5.

# Conclusions and policy implications

Policies for expanding early childhood education and care services would require additional government spending, but would contribute to reducing child poverty and increasing female labour supply. The additional tax revenues from increased employment offset some of the short-term cost of expansion of early childhood education and care, and the medium-term and long-term benefits of expanded access outweigh the costs. It should also be noted that the long-term benefits depend on the quality of early childhood education and care, and so it is important to invest in staff training and quality assurance systems.

The short-term cost-benefit outcomes depend mainly on the initial employment level, the educational attainment of mothers, the wage level of care workers and the income tax system.

Overall, shortening paid parental leave brings savings for the public budget and a substantial rise in female employment. However, it may also increase child poverty in the short run. Obviously, this is only feasible in countries where paid parental leave is currently longer than 15 months.

In Bulgaria, cutting paid parental leave would reduce public spending on family policies by 26 per cent and increase female employment by 1.3 percentage points, but at the cost of a 3.3 percentage point increase in child poverty in the short run. However, if about a fifth of the savings on paid parental leave were invested in a targeted expansion of early childhood education and care facilities, female employment would increase by a further 2.4 percentage points and would offset the damage of a paid parental leave cut by reducing child poverty by 0.9 percentage points. Access to early childhood education and care by disadvantaged children would increase by 68 percentage points.

In Romania, the same reforms would lead to a 46 per cent cut in public spending, and a 1.6 percentage point increase in female employment. However, poverty would increase by 8.6 percentage points. If about a fifth of the savings were allocated to early childhood education and care, female employment would rise by a further 1.1 percentage points, while poverty could decline by 3.0 per cent points if access was targeted to disadvantaged

families. Access to early childhood education and care for disadvantaged children would increase by 30 percentage points.

The magnitude of the impact of expanding early childhood education and care depends on the targeting of the policies. Universal access (policies 2a and 2b) tends to favour women with higher educational attainment, and this implies higher benefits in the short run. The policies targeting disadvantaged children (policies 3 and 4) yield smaller benefits in the short run which are offset by higher gains in the long run, in terms of improved school performance, better health and higher future earnings. This is because targeted support for early childhood education and care serves as an incentive for poor mothers to enrol their children in formal care, and disadvantaged children would receive above-average gains from good quality formal early childhood education and care.

In broad terms, smaller gains in the short run (1-2 years) are offset by larger expected gains in the long run (20 years). Therefore, the choice between these policies depends on the extent to which policy makers can plan for the long term.

Even given the relatively small impact on female employment that was used in the simulations, the benefits generated by tax returns cover a substantial share of the cost of early childhood education and care in most simulation countries. What is more, such measures would likely have a higher social return than some of the policies currently in place. However, the immediate fiscal benefits are below the costs<sup>108</sup> in all the countries, suggesting that investment in early childhood education and care requires political will and foresight that considers medium-term and long-term benefits as well as the short-term effect. Moreover, the reallocation of savings on maternity benefits to ECEC provision may in some countries involve a shifting resources between levels of government, which may be difficult due to political or administrative constraints.

Importantly, the private gains accrued by households from expansion in early childhood education and care are substantial and tend to exceed the costs (even for those paying parental fees) for mothers with high educational

<sup>108</sup> It should also be noted that we did not consider one-time set-up/investment costs.



attainment. This suggests that the median voter would likely support such an investment, if the expected gains were communicated well.

It should be noted that the cost-benefit calculations refer to the separate effects of introducing one or the other policy. The effect of a reform that combined a reduction in duration of maternity leave with an expansion to early childhood education and care services could be somewhat larger than the sum of these separate effects. This is because such a reform would encourage and enable women to return to employment and could also induce a change in social expectations and attitudes regarding the appropriate timing of mothers' return to the labour market.

The simulations illustrate possible impacts of policy changes, which depend on underlying assumptions about the context and the exact design of the policy change. Precise estimates of the potential impact of a similar policy intervention would require ex ante impact analysis using detailed parameters of the policy change and individual level data on potential beneficiaries.







## Chapter 6.

# Relevance for other countries and recommendations

### Relevance of the results for other countries in the region

The simulation results may be relevant for other countries in the region, with some variation in their validity. In line with SDG 5, the recommended policy options imply a move towards gender equity as they promote the caregiver parity model. This may meet more resistance (both from politicians and the public) in countries where the existing welfare system supports the part-time caregiver or the female caregiver model.

The table below presents current policies in the region and indicates which of the simulation results may be relevant for each country, given the current institutional characteristics and the design of family policies. In particular, the first policy option of shortening parental leave is applicable mainly for countries in clusters C2 and C3, and with some modification. In most of these countries parental leave is long but pays a low flat-rate benefit: this would need to be replaced by shorter leave paid at around 70-80 per cent of prior earnings, with a reasonable ceiling. This would also be a prerequisite for increasing the involvement of fathers. The other policy options are relevant in all of the countries, given that the existing level of early childhood education and care for children aged below three is low in all of them. The choice between the options depends mainly on political priorities and available resources: the targeted policies (option 2b and especially

options 3 and 4) have stronger effects on child poverty, while option 4 requires much fewer resources.

The existing economic and institutional context should also be considered, as it could affect the feasibility and potential effects of particular policy options. Romania and Croatia belong to the first cluster, which is characterized by a relatively low employment rate and a large share of the population living in rural areas, and relatively efficient governments. Bulgaria belongs to the second country cluster, which is characterized by a mid-level employment rate, a relatively high female employment rate and a low proportion of the country in rural areas. Public spending on social assistance is relatively high and so is government efficiency. Georgia belongs to the third country cluster characterized by a relatively high employment rate and a high proportion of the country in rural areas (though this figure is slightly lower in Georgia). Public spending on social assistance is lower in these countries than in the other clusters, and government efficiency is weak. The employment effects are likely to be somewhat higher in the second cluster, where the current employment rate is relatively high. Tax revenues from newly hired mothers may be lower in the third cluster, where informal employment is particularly widespread. Regarding feasibility, the tax allowance (option 2a) requires relatively little administrative capacity and therefore should be feasible in all countries, while the others may prove somewhat challenging in the third cluster.



**Table 20****Summary of relevant policies in non-simulation countries, by cluster**

Cluster: Simulation country	Country	Total paid leave (maternity and parental)	Replacement rate*		Enrolment rate in ECEC facilities (%)	
			Maternity	Parental % or EUR	under 3 years**	3-5 year- olds***
<b>C1: Croatia</b>	Bosnia and Herzegovina	12+0	50-90% ****	-	n.a.	13
	Moldova	4+34/16	100%	30% or flat rate €21 (uninsured)	15	71
<b>C1: Romania</b>	Albania	12+0.5	80% (5 months) and 50% (6.5 months)	100%	n.a.	40
	North Macedonia	9+0	100%, €1,400 ceiling	-	12	22
	Montenegro	12+0	100%	-	15	40
	Serbia	4+9	100%	100%	15.8	50
<b>C1</b>	Kosovo	9+0	70% (6 months) and 50% (3 months)	-	5	30
<b>C2: Bulgaria</b>	Armenia	4.5+22	100%	flat rate €34	8	n.a.
	Belarus	4+34	100%	35%	29.5	88
	Ukraine	4+16	100%	flat rate €30	15	52
	Turkey	4+0	66.70%	-	n.a.	n.a.
<b>C3: Georgia</b>	Azerbaijan	4+34	100%	flat rate €21.25	3	n.a.
	Tajikistan	4.5+16	100%	flat rate €4.73	2	6
	Turkmenistan	4+34	100%	flat rate €20.80	n.a.	24
	Uzbekistan	4+22	100%	flat rate €236.64	n.a.	20
<b>C3</b>	Kazakhstan	4+10	100%	40%	15	37
	Kyrgyzstan	4+0	10xmin wage	-	3	23

**Notes:** Maternity leave duration includes both pre-natal and post-natal leave.

\*The replacement rate shows the benefit level in % of prior earnings. Ceilings and flat rates are given in € /month.

\*\*\*\* The benefit varies across cantons.

**Sources:** \*\* UNECE Statistical Database, Childcare enrolment and availability rates. Enrolment Rate of Children aged under 3, per 100 children in 2012/2013 \*\*\*UNICEF Early childhood education database <https://data.unicef.org/topic/early-childhood-development/early-childhood-education/> and Kosovo Education Strategic Plan 2017-2021, Ministry of Education, Science and Technology, Republic of Kosovo <<https://masht.rks-gov.net/uploads/2017/02/20161006-kesp-2017-2021.pdf>> for Kosovo. Data refer to the most recent year available between 2005 and 2014,

## Recommendations

Based on the findings of the study it is recommended that countries in the ECA region should review the efficiency and effectiveness of current family policies and consider adjustments to enhance the contribution of these policies to gender equality and child development goals. The following specific recommendations may guide potential policy choices.

Where savings can be made on parental leave, reallocate these to expanding early childhood education and care facilities for children aged 0-2 years. There are large potential savings on parental leave in Bulgaria and Romania (possibly also in Moldova, the C2 countries except for Turkey, and some of the C3 countries), where the existing schemes exceed 15 months. The simulation results show that it would be feasible to reallocate some paid parental leave spending to early childhood education and care in Bulgaria and Romania: if the cut in the duration of paid parental leave is spaced over 3-4 years, the short-term negative effects on poverty could be offset by the positive impact of a proportionate, gradual expansion in early childhood education and care. The implementation period would need to be longer if early childhood education and care were to be offered universally and could be shorter if it were targeted at disadvantaged families. In Croatia and Georgia, parental leave is already relatively short but the replacement rate is high, and in Croatia no ceiling is applied on the maternity leave. This creates some room for reallocating government expenditure from maternity leave to early childhood education and care provision.

Expand the provision of early childhood education and care services targeting disadvantaged children. An expansion in early childhood education and care facilities targeting disadvantaged children may be relatively more costly when considering short-term costs and benefits, but is still recommended, as it is likely to bring higher benefits in the medium- and long-run in terms of improved child development outcomes and lower risk of child poverty. Universal expansions tend to favour educated women and, therefore, are likely to boost labour supply in the short- and medium-term, but yield little long-term improvement with regard to child development or poverty.

Where government resources are limited, seek alternative means to finance pre-school, through both private and

public means. A viable option may be to offer a reduced public subsidy to private (non-profit) service providers that would cover less than two-thirds of the costs and require a contribution of over a third by parents. This would encourage an increase in early childhood education and care capacities affordable to mothers with higher educational attainment, at no cost to the state budget as the subsidy could potentially be recovered by tax returns from the mothers' employment. This option seems especially relevant for Croatia, where income tax rates are high and thus state benefits are very close to the costs, even in the case of publicly provided early childhood education and care, and there is already a market of private early childhood education and care. This option, however, would likely increase the segregation of poor and wealthy children and would lead to suboptimal gains in the long term as disadvantaged families would continue to have limited access to early childhood education and care.

Alternatively, rely on contributions from local governments. If resources (or the political commitment) of the central government are limited, a second best solution is to introduce financial incentives for local governments to increase early childhood education and care provision. Such incentives could include a partial contribution to the cost of early childhood education and care or a reallocation of central government revenue towards local governments. The contribution of the central government could be weighted by the educational attainment or income of the mother, to provide an incentive to municipalities to give priority access to disadvantaged children. This would reduce the risk of segregation and increase the long-term benefits. It should be noted that this option would increase regional inequalities, unless the government contribution is differentiated not only by family but also by the economic conditions of the municipality / locality, in order to compensate for the limited capacity of local governments in poor regions to provide services.

Invest in the quality of care provision. It must be stressed that the long term benefits of investment in early childhood education and care and especially of policies targeting disadvantaged families is likely to depend on the quality of the early childhood education and care. This underlines the importance of investing in staff training and quality assurance systems.





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# ANNEX 1.

## Data sources

### Data availability, gaps, and comparability issues

Available microdata in Europe and Central Asia that contain both detailed family status and employment indicators are limited.

UNICEF's MICS data almost perfectly cover the countries of Europe and Central Asia included in the project (Table A3)<sup>109</sup> and provide detailed information on family status

and children's well-being. Particularly important indicators for our analysis are household composition, children's early childhood education attendance, subjective well-being, social transfers and poverty data (Table A3): these will be included in the analysis.

The MICS survey does not take place in every country every year and the year of the most recent survey varies widely in the sample. These differences may reduce comparability between the sample countries (Table A4).

**Table A1.1**

**Main categories of indicator that can be found in the UNICEF MICS data**

<b>Mortality</b>	<b>Mass media and ICT</b>
Nutrition	<b>Subjective well-being</b>
Child health	Tobacco and alcohol use
Water, sanitation and hygiene	Household energy use
Reproductive health	<b>Social transfers</b>
<b>Child development</b>	Victimization
Literacy and education	Functioning
Child protection	<b>Poverty</b>
HIV/AIDS and sexual behaviour	

109 With the exception of Armenia, Bulgaria, Croatia, Romania and Turkey.



**Table A1.2**  
**Available UNICEF MICS data by country and wave**

	2014	2013	2012	2011	2010	2006	2005	2000
Albania							X	X
Armenia								
Azerbaijan								X
Belarus			X				X	
Bosnia and Herzegovina			X			X		X
Bulgaria								
Croatia								
North Macedonia				X		X		
Georgia							X	
Kazakhstan				X		X		
Kosovo								
Kyrgyzstan	X					X		
Moldova			X					X
Montenegro		X				X		
Romania								
Serbia	X				X	X		
Tajikistan							X	X
Turkey								
Turkmenistan						X		
Ukraine			X				X	
Uzbekistan						X		X

The greatest barrier to the use of the UNICEF MICS data is the fact that it does not contain the employment status of the family members: therefore we have no information on the labour force participation of mothers. To bridge the

gap, in some cases the EU-SILC<sup>110</sup> survey can be used (Table A5), as it contains information on employment status, income and childcare as well.

<sup>110</sup> European Commission, 'Living and working conditions'. EURES, The European Job Mobility Portal <https://ec.europa.eu/eures/main.jsp?lang=en&catId=8427&acro=living&countryId=BG>

In other cases employment indicators from local Labour Force Surveys (LFS) can be combined with UNICEF MICS data to approximate woman's employment status and estimate the probability of their labour force participation. The lack of individual-level data in several countries that would contain both employment status and family situation creates some risks regarding the validity of the

analysis. The best solution is to receive as detailed indicators as possible in order to be able to make the closest possible approximations about the effect of the suggested family policies. Therefore, besides employment status by gender, we are also attempting to include employment indicators by age, educational attainment, rural-urban dimension, marital status and number of children.

