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The distributive effects of work-family life policies in European welfare states

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Abstract

An aspect that has only recently received attention in the study of policy measures aimed at supporting families with young children in their work-family life balance is its distributive impact. Are these measures used by poor and rich families alike, or is there a 'Matthew effect' at play, in the sense that poor families are underrepresented in using such measures? In order to perform such an evaluation one needs to have a measure of both cash and in-kind benefits related to policies that help families cope with the care of young children and job expectations. In-kind benefits are offered mainly in the form of subsidized early childhood education and care (ECEC), for which an appropriate cash equivalent has to be derived. As the value of in-kind benefits from publicly provided services is not included in the EU-SILC data, we derive them for this paper in line with earlier studies (e.g. Matsaganis and Verbist, 2009; Vaalavuo, 2011; Förster and Verbist, 2012; Van Lancker, 2014; Van Lancker and Ghysels, 2014). In comparison to these earlier studies, however, our analysis is much more fine-grained as we use the microsimulation model EUROMOD to include more precise estimates of parental fees and related tax-benefit policies; thus, we will have a better estimate of the net in-kind benefit households derive from ECEC services. We focus on policy measures going to children under compulsory schooling age for a selection of seven EU-countries. These improved estimates allow us to analyze the work-family polices from three perspectives: 1) how do the distributive characteristics of cash and in-kind benefits compare to one another in this domain?; 2) how do countries compare to one another in their policy perspective in terms of supporting outsourcing or home-based care for young children?; 3) what is the balance between private and public efforts for outsourced childcare across countries? Our results show that including net fees in the analysis attenuates the Matthew effect, in the sense that net fees are relatively more heavy for richer households than for the poor. There is, however, considerable cross-country variation.

Keywords: Family policy, child care, in-kind benefits, income distribution, microsimulation

JEL codes: H23, I38, J13, C53

1 Introduction

While family policies have initially been set up to support families to deal with the monetary costs associated with raising children, the aims and scope have been considerably enlarged and diversified over the past decades. Much more attention, as well as public spending is going now to policies that help families to balance work and care for children and which are considered to be part of a productive view on family policy (see also the literature on the social investment strategy, e.g. Morel et al., 2012). A whole range of policy instruments have come to light to support this so-called work-family life balance; these policies differ in terms of the degree of labour market attachment and employment effects, as well as in terms of their equity effects, i.e. their impact on inequality and poverty. A first set of instruments puts most emphasis on enhancing employment opportunities for parents (in practice mainly mothers) and relates to the support of outsourcing of care. These can include childcare vouchers, subsidized child care services, free pre-school education, tax reliefs for parental childcare fees etc. It is widely recognized that such childcare facilities have important pedagogical, economic and social effects on both children and parents. They may have important effects on cognitive and non-cognitive capabilities of children (Cunha and Heckman, 2008; Carneiro and Heckman, 2003; OECD, 2005), but their availability also plays a key role in the reconciliation between family and work of mothers (Del Boca and Wetzels, 2008). A second set consists of measures that allow parents to stay at home to care for their children, notably paid leave systems and home care allowances. Paid leave systems provide a benefit to parents who want to care for their (new-born) children, while home care allowances can be considered as an extension of these leave arrangements. These two types of instruments focus on the possibility to allow parents to take care of their children themselves, while keeping to a more or lesser degree the option open of re-entering the labour market. This facilitation of re-entrance on the labour market (and hence orientation to activation) is stronger for leave schemes than for home care allowances, as the first typically safeguard the parents' labour market attachment by maintaining a contractual link with the employer during the employee's temporary withdrawal from work (Ghysels & Van Lancker, 2011; Van Lancker, 2014).

Most of the social investment literature considers the employment effect of such policies, but remains largely silent about its distributive consequence (see e.g. Morel et al. 2012; Hegewisch & Gornick, 2011). This is the aim of this paper, i.e. to study the distributive role of those policies that are situated in the field of the work-family life balance of families with young children, i.e. those below compulsory school age. A complicating factor of such a distributive analysis is that these policies are not only provided in the form of cash transfers, but also in the form of in-kind benefits. The cash transfers include home care allowances, public income support payments during periods of parental leave, and public earmarked payments to parents that use formal childcare, as well as tax reliefs. The financial support that is provided through the tax system can include tax deductions for childcare co-payments and child care tax credits. The public spending on services includes the financing and subsidizing of all kind of childcare initiatives and entails an in-kind benefit for parents with young children. Cash transfers and services can be complementary and have different effects on female labour force participation, income distribution, child development, fertility rates, gender equity, etc. We refer to Förster and Verbist (2012) for an overview of the cash versus services debate, where pros and contras of both types of measures are discussed.

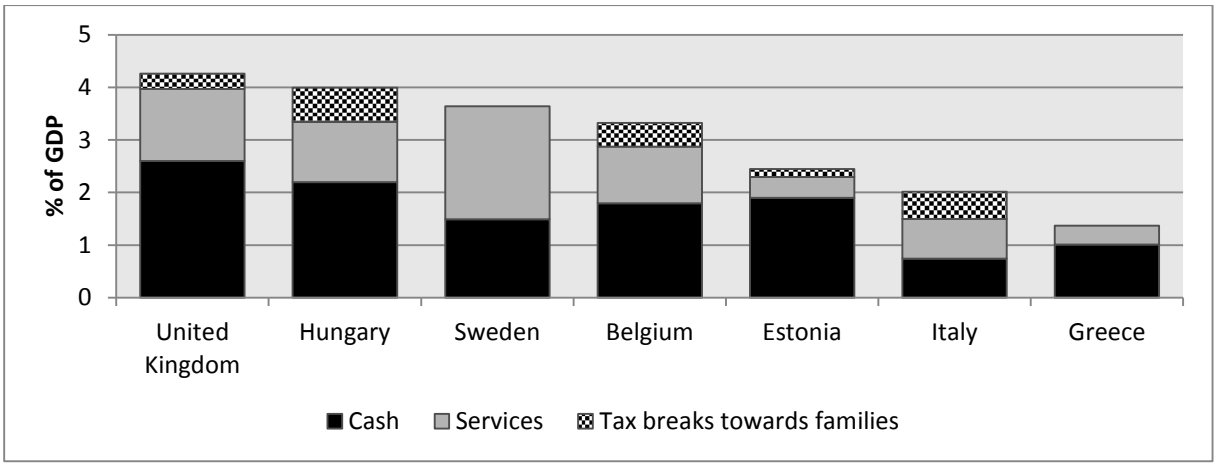
In this paper we discuss work-family life policies both in the form of cash and in-kind benefits. Work-family life policies help parents reconcile their labour market preferences and care for their children. Although these policies all include the access to affordable and quality early childhood education or childcare services and arrangements to take leave to care for the children the use and the structure of policies related to the outsourcing of care and (paid) parental care related policies (home care allowances) is very different across welfare states. Some countries focus more on the outsourcing of care, while others invest in parental home care related policies. Here we will investigate 1) How effective work-family life policies are in reducing inequality and child poverty, 2) How do families with young children in different European welfare states cope with the work-family balance? And 3) What can this exercise learn us in terms of policy design? Doing this, we will gain better insight into the question which social groups benefit most from childcare services and are, consequently, the main beneficiaries of government resources (Förster and Verbist, 2012; Vaalavuo, 2011; Van Lancker, 2014; Van Lancker and Ghysels, 2014). We contribute to the literature by refining estimates for the in-kind benefit of childcare services. We use the microsimulation model EUROMOD to include more precise estimates of parental fees and related tax-benefit policies; this will allow for better estimates of the in-kind benefit derived from childcare services (even though many issues still remain, as will be discussed in this paper). We also provide a wider set of countries than Van Lancker and Ghysels (2014), who provide a first example of such a more detailed analysis for Sweden and the region Flanders (Belgium). The selection of countries (Belgium, Estonia, Greece, Hungary, Italy, Sweden and the United Kingdom) covers a variety of welfare state regimes and differential use of childcare services. The share of ECEC provision varies according to country and the age of the children. E.g. in Sweden 86.5 % of the children aged two are in pre-primary education/formal care, while in Hungary most children aged two are cared for by a parent at home (2009). We give a brief overview of childcare policies in these countries in section 2, distinguishing between parental home care and outsourcing childcare. More detail for each country can be found in the country-specific Annexes of this report (see Annex 2). Section 3 describes the methodology and the data. We refine childcare policies in the European tax-benefit model EUROMOD and use the underlying EUROMOD database for our empirical analyses. The advantage of EUROMOD is that it allows taking account of interactions within the entire tax-benefit system. Empirical outcomes are given in sections 4 and 5. In section 4 we look at the impact a more refined estimation of in-kind benefits from public services on the income distribution and on children in poverty, while in section 5 we focus on the relative weight of work-family life policy components and their distributive patterns. Section 6 concludes.

2 An overview of work-family life policies in a selection of EU countries

Childcare policies help parents to reconcile work and care for young children. We do not dispose of an aggregate measure of spending on care for young children; Figure 1 gives a first impression, but it looks at the entirety of family policies, while our interest is in those that relate to the work-family life balance. The United Kingdom, Hungary, Sweden and Belgium have relatively high spending on families (more than 3%, the OECD-average in 2011 is 2.55 %). Italy and especially Greece are well below this average (2%, resp. 1.4%). For most countries, cash benefits make up the highest share, while tax breaks are less important; note that especially these categories include other instruments than those aimed at the care of young children. Early Childhood Education and Care (ECEC) services

are largest in Sweden (2.1% of GDP), and more than 1% in Belgium, Hungary and the United Kingdom. In Estonia, and Greece, service efforts are relatively small (less than 0.4% of GDP).

Figure 1: Public spending on family benefits in cash, services and tax measures, in per cent of GDP, 2011



Source: OECD Family database.

We now go into more detail regarding the measures that specifically support the care for young children (i.e. those below compulsory school age) in our selection of countries, notably Belgium, Estonia, Greece, Hungary, Italy, Sweden and United Kingdom. We make a distinction between home care related policies (section 2.1) and policies related to the outsourcing of care (section 2.2). In section 2.3 we give an overview of how total public efforts compare to the private financial contributions of families with children. In comparing early childhood education and childcare policies and spending in the selected countries we focus on the year 2009 and discuss relevant recent changes and evolutions (OECD, Education at glance 2014; OECD Family database).

2.1 Parental home care related policies

Policies for parents to stay at home and care for children can be distinguished into two types of cash benefits. Here we discuss both types of cash measures: parental leave and child home care allowances. Child benefits and other policies designed to compensate for the consumption cost of children are excluded from the analysis. Table 1 below brings the different measures together. We then discuss them in more detail, distinguishing leave benefits and cash care benefits.

Table 1: Parental care related childcare policies in a selection of EU countries, 2009

	Leave systems: duration and benefits		Child care benefits
Belgium	ML:15w (benefit) PtL:2w (benefit)	PrL: 3m full time (flat rate benefit)	-
Estonia	ML:20w (140 calendar days) (benefit)	PrL:82w (575 calendar days) (benefit)	Home care allowance (means tested benefit) for child up to max. 8 year old + additional allowance for large families (benefit)
Greece	ML: 17/20w (benefit)	PrL: 14w (unpaid)	-
Hungary	ML: 24w (benefit)	PrL: 136w (benefit)	Home care allowance (3 types of benefits) for child up to max. 8 year old
Italy	ML: 21.7w (5m) (benefit)	PrL: 47.6w (11m) (benefit)	-
Sweden	ML: 14w (benefit)	PrL:69w (480d) (benefit)	-
UK	ML: 18 to 26 w (benefit) PtL: 2w (benefit)	PrL: 18 w (unpaid)	-

Note: ML=maternity leave; PrL=Parental leave; PtL: Paternity leave;w =week; m=month.
Source: Country notes in Annex 2.