**Table A1.3**  
**Summary of available data in Europe and Central Asia**

	Latest available MICS data	EU-SILC data available	Available LFS-like data indicators	Has LFS-like data
Albania	2005		sex, age	Yes
Armenia		(Yes)*		Yes*
Azerbaijan	2000		sex	Yes
Belarus	2012		sex	Yes
Bosnia and Herzegovina	2011-12			Yes
Bulgaria		Yes		
Croatia		Yes		
Georgia	2005, 2013*			Yes
Kazakhstan	2010-11		sex, age, education	Yes
Kosovo	2013-14			Yes
Kyrgyzstan Republic	2014		sex, age, education	Yes
Moldova	2012		sex	Yes
Montenegro	2013			Yes
North Macedonia	2011	Yes		
Romania		Yes		
Serbia	2014		sex, region	Yes
Tajikistan	2005		sex	Yes
Turkey		Yes		
Turkmenistan	2006			Yes
Ukraine	2012		sex	Yes
Uzbekistan	2006		sex, age	Yes

\* in the case of Armenia an EU-SILC-like database is available. In Georgia, the WMS covers both employment and incomes.

## 1.2: Description of data sources used

### Georgia

In all simulations for Georgia, we used the household-based UNICEF Welfare Monitoring Survey (WMS) 2013 database (and the dataset thereof) downloaded from UNICEF Georgia's Data Portal. The dataset is intended for public use and can be directly downloaded from the website. We worked on the simulations in March and April 2017 and thus could not use the 2017 WMS.

The dataset covers self-reported information on education; employment and labour force participation; household income by sources; social protection; and water, sanitation and hygiene. The units of analysis are households and individuals. The survey covered about 3,700 households. A subsample of 8,129 respondents was used, of whom 6.2 per cent were mothers aged 18-49 with at least one child. The WMS dataset includes both urban and rural settlements.

We differentiated between low, medium and high-educated mothers based on educational attainment. Individuals with low educational attainment, in the Georgian education system, are those with no completed level, primary (age 6-12) and basic (age 13-15) education. Individuals with medium educational attainment are those with secondary (age 16-18) and vocational (age 16-18) education. Individuals with high educational attainment are those who have completed bachelor, master and doctoral degrees.

Mothers of children under the age of four could not be identified directly in the dataset. We obtained an approximation using the variable that describes the relationship of a child under the age of four to the household head or the spouse of the household head, and identified three types of such relationship: (1) child or stepchild; (2) grandchild; and (3) other relationship, including nieces and nephews, other relatives and non-relatives. In Type 1, household heads or their spouses who were females aged 18-49 were defined as potential mothers. In Type 2, daughters-in-law as well as children or stepchildren of the household head or the spouse of the household head who were females aged 18-49 were defined as potential mothers. In Type 3, all females in the household, excluding children or stepchildren and daughters-in-law of the household head or spouse, aged 18-49 were defined as potential mothers. Be-

cause the number of potential mothers in Type 2 and Type 3 was larger than number of young children, we followed a complex matching procedure. In some households, the number of potential mothers did not exceed one, thus children in these families could be uniquely assigned. In households with two or three potential mothers, we used three variables that identified whether a female: (1) was a housewife, student, disabled, ill, took care of a family member, did not want to work, had not tried to find a job, was employed during the last week and other; (2) age group; and (3) marital status. Housewives or females taking care of a family member were given priority to be assigned a child. Among these females, the assignment was done along the age group hierarchy followed by marital status hierarchy.<sup>111</sup> This means that, first, married housewives aged 24-39 were assigned a child, second, cohabitant housewives aged 24-39 were assigned a child, and so on. When there was no unique housewife aged 24-39 in the household to be assigned a child, married housewives aged 18-23 or 40-49 were assigned a child, and the assignment went until there was no unique housewife aged 18-23 or 40-49. Then, females in other employment statuses – employed, students, disabled, ill as well as those who did not want to work and had not tried to find a job, and other – following the same age group and marital status hierarchy were assigned a child. The final sample of mothers aged 18-49 with children under the age of four included all potential mothers in Type 1, Type 2 and Type 3. We assigned 618 children under the age of four to 511 mothers of whom 408 were uniquely identified, and 103 were non-uniquely identified before the application of the hierarchical assignment procedure.

Fathers of children under the age of four could not be directly identified. Like for mothers, we identified fathers along the age group hierarchy followed by marital status hierarchy.<sup>112</sup> However, we omitted the first step for giving priority to housewives because housewife status could not be applied to males and none of the potential fathers was taking care of a family member. As the last stage of identification after the hierarchical selection, in households with two or more potential fathers in which all of them were defined as fathers, we randomly assigned a child to one of them. We assigned 618 children under the age of four to 460 fathers of whom 365 were uniquely identified, and 95 were non-uniquely identified before application of the hierarchical assignment based on age group and marital status.

111 The hierarchy of mothers' ages is as follows (1) 24-39, and (2) 18-23 or 40-49 which is defined based on the age distribution of female household heads or spouses aged 18-49 in Type 1 relation. The marital status hierarchy was as follows (1) married, (2) cohabitant, (3) divorced or widow, (4) separated and (5) single.

112 Fathers' age group hierarchy was as follows (1) 27-42, (2) 18-26 or 43-49, as defined based on the age distribution of male household heads or spouses aged 18-49 in Type 1 relations. The marital status hierarchy was as follows (1) married, (2) cohabitant, (3) divorced or widow, (4) separated and (5) single.

**Table A1.4****Number of uniquely and non-uniquely identified mothers and fathers, by type of relationship to the household head/spouse**

Type	Relationship to the household head/spouse		Mothers identified		Fathers identified	
	Child	Mother/father	Unique*	Non-unique	Unique	Non-unique
Type 1	Child/stepchild	Household head/spouse	74	0	67	0
Type 2	Grandchild	Child/step-child, or daughter/son-in-law	286	96	262	80
Type 3	Brother/sister, niece/nephew, other relative, non-relative	Parent / grandparent, brother / sister, uncle / aunt / nieces / nephews, other relative, non-relative	48	10	36	15

\* Households with uniquely identified mothers include all households in Type 1 and households with only one potential mother in Type 2 and Type 3. The same applies to households with uniquely identified fathers.

**Source:** Authors' calculations using the UNICEF Welfare Monitoring Survey of 2013. <https://www.unicef.org/georgia/reports/welfare-monitoring-survey>

### Bulgaria, Croatia, and Romania

In simulations of the labour supply response to policy changes in Bulgaria, Croatia and Romania, we used the European Union's Labour Force Survey (EU-LFS) of 2012 as this was the year nearest to WMS 2013 available to us.

The dataset contains detailed individual-level data on current and previous employment, unemployment, inactivity, education and training, earnings, and household composition (among other data) on individuals aged 15 and over.<sup>113</sup> A total of 2,934 respondents completed the survey in Bulgaria, of whom 21.2 per cent were mothers aged 18-49 with children under the age of four. In Croatia, the total sample size was 2,614, of whom 27.9 per cent were in the target group. In Romania, the total sample size was 12,563 individuals and 30.2 per cent of them were mothers aged 18-49 with children under the age of five (note that the EU LFS only provides age data in five-year bands).

The respondents of the EU-LFS were disaggregated by educational attainment. Individuals that had not complet-

ed secondary school were grouped as low educational attainment. Individuals with medium educational attainment are those who had completed higher secondary education. Individuals with high educational attainment had completed bachelor, master and doctorate degrees.

The EU-Statistics on Income and Living Conditions (EU-SILC) 2012 database provided by Eurostat was used in poverty simulations for Bulgaria, Croatia and Romania. The dataset provides micro-level data on income, poverty, social exclusion, housing, labour supply, education, and health.<sup>114</sup> The units of analysis were private households and their members. A total of 2.6 per cent of all 5,706 households in Bulgaria were poor households with at least one child aged 0-2. In Croatia, poor households with young children comprised 3.3 per cent of all 5,851 households. In Romania, the proportion of poor households with young children was less than in Bulgaria and Croatia: 1.1 per cent of all 7,574 households surveyed.

<sup>113</sup> Eurostat: European Union Labour Force Survey. <https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey>

<sup>114</sup> Eurostat: Income and Living Conditions – Overview. <http://ec.europa.eu/eurostat/web/income-and-living-conditions/overview>



**Table A1.5**  
**Sample size by dataset and mother's education**

Country	Dataset	Sample definition	Sample size by mother's education				
			N all	% of population (all)	N low	N medium	N high
Bulgaria	LFS	Mothers (aged 18-49) of children aged under 4	621	21.2	146	270	195
	EU-SILC	Poor households with at least one child aged 0-2	149	2.6	-	-	-
Croatia	LFS	Mothers (aged 18-49) of children aged under 4	728	27.9	107	453	168
	EU-SILC	Poor households with at least one child aged 0-2	192	3.3	-	-	-
Georgia	WMS	All mothers aged 18-49	511	6.2	31	310	170
	WMS	Poor households with at least one child aged 0-2	127	3.4			
Romania	LFS	Mothers (aged 18-49) of children aged under 4	3,800	30.2	1,021	1,939	840
	EU-SILC	Poor households with at least one child aged 0-2	82	1.1		-	-

# ANNEX 2.

## Family policy regulations

### EU COUNTRIES: BULGARIA<sup>115</sup>

	Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits (CCB) – means-tested	CCB - universal
<b>Eligibility</b>	Female workers (12 months of insurance contributions in the 12 months preceding the leave)	Either parent	Employed fathers (with at least 12 months of insurance)	Mothers of 3 or more children	All births	Families with children	For children under 20 years.  Families with income below BNG 350 or EUR 179/family member (from 1 July 2016: BNG 400)	N/A
<b>Benefit/Replacement rate</b>	90% of the daily average contributory income for the 24 months preceding the leave	BGN 340 (EUR 174) per month	90% of the daily average contributory income for the 24 months preceding the leave	Free travel by rail and bus in the country (round trip) once a year	BNG 250 (128 EUR) for the 1st child, BNG 600 (307 EUR) for the 2nd child, BNG 300 for the 3rd child and 200 (102 EUR) for subsequent children	200 BGN reduction for 1 child, 400 for 2 children and 600 for 3 or more children	Family with 1 child: BNG 37 (EUR 18), family with 2 children: BNG 85 (EUR 43), family with 3 children: BNG 130 (EUR 66) and family with 4 children: BNG 140/month (EUR 72). Increasing by BGN 20 (EUR 10) for each subsequent child	N/A
<b>Length</b>	410 working days, 45 of which must be taken before the child is born.	1 year (until the child reaches the age of 2 years for 1st-3rd child, and 6 months for each subsequent child)	15 days	N/A	N/A	N/A	Until the children complete secondary education	N/A

<sup>115</sup> Bradshaw, Jonathan and Kenichi Hirese (2016) *Child Benefits in Central and Eastern Europe: A comparative review*. Budapest: ILO.

Eurofound (2015) *Maternity leave provisions in the EU Member States: Duration and allowances*. Luxembourg: Publications Office of the European Union.

European Commission (2019): 'Living and working conditions: EURES, The European Job Mobility Portal'. <https://ec.europa.eu/eures/main.jsp?lang=en&catId=8427&acro=living&countryId=BG>

European Commission (2016): 'Mutual Information System of Social Protection (MISSOC), Comparative Tables. 'IV. Maternity/Paternity' for Bulgaria. <https://www.missoc.org/misoc-database/comparative-tables/>

European Commission (2019): 'Your rights country by country - Bulgaria'. Employment, Social Affairs and Inclusion. <https://ec.europa.eu/social/main.jsp?catId=1103&langId=en>

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**EU COUNTRIES: CROATIA**<sup>116</sup>

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits (CCB) – means-tested</b>	<b>CCB – universal</b>
<b>Eligibility</b>	Employed and self-employed parents (at least 12 months pensionable service or at least 18 months in the last 2 years)	Employed and self-employed persons (same as maternity leave)  Right to request part-time work	Employed fathers	N/A	Employed or self-employed parent, a parent receiving other income, or a farmer outside the profit or income tax system, unemployed parent	For children, including those over 18 if they attend regular education or study as well as for children with disabilities for the duration of the disability	For child under 15 years., or 19 years for a child in secondary school  Total income earned in the previous calendar y. may not exceed 50% of the calculation base, i.e. HRK 1 663 (EUR 218) in 2016.	N/A
<b>Benefit/ Replacement rate</b>	100% of average insured earnings for the 6 months preceding the leave, no ceiling	100% of the insurance base of the previous income with a ceiling of HRK 3 991 (€537) per month for the first 6 months, and 50% thereafter	100% of previous earnings	N/A	70 % of the calculation base, i.e. HRK 2 328.20 (EUR 305).	N/A	25% of the calculation base	N/A
<b>Length</b>	28 days prior to the expected date of birth up to 70 days after the birth of the child - maximum 6 months	8 months (for the 1st and 2nd child) or 30 months (for twins or 3rd+ child).	7 working days	N/A	N/A	See above	N/A	N/A

<sup>116</sup> Bradshaw, Jonathan and Kenichi Hirese (2016) *Child Benefits in Central and Eastern Europe: A comparative review*. Budapest: ILO.

Eurofound (2015) *Maternity leave provisions in the EU Member States: Duration and allowances*. Luxembourg: Publications Office of the European Union.

European Commission (2016): MISSOC. Comparative Tables 'IV. Maternity/Paternity' for Croatia. <https://www.missoc.org/missoc-database/comparative-tables/>

European Commission (2019): 'Your rights country by country - Croatia'. Employment, Social Affairs and Inclusion <https://ec.europa.eu/social/main.jsp?catId=1104&langId=en>

ILO (2014) Maternity and paternity at work: Law and practice across the world. Geneva, ILO. [http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms_242615.pdf)

OECD (2016) OECD Family database: PF2.1: Key characteristics of parental leave systems. OECD - Social Policy Division - Directorate of Employment, Labour and Social Affairs. [https://www.oecd.org/els/soc/PF2\\_1\\_Parental\\_leave\\_systems.pdf](https://www.oecd.org/els/soc/PF2_1_Parental_leave_systems.pdf)

**EU COUNTRIES: ROMANIA**<sup>117</sup>

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	Insured women: employees, self-employed, unemployed (1 month of insurance contributions in the 12 months preceding the leave)	Either parent	Employed fathers	Women not on maternity leave whose employers cannot guarantee them working conditions that are free of risks to their health or that of their children	N/A	N/A	The children must be in education and must receive a behaviour mark of at least 8 (out of 10); the family must have an average net income per family member of no more than 1.06 times the reference social indicator (RON 530 – EUR 112)	Children aged up to 18 who are legally resident in Romania.
<b>Benefit/Replacement rate</b>	85% of the average insured earnings over the 6 months preceding the leave	85% of average prior monthly earnings (in the 2 years before the leave)	5 working days (10 if father attended infant care courses)	75% of the mother's average monthly income over the last 10 months before the benefit was requested	N/A	N/A	Calculated according to the reference social indicator (RSI), average monthly net income per family member and the number of family members.	Calculated according to the reference social indicator (RSI) and the child's age
<b>Length</b>	126 days: 63 days before and 63 days after the child is born	Up to the first 2 years of the child's life	100% of previous earnings (with no ceiling on payments)	Up to 120 days	N/A	N/A	Two-parent families who receive this benefit for 6 months or more must pay their local taxes and levies by 31 January of each year	Until 18 years or until they have completed their studies

<sup>117</sup> Bradshaw, Jonathan and Kenichi Hirese (2016) *Child Benefits in Central and Eastern Europe: A comparative review*. Budapest: ILO.