2.1.1 Maternity and parental leave benefits

A first important type of policy instruments are leave arrangements which allow parents to care for their new-born offspring. We distinguish between maternity leave, paternity leave and parental leave. We follow OECD definitions to categorize the benefits: "*The maternity leave or pregnancy leave is an employment-protected leave of absence for employed women at the time of childbirth.*" Pre- and post-birth leave can be combined in most countries. "*Paternity leave is an employment-protected leave of absence for employed fathers at the time of childbirth*." Not all countries have paternity leave and it is in general shorter than maternity leave. Also parental leave is an employment-protected leave for employed parents and is often supplementary to maternity or paternity leave. Parental leave can be for each parent or for the family; most often it is family-based, i.e. only one parent can claim this kind of income support at a time (OECD Family database).

Maternity leave in ***Belgium*** is 15 weeks at 80% (first month) and 75% (rest) of (capped) earnings. Paternity leave is granted for 10 days; for the first three days the employer continues to pay the full wage, while for the following days the National Sickness and Invalidity Insurance Institute pays an allowance of 82% of the wage, with a maximum amount per day. The paternity leave can be used within the first four months after the birth of the child. Parents are eligible for a parental leave benefit for 3 months full time or part-time for a longer period, at a flat rate.

An insured woman in ***Estonia*** can receive a maternity benefit (sünnitushüvitis) for up to 20 weeks, and afterwards a parental benefit (vanemahüvitis) until 575 calendar days since the pregnancy and maternity leave started. The gross entitlement of each benefit is equal to the person's average gross earnings in the previous calendar year and both benefits are taxable. The parental benefit is capped at three times the national average gross earnings (two years ago) and persons who worked in the previous year but had average earnings below the national minimum wage, receive the parental benefit in the amount equal to the minimum wage. Persons who did not have any earnings are paid at the lower rate (equal to the level of minimum wage in the previous year, since 2008).

In ***Greece*** maternity leave is 20 weeks in the public sector and 17 weeks in the private sector. It is paid as 100% of earnings. Paternity leave is limited to two days both in the private and the public sector. Parental leave is unpaid and can be granted for up to 14 weeks.

Maternity leave in ***Hungary*** is 24 weeks (70% of earnings) and parental leave is 136 weeks at a flat rate payment. Parents receive a parental leave allowance (GYES). Most mothers in Hungary care for their child from the birth of the child until the child is 3 years old and starts pre-primary education. Insured mothers receive a parental leave allowance until the second birthday of the child (GYES). For uninsured women and until the child is three years old, one of the parents has the right to receive a flat fee (GYED). The paternity leave is one week.

In ***Italy*** different benefits for maternity leave can be distinguished: the mandatory maternity leave allowance, the State Maternity Benefit, the Municipalities Maternity Benefit and parental leave. The mandatory maternity benefit is a substitute for the wage and it lasts at most 21,7 weeks or five months, divided in two periods: two months before and three months after delivery (or one month before the delivery and four after, to be chosen by the mother if she is in a good health status). For self-employed mothers, there is no mandatory leave from work. For employees the allowance is 80% of the average daily wage. For self-employed mothers, it is 80% of the conventional daily remuneration, which are fixed each year by law. The State Maternity Benefit is a benefit granted to mothers who are not eligible to the maternity leave allowance. The State allowance is given to eligible mothers without income test. The amount was 1.902,90 euro in 2009. The Municipalities Maternity Benefit is for mothers who do not receive any other maternity benefit, or receive another benefit which is smaller than the municipality one (in this cased the municipality supplies the difference). The benefit is means tested by using the Indicator of Economic Situation[1], and the threshold is fixed each year by law for a reference family of three members. The amount was 1,545.55 euro in 2009. As regards parental leave, each parent can have leave from work until the child is eight years old. The leave cannot exceed jointly for the two parents ten (to eleven) months. The allowance (30% of the average daily wage) is granted without income test for at most six months cumulated between the parents within the first three years of the child. If the parental leave exceeds six months, from age three to eight, the allowance is means tested: the income of the applicant parent cannot be higher than 2.5 times the minimum pension fixed by law in the year of the application.

If work conditions make it impossible to work, a pregnant woman in ***Sweden*** can apply for maternity allowance during maximum 14 weeks. The benefit rules are the same as for the sickness benefit. Parental leave in Sweden is 480 days to be divided between the two parents. 390 days are paid at 80% of earnings, the remaining 90 days at a flat rate. 60 days are reserved exclusively for mothers, 60 days for fathers, and the remaining days can be divided between them in accordance with their preferences.

The maternity allowance in the ***UK*** is 18 to 26 weeks. The Statutory Maternity Payment is paid by employers to employees who fulfil employment and contribution conditions. The Payment equals

[1] The Indicator of Economic Situation (ISEE, *Indicatore della Situazione Economica Equivalente*) is calculated according to family situation measured by the equivalent financial situation index which takes into account income, wealth and family composition and the rules determined by each municipality (Cittadinanza Attiva, 2011).

90% of usual earnings, there is also a minimum flat rate. The Maternity Allowance is a flat-rate benefit for mothers who did not fulfil these conditions.

2.1.2 Home child care allowances

Home care allowances or childcare allowances are those benefits granted to parents who stay at home to care for their young child(ren), after the leave benefits have expired. They exist in Estonia and in Hungary. The benefit is paid to one of the parents.

The child home care allowance in ***Estonia*** is a means tested benefit, which can be used once the parental benefit is exhausted. It is paid to one of the parents for raising a child under 3. Parents are also eligible to a (lower) child raising support for raising 3-8 year olds. Eligibility does not depend on whether the parent is working or not. An additional parental allowance exists for large families, which is paid to parents raising seven or more children.

Hungary has three types of home care allowance: the *Gyermekgondozàsi Segèly* (child care allowance), the *gyermekgondozási díj* (child care fee) and the *Gyermeknevelèsi Tàmogatàs* (child raising support). The child care allowance is a flat-rate benefit to parents who stay away from work to care for their children under the age of 3 (under age of 10 in case of permanently ill or severely disabled children) or for grandparents who care for their grandchildren aged between 1-3 years in the household of the parent. The monthly amount is equal to the minimum old age pension. The child care fee is a contributory benefit, which is paid after the Maternity Allowance is exhausted and until the child reaches 2 years of age. It is only paid if the parent(s) does not work. The eligibility criterion is at least 180 days of insurance during the last two years before delivery. It amounts to 70% of the daily average gross earnings of the previous year with a maximum of 70% of twice the minimum wage. The child raising support is a universal benefit financed by the state budget for parents who raise three or more children in their own home, if the youngest child is between 3 and 7 years old. The monthly amount is equal to the minimum old age pension, irrespective of the number of children.

2.2 Outsourcing child care

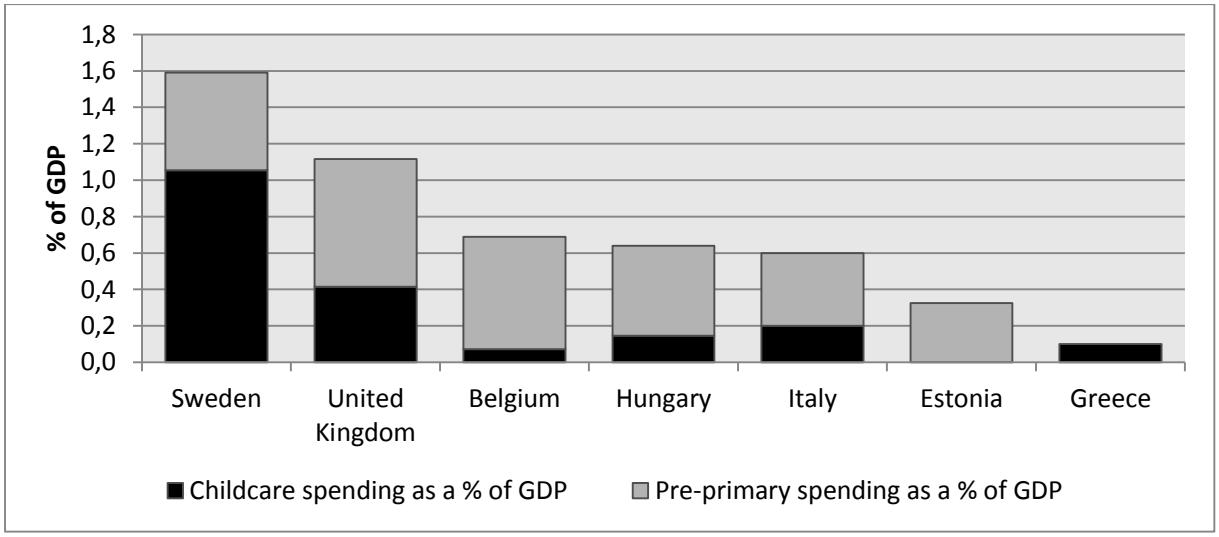
Child care facilities have important pedagogical, economic and social effects on children and parents. Quality ECEC services improve cognitive and non-cognitive capabilities of children (Cunha and Heckman, 2008; Carneiro and Heckman, 2003; OECD, 2005). Childcare can be outsourced using childcare vouchers, subsided childcare, free pre-primary education and tax advantages for parental childcare fees.

2.2.1 Early Childhood Education and Care services

Early Childhood Education and Care (ECEC) responsibilities are often divided between several ministries and over different governance levels. In general, we notice on the one hand the organization of childcare services for the younger children and on the other hand pre-primary education for those aged between 3 and compulsory age. Both services can be funded by different funding streams, have different procedures and regulations and different quality requirements. This

influences the coverage and the affordability of the services. In contrast to early education services, childcare services tend to have a lower coverage, they are more small-scale and less affordable. Early childhood education services are provided through the school network and are mostly free of charge. Figure 2 gives public spending on services provided for young children. Sweden has highest overall spending, and Greece the lowest. Spending on childcare is highest in Sweden and the United Kingdom, while in Belgium and Hungary spending on pre-primary education is more important.

Figure 2: Public spending on ECEC services in cash and services, in per cent of GDP, 2011



Source: OECD Family database; Note: information on Greece from 2009.

Table 2: In-kind early childhood education and childcare policies in 7 EU countries, 2009

	Age			Parental fees?	
	Compulsory education	**Childcare**	**Pre-primary**	**Childcare**	**Pre-primary**
Belgium	6y	0(3m)-3y	2.5/3 -6y	Income dependent	Free of charge
Estonia	7y	0-3/7y	1.5 -7y		Age or income dependent (municipal decision)
Greece	6y	0(2/7m)-6y	4 -6y	Income dependent	Income dependent
Hungary	6y	0-2y	3 -6y	Free of charge*	Free of charge.
Italy	6y	0(5m)-2y	3 -7y	Income dependent	Free of charge.
Sweden	7y	1-5y	1 -7y		Income dependent
United-Kingdom	5y	0-4/5y	3-4/5y	Not income dependent	(part-time) free of charge.