Eurofound (2015) *Maternity leave provisions in the EU Member States: Duration and allowances*. Luxembourg: Publications Office of the European Union.

European Commission (2016): MISSOC, Comparative Tables. 'IV, Maternity/Paternity' for Romania. <https://www.missoc.org/missoc-database/comparative-tables/>

European Commission (2019): 'Your rights country by country - Romania': Employment, Social Affairs and Inclusion <https://ec.europa.eu/social/main.jsp?catId=1126&langId=en>

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OECD (2016) OECD Family database: PF2.1: Key characteristics of parental leave systems. OECD - Social Policy Division - Directorate of Employment, Labour and Social Affairs. [https://www.oecd.org/els/soc/PF2\\_1\\_Parental\\_leave\\_systems.pdf](https://www.oecd.org/els/soc/PF2_1_Parental_leave_systems.pdf)



## BALKANS &amp; NON-EUROPEAN UNION COUNTRIES

ALBANIA<sup>118</sup>

	Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits – means-tested	Child cash benefits – universal
<b>Eligibility</b>	Economically active women (of working age, 12 months of social insurance)	N/A	N/A	When forced to accept a lower paid job due to pregnancy (if the woman has 12 months of social insurance)	Mother or father (mother has priority) - 12 months of insurance	N/A	N/A	N/A
<b>Benefit/Replacement rate</b>	80% of the annual assessment basis for 150 days; 50% FOR the rest (215 days)	N/A	N/A	Difference between previous and present wage (maximum 50% of daily average of annual assessment basis)	50% of the monthly minimum wage	N/A	N/A	N/A
<b>Length</b>	365 days - minimum 35 before and 42 days after giving birth	N/A	N/A	N/A	N/A	N/A	N/A	N/A

118 Bradshaw, Jonathan and Kenichi Hirese (2016) *Child Benefits in Central and Eastern Europe: A comparative review*. Budapest: ILO.

Council of Europe (2018), 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO)' 'Family benefits' for Albania. <http://www.missceo.coe.int/#8>

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UNICEF (2007) *Childcare system reform in Albania*. Tirana: UNICEF

**BOSNIA AND HERZEGOVINA**<sup>119</sup>

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility (Federation of Bosnia and Herzegovina)</b>	All employed and unemployed women who receive financial assistance (minimum 6 months of employment)	After 42 days from delivery an employee (father) may also exercise the right to leave Right to request part-time work	Employed fathers	N/A	All employed and unemployed women	N/A	Income per household member does not exceed the income level sufficient for supporting themselves	N/A
<b>Benefit/Replacement rate</b>	50-90% of the salary (varies from canton to canton)	Unpaid	100% of previous earnings	N/A	86 BAM-500 BAM (43-255 EUR) depending on canton	N/A	BAM 9.75 to BAM 50.00 (5-25 EUR)	N/A
<b>Length</b>	1 year (not less than 28 days before and 42 days after giving birth)	3 years (156 weeks)	7 working days	N/A	Cash assistance for child nutrition is provided up to 6 months in the amount which varies from 48-119 BAM (25-60 EUR)	N/A	Up to 18 years (up to 25 years for a full-time student).	N/A
<b>Eligibility (REPUBLIKA SRPSKA)</b>	All employed and unemployed women	After 60 days from delivery an employee (father) may also exercise the right to leave (need for additional care)	N/A	N/A	Employed in the economy of Republic of Srpska	Employed parent	Permanent residents with more than 1 child - granted on proof of a low family income	N/A
<b>Benefit/Replacement rate</b>	100% (first 30 days paid by employer, then reimbursement from the Public Fund of Child Protection)	100% (first 30 days paid by employer, then reimbursement from the Public Fund of Child Protection)	N/A	N/A	Not less than 50% of average net salary in the previous year (250.00 BAM – 128 EUR), 600 BAM (307 EUR) for the 3rd child, 450 BAM (230 EUR) for the 4th	900 BAM (460 EUR) tax relief for each supported member of the family	2nd child: 35 BAM/month (18 EUR), 3rd child: 70 BAM/month (36 EUR), 4th child: 35 BAM/month, 5th+: no right	N/A
<b>Length</b>	365 days (not less than 60 days)	1 year	N/A	N/A	N/A	N/A	Until 19 y.	N/A

Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits – means-tested	Child cash benefits – universal
<b>Eligibility (Brcko District)</b>	All employed women (minimum 3 months of employment)	N/A	N/A	Parents must be residents of Brcko District	N/A	Means test with a threshold of 15% of the average earnings and income from land rent (cadastral income) no higher than 3% of average land rent per hectare of land.	N/A
<b>Benefit/ Replacement rate</b>	100% of salary	N/A	N/A	25% of average earnings in BD (170.83 BAM - 87 EUR)	N/A	10% of average earnings (average earnings equal 683.33 BAM/month, benefit fixed at 68.33 BAM/month – 35 EUR).	N/A
<b>Length</b>	12 months	N/A	N/A	N/A	N/A	Up to the age of 15 years, up to 26 years if a full time student	N/A

119

119 The Federation of Bosnia and Herzegovina (2012) 'Answers to European Committee of Social Rights (2011): Conclusions on the First Report of Bosnia and Herzegovina on Implementation of the European Social Charter – Revised, Group IV (Children, Families, Migrants) Articles 7, 8, 16 And 17'. Sarajevo: Ministry of Human Rights and Refugees [http://www.mhrr.gov.ba/PDF/LjudskaPrava/Answer%20to%20Conclusion%20\(2011\)%20on%20the%20First%20Report%20of%20BH.pdf](http://www.mhrr.gov.ba/PDF/LjudskaPrava/Answer%20to%20Conclusion%20(2011)%20on%20the%20First%20Report%20of%20BH.pdf)

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**KOSOVO**<sup>120</sup>

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits - universal</b>
<b>Eligibility</b>	Employed women	N/A	Employed fathers	N/A	N/A	N/A	All families receiving social assistance	N/A
<b>Benefit/ Replacement rate</b>	Employers to compensate workers for 70% of their basic wage for the first 6 months; the next 3 months are covered by the government at a rate of 50% of the average wage, the 3 last months are offered as unpaid leave	N/A	100% of previous earnings	N/A	N/A	N/A	EUR 5	N/A
<b>Length</b>	Maximum 12 months	N/A	2 days of paid leave at birth or on adoption of the child and 2 weeks unpaid leave after the birth or on adoption of the child, at any time before the child reaches the age of 3	N/A	N/A	N/A	N/A	N/A

120 Krasniqi, Nida (2016) 'Provisions of Maternity Leave in the Republic of Kosovo: Impact on Private Sector and Employment', Thesis: Rochester Institute of Technology. <https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://www.kuvendikosoves.org/common/docs/ljigjet/2010-212-eng.pdf>

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**MONTENEGRO**<sup>121</sup>

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	Employed (for at least 12 months) and self-employed persons, unemployed persons registered with the Employment Agency and regular students.	Employed parent – father or mother  Right to request part-time work	Employed father	N/A	A parent may exercise the right to the benefit until the child reaches the age of 1	N/A	For the first 3 children in the family  Recipients of social assistance	N/A
<b>Benefit/ Replacement rate</b>	100% (paid by employer – refund from the State Budget), up to a maximum amount of two average gross wages	100% - cannot be set at an amount lower than the lowest cost of labour (EUR193) or higher than the two average gross wages in the country (1450€ in 2016)	100% of previous earnings	N/A	EUR105 per birth for the supply of baby accessories	N/A	EUR19.11; Recipients of care and assistance allowance: EUR25.71; of personal disability allowance: EUR31.92; child without parental care: EUR31.92; in case of activation assistance or assistance in unfavourable social situation: EUR19.11	N/A
<b>Length</b>	28 days prior to the birth, 45 days after the birth (up to 365 days – see Parental leave)	365 days	Usually 1 week (regulated by collective agreement)	N/A	Until the child reaches the age of 1	N/A	Until the child reaches the age of 18 if the child is engaged in regular education	N/A

<sup>121</sup> Bradshaw, Jonathan and Kenichi Hirase (2016) *Child Benefits in Central and Eastern Europe: A comparative review*. Budapest: ILO Council of Europe (2018), 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO)' 'Family benefits' for Montenegro, <http://www.missceo.coe.int/#8>  
European Commission (2015): 'Montenegro: Country report - Gender equality'. Brussels: European Commission.  
ILO (2014) *Maternity and paternity at work: Law and practice across the world*. Geneva, ILO. [http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms_242615.pdf)

**NORTH MACEDONIA<sup>122</sup>**

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	Employed and self-employed individuals (insured for at least 6 months before giving birth and health insurance contributions paid regularly and on time)	Individual right of the employed mother, transferable to the father.	Employed father	For the 3rd newly born child  Mother: takes care of the child, ensures educational attendance of the child and regular health checks, had taken proper care for the previously born children, lives and works in North Macedonia	One of the parents is a citizen and a permanent resident. For the 1 <sup>st</sup> newborn / adopted baby	N/A	MKD 2,490 monthly income per family member and MKD 4,980 for child of lone parent.	N/A
<b>Benefit/ Replacement rate</b>	100% of the average monthly net wage paid 12 months prior to the leave (ceiling: 4 average wages – 2014: EUR 1 400)	Unpaid	100% of previous earnings	8 362 MKD (EUR 136, 87% of the minimum wage)	5 017 MKD (EUR 80, 52% of the minimum wage)	N/A	744 MKD (EUR 12, 8% of the minimum wage) / month – 1180 MKD (EUR 19, 12% of the minimum wage) / month	N/A
<b>Length</b>	9 months, obligatory: 45 days after birth, 28 before	3 months until the child is 3 years old	7 days	10 years	N/A	N/A	Up to 15 years of age or as long as they are full-time primary school pupils	N/A

<sup>122</sup> Bradshaw, Jonathan and Kenichi Hiresse (2016) *Child Benefits in Central and Eastern Europe: A comparative review*. Budapest: ILO

ILO (2014) *Maternity and paternity at work: Law and practice across the world*. Geneva, ILO. [http://www.ilo.org/wcmsp5/groups/public/-dcomm/-publ/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dcomm/-publ/documents/publication/wcms_242615.pdf)

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**SERBIA<sup>123</sup>**

	Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits – means-tested	Child cash benefits – universal
<b>Eligibility</b>	Employed and self-employed mothers (12 months previous employment)	Employed and self-employed mothers (compensation – subject to agreement between parents)	Employed fathers	N/A	Mother who gives birth to her 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> child. Not paid if the assets' tax base of the whole family is higher than 12 000 000 RSD (EUR 99 000)	For dependent family members	Monthly net income per family member (including children) must be lower than the defined threshold – 8 212.90 RSD (EUR68, in 2015)	Schoolchildren – in primary, secondary schools, students of university
<b>Benefit/Replacement rate</b>	100% (covered by employer – full compensation from central budget). Ceiling: 5 times the national average gross salary, 60% for period of employment of 3-6 months, 30% for less than 3 months of employment.	100 % - parent who has worked for at least 6 months. For a parent who has worked 3-6 months: 60 %, and for less than 3 months: 30% of the salary	100% of previous earnings	N/A	1 <sup>st</sup> child: 37 519 RSD – ca. EUR300 (one-off payment – 96% of net average wage), 2 <sup>nd</sup> : 146 714 RSD (373% of net average wage), 3 <sup>rd</sup> : 264 072 RSD (672% of net average wage), 4 <sup>th</sup> : 352 093 RSD (896% of net average wage)	RSD 110 567 (EUR936) for each family member for 2014	2 622 RSD (EUR22) monthly per child (7% of net average wage)	primary: 20% of national average gross salary – 12 260 RSD (EUR 103). Secondary: 25% - 15 326 RSD (EUR 130), university: 30% - 18 391 RSD (EUR 156)
<b>Length</b>	At least 28 days before birth, 3 months after giving the birth	From 3 months after the birth until 365 days from the commencement of maternity leave	7 working days	N/A	Grant for the 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> child is paid monthly in 24 equal instalments	N/A	Up to 19 years of age, exceptionally up to age of 26 years for children with special needs	N/A

<sup>123</sup> Bradshaw, Jonathan and Kenidi Hirose (2016) *Child Benefits in Central and Eastern Europe: A comparative review*. Budapest: ILO Council of Europe (2018) 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO)' 'Family benefits' for Serbia. <http://www.missceo.coe.int/#8>

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**TURKEY<sup>124</sup>**

	Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits – means-tested	Child cash benefits – universal
<b>Eligibility</b>	Civil servants, insured women, insured men for uninsured wives.	Either of the parents Right to request part-time work	Employee whose spouse has given birth	Women with a certification of pregnancy before the date of birth	If the mother has Turkish nationality, then she will be the one to receive the allowance	N/A	Civil servants  Salary coefficient (according to Law 657) x index (250)	N/A
<b>Benefit/ Replacement rate</b>	Civil servants: 100% of previous earnings  Incapacity for work benefit: 66.7% of earnings is paid for up to eight weeks before and eight weeks after the expected date of childbirth	Unpaid	100% of previous earnings	Lump sum benefit	EUR100 (TL 300) for the 1 <sup>st</sup> child, EUR133 (TL 400) for the 2 <sup>nd</sup> child, and EUR200 (TL 600) for the 3 <sup>rd</sup> child	N/A	Different amounts for children under 6 years and older than 6 years	N/A
<b>Length</b>	16 weeks: 8 weeks before the birth and 8 weeks afterwards	2 years – 24 months (civil servants), 6 months (female workers)  2016 – 60 days for the 1 <sup>st</sup> birth, 120 for the 2 <sup>nd</sup> and 180 for the 3 <sup>rd</sup>	5 days	N/A	N/A	N/A	N/A	N/A

<sup>124</sup> Bradshaw, Jonathan and Kenichi Hirose (2016) *Child Benefits in Central and Eastern Europe: A comparative review*. Budapest: ILO  
ILO (2014) *Maternity and paternity at work: Law and practice across the world*. Geneva, ILO. [http://www.ilo.org/wcmsp5/groups/public/-dcomm/-publ/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dcomm/-publ/documents/publication/wcms_242615.pdf)  
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## POST-SOVIET COUNTRIES

### ARMENIA<sup>125</sup>

	Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits – means-tested	Child cash benefits – universal
<b>Eligibility</b>	All residents (unemployed women – from 1 January 2016)	Employees, self-employed persons, and owners of agricultural land (economically active)  Right to part-time work (until the child turns 1)	Husband of a woman on pregnancy and delivery leave or on maternity leave	N/A	Child birth and adoption (only if the child is adopted directly from hospital)	Low-income families with at least one family member under 18 years.	Low-income families with at least one family member under 18 years.	N/A
<b>Benefit/Replacement rate</b>	100% of previous earnings. ICap: if average monthly salary exceeds 15 times the Minimum Monthly Wage (MMW), the benefit is calculated on the basis of 15 times this MMW. Minimum benefit is 50% of the MMW	18 000 AMD per month (EUR32, 18% of the average wage)	Unpaid	N/A	50 000 AMD (EUR90) for the 1 <sup>st</sup> and 2 <sup>nd</sup> child and – 1 000 000 drams (EUR 1 790) for the 3 <sup>rd</sup> and 4 <sup>th</sup> child, 1 500 000 drams – 5 <sup>th</sup> + child (EUR 2,686)	Basic amount (16 000 AMD (EUR29) per household per month) + supplementary amount (5 500-6 500 AMD per child per month, EUR 10-12). Supplementary sum depends on how low the income is (score), place of residence and number of children under 18)	Basic amount (16 000 AMD (EUR29) per household per month) + supplementary amount. Supplementary amount depends on disadvantage score and number of children under 18 years (5 000-8 000 AMD, EUR9-14)	N/A
<b>Length</b>	140 days (70 days before and 70 days after delivery)	Until the child reaches 2 years of age	two months of leave before the child reaches the age of 3	N/A	N/A	Until the child reaches 18 years of age.	Until the child reaches 18 years of age.	N/A

<sup>125</sup> Stali izvestny razmery posobyi i neotlozhnyy material'noy pomoshchi na (2014g): [The size of benefits and direct support to mothers for 2014 became known], approved by the Government of Armenia Council of Europe (2018) 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO)'. Family benefits' for Armenia.

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**AZERBAIJAN<sup>126</sup>**

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	Employed women (with at least 6 months of work experience)  Possible part-time work	Employees and self-employed persons  Right to part-time work	Men whose wives are on maternity leave	N/A	Child birth / adoption (if the child is adopted directly from hospital) – If the mother does not work, the grant is issued to the baby's father at his workplace	One of a couple with 3 or more children	Income under 105 AZN (EUR54) per family member	N/A
<b>Benefit/Replacement rate</b>	100% of earnings prior to leave	40 AZN (EUR20) from birth until 1.5 years of age, 25 AZN (EUR13) per month for 1.5-3 years of age	Unpaid	N/A	90 AZN (EUR46)	50 AZN (EUR25) in taxable income)	20 to 40 AZN (EUR 10-20), depending on whether the child is fed breast milk or not.	N/A
<b>Length</b>	140/126 days (agricultural/non-agricultural sector) – 70 days of prenatal and 70/56 days of postnatal leave	156 weeks (3 years) – terminated if child under 3 enrols at kindergarten	14 days	N/A	N/A	Until the child reaches 18 years or 23 years if the child is a student	Until the child is 1.5 years old	N/A

<sup>126</sup> Council of Europe (2018) 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO)' 'Family benefits' for Azerbaijan. <http://www.missceo.coe.int/#8>

ILO (2014) *Maternity Protection and Childcare Systems in the Republic of Azerbaijan*. Moscow: ILO. [https://www.ilo.org/wcmsp5/groups/public/-europe/-ro-geneva/-sro-moscow/documents/publication/wcms\\_312667.pdf](https://www.ilo.org/wcmsp5/groups/public/-europe/-ro-geneva/-sro-moscow/documents/publication/wcms_312667.pdf)

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**BELARUS<sup>127</sup>**

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	Employed and unemployed registered women (receiving unemployment benefit)  Possible part-time work	Mother or father or adoptive parents or guardian.  Right to part-time work.	N/A	Paid to those registered with the state health care system before 12 weeks of pregnancy	Paid for each child born (or child adopted up to six months old)	One of the parents with at least one child under 18 years.	Monthly family income is less than 60% of the national average subsistence income level as of September in the previous year (80% for a reduced benefit)	If a family has at least one child younger than 3 years.
<b>Benefit/Replacement rate</b>	100% of previous earnings/unemployment benefit	1 <sup>st</sup> child – 35% of national average monthly income – 2 <sup>nd</sup> child and more – 40% of national average monthly income – child with disability until 3 years old – 45% of national average monthly income	N/A	A lump sum of the average subsistence income level	10 times the minimum subsistence level income prior to the birth is paid for the first child; 14 times for the second and subsequent child.	27 BYR (EUR11) per child per month	30% of the minimum subsistence income level	50% of minimum subsistence level per family
<b>Length</b>	126 days (18 weeks)	156 weeks (3 years)	N/A	N/A	N/A	Until the child reaches 18 years or 23 years if the child is a student	Until the child is 16 or 18 years old (if a student without an education grant)	Until the youngest child is 3 years old.

<sup>127</sup> ILO (2014) *Maternity and paternity at work: Law and practice across the world*. Geneva, ILO. [http://www.ilo.org/wcmsp5/groups/public/-dcomm/-publ/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dcomm/-publ/documents/publication/wcms_242615.pdf)  
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**GEORGIA<sup>128</sup>**

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	All employed women	Either parent (grandmother, grandfather, other relative or guardian actually bringing up the child)	Husband of the woman who gave birth (the leave is taken either by mother or father)	N/A	Child birth and adoption (only if the child is adopted directly from hospital)	Families with children residing in highland	Needy families with children  Families with 2 or more members	Families with seven or more children younger than age 18
<b>Benefit/Replacement rate</b>	100% of daily wage, with a ceiling of GEL 1 000 (EUR370) per month	Unpaid	N/A	N/A	Maximum 1000 GEL (EUR370)	Reduction of 50% in income tax if the taxable income is not more than GEL 3 000 (EUR985)	GEL 60 (EUR20, to the oldest family member, single person); GEL 48 (EUR13, to each subsequent family member)	GEL 35 (EUR 11) per month
<b>Length</b>	183 days	730 calendar days in total for maternity and parental leave, of which 183 days (6 months) are payable.	N/A	N/A	N/A	Until the child reaches 18 years of age.	N/A	Until the children are 18 y.

<sup>128</sup> Council of Europe (2018) 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO)' 'Family benefits' for Georgia. <http://www.missceo.coe.int/#8>

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**KAZAKHSTAN**<sup>129</sup>

	Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits – means-tested	Child cash benefits – universal
<b>Eligibility</b>	Insured/employed women (12 months of previous contribution)	Either parent (grandmother, grandfather, other relative or guardian actually bringing up the child)	N/A	Mothers with 6-7 or more children	All women, regardless of their work status	N/A	Each dependent child (under 18)  Families with average per capita income below the national subsistence minimum	N/A
		Right to part-time work					Not granted if parents are unemployed, do not study, do not serve in the army, not registered as unemployed	
<b>Benefit/ Replacement rate</b>	Average monthly income for the last 12 months * 4.2 (disability coefficient, depends on the number of days taken by mother)	40% of the average monthly income during the past 24 months for a period of 1 year, 2 years are unpaid	5 days	6 MCI (Monthly Calculation Index)	31.41 MCI 1-3 children 52.35 MCI 4+ children in 2016	N/A	Value of 1 MCI per month	N/A
<b>Length</b>	Maximum 126 days (70 days before and 56 days after giving birth)	156 weeks (3 years)	Unpaid	N/A	N/A	N/A	Until the child is 18 years old.	N/A

129 Kazakhstan (2017) Code of taxes and other obligatory payments to the budget 2017: [https://online.zakon.kz/Document/?doc\\_id=30366217#pos=4-245](https://online.zakon.kz/Document/?doc_id=30366217#pos=4-245)

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**KYRGYZSTAN<sup>130</sup>**

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	Officially employed women; entrepreneurs; members of farm households; unemployed women (registered with Public Employment Service)	Mother, father, grandmother, grandfather, other relative or custodian who actually take care of the child  Right to part-time work	Husbands of wives who are in maternity leave	N/A	Paid for each newborn child	Social tax credit on education of dependents	Paid for each child younger than 16 years (23 years if a full-time student)  Not granted if parents are in labour force but unemployed, do not study and are not registered as unemployed	N/A
<b>Benefit/Replacement rate</b>	100% for the first 10 working days by employer. From the 11 <sup>th</sup> working day, 10 times the minimum wage level is paid by the state (through employer reimbursement)	Unpaid	N/A	N/A	300% of the GM. The GM is 640 KGS (EUR8.5, 2014)	Amount paid to officially registered education facility (pre-school, school, higher education), but not more than 10% of taxpayer's taxable income	Difference between family average per capita income and guaranteed minimum income	N/A
<b>Length</b>	126 days (70 days before and 56 days after giving birth)	Until the child reaches 18 months or until the child reaches 3 years (based on agreement with employer)	N/A	N/A	N/A	Until the child is 24 years old.	Until the child is 16 years old or 23 years old (if a full-time student)	N/A

<sup>130</sup> ILO (2014) *Maternity and paternity at work: Law and practice across the world*. Geneva, ILO. [http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-pub/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-pub/documents/publication/wcms_242615.pdf)  
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**MOLDOVA**<sup>131</sup>

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	People residing in Moldova (insured)	Either parent or actual caregiving relative  Insured persons must have at least 9 months of contributions in the last 24 months	Employed father	N/A	Each live birth, regardless of family income.	N/A	N/A	N/A
<b>Benefit/Replacement rate</b>	100% of the insured person's average earnings is paid from the 30 <sup>th</sup> week of pregnancy for 126 days (based on the insured person's earnings in the last 12 months)	Right to part-time work  Insured person: 30% of average income in the 12 months preceding the child's month of birth  Uninsured person: child younger than age 18 months, 440 MDL (EUR22.60).	100% of previous earnings	N/A	1 <sup>st</sup> child – 3 100 MDL (EUR690) Subsequently, each child – 3 400 MDL (EUR750)	N/A	N/A	N/A
<b>Length</b>	126 days (70 prenatal, 56 postnatal)	Uninsured person – paid until child reaches 18 months. Insured – paid until child reaches 3 years	14 days	N/A	N/A	N/A	N/A	N/A

131 Council of Europe (2018) 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO)', 'Family benefits' for Moldova. <http://www.missceo.coe.int/#8>

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**TAJIKISTAN**<sup>132</sup>

	Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits – means-tested	Child cash benefits – universal
<b>Eligibility</b>	Citizens of Tajikistan.	Either parent or actual caregiver  One parent must be in paid work  Right to part-time work	N/A	N/A	Granted from the day the child is born	N/A	N/A	N/A
<b>Benefit/ Replacement rate</b>	100% of previous earnings	Flat rate benefit – 40 TJS (EUR4) a month is paid until the child reaches 18 months.	N/A	N/A	1 <sup>st</sup> child: 120 TJS (11 EUR), 2 <sup>nd</sup> child: 80 TJS (EUR7.50), each subsequent: 40 TJS (EUR4)	N/A	N/A	N/A
<b>Length</b>	140 days (70 days before and 70 days after the expected date of childbirth)	156 weeks (3 years) – 78 weeks paid	N/A	N/A	N/A	N/A	N/A	N/A

<sup>132</sup> ILO (2014) *Maternity and paternity at work: Law and practice across the world*. Geneva, ILO. [http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-pub/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-pub/documents/publication/wcms_242615.pdf)  
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**TURKMENISTAN<sup>133</sup>**

	Maternity leave	Parental leave	Paternity leave	Special maternity allowances	Birth grants	Tax credits	Child cash benefits – means-tested	Child cash benefits – universal
<b>Eligibility</b>	Employed citizens.	Person who is taking care of the child de facto, including the mother, the father, the child's guardian or other relative	N/A	N/A	For the first four children	Per dependent (a child receiving state benefits); granted to both parents. Granted whether dependents live with the taxpayer or not.	N/A	N/A
<b>Benefit/ Replacement rate</b>	100% of previous earnings – average monthly wage over the previous 12 months	65% of the basic amount The basic amount is 182 TMT a month (about 32 EUR)	N/A	N/A	130% of the basic amount is paid for the 1 <sup>st</sup> two children; 250% for the 2 <sup>nd</sup> child; and 500% for the 4 <sup>th</sup> (basic amount= EUR49.24)	N/A	N/A	N/A
<b>Length</b>	16 weeks – 112 days – 56 days before and 56 days after the expected date of childbirth	Until the child reaches the age of 3	N/A	N/A		N/A	N/A	N/A

<sup>133</sup> Government of Turkmenistan (2012) Code on social protection of the population. [https://online.zakon.kz/m/Document?doc\\_id=31349871#sub\\_id=550000](https://online.zakon.kz/m/Document?doc_id=31349871#sub_id=550000)

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**UKRAINE<sup>134</sup>**

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	All insured and uninsured women (not professionally active), all permanent residents.	All residents – either parent or actual caregiver  Right to part-time work	N/A	N/A	One (of the) parent(s) should apply not later than 12 months after the birth of the child	1) On education of dependents  Must be paid to officially registered education facility  2) Having two or more children under 18 years.	If the aggregate average monthly income per member of the family in the previous quarter did not exceed 3 times the amount of the minimum wage	Mothers or fathers who care for 3 or more children
<b>Benefit/Replacement rate</b>	100% of previous earnings  100% of the mother's average monthly income (including unemployment benefits) – not less than 25% of the monthly minimum subsistence level for persons with disabilities	41 280 UAH (EUR1,350). 10 320 UAH (EUR337) paid as a lump-sum.  Remaining 30 960 UAH are paid in equal amount (860 UAH per month – 28 EUR, for 36 months)	N/A	N/A	10 320 UAH (EUR337)	1) Minimum subsistence level multiplied by 1.4 and rounded to the closest 10 UAH  2) 100% of subsistence minimum for a taxpayer able to work	50% of the minimum wage for each child	100% of the minimum wage for caring for 3 children, and 200% of the minimum wage for caring for 4 or more children.
<b>Length</b>	126 days before and 56 after birth	36 months	N/A	N/A	N/A	2) Until children reach 18 years.	Until children are 16 years old. (18 if they are at school)	Up to the age of 16 years (18 if full-time students)