*Source: Country notes in Annex 2. Note:*From 2012: income dependent (% of net family income per child in day care, 50% in home-based ECEC.)*

Table 2 summarizes the ECEC systems of the selected countries. The difference in duration and availability of the parental leave systems, influences the system of childcare and pre-school services. In countries with shorter or more limited leave systems, childcare institutions generally care for children starting from a younger age. The start of compulsory schooling age is also an important parameter, as it in general marks the end of pre-primary education arrangements. In most countries this is situated around 6 years, with a lower age in the UK (5 years) and 7 years in Estonia and Sweden. Table 3 shows the share of users of subsidized and formal childcare. We distinguish two groups of children according to age, notably a first group of who are younger than 3, and a second group of those aged three up to compulsory schooling age. This division is also the one that will be

used in our empirical analysis, and corresponds largely to the age of childcare (youngest group) and pre-primary education (older group).

Table 3: Share of users in subsidized childcare and pre-school services, 2009

	0-2 years		3-5 years	
	formal	**subsidized**	**formal**	**subsidized**
Belgium: Flemish Community	63%	27%	99%	99%
Belgium: French Community	72%	20%		
Estonia	40%	35%	88%	87%*
Greece	11%^	11%^	58%^	58%^
Hungary	8%	8%	87%	87%
Italy	16%	13%	97%	97%
Sweden	47%	47%	93%	93%
United Kingdom	41%**	-	92%**	-

Source: country notes; Source: K&G, ONE, OECD, Municipality of Athens, Ministry of Social Affairs Estonia, ESA, KSH, Istat, Skolverket

*Notes: *3-6 year olds , ^0-3: 7% in full time formal childcare, 4% in part time formal childcare & 3-5: 25% in full time childcare, 33% in part time childcare(Eurostat). For Greece formal and subsidized care cannot be distinguished on the basis of these data. ** Source OECD: different number in Brewer et al.*

In ***Belgium***, childcare is used in principle from three months onwards (after the end of maternity leave), while pre-primary education or kindergarten starts at 2.5 or 3 years old. The compulsory schooling age is 6 years. Childcare and early education services are both competences of the Communities. Different institutions are responsible for the organization of the services. Both in the French speaking part and in Flanders childcare fees are income dependent and pre-primary education is free of charge. The formal childcare in the Flemish Community is supervised by Child and Family (Kind en Gezin, K&G). In the French speaking part formal childcare is supervised by the Bureau of Birth and Childhood (Office de la Naissance et de la enfance, ONE). K&G and ONE are both competent in Brussels. The service for the German-speaking Community is called the Service for Child and Family (Dienst für Kind und Familie, DKF). Because this service only concerns a very small part of the Belgian population, we will not go into detail about it. Within formal childcare private and subsidized facilities can be distinguished in both the Flemish and the French Community. In February 2009 63% of the children between 3 months and 3 year old[2] in Flanders was frequently[3] in formal childcare, while 27%[4] was in subsidized childcare; 31% of the children was not in childcare. In the French Community 20% of youngest group was in subsidized childcare. The price paid by parents for formal childcare depends on the amount of childcare used and the type. In Belgium, both in Flanders and the French Community parental fees in subsidized institutions are income-related and depend on the number of children in childcare (French speaking region) and the number of dependent children in the family (Flanders). The average enrolment rate of children aged 3-5 years in pre-primary education is 99%.

Estonia has a system of pre-school childcare institutions which provide full-time day care in combination with pre-primary education.[5] While the attendance is voluntary, every local municipality

[2] The end of maternity leave is at 3 months. From 30 months/2.5 years children start going to kindergarten.

[3] 'Frequently' means that a non-school going child goes to childcare for at least one uninterrupted period of 5 hours per week.

[4] Calculated on the basis of absolute numbers, 2months to 3 years, 2009.

[5] Regulated by the Pre-School Child Care Institutions Act (*Koolieelse lasteasutuse seadus*).

must ensure that all resident children aged from 1.5 to 7 years, i.e. under the compulsory schooling age, have the opportunity to attend a pre-school institution. There are two types of institutions: crèches for children up to the age of 3 and kindergarten for children up the age of 7. The latter can also be combined with an institution for primary education. Nearly 90% of children aged 3-6 attend pre-school child care institutions. The share for children aged 0-2 is about one third, presumably due to the relatively well paid parental leave which can last up to 18 months after birth. The legal obligation to provide pre-school services on the one hand and limited scope for charging users on the other hand, results in waiting lists as not all municipalities are able to provide places for all their resident children. The fees in pre-primary education are set by local municipality councils and can be differentiated on the basis of the age of the child, operating costs of the institution, financial situation of the family etc. The fees vary from 0 to €56 per month across local municipalities and the average catering cost per child was €20 per month in the beginning of 2009. While total cost (including investments) per child in a municipal kindergarten is lower on average in towns compared with rural municipalities, co-payments by parents are on average higher in towns.

Compulsory schooling in ***Greece*** starts at the age of 6. ECEC services in Greece are split into two main categories. Nurseries or day-care centres provide early childhood care to children between 2 months (or 7-8 months for the public sector nurseries) and up to 5 years. Kindergartens provide early childhood education to children from 4 years to 6 years. Childminders are an informal form of childcare. Mostly migrant workers are paid to care for the children (often in the child's own house). In Greece the coverage of childcare is rather limited. In 2010 only 11% of children under 3, 2% of children aged 3, 54% of children aged 4 and 90% of children aged 5 were enrolled in official ECEC services in Greece. Municipalities are responsible for childcare and also decide on the tariffs. The parental fees for childcare institutions are income-related and depend on the rank of the child. In general, parental fees are lower in rural areas than in urban areas in Greece.

In ***Hungary*** childcare services are organised for children from 0 to 3 years. Formal subsidized childcare includes both nurseries and family day care. According to EU SILC-data 8% of the children under 3 years old is enrolled in formal childcare in 2009. The demand is much higher than the available places. Public pre-primary education is available for almost all children aged 3 to 5. In 2009 87% of the children aged 3-5 are enrolled in pre-primary educational programmes. Compulsory education starts at 6. The final year of pre-primary education is also compulsory (5-6 years). From 1 September 2015 kindergarten attendance will be compulsory from age 3. Parental fees in Hungary are not income related in 2009. Only the number of children in childcare in a family influences the fee paid by parents. Until 2009 public day care centres could only charge meals and minor material contributions (300-500 HUF a day). From 2012 public childcare institutions can charge a parental fee[6]. The monthly fees are regulated: in day care centres fees and meals cannot exceed 25 % of net family income per child. In home-based ECEC, the limit is set at 50 % of net family income per child. Some municipalities still offer free ECEC from 4 months and only charge for meals (Eurydice and Eurostat report, 2014).

The ***Italian*** case is characterized by low availability of public child care slots and relatively high fees to be paid by the families. Public childcare is for children from 0 to 2 year. According to the administrative data provided by Istat (2011), the national coverage rate in 2009 was about 13%, ranging from more than 25% of children aged 0-2 attending public pre-primary education in Emilia

[6] According to the Public Education Law CXC/2011

Romagna, Umbria and Valle d'Aosta to less than 5% in some Southern regions such as Calabria and Campania. From the age of 3 until 5, children go to pre-primary school. Compulsory schooling age is 6 years. 97% of the children aged 3-5 are in formal pre-school educational programmes. Private and public pre-schools are both available in Italy. The public-private provision differs from region to region. Parental fees in public childcare in Italy are income-related, and can also depend on the household type. Fees are set on a regional level.

In ***Sweden*** childcare services are traditionally publicly provided for children aged 1 to 5. Three types of services can be distinguished: pre-school services, family day care homes and open pre-schools. The municipalities are obliged to provide family day care or pre-school for children aged 1 or older. In 2009 47% of the children under 3 years old are in formal childcare in Sweden. 92% of the children aged 3 to 5 are in pre-school educational programmes (OECD, 2009). Since maternity leave is relatively long in Sweden, childcare (incl. pre-school) only starts for children aged 1. Compulsory schooling age is 7 years, but most children are in the pre-school class at the age of 6. The parental fees in Swedish childcare and pre-primary education services are income-related and depend on the rank of the child. Since municipalities are responsible for the provision of childcare, they can set the price, within the limits of the national 'maxtaxa' regulations.

Childcare services in the ***UK*** are mostly private for children under 3 years old. 3 and 4 years old are entitled to free part time early years education. Different forms of childcare services exist: day nurseries, nursery classes attached to infant or pre-primary school, centre-based childcare facilities and to a small extent childminders. Compulsory schooling age is 5, but most children start education in September, after they turn 4. Childcare services are managed by local authorities.

2.2.2 Tax advantages

In four of the countries there is financial support through the tax system for families with children in childcare. This is done either in the form of a tax deduction (parental fees deductible from taxable income) and tax credits (amounts deducted from the tax liability) (Förster et al., 2013).

Table 4: Tax advantages for childcare fees

	Tax advantages
Belgium	Parental fee deductible from taxable income
Estonia	Parental fee deductible from taxable income
Greece	
Hungary	
Italy	Tax credit for parental fee
Sweden	
United Kingdom	Childcare element in the Working Tax Credit

Source: Country notes in Annex 2.

In ***Belgium***, parents can have a tax deduction that amounts up to 45% of fees for children under 12 years in childcare (with a maximum fee of €11.20 per day qualifying for this reduction). This tax concession can be claimed both for subsidized and non-subsidized recognized childcare institutions.

Families with children in public pre-primary education in ***Estonia*** are eligible to receive a tax deduction of 20% of their gross childcare fee. These fees are considered to be part of educational expenses.

In ***Italy***, families who pay childcare fees can claim a tax credit equal to 19% of the fees paid, with a maximum of up to 632€ per year.

The Working Tax credit in the ***UK*** includes a childcare element. Through this tax credit parents can claim up to 80% of childcare costs, up to a maximum cost of £175 per week for one child in childcare and £300 per week for two or more children.

2.3 Public and private spending on early childhood education and childcare services

Using administrative information (see Country notes in Appendix) we try to give a first idea of the public and private contribution to the total monetary cost of child care provisions (Table 5, absolute amounts in national currencies). In general, the overall cost of childcare (younger children) is higher than that for the older group (pre-primary education). The co-payment share ranges between 0% and 33% for childcare, while the private contribution for pre-primary education is lower, and in most countries zero. Clearly, more detailed information is needed to estimate the distributive impact of childcare. In the next section, we explain how we have derived such information.

Table 5: Public and private spending on childcare and pre-school facilities, 2009.