<sup>134</sup> Council of Europe (2018), 'Mutual Information System on Social Protection of the Council of Europe (MISSCEO): Family benefits' for Ukraine. <http://www.missceo.coe.int/#8>

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**UZBEKISTAN<sup>135</sup>**

	<b>Maternity leave</b>	<b>Parental leave</b>	<b>Paternity leave</b>	<b>Special maternity allowances</b>	<b>Birth grants</b>	<b>Tax credits</b>	<b>Child cash benefits – means-tested</b>	<b>Child cash benefits – universal</b>
<b>Eligibility</b>	Persons in covered employment; persons on leave from employment while pursuing secondary, technical, or advanced education; and registered unemployed persons.	Mother, father, grandmother, or another relative who actually takes care of the child.  Right to part-time work	N/A	N/A	On the birth of a child	N/A	Children must be younger than age 14.  Monthly income per household member for last 3 months does not exceed 1.5 times the minimum wage rate	N/A
<b>Benefit/ Replacement rate</b>	100% of the insured person's last month's wage is paid monthly	200% of the monthly minimum wage. – The allowance is income tested, except for single-parent families and families with at least one child with a disability.	N/A	N/A	Up to 6 months from the date of starting the work – 50% of average monthly income;  - 6-12 months – 75% of her average monthly income;  - more than 12 months – 100% of her average monthly income.	N/A	50% of the monthly minimum wage: families with 1 child; 80% for 2 children; 100% for 3 and more.	N/A
<b>Length</b>	126 days – 70 days before and 56 days after childbirth	156 weeks, 104 weeks paid until the child reaches the age of 2, complementary unpaid leave until the age of 3)	N/A	N/A		N/A	Up to six months; may be extended if family income has not changed	N/A

<sup>135</sup> Republic of Uzbekistan (1995) Labour CodeILO (2014) *Maternity and paternity at work: Law and practice across the world*. Geneva, ILO. [http://www.ilo.org/wcmsp5/groups/public/-dcomm/-pub/documents/publication/wcms\\_242615.pdf](http://www.ilo.org/wcmsp5/groups/public/-dcomm/-pub/documents/publication/wcms_242615.pdf)ILO (2011) 'Uzbekistan – Maternity protection – 2011'. ILO, July 2012 [https://www.ilo.org/dyn/travail/sectionReport17p\\_lang=en&p\\_structure=3&p\\_year=2011&p\\_start=1&p\\_increment=10&p\\_sc\\_id=2000&p\\_countries=UZ&p\\_print=Y](https://www.ilo.org/dyn/travail/sectionReport17p_lang=en&p_structure=3&p_year=2011&p_start=1&p_increment=10&p_sc_id=2000&p_countries=UZ&p_print=Y)Cabinet of Ministers (2012) On Measures to Further Improve the Procedure for the Appointment and Payment of Social Benefits. <http://www.lex.uz/acts/2101341>Social Security Administration (2010) 'Social Security Programs Throughout the World: Asia and Pacific - Uzbekistan'. <https://www.ssa.gov/policy/docs/progdesc/ssptw/2010-2011/asia/uzbekistan.html>Social Security Administration (2014) 'Social Security Programs Throughout the World: Asia and Pacific - Uzbekistan'. <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/asia/uzbekistan.pdf>Republic of Uzbekistan (2007) Tax Code. [https://online.zakon.uz/Document/2doc\\_id=30421027#pos=6-245](https://online.zakon.uz/Document/2doc_id=30421027#pos=6-245)

## EARLY CHILDHOOD EDUCATION AND CARE IN THE EUROPE AND CENTRAL ASIAN COUNTRIES

	AL	AM	AZ	BLR	BIH	BG	HR	GE	KZ	KO	KG	MK	MD	ME	RO	RS	TJ	TR	TM	UA	UZ
Compulsory preparatory year before entering school				X	X	X	X	X	X				X		X	X					
Preparatory year / public pre-school free of charge			X	X	X	X	X	X	X				X		X						
Childcare subsidies	X					X	X	X	X			X			X	X	X				
Age of entering primary school	6	7	6	6	6	7	6	6	7	6	6/7	6	6/7	6	6	7	7	6	6	6	6

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## ANNEX 3.

# Review of impact evaluations

### Review of evaluation studies on relevant family policies

To identify impact evaluations on family policies of interest, we used Google Scholar, the CEU online library and the International Initiative for Impact Evaluation (search terms: parental leave, maternity leave, childcare, kindergarten, kindergarden, daycare, early childhood, impact, evaluation, evidence, effect), publications of relevant international organisations (IADB, OECD, UNICEF, World Bank, United Nations Research Institute for Social Development), and literature reviews included in relevant papers. Wherever possible, we focus on evaluations from the less-developed world, but in the absence of available studies we reach out to examples from developed countries. The scope of the review was limited to counterfactual quantitative evaluations that we may use in the simulation exercise.

We present the outcomes of the literature review grouped according to the most common types of government measures: i) improving the availability of childcare facilities (providing subsidies for families to cover the costs of childcare, capacity building in childcare facilities); ii) changing paid parental leave regulations; and iii) providing conditional cash transfers to parents enrolling their children in early childhood education and care facilities.

#### Increasing the availability of early childhood education and care

The literature review yielded no results for impact evaluations in the ECA region. Numerous impact evaluations are available from Latin America that assess the effect of early childhood education and care facilities on children's wellbeing and female labour supply. Martínez and Perti-cará (2017) examine the effect of free afterschool care for children aged 6 to 13 targeted at vulnerable families in the framework of a randomized control trial programme. In the short-term, the programme increased the number of months participating mothers were employed significantly. Dante et al (2012) exploit the variation in the proximity to early childhood education and care facilities, and the compatibility of early childhood education and care hours and working hours in Chile and find significant and large positive effects on maternal employment probabilities. In-

creasing the availability of public early childhood education and care facilities in Argentina (measured as the proportion of newly constructed places and the baseline early childhood education and care capacities) increases maternal labour supply by 7-14 percentage points, according to Berlinski and Galiani (2007). The results of a later study by Berlinski and McEwan (2011) on the same programme imply that increasing the availability of early childhood education and care facilities increased the working hours of those mothers who already worked in the absence of free early childhood education and care facilities. Their average weekly working time increased by eight hours. De Barros et al (2010) find a 4-9 per cent increase in the probability of employment of an early childhood education and care facility randomized control trial programme in Brazil providing free day care to disadvantaged families. Unemployment declined consistently by 4-8 per cent in the target population.

Two evaluations by Medrano (2009) and Encina and Martínez (2009) examining the impact of a significant increase in the availability of public early childhood education and care services in Chile between 2005 and 2007 find no significant effects on mothers' employment probabilities. The authors suggest this lack of significant effects is for cultural reasons (traditional female role) and institutional reasons (the operating hours of the early childhood education and care facilities and distortions in the application process).

Prada et al (2015) evaluate the impact of a regulatory change in Chile obliging all firms with more than 20 employees to maintain early childhood education and care facilities. The authors evaluate the reform's impact on women's starting wages using a regression discontinuity design and find that the reform significantly reduced the starting wages of women in the treatment group (by approximately \$39 – \$87). They interpret the results as an indication that the mandated early childhood education and care provision functions as a tax on employment. The authors note that their estimations reflect the reform's effect on the margin only, and also that determining long-run effects would be necessary to adequately evaluate the effectiveness of the intervention.

Informal day care is a common solution to the low supply of early childhood education and care facilities. Attanasio and Hernandez (2004) evaluated a Colombian community nursery in which poor children received food (financed by the government) and care (from one of the mothers in the community) in 1984-1986 using an instrumental variable approach. Their results reveal a positive impact not only on the probability of participating mothers' employment and children's nutritional status, but also on children's long-run school participation. Hallmann et al (2005) studied a similar, informal day care availability intervention in Guatemala. They found a positive but insignificant impact on the probability of employment, and a positive and significant impact on the number of hours worked, suggesting that the positive effect was more pronounced for women who had already worked in the absence of the intervention. These results are consistent with the findings of Berlinski and McEwan (2011).

Several papers have evaluated PEI: a large-scale Mexican home and community-based child-care arrangement targeting 1-4 year old children from the financially vulnerable population. Ángeles et al (2014) compared the outcomes of mothers participating in the programme and those on the waiting list and found large and positive employment effects, especially for women who had not worked prior to the programme (effect size varies between 15 and 21 per cent). Another large-scale early childhood education and care subsidy programme (Apoyar a Madres Trabajadoras) in Mexico was thoroughly evaluated by Calderón (2014). Using difference-in-difference and regression discontinuity methods, the authors evaluated the effect of the subsidy, which covered approximately 90 per cent of the early childhood education and care costs. The study finds that the programme increased the probability of mothers' employment by 5-13 per cent, while it reduced the probability of fathers' employment by 1-6 per cent. The programme also increased the monthly labour income of women by 2-5 per cent, but mothers living in rural areas saw no increase in their wage level. An early childhood education and care centre programme (Child Development Fund – FODI) in Ecuador was also found to have beneficial effects on maternal labour supply (a 31 percentage point increase in the probability of employment and 11 additional hours worked per week). The income of the target population did not increase significantly, suggesting that the expansion of labour supply was mostly realized in the informal sector (Rosero and Osteerbeek 2011). Toledo (2015) evaluated a universal early childhood education and care scheme introduced in Mexico in 2004 that ensured that all children above three years could attend early childhood education and care facilities, and found significant and positive results for the probability of mothers' employment.

Schlosser (2011) evaluated an Israeli randomized control trial programme in which 11 towns with mostly Arab populations provided 3-4 year old children with free early childhood education and care services between 1998 and 2003. Depending on the model used, women's labour force participation improved significantly, by 5-10 per cent compared to their peers where the services were not provided.

### **Paid parental leave – regulatory changes**

The literature review yielded no results for impact evaluations in the ECA region or Latin-America. The relevant studies that we found all relate to Europe.

In their evaluation, Geyer et al (2014) exploited a German regulatory change, which simultaneously increased the size of parental leave benefit, and reduced the entitlement period. Prior to the reform, the parent on leave was eligible for a means-tested benefit of €300 per month for two years. The reform reduced the entitlement period (Elterngeld) from 24 to 12 months and set the benefit amount at the size of previous earnings. The entitlement could be extended by two months (to 14 months) if during that extension the partner (e.g. the father) went on leave. This regulatory change was combined with a significant expansion of subsidized early childhood education and care that guaranteed a place in a facility for each child above the age of one. With the latter change the average cost to parents of an early childhood education and care place went down from €384 to €130 per month. The authors used a structural labour supply model and then simulated the impact of i) the parental leave change, ii) the universal early childhood education and care, and iii) the combined effects of the two reforms. The results suggest that as a result of the parental leave changes, mothers' labour supply decreased in the first 12 months after child birth by 2 to 5 percentage points, with a larger negative effect for high-income families. In the second year following the child's birth, labour supply of mothers with an income below the median increased by between 2.6 and 6 percentage points (depending on the specification). The results for the entire population for the second year are not significant. If we consider the effect of the early childhood education and care expansion alone, the effect on the female employment rate was 5 percentage points. Together, the parental leave and early childhood education and care expansion reforms increased the labour supply of mothers by 7 percentage points.

Dustmann and Schönberg (2012) evaluated three consecutive reforms of Germany's maternity leave regulations. The authors found positive effects on female labour supply when maternity leave was extended from 6 to 10, and from 18 to 36 months, while there was a negative effect on maternal labour supply when unpaid leave was extended from 2 to 6 months. The reforms had no significant

impact either on children's educational outcomes or their long-run labour market outcomes.

Joseph et al. (2013) investigated the effects of the introduction of a short-term parental leave cash benefit in France, incentivizing women with their first child to stay home for six months after the child's birth. The measure also offered a partial benefit to mothers working part-time. The evaluation found that part-time paid leave was more effective in supporting mothers' medium-term labour force participation than the full-time leave. This effect was especially pronounced for women with low educational attainment. The effect of the part-time leave on wages two years after child birth was, however, negative: this suggests that part-time paid leave did not pay off in terms of income compared to the pre-reform period, when women did not receive paid leave. Kluge and Schmitz (2014)<sup>136</sup> found similar results in an evaluation of a similar German policy reform. The employment rate of mothers increased by up to 10 per cent in the medium term. The effect was mostly driven by part-time positions, similar to the French case described above.

A 2014 study looked at the impact of the re-launch of an insurance-based maternity benefit (following a temporary withdrawal of the benefit) in Hungary.<sup>137</sup> GYED was enacted in 2000 and provided mothers with 70 per cent of their previous monthly income for two years after a child's birth. Using propensity score matching, the author found significant negative effects on female employment after the second year of motherhood despite the fact that mothers received the re-launched maternity benefit in the first two years of the motherhood. The effect was stronger for mothers with low educational attainment and a youngest child aged 2-5 years.

### **CCT for parents enrolling their children in child-care**

A means-tested, regionally introduced conditional cash transfer (CCT) programme in Kazakhstan targeted the following groups: children aged four and over, pregnant women, newborns and young people aged 16-19. A 2013 study<sup>138</sup> evaluated the randomized CCT programme in the 2011-2012 period, focusing on the \$24-35 cash benefit

element provided to low-income families in rural settlements in Almaty region, which was primarily intended to be spent on early childhood education and care facilities. Sixty pairs of villages were selected as a sample; then the villages were randomly allocated to treatment and control groups within each pair. The eligibility criteria for the cash subsidy were: (i) low-income household; and (ii) attending at least 85 per cent of the time that an early childhood education and care unit was operating. One year after the start of the programme the primary carers were 10 per cent more likely to be in paid employment but other outcomes (employment probability, unemployment and poverty rates) had not changed significantly as a result of the intervention.

Mexico implemented a number of programmes providing cash support for early childhood education and care in the form of CCT measures aiming at improving children's nutritional status and school attendance rates. A 2000 study<sup>139</sup> looked at the impact of a programme providing educational grants and cash grants for food. The randomized control trial measures taking place between 1998 and 1999 targeted the poor population with children aged four months at least, and had a significant and large positive effect on children's health. The treatment population's mean consumption level increased by 13.4 per cent, the median food consumption by 10.6 per cent and the median caloric acquisition by 7.8 per cent. A 2000 study<sup>140</sup> evaluated the same programme. The authors found a significant and large positive impact on the school enrolment rate in the treatment group. Consistent with the results of other studies,<sup>141</sup> the long-term impact was much larger (7-9 per cent as opposed to 1 per cent for girls and 4-6 per cent as opposed to 1 per cent for boys). This is also because baseline enrolment in primary schools is much higher than in secondary schools (90 per cent as opposed to 67 per cent). An Argentinian programme paid monthly cash transfers to parents or other carers with unstable financial backgrounds of children under 18 years of age. The cash support is a semi-conditional cash transfer to parents with a child under the age of 18: 80 per cent of its value is paid on a monthly basis, and the remaining 20 per cent is deposited into a savings account in the parent's

136 Kluge, Jochen, and Sebastian Schmitz (2014) Parental Benefits and Mothers Labor Market Outcomes in the Medium Run. In *Family Economics F03-V3, Vereins für Socialpolitik 2014: Evidenzbasierte Wirtschaftspolitik*. <http://www.sole-jole.org/15370.pdf>.

137 Szabó-Morvai, Ágnes (2014) 'Who Benefits from Child Benefits? The labor supply effects of maternal cash benefit'. [http://hetfa.eu/wp-content/uploads/2014/11/SzaboMorvai\\_GYED\\_April2014.pdf](http://hetfa.eu/wp-content/uploads/2014/11/SzaboMorvai_GYED_April2014.pdf)

138 O'Brien, Clare, et al. (2013) 'Kazakhstan: External Evaluation of BOTA Programmes. The Impact of BOTA's Conditional Cash Transfer (CCT) Programme 2011-2012'. Oxford: Oxford Policy Management. <http://microdata.worldbank.org/index.php/catalog/2218>

139 Hoddinott, John, Ryan Washburn, and Emmanuel Skoufias (2000) 'The Impact of PROGRESA on Consumption: A Final Report'. Washington, DC.: International Food Policy Research Institute. [www.ifpri.org/publication/impact-progres-a-consumption](http://www.ifpri.org/publication/impact-progres-a-consumption)

140 Skoufias, Emmanuel, and Bonnie McClafferty (2000) 'Is PROGRESA Working? Summary of the Results of an Evaluation by IFPRI', Synthesis Evaluation Report. Washington DC.: International Food Policy Research Institute, <http://ebrary.ifpri.org/utis/getfile/collection/p15738coll2/id/125401/file-name/125402.pdf>

141 See, for example, Attanasio, Orazio and Marcos Vera-Hernandez (2004) Medium and Long Run Effects of Nutrition and Child Care: Evaluation of a Community Nursery Programme in Rural Colombia'. *Working Paper 04/06*. London: Institute for Fiscal Studies. <http://discovery.ucl.ac.uk/14749/1/14749.pdf>

name. The deposited money can be withdrawn if school attendance health check-ups are proven. A 2014 study<sup>142</sup> evaluated the programme's impact on parents' employment status and income, and found no significant effect, meaning that the cash transfer did not provide disincentives for the parents to take up employment.

## Details of studies used as models in the simulations

Kluge and Schmitz (2014) studied the impact of a cut in the duration of paid parental leave coupled with an increase in the replacement rate on mothers' employment rate in Germany. The reform meant that paid parental leave was shortened from 24 months (for either parent) to 12 months (for the mother) or 14 months (per household if both parents take the leave), and an increase in the benefit from €300 per month (a flat rate) to 67 per cent of previous net earnings with a ceiling of €1,800. In their study, they examined the effect of the reform in three different periods. On average, 2-4 years after childbirth, the employment rate of mothers increased by 3.33 per cent compared to the pre-reform level. Highly educated and high-income mothers mainly drove this effect. The limitation of the applicability of this study is that the two components of the policy change took place at the same time, and so the combined effect of a cut in duration and an increase in the replacement rate cannot be disaggregated. An increase in replacement earnings would be expected to reduce employment and increase uptake of parental leave. Therefore, the effects estimated for simulation countries are considered as lower-bound estimates of the potential effect of a cut in the duration of leave.

Calderón (2014) studied how eligible mothers and single fathers of children aged 1-3 changed their behaviour as a result of expansion of a subsidized early childhood education and care programme providing ECEC services for children aged 1-4. The programme focused on the children of mothers who were not covered by Mexico's Social Security

system and increased the mothers' probability of working by 4.3 per cent for every 10 percentage points of increase in early childhood education and care coverage. The effect was higher for women with at-most high-school education in rural settlements than for those in urban localities (5.5 and 3.6 percentage changes, respectively). However, the programme decreased the father's probability of working by 1.26 per cent for every 10 percentage points of increase in early childhood education and care coverage (probably due to the added worker effect).

Lovász and Szabó-Morvai (2014) investigated how mothers' labour force participation reacted to increased early childhood education and care coverage in Hungary. They found that the increase in coverage by almost 100 percentage points (from almost none to almost full coverage when children become eligible to kindergarten at age 3) raised women's labour market participation by 9.5 percentage points. And since the activity rate of mothers who did not participate in the programme was 50 per cent, the average effect was an increase of 19 per cent. In the simulation, we use coefficients from Lovász and Szabó-Morvai (2014) as a lower bound and coefficients from Calderon (2007) as an upper bound of the effect of an early childhood education and care subsidy on mothers' employment.

De Barros et al (2010) studied the impact of subsidized full-time early childhood education and care specifically targeting disadvantaged (low-income) families in Brazil. They find that, on average, offering an integrated early childhood education and care programme for children aged 0-3 increases mothers' employment in disadvantaged families by 26.5 per cent

Table A3.1 below presents selected contextual indicators for the model countries and mean values for the three clusters in the ECA region. In most indicators, three of the model countries (excluding Germany) are reasonably similar to ECA countries in cluster C1 and C2, while countries in cluster C3 appear to differ both from the other clusters in the region and from the model countries.

142 Maurizio, Roxana, and Gustavo Vázquez (2014) 'Argentina: Impacts of the Child Allowance Programme on the Labour-Market Behaviour of Adults', *Revista CEPAL*, 2014(08), [http://repositorio.cepal.org/bitstream/handle/11362/37424/RV113Maurizio\\_en.pdf](http://repositorio.cepal.org/bitstream/handle/11362/37424/RV113Maurizio_en.pdf)



**Table A3.1**  
**Context indicators in model countries and the cluster means**

Country	Germany	Hungary	Brazil	Mexico	C1	C2	C3
Fertility rate	1.50	1.45	1.73	2.18	1.64	1.51	2.54
Rural population	22.8	29.2	14.0	20.4	29.0	44.2	55.8
Employment	58.0	52.9	56.4	58.9	50.6	43.3	60.5
Female employment	52.9	45.5	46.1	42.2	42.2	36.7	51.9
Government effectiveness	1.73	0.46	-0.17	0.14	-0.14	0.04	-0.45
Infant mortality	3.2	4.1	14.6	12.2	9.4	8.1	27.6

**Source:** Worldbank online database, data for 2016. <https://data.worldbank.org/> (last access July 2017) **Note:** See Annex 4 for more detail on the clusters.

## Annex 4.

# Country clusters created on the basis of contextual factors

The first step in defining the three country groups was a cluster analysis of indicators of family policy, outcomes, and contextual factors that might shape the design of family policy measures. The cluster analysis included indicators to measure the social context that may influence the level and geographical distribution of demand for childcare: the fertility rate and the share of the rural population. The policy challenge was captured by the female employment rate and total employment, while government efficiency was approximated as government effectiveness ranking and infant mortality. We manually crosschecked if the clustering was consistent with variation in some variables that may influence demand for public daycare (the self-employment rate) or describe targeting and level of expenditure on social policies (provision of means-tested child benefit, level of social expenditure) but were excluded from the calculation because

of missing values. The choice of these variables was heavily restricted by what was available and comparable for all countries. We used K-means clustering with least squared Euclidean distance on the selected variables. The calculation generated the five clusters presented in Table A1. The clusters clearly differ in terms of the six contextual variables.

In the final step, D.Cluster 1 (including Bosnia and Herzegovina and Kosovo) was merged into D.Cluster 4 because of their relative similarity (except the markedly lower employment rates) and D.Cluster 2 and D.Cluster 5 were merged as they were similar in most indicators except for the government efficiency dimension. In the rest of the analysis we used the resulting three main clusters (as indicated in Table A4.2). Table A4.1 describes the five detailed clusters.

**Table A4.1**  
**Characteristics of the five detailed clusters (averages)**

	D.Cluster 1	D.Cluster 2	D.Cluster 3	D.Cluster 4	D.Cluster 5
	Bosnia and Herzegovina Kosovo	Azerbaijan Georgia Kazakhstan Kyrgyzstan	Armenia Belarus Bulgaria Turkey Ukraine	Albania Croatia Moldova Montenegro North Macedonia Romania Serbia	Tajikistan Turkmenistan Uzbekistan
Rural population	61.18	50.83	28.98	44.19	62.45
std. dev.	1.12	9.07	5.19	5.70	11.55
Employment rate	29.80	62.97	50.56	43.27	57.10
std. dev.	4.10	5.36	4.33	4.78	3.12
Female employment	18.25	56.23	42.24	36.71	46.10
std. dev.	8.13	6.91	9.43	4.78	6.17
Government effectiveness	-0.48	-0.20	-0.14	0.04	-0.79
std. dev.	0.09	0.54	0.36	0.34	0.10
Fertility rate	1.68	2.44	1.64	1.51	2.66
std. dev.	0.59	0.65	0.25	0.18	0.72
Infant mortality rate	8.40	18.45	9.36	8.07	39.90
std. dev.	4.24	7.91	3.85	4.17	5.00

Table A4.2 presents indicator values for each country, including those used in the clustering calculation as well as those that were dropped due to missing data.

**Table A4.2**  
**Clustering of ECA countries**

Cluster	Country	Employment	Female employment	Rural population	Self-employed female	Infant mortality	Means tested child benefit	Public spending on social assistance
1a	Bosnia and Herzegovina	32.7	24.0	60.4	27.7	5.4	1	n.a.
1a	Kosovo	26.9	12.5	62.0	13.7	11.4	1	0.50
1b	Albania	46.3	38.2	43.6	70.0	12.9	0	0.50
1b	Croatia	42.7	37.3	41.3	18.1	3.8	1	2.00
1b	Moldova	39.9	37.1	55.1	24.9	13.9	0	1.60
1b	Montenegro	40.4	34.3	36.2	12.3	4.6	1	
1b	North Macedonia	39.9	31.1	43.0	23.5	5.2	1	0.00
1b	Romania	52.8	45.9	45.6	33.4	10.1	1	0.50
1b	Serbia	40.9	33.1	44.5	26.1	6.0	1	1.30
	<b>average of C1 (1b only)</b>	<b>43.27</b>	<b>36.71</b>	<b>44.19</b>	<b>29.76</b>	<b>8.07</b>		<b>0.98</b>
	standard deviation of C1 (1b only)	4.78	4.79	5.70	18.93	4.17		0.77
	average of C1 (including 1a and 1b)	40.28	32.61	47.96	27.74	8.14		0.91
	standard deviation of C1 (1a and 1b)	7.38	9.58	8.98	17.23	3.91		0.72

Cluster	Country	Employment	Female employment	Rural population	Self-employed female	Infant mortality	Means tested child benefit	Public spending on social assistance
2	Armenia	52.9	44.2	37.2	26.7	13.2	1	1.10
2	Belarus	52.9	48.1	23.7	2.4	3.5	1	2.10
2	Bulgaria	47.2	42.7	26.4	8.8	9.7	1	0.60
2	Turkey	44.8	26.2	27.1	45.7	12.3	1	0.30
2	Ukraine	55.0	50.0	30.5	19.5	8.1	1	2.60
	<b>average of C2</b>	<b>50.56</b>	<b>42.24</b>	<b>28.98</b>	<b>20.62</b>	<b>9.36</b>		<b>1.34</b>
	standard deviation of C2	4.33	9.43	5.19	16.87	3.85		0.98
3a	Tajikistan	60.7	53.2	73.3	41.5	39.7	0	0.10
3a	Turkmenistan	55.3	42.1	50.3		45.0	0	n.a.
3a	Uzbekistan	55.3	43.0	63.7	71.1	35.0	1	n.a.
3b	Azerbaijan	63.2	59.3	45.6		28.9	1	0.40
3b	Georgia	56.6	49.9	46.5	62.4	11.3	1	0.50
3b	Kazakhstan	69.7	64.5	46.7	31.6	13.5	1	0.30
3b	Kyrgyzstan	62.4	51.2	64.4	32.7	20.1	1	2.50
	<b>average of C3</b>	<b>60.46</b>	<b>51.89</b>	<b>55.81</b>	<b>47.86</b>	<b>27.64</b>		<b>0.76</b>
	standard deviation of C3	5.24	8.11	11.15	17.93	13.08		0.98
	Significance of F statistics for the three clusters	0.000	0.002	0.000	0.058	0.000		0.567



# ANNEX 5.

## Methodology

### Assumptions used in the cost-benefit analysis

#### Costs and benefits, Policy option 1: parental leaves

The proposed policy is to have relatively generous paid parental leave (which replaces 85-90 per cent of mothers' earnings) for a short period of time (eligibility for paid parental leaves run out when the child reaches 15 months of age). In Bulgaria and Romania, this implies a shortening of parental leave without a major change in replacement rates.

To estimate the employment response to the policy change, we used the effect estimates from counterfactual studies. More precisely, we extracted the percentage (proportional) change in the employment rate, differentiated by educational groups. We used the current employment rates and composition of women with young children in our simulation countries, and assumed that the proposed policy would change the labour market status to the same proportion as in the original study.

On the benefit side, the state budget revenues will increase due to lower spending on paid parental leave. Since this is a policy that applies universally, we used current average parental benefits. State revenues will also increase due to taxes (and social security payments) on earnings of re-employed mothers. This was estimated using official statistics on gross earnings of women (by educational group), and the official personal income tax and contribution rates. The total increase in revenues from this source is thus the increase in employment multiplied by the tax revenue per capita.