	Childcare		Pre-primary	
	total yearly cost per child	**co-payment (as % of total cost)**	**total yearly cost per child**	**co-payment (as % of total cost)**
Belgium (in euro)	11,714	33%	4,933	0%
Estonia (in Estonian Kroon)	-	-	2,868	13%
Greece* (in euro)	847	8%	-	-
Hungary (in Hungarian Forint)	1,440,400	0%	569,112	0%
Italy (in euro)	7,477	18%	5,828	0%
Sweden (in Swedish Kroon)	-	-	114,400	8%
United-Kingdom (in UK Pounds)	-	*100%***	2,284	-**

*Source: country notes; OECD, Child&Family, ONE, KSH, ISTAT, Skolverket *no details on the contributions in pre-primary facilities in Greece; the contribution shown for childcare services is based on the information of the municipality of Athens; ** childcare for children under three is not subsidized in 2009, but through the childcare element of the working tax credit parent s can reduce the actual amount paid for childcare fees in registered childcare services; from three years old children are entitled to free part time early years education. Additional childcare is paid for by private (parental) contributions.*

3 Methodology

In order to estimate the distributive impact of cash and in-kind benefits related to the work-family life balance we work with the underlying dataset of EUROMOD, which is EU-SILC. In Section 3.1 we briefly describe the information available in the dataset, as well as what is missing. In section 3.2 we describe how the missing information is provided within EUROMOD and how we have refined EUROMOD. Section 3.3 describes the methodology to quantify the in-kind benefit of ECEC services, and how we use this to construct a concept of "extended income" which includes both cash and in-kind benefits. In section 3.4 we give an overview of the measures we use in our empirical analysis.

3.1 Data

The data used for the analysis is the underlying dataset for EUROMOD, EU-SILC. EU-SILC is the reference survey for income and living conditions in the EU and is carried out among a representative sample of households in all EU Member States. In this section, we focus on the information in EU-SILC that is of primary interest for this paper, for a more general discussion of EU-SILC, see for instance Decancq et al. (2014). EU-SILC includes information on cash family benefits in general (variable HY060), but does not allow to disentangle different types, which would allow us to identify those policy measures suitable for our purpose. This problem can be remedied to a large extent by using EUROMOD (see next section). EU-SILC also provides information on the use of ECEC services in five variables. These variables refer to the type of ECEC service a child attends and the number of hours of attendance in a usual week. The types of childcare are: education at pre-school (rl010), center-based childcare (rl030), day-care center (rl040), child care by a professional child-minder (rl050) and informal unpaid care (rl060). The distinction between the types of childcare is not always very clear and slightly different definitions are used in the different countries. Unfortunately, no information is available in the datasets on whether parents use subsidised or non-subsidised facilities. When evaluating the distributive impact of child care, ignoring this distinction would however imply to allocate in some cases subsidies to families purchasing a private service. In countries where private services are rare or almost entirely subsidized by the state (e.g. as in the Nordic countries), this issue is hardly problematic. But it might lead to double counting of the benefits in countries, where many parents pay for private childcare and are partly reimbursed through the tax system (Vaalavuo, 2011). Moreover, the data do not include the in-kind benefit derived from the use of publicly provided services; therefore we estimate the value, refining the current state of the literature by calculating net in kind benefits of ECEC (see section 3.3). As the information on parental fees is also missing in EU-SILC, we simulate them in EUROMOD (see next section). We use the normal cross-sectional weight to uprate to population levels.

The input data (EU-SILC 2010 & FRS 2009-2010 for UK) is used for simulations in the policy year 2009, as the income information in EU-SILC relates to the year preceding the survey. However, demographic information relates to the year of the survey. For this reason, we lower the age of all children in the dataset with 1 year, and drop all children who were not yet born in 2009 from the data.

3.2 EUROMOD & modelling policies and parental fees

EUROMOD is a multi-country European wide tax-benefit microsimulation model, which simulates tax liabilities (direct taxes and social insurance contributions) and cash benefit entitlements for the household populations of EU Member States in a comparable way across countries on the basis of the tax-benefit rules in place and information available in the underlying datasets. Market incomes and income components which are not simulated due to lack of information (on e.g. previous employment and contribution history) are taken directly from the data. EUROMOD is a static model in the sense that the arithmetic simulation of taxes and benefits abstract from potential behavioural reactions of individuals. As such, EUROMOD is very suitable to assess the first order effects of tax-benefit policies in terms of income distribution, work incentives and government budgets. For further information, we refer to Sutherland (2007) and Sutherland and Figari (2013).

From the policies described in section 2, EUROMOD includes the simulation of the home care allowance in Estonia, the maternity grant in Hungary and the child home care allowance in Hungary. Other leave benefits and child home care allowances are taken from the data. In the framework of this project we have extended EUROMOD by calculating the parental fees for formal childcare, and for the countries where this is applicable (notably Belgium, Estonia and Italy, see section 2.1.3), we have included the tax treatment of these fees[7].

The methodology and the assumptions used to simulate childcare fees and additional policies are summarized in Table 6. First, we make a distinction between subsidized and non-subsidized care in the countries where both forms are used. For three countries (Belgium, Greece and Italy) a random imputation is used to determine if the child is in either of the two types. If more detailed information is available, the imputation takes this information into account (e.g. when subsidized childcare is more frequently used by the bottom income quintile, as is the case in Greece, or when the provision of subsidized childcare depends on the region as is the case in Belgium and Italy). Next, the identification of the type of childcare is based on the above-mentioned five variables in SILC; we align the content of these variables as much as possible across countries. These variables also give the intensity of use in hours. Depending on the policy rules, these hours are converted to other time unites (e.g. days). We then specify to what extent regional variation is included in the data. In order to calculate parental fees, we specify which rules are applied, and whether a distinction can be made between fees in the subsidized and in the non-subsidized sector. Since the monthly fee for childcare services is based on a usual pattern of childcare use (i.e. based on a regular week outside holidays), we convert this to a yearly amount by multiplying by 10[8]. We do not include childcare before and after school hours for school going children in our simulations, due to lack of information (with the exception of the United Kingdom where the information is included in the survey). An exception in the simulation is made for Sweden. Here additional care in the pre-primary class is included. Since the pre-primary class is only part-time and additional care is often in the same institution, we simulate parental fees for the additional (day) care. Parental fees in the UK are taken from the data, the fees also include childcare before and after school hours. As parental fees are included in the FRS, we do not have to calculate these fees with the simulation model.

[7] We are very grateful to Alari Paulus for programming tax deduction and fees in Estonia, and to Francesco Figari for tax credit and parental fees in Italy.

[8] We do not include holiday care and childcare before and after school hours. This assumption is an underestimation for some countries while for others it may be an overestimation.

Table 6: Assumptions to include childcare fees in EUROMOD, 2009

	Subsidized versus non subsidized	Use of EU-SILC variables	Hours	Region	Co-payments
Belgium	Random selection in both regions.	For children under 3 all childcare variables are taken together. For children from 3y to 5y variable rl010 is used.	Hours are taken from EU-SILC variables and recalculated to days.	Flanders and French Community distinguished for calculation fees in subsidized sector. For non-subsidized sector same average amount for both regions are used.	Fees simulated according to the income dependent tariff structure of region.
Estonia	Pre-school institutions assumed to be public and other forms of childcare are private (non-subsidized).	rl010 assumed to correspond to subsidized pre-school. For other types (rl030, rl040, rl050) non-subsidized childcare assumed.	Full time pre-school or childcare assumed for children in formal ECEC institutions.	Pre-school fees simulated based on regional averages.	Fees based regional averages. Deflated 2011 fees used as no information on average cost in 2009. Costs are deflated using growth rates.
Greece	25% of children randomly selected among all children not in poorest quintile and assumed to attend private day care centres, (i.e. not subsidized). Remaining 75% assumed to attend publicly-funded care. No distinction can be made between childcare and pre-school institutions.	Variables rl030, rl040 and rl010 are taken together. Rl050 is left out. Care of a child minder (rl050) assumed to be informal paid care.	Hours from EU-SILC variables recalculated to days.	No information on regions. For private childcare urbanisation rate used to differentiate fees in urban and rural areas.	Co-payments and tariff structure of municipality of Athens used for entire country.
Hungary	All childcare assumed to be public.	rl040 and rl050 for childcare under 3y; rl010 for children in pre-school (= from 3y); rl030 not used as cases identical to those in rl010.	Hours from EU-SILC variables recalculated to days.	No regional differences included.	Note in 2009 childcare except for cost of meals.
Italy	Random selection in all regions. For pre-school services all children assumed to be in subsidized pre-school.	For children under 3 all childcare variables are taken together. For children from 3 until 5 y variables rl010 and rl020 used.	Fees only calculated for children at least 30 hours in ECEC.	Childcare services for children under 3 are simulated on regional level, both for subsidized and non-subsidized childcare. For pre-school, no differentiation between regions.	Fees simulated according to income dependent tariff structure. For each region system of capital of region used.
Sweden	All pre-school institutions assumed to be public.	All childcare variables taken together except for pre-school variable. Since pre-	Full time pre-school assumed for children in ECEC	No regional differences included.	Fees income dependent and calculated on monthly basis. For all children aged 3 to 5

		school class (6y) is only part time, childcare variables rl030, rl040 and rl050 to calculate fees for additional care.	institutions. Number of hours used for calculation monthly fees in pre-school class.		part time free childcare is simulated.
UK	We assume childcare under three years is private. 3 and 4 year olds are entitled to free part time early years education.	FRS is used as input data.	(not used)	/	Childcare fees are included in the data.

Source: Country notes, EUROMOD; for more details see Annex 2.

3.3 Calculating the value of the in-kind benefit of ECEC

Providing an estimate of the value of government services for households raises a range of methodological questions, such as how to value public services and how to allocate this value among individuals and households (see e.g. Marical et al. 2008; Garfinkel et al. 2006; OECD 2008; Aaberge et al. 2010; Paulus et al., 2010, Verbist et al., 2011). OECD (2011b), Vaalavuo (2011), Matsaganis and Verbist (2009), Verbist and Matsaganis (2014) are recent examples of internationally comparative studies that analyse the distributive effect of childcare subsidies. These studies indicate that, overall, the inclusion of childcare subsidies in the income definition tends to reduce the degree of income inequality, as well as the risk of poverty. The results are driven to a large extent by the extent of use, which may or may not reflect the availability of ECEC services. A similar analysis is undertaken in this paper, building further upon the analysis presented in OECD (2011b), Verbist & Förster (2012) and Van Lancker and Ghysels (2014). However, different from these earlier studies, our analysis is more fine-grained as the use of the tax-benefit model allows us to provide a measure of ***net*** subsidies, i.e. after deducting parental fees. Most of the other studies, however, are able to look at gross subsidies only, i.e. without taking account of these fees, thus probably overestimating the first-order distributive effect of these in-kind benefits.

Regarding the valuation of public services, this paper follows the standard approach in the literature, namely to assume that the transfer to the beneficiaries equal the average production cost of the public services. In other words, one euro spent on services is assumed to equal one euro worth to households or individuals. This, however, is a very strong assumption as it means that differences within and across countries in the quality and efficiency in the provision of these services are neglected. This constitutes a serious drawback for interpreting fully the results from the analysis below, as quality issues in care are a key aspect in policy decision making (OECD 2009 and 2012). Amounts per user of ECEC are derived from national sources and/or the OECD Education Database (see Country Notes in Annex 2). In order to allocate the value of public ECEC services across the population, beneficiaries are defined as the children and their parents that are using these services, thus the value of this type of public service can be allocated to the child or to the parents. For an appropriate identification of beneficiaries, one ideally needs information on whether the user is benefiting from subsidized care, on the type of childcare that is used (this is relevant in the case where different categories are subsidised in a different way, which is in general the case), and on the intensity of use (number of hours, or full-time or part-time). The imputation of the ECEC transfers is undertaken on the basis of the number of hours of actual use of the services, in order to account for differences in the intensity of use. In countries with widespread full time use we assume full-time childcare use and simulate the full time parental fee; this is the case for Sweden and Estonia, as well as for Italy where there is too little information on part time use. If possible net subsidies for childcare are calculated on the regional level.

As discussed in section 2, pre-primary education is in general free of charge (except for Estonia and Sweden, cf. Table 5 and Annex 2) while for formal childcare for the age group 0-2 parental fees apply. Contrary to most other comparative studies (e.g. Förster & Verbist, 2012; Vaalavuo 2011), we are able to take account of these fees, and thus derive net in-kind benefits. A first study that takes this approach for Flanders and Sweden shows that indeed childcare fees are an increasing function of income (Van Lancker and Ghysels, 2012).

3.4 Measures of the distributive impact of ECEC

We provide an indication of the distributive impact of ECEC by looking at the distribution of beneficiaries and the value of in-kind benefit over income quintiles. Income quintiles are constructed on the basis of equivalent cash disposable income. Cash disposable income in EUROMOD closely follows the EU-SILC definitions but disposable income in EUROMOD is constructed using simulated components as much as possible (for a detailed description of the components of disposable income see EUROMOD country reports). The disposable income used in our simulations is not identical to the disposable income used in the EUROMOD country reports since we have added tax credits and tax deductions for childcare fees.

We will also present inequality and poverty indicators for the cash disposable household income. We focus the distributive analysis to size and incidence over cash income quintiles. Income (components) are equivalized using the OECD modified equivalence scale (i.e. a value 1 for the first adult, 0.5 for subsequent persons aged 14 and over and 0.3 for children younger than 14). For measuring the pro-poorness of the policy instruments we provide two indicators. On the one hand, we look at the extent to which work-family life policy measures are spent below the poverty line. The poverty line is defined here using the 60% median equivalent income threshold. On the other hand, we provide concentration coefficients. A concentration coefficient indicates how income components are distributed, and are scale indifferent (i.e. multiplying all income components by a scalar does not change the concentration coefficient, see also Lambert, 2001). The calculation of the concentration coefficients is similar to that of a Gini coefficient; only we rank according to disposable household income and measure the inequality of cash and in-kind benefits relative to that ranking. When the concentration is higher than the Gini, the income component is pro-rich. Concentration coefficients that are smaller than the Gini coefficient indicate that cash benefits go disproportionally to the poor. Verbist and Matsaganis (2013) distinguish between strong and weak pro-poorness: they label transfers with a negative concentration coefficient as 'strongly pro-poor'; benefits for which the concentration coefficient has a value between zero and the Gini coefficient are 'weakly pro-poor'.

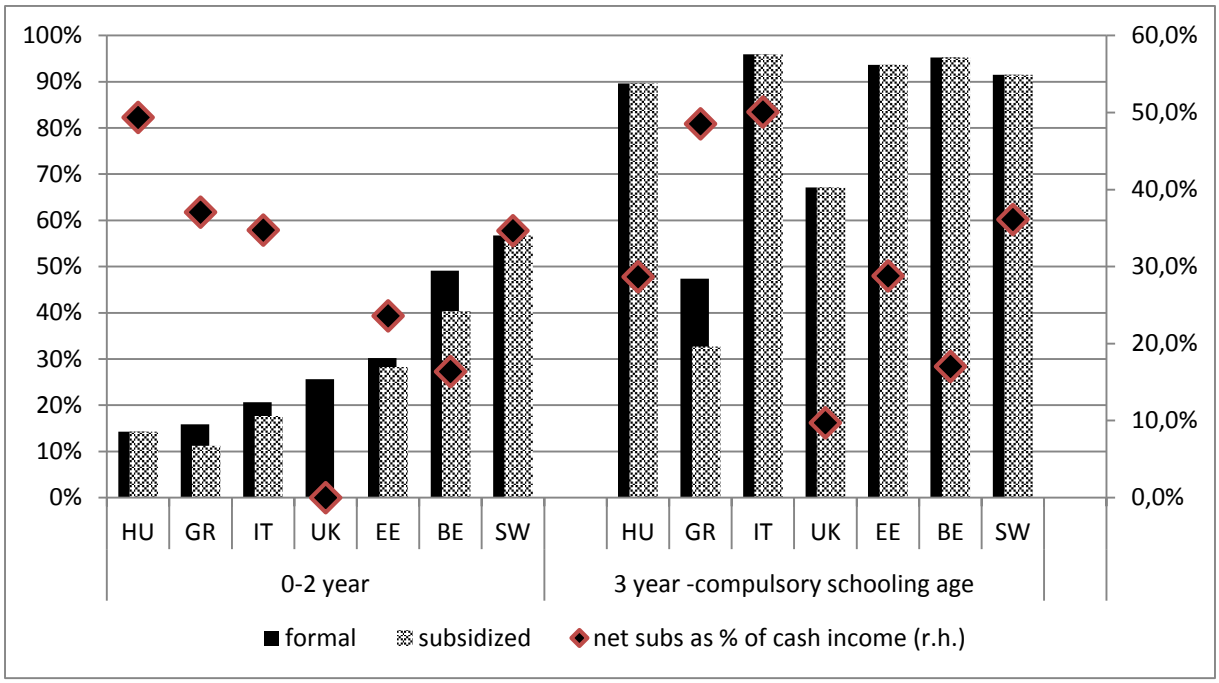
4 Taking account of the in-kind benefits of ECEC

4.1 Incidence and size of in-kind benefits

We map the beneficiaries of the in-kind benefits provided by ECEC services and show the importance of these in-kind benefits by expressing them as a share of cash disposable income. Because of the differences in childcare and pre-primary systems we present results according to groups according to the age of the child (with 0 to 2 years roughly corresponding to childcare and 3 to 6 years to pre-primary school). The Figure below shows the percentage of children in formal ECEC services for the two age groups of young children, as well as those in subsidised facilities. Most variation across countries is found among 0 to 2 year old, with formal ECEC shares ranging from 16% in Greece to 50% and more in Belgium and Sweden. Shares of beneficiaries of subsidized care for this age group are lower in in all countries except Hungary and Sweden. Compared to Table 6 the use of subsidised care for Belgium may seem high. This can be explained by the fact that part of the children aged 2 are already in pre-primary education, which is subsidized and for which we have assumed full time

attendance in public pre-primary education. Hence, the share of beneficiaries of subsidized ECEC for this age group will be higher than when looking at childcare facilities only. For the older age group, shares are higher ranging from 33%(subsidized care) in Greece to above 90% in most of the other countries. For all countries, formal and subsidized coincide, except in Greece. In Greece children under compulsory schooling age are in childcare services or pre-primary education until they start primary education or the pre-primary class. These facilities can be private or public.

Figure 3: Share of children in formal and in subsidized ECEC services (left-hand axis) and level of net subsidy relative to disposable income (right-hand axis), 2009



Notes: Countries ranked from low to high share of beneficiaries in youngest age group. Net subsidies are given as a percentage of cash disposable income for beneficiaries only, right-hand axis.

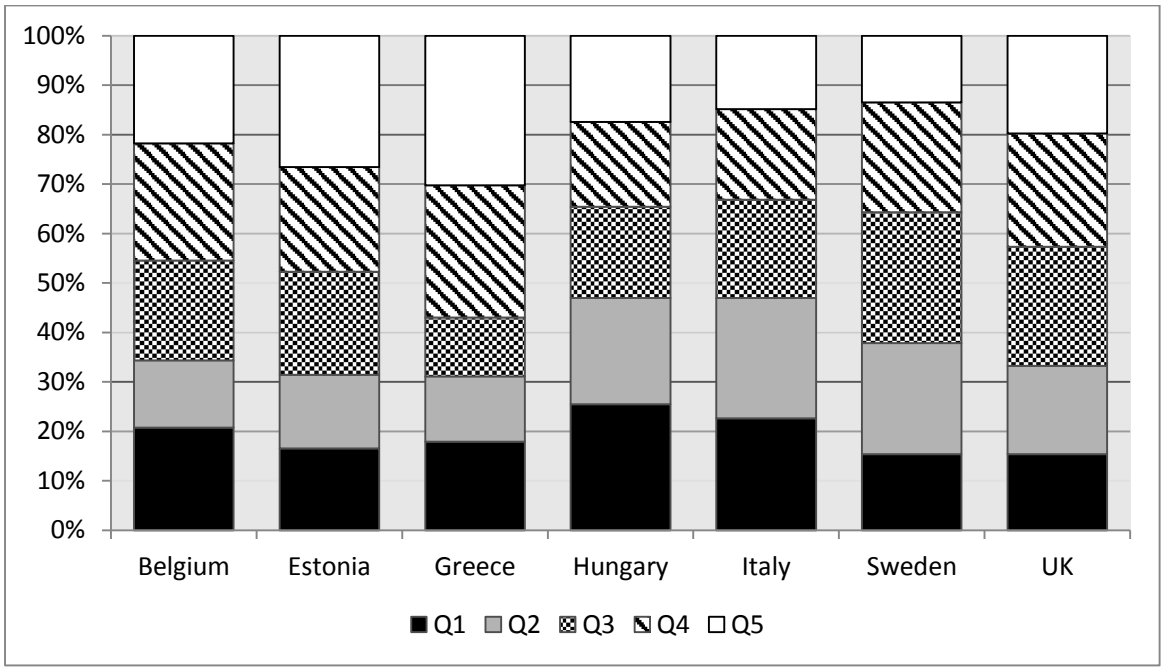
Source: own calculations based on EUROMOD , EU-SILC 2010 & FRS 2009-2010.

Figure 3 also shows the level of the net subsidy relative to cash disposable income for each age group and for beneficiaries only. Relative levels among the youngest age group are highest for Hungary, and much lower for Belgium, while for the older age group it is especially high in the two Southern European countries. Remarkably, with the exception of Hungary and the UK relative levels of net subsidies are higher for the older age group as compared to the younger age group. In most countries gross subsidies are higher for younger age groups. We calculate net subsidies by deducting parental fees from the gross subsidies. There are more parental fees in the younger age group, hence lower net subsidies. In Hungary childcare for under three year old children is free of charge (except for minor contributions for meals and some other expenses, in 2009). The UK is also an exception. In the UK there are no subsidized childcare places for children under three years old[9], but through the childcare element of the tax credit outsourcing childcare is also indirectly subsidized. The tax credit is not included here, but will be discussed later. The older age group in the UK is entitled to free part-time education. Additional care is paid through parental contributions.

[9] In 2009. From 2013 some 2 year olds are also entitled to a free part-time place.

Figure 4 shows how the users of formal ECEC are distributed over income quintiles, using income quintiles based on cash income. We find the highest share of low-income children beneficiaries (25%) in Hungary, while in other countries this is around 20% (Belgium and Italy) or below it (Greece, Estonia and Sweden). In Greece, the top quintile is overrepresented with more than 30% of beneficiaries according to cash income quintiles; this is far less the case in the other countries, especially in Sweden and Italy (with top income shares around 15%).

Figure 4: Distribution of children in formal ECEC over income quintiles, 2009



Notes: 1) Quintiles are constructed on the basis of cash equivalent income of all households.
Source: own calculations based on EUROMOD and EU-SILC 2010.