On the cost side, we assume that mothers who lose eligibility for paid parental leave due to the policy change, but are not re-employed are (potentially) eligible for welfare benefits (such as means-tested minimum income benefits or social assistance). In order to estimate the increase in costs of this, we would have to perform a full micro-simulation, including eligibility based on household

income and take-up rates. We do not estimate this increase in welfare benefits, and thus we provide an upper bound estimate for the increase in government revenues (and loss in parental incomes).<sup>143</sup>

#### Costs and benefits, Policy option 2a: early childhood education and care subsidies in the form of a tax allowance

In this policy option we propose providing a tax allowance to families whose young children attend early childhood education and care of a third of the total cost of provision. This policy is complemented with a direct state subsidy to early childhood education and care providers of a third of the total cost of provision. Thus, parents will effectively cover a third of the cost of early childhood education and care provision in the form of fees.

As in the case above, to estimate the employment response to the policy change, we used effect estimates from counterfactual studies. More precisely, we extracted the proportional change in the employment rate, disaggregated by educational attainment, from the studies. We used current employment rates and composition of women with young children in the simulation countries, and assumed that the proposed policy would change the labour market status to the same proportional degree as in the original study.

There are two additional issues related to estimating employment responses. First, the effect estimates vary largely with institutional context, and so we use two studies to provide upper and lower bounds on the potential employment response. Second, we need to consider take up of the policy by different categories of mothers disaggregated by educational attainment and income. In the baseline case, we assume that take up is equi-proportional: thus, if 100 additional places are established with the new early childhood education and care policy, the composition of mothers of children enrolled is similar to the educational composition of mothers of young children in the population. However, since the family must have

<sup>143</sup> It is worth noting that due to the tight eligibility criteria and low welfare benefits, the average contribution of minimum income benefits to total household income among all households with children is 2.9 per cent in Bulgaria, and 7.9 per cent in Romania.

a (relatively) high income to be eligible for the full tax allowance,<sup>144</sup> it is likely that take up of this policy would be tilted towards relatively highly educated mothers. Thus, in the alternative scenario, we assume that highly educated mothers will be overrepresented while low educated mothers will be underrepresented among users. In practice, we will take account of this by reweighting the proportion of tax allowance claimants.

For this policy, the increased revenue for the state budget comes in the form of taxes (and social security payments) on the earnings of re-employed mothers. This was estimated using official statistics on gross earnings of women (by educational attainment), and official personal income tax and contribution rates. The total increase in revenue from this source is the increase in employment multiplied by tax revenues per capita. For these revenues, we will provide four estimates, for the two scenarios mentioned above (proportional take up, and overrepresentation of highly educated mothers among beneficiaries), and the lower and upper bound (based on different evaluation studies).

On the cost side, the state incurs two-thirds of the total running costs of new early childhood education and care places. Thus, reliable data is needed on such running costs. This has primarily been estimated based on official statistics on the costs of public early childhood education and care (nurseries). However, this was not available in all countries, and so it has been estimated in some cases based on total government spending on early childhood education and care and enrolment in pre-school education. We need to clarify that the figures obtained by these rough calculations are lower bound estimates of the true costs of early childhood education and care. This is because (a) pre-school education spending currently goes mainly to kindergartens in our simulation countries; and (b) kindergarten education is substantially cheaper than early childhood education and care as regulations allow for much higher (typically two to three times as high) child-to-carer ratios in kindergartens than in early childhood education and care.<sup>145</sup> We do not adjust these figures for potential differences in costs.

#### **Costs and benefits, Policy option 2b: early childhood education and care subsidies in the form of quasi-vouchers**

Policy option 2b proposes providing subsidies in the form of quasi-vouchers to families whose young children attend early childhood education and care. The quasi-vouchers

will equate to a third of the total cost of provision. This policy is complemented by a direct state subsidy to early childhood education and care providers amounting to a third of the total cost of provision. Thus, effectively, parents will cover a third of the costs of early childhood education and care provision in the form of fees.

Costs and benefits were estimated in the same way as for policy 2a. There is one change: three scenarios have been estimated for the take up of the voucher (enrolment in early childhood education and care). First, an equi-proportionate (baseline) scenario; second, one in which high-educated parents have higher take up (in order to simulate a situation which resembles current take up rates); and finally, a scenario in which children of low-educated mothers are given priority for early childhood education and care (through administrative rules): in this case, mothers with lower educational attainment are given a larger 'weight', while mothers with high educational attainment are given a lower 'weight' in our calculations.

#### **Costs and benefits, Policy option 3: early childhood education and care subsidies targeted at children of mothers with low educational attainment**

Policy option 3 provides subsidies in the form of quasi-vouchers for mothers with low educational attainment whose young children attend early childhood education and care. The subsidies would equate to two-thirds of the total cost of provision. As this policy is also complemented with a direct state subsidy to early childhood education and care providers equating to a third of the total cost of provision, early childhood education and care is effectively free for parents with low educational attainment. In this policy scenario, we assume that no additional (subsidized) childcare places are provided to children of mothers with medium and high educational attainment.

Costs and benefits were estimated in the same way as for policies 2a and 2b. There are two changes: we assume that only mothers with low educational attainment are eligible, and the estimation of costs is adjusted to take into account the larger subsidy for mothers with low educational attainment.

#### **Costs and benefits, Policy option 4: free meals targeted at those with low educational attainment**

The labour supply impact of free meal provision is very small. Therefore costs and benefits are not calculated for this option (but effects on poverty are simulated).

<sup>144</sup> The tax allowance amounts to one third of early childhood education and care fees. This can be fully exploited if the parents' tax liability is at least that high. Thus, in personal income tax systems with a zero-tax band for the lowest income bracket, parents with low incomes cannot take advantage of the allowance.

<sup>145</sup> We also consider adjusted cost calculations of early childhood education and care in countries that currently allow for exceedingly high child-to-care-taker ratios. This would model a situation in which tighter quality standards are enforced.

### *Poverty simulations*

In these calculations we define poverty as relative poverty, or per capita household equivalent income of below 60 per cent of the median, so that the results are comparable to the relevant European Union indicators.<sup>146</sup> Thus, we measure what proportion of households with at least one young child is poor, and how this changes if the proposed policy is implemented. We use household level data from the Survey of Income and Living Conditions for Bulgaria, Croatia and Romania, and the Welfare Monitoring Survey for Georgia to estimate equivalent incomes, household composition and poverty.<sup>147</sup>

In order to estimate the effects of alternative policies on child poverty, we use the impact estimates on mothers' net earnings (as well as on parental benefits for Policy Option 1) and add these to the incomes of all potentially affected families.<sup>148</sup> After having thus 'simulated' the potential change in household incomes, we re-calculate median equivalent incomes, relative poverty lines and poverty rates. It should be noted that these simulations do not include the potential increase in family spending on early childhood education and care, and so our estimates of changes in income provide an upper-bound estimate of the net disposable income of households with young children.

An important issue is whether all low-income households with young children have equal access to and take-up of the proposed policies. This is a significant issue, as a policy that targets the less poor (those closer to the poverty threshold) can achieve a larger reduction in the poverty rate, with a given estimated increase in income, than one that targets the poorest. We will assume that all (currently poor) families have equal access and take-up, and that thus all families will see an equal increase in their incomes.

### **Calculating access to ECEC**

The calculations on changes in access to early childhood education and care are based on the assumption that public spending on the sector increases by 20 per cent of current public spending on paid leave.<sup>149</sup>

In some countries, this 20 per cent increase may be financed from a cut in the length of leave, while in others it may be resourced from savings in another policy area or a tax increase. The size of the increase was chosen to be feasible in terms of flexibility in budgeting and in terms of practical implementation within a year. We assumed that families make full use of new early childhood education and care facilities, so any increase in places is fully translated into an increase in access.

Only central government spending on early childhood education and care services was considered and local government expenditure was ignored. Data was available on the current level of access, but no household level information was available on use of early childhood education and care or on level of access by educational attainment of mothers.<sup>150</sup> Therefore the calculations are based on the following assumptions: the existing level of access to early childhood education and care among children of mothers with low educational attainment is half the average. This remains unchanged in policy option 2a (tax allowance) if use of the tax allowance is not tilted towards women with higher educational attainment and worsens to a quarter of the average if women with higher educational attainment are twice as likely to use the allowance. For policy option 2b (the quasi voucher), access by disadvantaged children is assumed to increase to the average level, or 1.5 times the average if the rules of access explicitly favour parents with lower educational attainment. For policy option 3, it is assumed that disadvantaged children take up all the newly created spaces. To ensure consistency with the simulations of employment and poverty, further calculations were made with slightly different assumptions: in these access by disadvantaged children equals the average (these are presented in Annex 9). These can be considered conservative assumptions, as the existing levels of access are likely to be lower, implying that the actual impact of targeted policies may be even larger.

<sup>146</sup> Poverty rates were also calculated using 'old' OECD equivalence scales, and using 50 per cent of median incomes as poverty lines (see Annex 9).

The rationale for this alternative measure is that it captures deep poverty better, and the equivalence scale places greater 'weight' on children, which may be more appropriate in developing countries.

<sup>147</sup> It is worth noting that since neither the EU SILC nor the WMS contains direct information on child-mother pairings, we will calculate poverty rates for households where at least one child is below three years of age.

<sup>148</sup> When simulating the effects of policies that target low-educated children, it is assumed that families where mothers are highly educated have no access, and thus their incomes do not change.

<sup>149</sup> It should be noted that the authors did not have access to direct official information on spending on paid parental (maternal) leave. This was thus estimated using the number of children in the relevant age band, women's earnings and paid leave benefit rules. This assumes full take up (all mothers who are eligible do actually benefit for the whole entitlement period), and that access to leave is universal (no mothers are not eligible due to absence of employment history). Finally, it uses current benefit rules, assuming that an average mother's earnings is equal to the average income of women, and calculated replacement rates (and hence monthly benefit amounts) accordingly.

<sup>150</sup> The OECD Family Policy Database (PF3.2.B and C) has some information on Croatia: for children aged 0-2 years, enrolment in formal early childhood education and care is 17 per cent on average, compared to 37 per cent for mothers with higher education and 10 per cent for those with less than higher education. Meanwhile, access is only 1 per cent in the poorest third of households.

## Limitations in the simulation exercise

The simulation of the impact on female employment rests on the general assumption that female labour supply at the individual level depends mainly on the level of education and the age of the child. This is based on economic theory and the available empirical evidence and is consistent with assuming that the fine details of a policy measure are suitably adapted to local contextual factors.

Further, the simulations rely on a number of simplifications and ignore the following important processes. First, due to potential large-scale expansion of early childhood education and care services, employment will increase through the hiring of additional caregivers. This will also lead to an increase in state revenues (through income tax), and an increase in national income (through the value of production of these additional services). Second, the total increase in economic output from the (potential) additional employment opportunities of mothers with young children has not been evaluated. More precisely, the profit that accumulates to capital owners due to an expansion of employment (production) is not taken into account. An increase in income is estimated from labour costs: i.e. the net earnings of families, and the increase in taxes and social security contributions benefiting the state. Given that the share of total output that accrues to capital owners is around 35-45 per cent, the total increase in economic output will be 1.5-1.8 times as large as the increase in labour costs.<sup>151</sup> It should also be noted that the actual increase in labour tax revenues may be somewhat lower in countries where the informal economy (and the proportion of self-employment) is large. We do not consider this a significant bias though, as most of the increased revenues come from educated mothers, who are less likely to be working in the informal sector.

Finally, we make no attempt to evaluate the general-equilibrium effects of these policies: that is, the effect of the increased supply of mothers' labour on the labour market (and the economy) at large. For example, the labour supply of mothers of young children could increase due to the policy change, which in turn would decrease

the wage rates of similarly skilled older women, and due to a decrease in labour costs, firms' profits and economic growth would increase.

Furthermore, we only consider *short-term* direct effects. That is, we only estimate the effect of the change in the policies for the period when children are 1-3 years of age. Thus, we ignore longer-term effects. For instance, if a policy increases the employment rate of mothers of young children and thus the human capital of these mothers depreciates less, then this will not only influence their current employment rates, but also their labour market position later in life.<sup>152</sup> Similarly, we also ignore the effects on the cognitive development of children (and subsequent school performance and labour market outcomes<sup>153</sup>) or on deviant behaviour.

Importantly, the simulations only cover running costs, and ignore the one-time cost of investing in physical infrastructure or the training of new early childhood education and care facility staff. These costs may be substantial if the expansion of facilities is mainly in the form of public nurseries operating in new buildings. A Hungarian study estimated the cost of newly built facilities to be around €5,000 to €8,000 per child in nurseries with a group size of around 12-14 children, while the annual running cost is around €2,000 to €2,600 per child<sup>154</sup> (Reszkető and Scharle 2010), i.e. within the range of €500 to €4,000 per child in our simulation sample. In Kyrgyzstan, newly built facilities cost around €4,000 per room, while alternative forms are considerably cheaper: around €3,300 per room for community-based kindergartens and €195 per room for home-based satellites (van Ravens 2010).<sup>155</sup> Support from international donors (as was the case in Kyrgyzstan) and/or by creating a framework that allows the flexible involvement of private investors, local governments, NGOs and foreign donors can reduce the burden on the public budget. Other options for cost cutting may be to extend existing kindergartens and to set up family-based early childhood education and care centres. Such flexible solutions are particularly important in rural areas where nurseries cannot be maintained at a reasonable cost.

<sup>151</sup> However, part of this increase would lead to rising state revenues in the form of taxes on capital (profits).

<sup>152</sup> For instance, a study found that expanding subsidized early childhood education and care in Quebec had greatly increased the labour supply of mothers, not only when their children were of pre-school age, but also when they were 6-12 years old see: Lefebvre, Merrigan, and Verstraete (2009) Dynamic labour supply effects of childcare subsidies: Evidence from a Canadian natural experiment on low-fee universal child care. *Labour Economics* 16(5) 2009: pp.490-502. [https://econpapers.repec.org/article/eeelabeco/v\\_3a16\\_3ay\\_3a2009\\_3ai\\_3a5\\_3ap\\_3a490-502.htm](https://econpapers.repec.org/article/eeelabeco/v_3a16_3ay_3a2009_3ai_3a5_3ap_3a490-502.htm)

<sup>153</sup> It should be noted that the evidence on this issue is not universally positive: some studies have found substantial positive effects (Havnes and Mogstad, 2011), while others found heterogeneous effects (Kottelenberg and Lehrer, 2014).