Table 7 presents the children in childcare of all children per quintile in percent for subsidized and formal ECEC. Both for subsidized and formal ECEC, we find a higher share of users the more one goes up the income distribution; this is especially the case for the younger age group. For instance, in Belgium and the UK, we see a much higher number of children in childcare in the top of the income quintile. In Greece the use of childcare looks rather equal, but these results are influenced by the way the subsidized childcare is imputed[10]. Also in the other countries we find a concentration in the higher ends of the income distribution. This is also the case for the older age groups, be it often to a lesser extent.

[10] For more information on the assumptions, see Annex 2: Country notes

Table 7: Percentage of children in ECEC by equivalized cash income quintiles and age group, 2009

	Age	Q1		Q2		Q3		Q4		Q5		Total	
		S	F	S	F	S	F	S	F	S	F	S	F
Belgium	0-2	25%	25%	31%	37%	43%	60%	43%	53%	60%	72%	40%	49%
	3+	93%	93%	96%	96%	94%	94%	97%	97%	97%	97%	95%	95%
	Tot.	57%	57%	66%	69%	68%	77%	68%	73%	74%	82%	66%	71%
Estonia	0-2	21%	21%	30%	30%	37%	38%	35%	37%	18%	22%	28%	30%
	3+	88%	88%	88%	88%	95%	95%	98%	98%	97%	97%	94%	94%
	Tot.	66%	66%	61%	61%	66%	66%	66%	67%	60%	62%	63%	64%
Greece	0-2	12%	12%	0%	0%	14%	15%	17%	24%	12%	26%	11%	16%
	3+	40%	40%	26%	40%	24%	33%	34%	60%	36%	60%	33%	47%
	Tot.	27%	27%	14%	22%	18%	23%	26%	41%	25%	44%	22%	32%
Hungary	0-2	10%	10%	10%	10%	18%	18%	14%	14%	23%	23%	14%	14%
	3+	86%	86%	88%	88%	90%	90%	97%	97%	90%	90%	90%	90%
	Tot.	48%	48%	50%	50%	55%	55%	58%	58%	54%	54%	52%	52%
Italy	0-2	13%	13%	14%	17%	18%	24%	21%	23%	27%	34%	18%	21%
	3+	93%	93%	98%	98%	96%	96%	98%	98%	96%	96%	96%	96%
	Tot.	54%	55%	57%	59%	60%	62%	57%	58%	64%	67%	58%	59%
Sweden	0-2	52%	52%	50%	50%	59%	59%	62%	62%	66%	66%	57%	57%
	3+	81%	81%	90%	90%	95%	95%	92%	92%	99%	99%	91%	91%
	Tot.	66%	66%	71%	71%	78%	78%	79%	79%	86%	86%	75%	75%
UK	0-2	0%	10%	0%	10%	0%	29%	0%	38%	0%	54%	0%	26%
	3+	61%	61%	58%	58%	69%	69%	74%	74%	81%	81%	67%	67%
	Tot.	24%	30%	21%	28%	28%	46%	27%	51%	27%	63%	25%	41%

Notes: 1) S = subsidized ECEC; F = formal ECEC; 2) Quintiles are constructed on the basis of equivalent cash income of all households.
Source: own calculations based on EUROMOD ,EU-SILC 2010 and FRS 2009-2010.

4.2 Impact of work-family life policies on children in poverty

In this section we show whether work-family life policies reach poor children and the degree to which poor families can use cash and in-kind benefits related to childcare policies. We refer to poor children if they live in a household with an equivalent disposable income below the poverty line set at 60% of median income. Table 8 shows the number of poor children, the cash and in-kind benefits that reach these poor children and the parental contribution paid for poor children in childcare services.

Table 8: Share of childcare policy components going to poor children, 2009

			BE	EE	GR	HU	IT	SW	UK
Children in poverty	Total		20%	14%	20%	15%	23%	12%	6%
	0-2 year		21%	9%	19%	15%	22%	14%	6%
	3-c.a.		18%	17%	22%	15%	23%	11%	6%
Cash benefits	Total		7%	12%	7%	15%	13%	9%	1%
	Leave benefits	Total	13%	11%	7%	18%	25%	9%	2%
		0-2year	11%	10%	9%	18%	26%	12%	2%
		3-c.a.	22%	14%	1%	19%	19%	-	4%
	Home care allowance	Total	-	15%	-	13%	-	-	-
		0-2year	-	6%	-	12%	-	-	-
		3-c.a.	-	20%	-	17%	-	-	-
	Tax advantage	Total	1%	6%	-	0%	-	-	0%
		0-2year	0%	2%	-	0%	-	-	0%
		3-c.a.	0%	8%	-	0%	-	-	0%
Public contributions	In-kind benefits from ECEC (net subsidy)	Total	19%	14%	22%	15%	22%	12%	6%
		0-2year	16%	8%	14%	10%	19%	14%	0%
		3-c.a.	18%	16%	25%	15%	23%	10%	6%
Private contribution (net parental fee)		Total	4%	14%	7%	15%	22%	8%	5%
		0-2year	4%	7%	1%	10%	14%	8%	4%
		3-c.a.	0%	16%	8%	15%	23%	7%	5%
Private contribution (net parental fee)		Total	19%	14%	22%	15%	22%	12%	6%
		0-2year	16%	8%	14%	10%	19%	14%	0%
		3-c.a.	18%	16%	25%	15%	23%	10%	6%

Note: (1) Poverty line calculated on the basis of cash income.
Source: own calculation with EUROMOD, EU-SILC and FRS

Children in poverty are underrepresented in cash benefits or parental care, except for Hungary and Italy where they are highly represented among cash benefits. In the case of home care allowance we find a higher use by the group of poor children. The third type of cash measures, the tax advantage, is negligible for the poor children in all countries where these apply.

In general poor children are not underrepresented for in-kind benefits, but we notice a different pattern for under 3 year old children and children from 3 to the compulsory age. We find underrepresentation of the younger age group for in-kind benefits, while the older age group is overrepresented. In most countries around the age of 3 young children can start (free) pre-primary education.

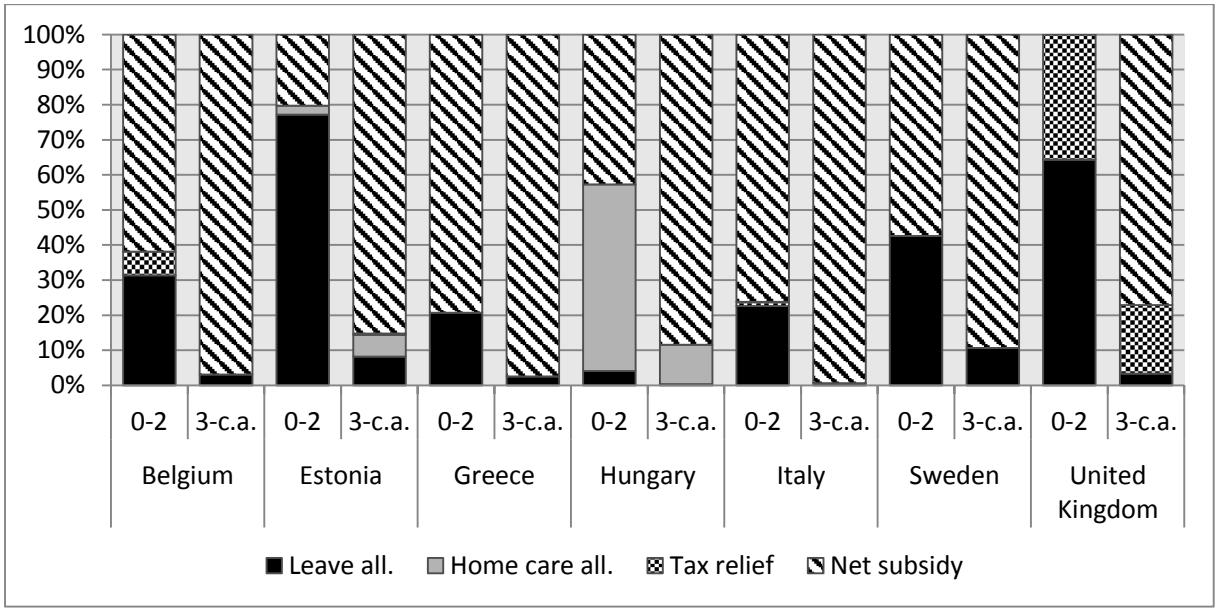
This is in line with what we would expect because of the income-dependent fee systems, poor children contribute to a lesser extent for parental fees.

5 The work-family life balance policy package

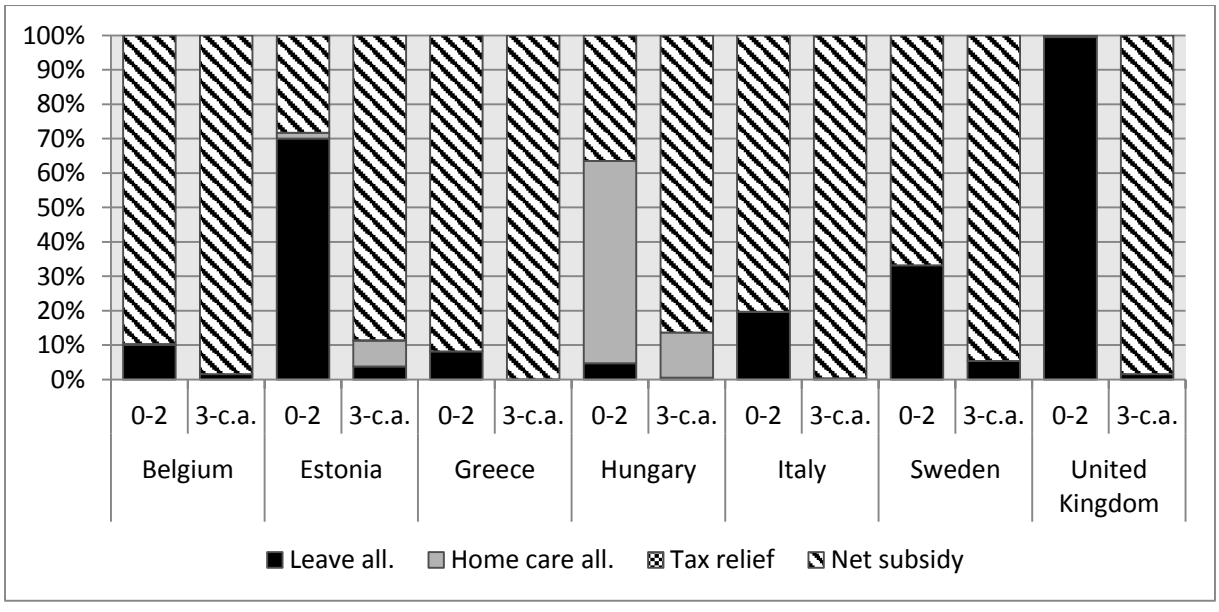
We now turn to the relative size of the different components of the work-family life balance policy package. We look at this relative size from different angles: the perspective of the type of instrument used (i.e. cash versus in-kind); the underlying objective (focus on care or on employment, i.e. home care allowances and leave benefits versus all measures relating to childcare and pre-school institutions); and the character of the contributor (private or public).

Figure 5: average share of work-family life policy package components in total package work-family life policies, 2009

(a) **Total**



(b) **Bottom quintile**



Note: c.a.= compulsory age
Source: own calculations based on EUROMOD and EU-SILC

5.1 Cash or in-kind?

Figure 5 compares the different components with one another, both for the total population of children under compulsory age (panel a) and for the bottom quintile (panel b). We first compare cash to in-kind benefits. The in-kind benefits are dominant in all countries and for the two age groups, except in Estonia, Hungary and the UK for the younger age group. For these two countries we find a stronger reliance on cash benefits: the cash benefits in Estonia account for 80% of the total package of the 0 to 2 year old. It is mostly the parental leave allowance in Estonia, while the home care allowance represents more than 50% for the youngest group in Hungary. In the UK the leave allowance amount to 64% and in Sweden to 47%. For the more than 3 year old, in-kind benefits provided by the net subsidies of ECEC facilities represent in all countries more than 70% of the package. Interestingly, the cash - in-kind division is in general not so different for the average population and those in the bottom quintiles: for Belgium and Greece, we find a slightly higher prevalence of in-kind for those at the bottom of the distribution than for the general average. For the UK we note that cash benefits represent almost the total proportion of work-family policies for under 3 year old, while in-kind benefits dominate the work-family life policy package for more than 3 year old.

5.2 Parental or formal outsourced care?

We now look at the perspective of whether the instruments focus on parental care or on care outsourced to public providers (through the net subsidies and the tax reliefs). Half of the countries in our study rely more on outsourced care than on provisions for parental care. In contrast, in Estonia, Sweden and the UK we find a high share of (especially) parental leave benefits, while in Hungary we observe a high share of the home care allowance. In the UK a great part of the outsourced care is the tax relief: for both age groups this represents 20% or more of the total package for all children. In the bottom quintile the effect of the childcare element of the working tax credit is negligible.

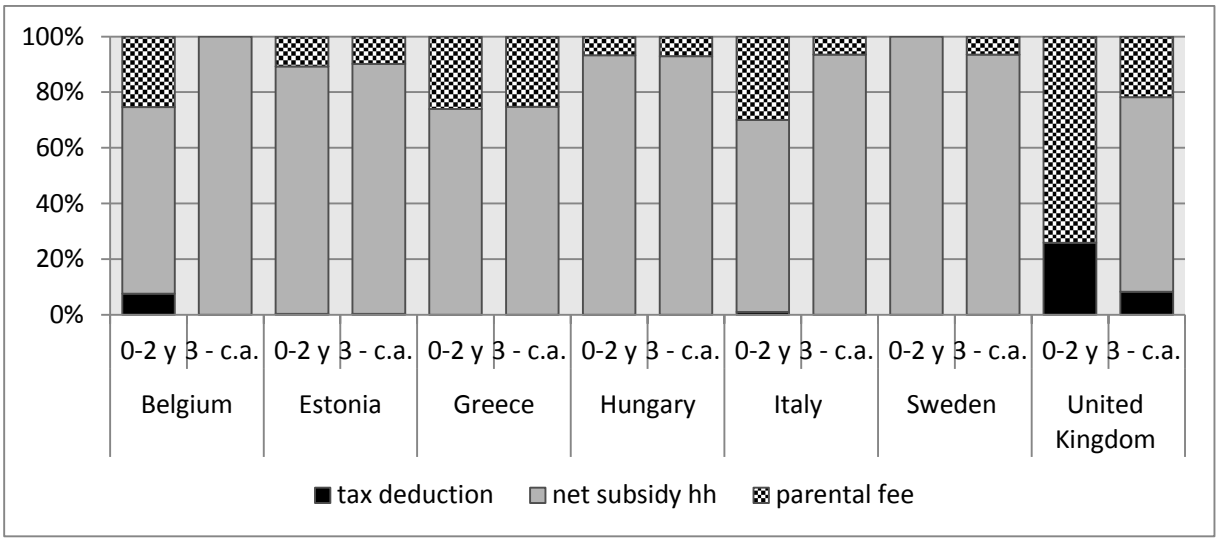
5.3 Public or private contribution for ECEC

There is considerable difference across countries in terms of the public – private contribution for outsourcing care. The private contribution consists of the parental fees, net of any possible tax deductions, while the public contribution is formed by a range of policy instruments, either cash (notably tax reliefs), or in-kind (subsidies of services). In general, the public share of the monetary cost is much higher than the private contribution, as is shown clearly in Figure 6. For the youngest group the private contribution ranges between less than 5% (Sweden) and more than 20% (Belgium, Greece, Italy). In the UK the private contribution for the youngest age group is even more than 70%. Hungary has a relatively low private contribution, which only includes meals and other minor expenses. For the children of 3 and older, the parental fees are often (very) low in the case of pre-primary education; the major exception is Greece, with a parental contribution of almost one quarter. Note, however, that this might be an overestimation, given that we have imputed parental fees on the basis of rates in Athens. The bulk of the public effort is represented by the in-kind benefit through subsidized care facilities, especially for the older group. The tax relief for parental fees attenuates to some extent the private burden, but apparently, the impact is rather limited: only in

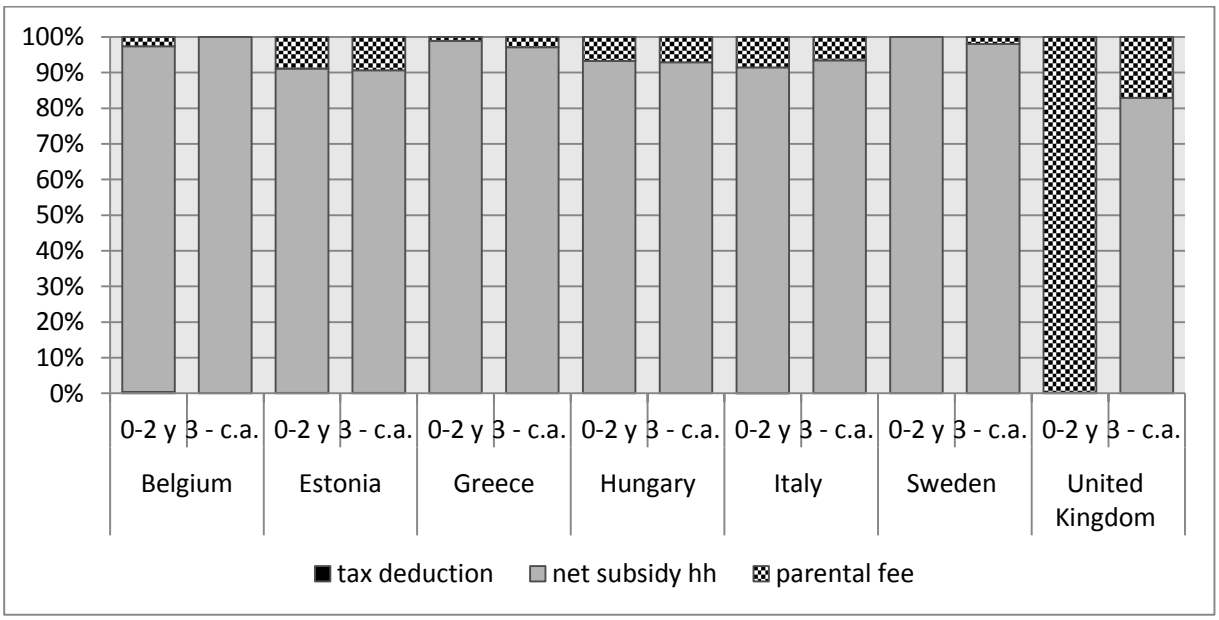
the UK the share of the tax relief quite high, it accounts for 26% of total public and private contributions among the youngest group. In Belgium the proportion of the tax relief is 8%, while in the other two countries where this type of instrument is used (Estonia and Italy) the weight is almost negligible. The limited weight of tax advantages in these countries is due to the small amount of the tax credit or tax deduction. If we focus on the bottom quintile for the private – public contribution, then the picture is different: the private share is on average below 10%, and often close to zero. In general, it is lower than average, providing an indication of the income dependent character of these parental fees. The UK is an exception, since almost the entire packages in consists of private contribution for the under 3 year old and 17% of the package for the children from 3 to compulsory schooling age.

Figure 6: Average share of employment related policy measures and private contributions to childcare, 2009

(a) **Total**



(b) **Bottom quintile**



Note: c.a.= compulsory age
Source: own calculations based on EUROMOD and EU-SILC

5.4 Distribution of the work-family life balance components

We now want to see how the different components of the monetary cost are distributed in comparison with the distribution of equivalent disposable household incomes. One would expect that private contributions are distributed in a pro-rich way (i.e. higher incomes pay a higher share of the total private contribution than their income share), given the income dependent character of the fees, while the public instruments are expected to be more pro-poor. Among the public components one might expect the cash allowances to be more pro-poor than the in-kind benefits, given that in-kind benefits will in general be used by two earner families (with ceteris paribus higher incomes than one earner families). We show this in two ways: on the one hand we present concentration coefficients, on the other quintile distributions of the different components. A concentration coefficient that is larger than the Gini coefficient points to a pro-rich pattern, while when it is smaller, then the income component is distributed more equally than the income concept on which is the Gini is calculated.

The private contribution is more pro-rich than the public contribution in Belgium, Greece, Hungary, Italy, Sweden and the UK. Estonia is the exception, which is largely due to its distribution of fees for the older age group which is close to proportionality. For the same reason also the parental fees in Italy are close to proportionality. Important to note that for Estonia we simulated parental fees based on weighted averages per region, we could not include the income dependent scheme. Among the private contributions, especially those for the youngest group have a pro-rich pattern (Belgium, Greece and the UK), indicating on the one hand that beneficiaries are more present in the upper part of the distribution, but on the other hand that the income selective character of the fees makes higher income pay relatively more. This is far less the case for fees paid by the older group, which is more equally distributed than that for the younger group.

The total of public efforts is pro-poor in all selected countries. In Belgium this is driven by the in-kind benefits, because the cash benefits are very pro-rich. Cash benefits are more pro-poor in Greece, Hungary, Italy and Sweden. Among the public instruments the home care allowance is the most pro-poor, but it is only in use in two countries. Leave benefits show a mixed pattern: they are pro-poor in Hungary and Italy, while in Belgium they are pro-rich. Panel (b) in Figure 7 gives the quintile distribution of the total of the cash allowances, showing the large share of leave benefits located in the top quintile in Belgium, while in Hungary it is more concentrated at the bottom.

The tax relief is according to expectations pro-rich, especially in Belgium, and follows to some extent the pattern of the parental fees. In Italy and Estonia, tax reliefs are relatively more pro-rich than the parental fees in these countries. In the UK tax relief is close to proportionality, while private contributions are pro-rich. The tax advantage has a similar quintile distribution pattern as the parental fees in Belgium, while in Estonia and Italy it is a bit more pro-richly distributed. This relates to the cap on the amount than can be deducted in Belgium, which is not the case in the two other countries. In the UK the tax advantage and the parental fee quintile distribution have very different patterns. More than 50% of parental fees are paid by the highest quintile. And although the working tax credit is aimed at low wages, the third and the fourth quintile represent the biggest share in the tax reliefs.