<sup>154</sup> Reszkető, Petra and Ágota Scharle (2010) *Háttérindikátorok a napközbeni gyermekellátások férőhely szükségletének meghatározásához*. Budapest: Budapest Institute.

<sup>155</sup> Group sizes in the case of Kyrgyzstan were around 20 (newly built facilities), 27 (kindergartens) and 20 (home-based). Source: van Ravens, Jan (2010) 'A better future for every child: financially feasible scenarios for the equitable expansion of preschool education in Kyrgyzstan', UNICEF, World Bank and the Aga Khan Foundation in Bishkek.





## ANNEX 6.

# Country tables of simulation results

**Table A6.1**  
**Bulgaria**

	Early childhood education and care tax allowance <sup>1</sup>	Early childhood education and care quasi-voucher <sup>2</sup>	Early childhood education and care tax allowance <sup>3</sup>	Early childhood education and care quasi-voucher <sup>4</sup>	Early childhood education and care low educational attainment <sup>5</sup>	Shortened paid parental leave
Net change in government expenditure and revenue per month as % of current spending	-17	-18	-17	-17	-17	26
Percentage point change in female employment rate	3.97	1.75	5.14	3.48	2.44	1.25
Percentage point change in female employment rate for those with high educational attainment	6.45	2.84	12.90	5.44	0.00	5.33
Percentage point change in poverty (60% Eurostat) **	-0.93	0.00	0.00	0.00	-0.93	3.34
Percentage point change in poverty (50%) **	0.00	0.00	0.00	0.00	0.00	2.88
Percentage point increase in access by disadvantaged children	12.26	30.11	3.33	47.97	68.39	0.00
Percentage point increase in access, harmonized assumptions	24.51	24.51	7.77	42.37	62.79	0.00
Total current expenditures on paid parental leave per month (thousand €)*	21,216	21,216	21,216	21,216	21,216	21,216

	Early childhood education and care tax allowance <sup>1</sup>	Early childhood education and care quasi-voucher <sup>2</sup>	Early childhood education and care tax allowance <sup>3</sup>	Early childhood education and care quasi-voucher <sup>4</sup>	Early childhood education and care low educational attainment <sup>5</sup>	Shortened paid parental leave
20% of total current expenditure on paid parental leave per month (thousand €)	4,243	4,243	4,243	4,243	4,243	4,243
Estimated number of new early childhood education and care places	40,483	40,483	40,483	40,483	40,483	26,989
Participation rate in early childhood education and care, 2014 (%) (0-2yrs)	11.20	11.20	11.20	11.20	11.20	11.20
Estimated number of children aged 0-2*	165,138	165,138	165,138	165,138	165,138	165,138
Estimated number of children 0-2 with low educated mother	39,460	39,460	39,460	39,460	39,460	
Mothers' current employment rate (%)	37.59	37.59	37.59	37.59	37.59	37.59
Total change in tax revenue on all affected mothers / month (€)	241,303	104,386	343,997	204,991	71,624	547,797
Balance of government expenditures and revenues / month (thousand €)	-4,001	-4,138	-3,899	-4,038	-4,171	5,905

**Notes:** Due to data limitations, estimates of female employment consider children aged 0-4, while poverty and day care access calculations consider children aged 0-2.

\* <http://www.nsi.bg/en/content/6708/population-districts-age-place-residence-and-sex>

\*\* Does not account for direct (out-of-pocket) spending on childcare, nor the decrease in income due to shortening of parental leave.

1 Early childhood education and care tax allowance based on Calderón (2014)

2 Early childhood education and care quasi-voucher based on Lovász and Szabó-Morvai (2014)

3 Early childhood education and care tax allowance affecting mothers with high educational attainment more based on Calderón's (2014) estimations

4 Early childhood education and care quasi voucher affecting mothers with low educational attainment more based on Lovász and Szabó-Morvai's (2014) estimates

5 Early childhood education and care for mothers with low educational attainment based on Barros et al (2010)

+The baseline poverty rate for households with small children (aged 0-2) is 25.15 per cent. This is expressed as the percentage of all households (not individuals). These calculations account for the increased spending on early childhood education and care, as well as the decreased income due to the shortening of the parental leave period, on top of the increase in mothers' earnings. Note that calculations are done at 60 per cent of median disposable income, using the OECD's "new" equivalence scales.

**Table A6.2**  
**Croatia**

	Early child- hood edu- cation and care tax allowance <sup>1</sup>	Early child- hood edu- cation and care qua- si-voucher <sup>2</sup>	Early child- hood edu- cation and care tax allowance <sup>3</sup>	Early child- hood edu- cation and care quasi voucher <sup>4</sup>	Early child- hood edu- cation and care low educational attainment <sup>5</sup>
Net change in government expenditure and revenue per month as % of current spending	-14	-14	-14	-14	-15
Percentage point change in female employment rate	1.53	0.68	1.69	1.47	0.63
Percentage point change in female employment rate for those with high educational attainment	2.06	0.91	4.13	1.98	0.00
Percentage point change in poverty (60% Eurostat) **	-0.47	-0.00	-0.47	-0.47	-0.47
Percentage point change in poverty (50%) **	-0.24	-0.24	-0.24	-0.24	-0.24
Percentage point increase in access by disadvantaged children	3.98	16.41	-2.23	28.85	36.13
Percentage point increase in access, harmonized assumptions	7.96	7.96	0.51	20.40	27.68
Total current expenditures on paid parental leave per month (thousand €)*	8,574	8,574	8,574	8,574	8,574
20 per cent of total current expenditure on paid parental leave per month (thousand €)	1,715	1,715	1,715	1,715	1,715
Estimated number of new early childhood education and care places	7,826	7,826	7,826	7,826	5,217
Participation rate in early childhood education and care, 2014 (%) (0-2yrs)	16.9	16.9	16.9	16.9	16.9
Estimated number of children 0-2*	98,257	98,257	98,257	98,257	98,257
Estimated number of children 0-2 with low educated mother	14,442	14,442	14,442	14,442	14,442
Mothers' current employment rate	44.65	44.65	44.65	44.65	44.65

	Early child- hood edu- cation and care tax allowance <sup>1</sup>	Early child- hood edu- cation and care qua- si-voucher <sup>2</sup>	Early child- hood edu- cation and care tax allowance <sup>3</sup>	Early child- hood edu- cation and care quasi voucher <sup>4</sup>	Early child- hood edu- cation and care low educational attainment <sup>5</sup>
Total change in tax revenue on all affected mothers / month (€)	35,432	15,089	37,850	32,827	9,670
Balance of government expenditures and revenues / month (thousand €)	-1,679	-1,700	-1,677	-1,682	-1,705

**Notes:** Due to data limitations, estimates of female employment consider children aged 0-4, while poverty and day care access calculations consider children aged 0-2.

\* 2016 Statistical Yearbook of the Republic of Croatia

\*\* Does not account for direct (out-of-pocket) spending on early childhood education and care tax, nor the decrease in income due to shortening of parental leave.

1 Early childhood education and care tax allowance based on Calderón (2014)

2 Early childhood education and care quasi-voucher based on Lovász and Szabó-Morvai's (2014) estimations

3 Early childhood education and care tax allowance affecting mothers with high educational attainment more based on Calderón's (2014) estimations

4 Early childhood education and care voucher affecting mothers with low educational attainment more based on Lovász and Szabó-Morvai's (2014) estimations

5 Early childhood education and care tax for mothers with low educational attainment based on Barros et al.'s (2010) estimations

+The baseline poverty rate for households with small children (age 0-2) is 13.44 per cent. This is expressed as the percentage of all households (not individuals). These calculations account for the increased spending on childcare, as well as the decreased income due to the shortening of the parental leave period, on top of the increase in mothers' earnings. Note that calculations are done at 60 per cent of median disposable income, using the OECD's "new" equivalence scales.

**Table A6.3**  
**Georgia**

	Early childhood education and care tax allowance <sup>1</sup>	Early childhood education and care quasi- voucher <sup>2</sup>	Early childhood education and care tax allowance <sup>3</sup>	Early childhood education and care quasi voucher <sup>4</sup>	Early childhood education and care low educational attainment <sup>5</sup>
Net change in government expenditure and revenue per month as % of current spending	-19	-19	-19	-19	-19
Percentage point change in female employment rate	3.37	1.49	3.53	3.42	0.86
Percentage point change in female employment rate for those with high educational attainment	3.95	1.74	5.93	3.82	0.00
Percentage point change in poverty (60% Eurostat) **	-0.37	-0.18	-0.37	-0.37	-.018
Percentage point change in poverty (50%) **	-0.41	-0.21	-0.41	-0.41	-0.41
Percentage point increase in access by disadvantaged children	12.02	27.03	4.51	42.05	97.00
Percentage point increase in access, harmonized assumptions	24.03	24.03	9.06	39.05	94.00
Total current expenditures on paid parental leave per month (thousand €)*	4,859	4,859	4,859	4,859	4,859
20 per cent of total current expenditure on paid parental leave per month (thousand €)	972	972	972	972	972
Estimated number of new early childhood education and care places	35,600	35,600	35,600	35,600	23,733
Participation rate in early childhood education and care, 2014 (%) (0-2yrs)	6.00	6.00	6.00	6.00	6.00
Estimated number of children 0-2*	148,138	148,138	148,138	148,138	148,138
Estimated number of children 0-2 with low educated mother	8987	8987	8987	8987	8987



	Early childhood education and care tax allowance <sup>1</sup>	Early childhood education and care quasi- voucher <sup>2</sup>	Early childhood education and care tax allowance <sup>3</sup>	Early childhood education and care quasi voucher <sup>4</sup>	Early childhood education and care low educational attainment <sup>5</sup>
Mothers' current employment rate	32.54	32.54	32.54	32.54	32.54
Total change in tax revenue on all affected mothers / month (€)	18,923	8,090	19,191	18,599	18,923
Balance of government expenditures and revenues / month (thousand €)	17	27	16	17	17

**Notes:** Due to data limitations, estimates of female employment consider children aged 0-4, while poverty and day care access calculations consider children aged 0-2.

\*Eurostat fertility rate

\*\*Does not account for direct (out-of-pocket) spending on early childhood education and care tax, nor the decrease in income due to shortening of parental leave.

1 Early childhood education and care tax allowance based on Calderón (2014)

2 Early childhood education and care quasi-voucher based on Lovász and Szabó-Morvai's (2014) estimations

3 Early childhood education and care tax allowance affecting mothers with high educational attainment more based on Calderón's (2014) estimations

4 Early childhood education and care quasi voucher affecting mothers with low educational attainment more based on Lovász and Szabó-Morvai's (2014) estimates

5 Early childhood education and care for mothers with low educational attainment based on Barros et al.'s (2010) estimations

+The baseline poverty rate for households with small children (age 0-2) is 13.44%. This is expressed as the percentage of all households (not individuals). These calculations account for the increased spending on early childhood education and care, as well as the decreased income due to the shortening of the parental leave period, on top of the increase in mothers' earnings. Note that calculations are done at 60% of median disposable income, using the OECD's "new" equivalence scales.

**Table A6.4**  
**Romania**

	Childcare tax allowance <sup>1</sup>	Childcare quasi- voucher <sup>2</sup>	Childcare tax allowance <sup>3</sup>	Childcare quasi voucher <sup>4</sup>	Childcare low educational attainment <sup>5</sup>	Shortened paid parental leave
Net change in government expenditure and revenue per month as % of current spending	-16	-17	-16	-16	-17	46
Percentage point change in female employment rate	3.12	1.38	3.47	3.00	1.15	1.65
Percentage point change in female employment rate for those with high educational attainment	4.28	1.89	8.56	3.67	0.00	5.92
Percentage point change in poverty (60% Eurostat) ***	-1.31	-1.31	-1.31	-1.31	-1.31	11.87
Percentage point change in poverty (50%) ***	0.00	0.00	0.00	0.00	0.00	8.66
Percentage point increase in access by disadvantaged children	7.33	20.85	0.56	34.38	36.36	0.00
Percentage point increase in access, harmonized assumptions	14.65	14.65	6.98	28.18	30.16	0.00
Total current expenditures on paid parental leave per month (thousand €)*	41,310	41,310	41,310	41,310	41,310	41,310
20 per cent of total current expenditure on paid parental leave per month (thousand €)	8,262	8,262	8,262	8,262	8,262	-

	Childcare tax allowance <sup>1</sup>	Childcare quasi- voucher <sup>2</sup>	Childcare tax allowance <sup>3</sup>	Childcare quasi voucher <sup>4</sup>	Childcare low educational attainment <sup>5</sup>	Shortened paid parental leave
Estimated number of new early childhood education and care places	70,399.1	70,399.1	70,399.1	70,399.1	46,932.8	-
Participation rate in early childhood education and care, 2014 (%) (0-2 years)	12.40	12.40	12.40	12.40	12.40	-
Estimated number of children aged 0-2**	480,448	480,448	480,448	480,448	480,448	480,448
Estimated number of children 0-2 with low educated mother	129,089	129,089	129,089	129,089	129,089	129,089
Mothers' current employment rate (%)	49.45	49.45	49.45	49.45	49.45	49.45
Total change in tax revenue on all affected mothers / month (€)	314,980	134,083	338,279	292,863	86,918	2,950,057
Balance of government expenditures and revenues / month (thousand €)	-7,947	-8,128	-7,924	-7,969	-8,175	18,968

**Notes:** Due to data limitations, estimates of female employment consider children aged 0-4, while poverty and day care access calculations consider children aged 0-2.

\* EU SILC estimation

\*\*Eurostat fertility rate

\*\*\* Does not account for direct (out-of-pocket) spending on childcare, nor the decrease in income due to shortening of parental leave.

1 Early childhood education and care tax allowance based on Calderón (2014)

2 Early childhood education and care quasi-voucher based on Lovász and Szabó-Morvai's (2014) estimations

3 Early childhood education and care tax allowance affecting mothers with high educational attainment more based on Calderón's (2014) estimations

4 Early childhood education and care quasi voucher affecting mothers with low educational attainment more based on Lovász and Szabó-Morvai's (2014) estimates

5 Early childhood education and care for mothers with low educational attainment based on Barros et al.'s (2010) estimations

+The baseline poverty rate for households with small children (age 0-2) is 16.36%. This is expressed as the percentage of all households (not individuals). These calculations account for the increased spending on early childhood education and care, as well as the decreased income due to the shortening of the parental leave period, on top of the increase in mothers' earnings. Note that calculations are done at 60% of median disposable income, using the OECD's "new" equivalence scales.









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