Table 9: Concentration coefficients for different components of the work-family life balance package for young children

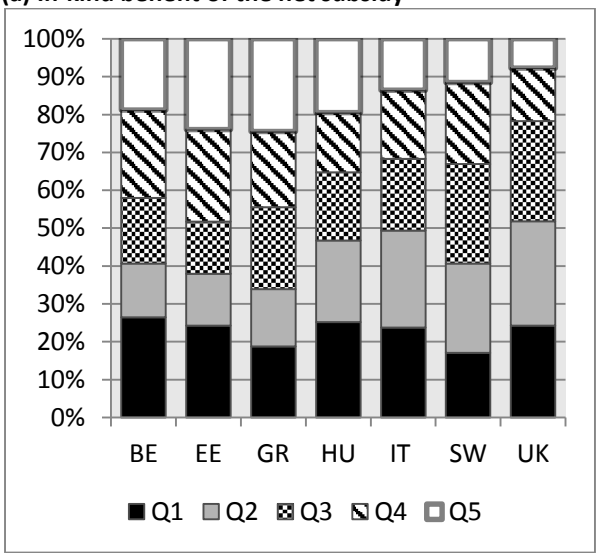
	Gini	Public contribution										Private contribution (net parental fee)		
		Total Public	Cash benefits							In-kind benefits (net subsidy)					
			Total cash	Leave benefits		Home care allowances		Tax relief		Total in-kind	0-2 year	3-c.a.	Total Private	0-2 year	3-c.a.
				0-2 year	3-c.a.	0-2 year	3-c.a.	0-2 year	3-c.a.						
BE	0.226	0.068	0.478	0.502	0.302	.	.	0.508	.	-0.016	0.084	-0.058	0.495	0.495	.
EE	0.306	0.174	0.278	0.325	0.139	0.137	-0.022	0.170	0.220	0.072	0.111	0.062	0.093	0.181	0.069
GR	0.319	0.028	0.198	0.178	0.246	.	.	.	.	0.015	0.165	-0.032	0.419	0.596	0.362
HU	0.229	-0.106	-0.169	-0.103	-0.222	-0.101	-0.273	.	.	-0.074	0.068	-0.118	-0.070	0.065	-0.110
IT	0.316	-0.105	0.117	0.130	-0.014	.	.	0.253	.	-0.117	-0.086	-0.122	0.074	0.264	-0.125
SW	0.234	-0.034	-0.004	-0.014	0.031	.	.	.	.	-0.045	-0.064	-0.035	0.362	.	0.362
UK	0.285	0.059	0.254	0.282	0.134	.	.	0.239	0.250	-0.172	.	-0.172	0.435	0.477	0.356

Notes: (1) Concentration coefficients are calculated with income units ranked according to cash income; (2) c.a.= compulsory age.
Source: own calculations based on EUROMOD and EU-SILC 2010

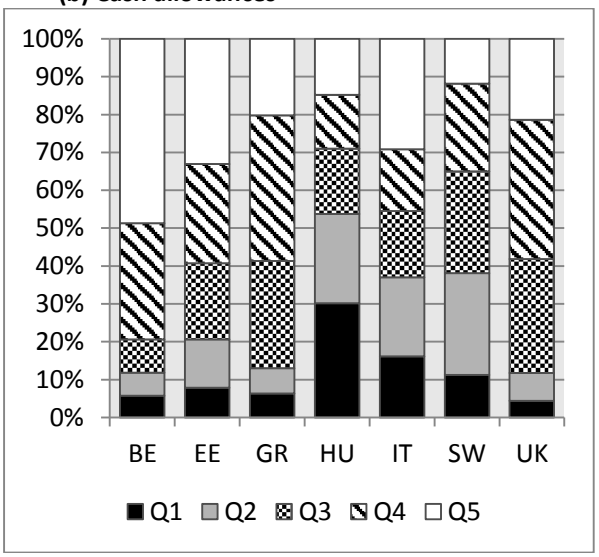
Finally, we show the distribution of the in-kind benefit, consisting of the net subsidy (i.e. the subsidy after subtraction of parental fees). This in-kind benefit is relatively evenly distributed over quintiles, with a somewhat larger share at the bottom for Belgium, Estonia, Hungary, Italy and the UK, and at the top in Greece and Estonia. The concentration coefficient is negative in all countries expect Estonia and Greece. This suggest a strong pro-poor effect of the net subsidies. In most studied countries net subsidies are slightly more pro-poor for the older age group. Only in Sweden the effect on the younger age group is more pro-poor. In Greece and Estonia in-kind benefits for the children under three are weakly pro-poor. Both the concentration coefficients and the distribution over quintiles show private contributions in the use of outsourced child care are largely paid by the richer quintiles.

Figure 7: Distribution over quintiles of the different components of the monetary cost for care for young children, children under compulsory schooling age, 2009

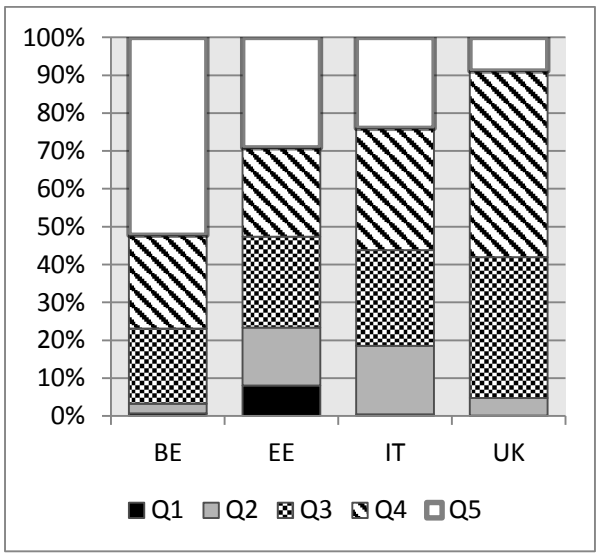
(a) In-kind benefit of the net subsidy



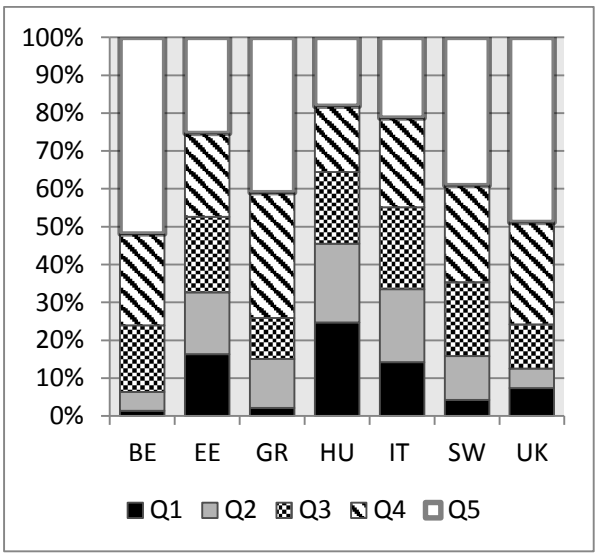
(b) Cash allowances



(c) Tax relief



(d) Parental fee



Note: quintiles calculated on the basis of cash income.

Source: own calculations based on EUROMOD and EU-SILC 2010.

6 Conclusion

In this paper we have investigated the public provisions that are available to parents of young children to deal with the work-family life balance and the distributive effect of these policies. Policy measures are diverse in the sense that they can be either in cash or in-kind, and they can put more stress either on the labour market attachment of the parents and the outsourcing of care or on their parental care efforts at home.

Refining and expanding the microsimulation model EUROMOD and estimating the in-kind benefit of ECEC services, we have compared these different policies with one another in terms of their size and distributive characteristics. In general, we found that these in-kind benefits are often more important than the measures that provide a cash advantage to balance work and family life. When in-kind benefits are used, these benefits mostly dominate in the work-family life package. We find that in-kind benefits are more pro-poor than cash-benefits. Only for home care allowances poor children (where they exist) tend to be fully or overrepresented. Here the in-kind benefits occur in the form of subsidized ECEC services. ECEC services often imply parental fees. In most of the countries we studied these fees are income dependent, which makes higher incomes pay much more fees than lower incomes. Consequently, this attenuates the Matthew effect in work-family life policies. In countries with tax advantages for childcare fees, these tax reliefs are also included in our analysis. The redistributive effect of childcare fees is undermined when countries with income-dependent childcare fees also have tax advantages for parental fees. These tax advantages are often (very) pro-rich and do not reach children in poverty. When it comes to the parental care or outsourcing care oriented policies, we find that the countries exhibit a large variation in terms of distributive characteristics. Parental care-oriented policies are very pro-rich in Belgium, and close to proportionality in Estonia, while in Hungary these parental care policies are more pro-poor. Policies for outsourcing care are pro-poor in Belgium, Sweden and the UK, although in Belgium and the UK the tax reliefs are very pro-rich.

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Annex 1: Additional tables and figures

Table A.1: Distribution of children in subsidized(S) and formal(F) ECEC per agegroup over quintiles (based on cash disposable income), 2009

		Q1		Q2		Q3		Q4		Q5		Total	
		S	F	S	F	S	F	S	F	S	F	S	F
BE	0-2	16%	13%	9%	9%	19%	22%	24%	25%	32%	32%	100%	100%
	3+	25%	25%	16%	16%	19%	19%	23%	23%	16%	16%	100%	100%
	Total	22%	21%	14%	14%	19%	20%	23%	24%	21%	22%	100%	100%
EE	0-2	9%	8%	17%	16%	29%	28%	28%	28%	18%	21%	100%	100%
	3+	19%	19%	15%	15%	19%	19%	19%	19%	28%	28%	100%	100%
	Total	17%	17%	15%	15%	21%	21%	21%	21%	26%	27%	100%	100%
GR	0-2	21%	15%	0%	0%	22%	17%	34%	32%	23%	35%	100%	100%
	3+	27%	19%	16%	17%	11%	10%	21%	25%	25%	29%	100%	100%
	Total	26%	18%	12%	13%	14%	12%	24%	27%	25%	30%	100%	100%
HU	0-2	20%	20%	15%	15%	21%	21%	14%	14%	30%	30%	100%	100%
	3+	26%	26%	23%	23%	18%	18%	18%	18%	15%	15%	100%	100%
	Total	25%	25%	21%	21%	18%	18%	17%	17%	17%	17%	100%	100%
IT	0-2	18%	16%	19%	20%	19%	21%	25%	23%	19%	20%	100%	100%
	3+	24%	24%	25%	25%	20%	20%	17%	17%	14%	14%	100%	100%
	Total	23%	23%	24%	24%	19%	20%	18%	18%	15%	15%	100%	100%
SW	0-2	18%	18%	21%	21%	27%	27%	22%	22%	12%	12%	100%	100%
	3+	14%	14%	23%	23%	26%	26%	22%	22%	14%	14%	100%	100%
	Total	15%	15%	22%	22%	26%	26%	22%	22%	13%	13%	100%	100%
UK	0-2	18%	7%	21%	10%	27%	24%	22%	28%	12%	30%	100%	100%
	3+	19%	19%	22%	22%	25%	25%	20%	20%	15%	15%	100%	100%
	Total	19%	14%	22%	17%	25%	24%	20%	23%	15%	21%	100%	100%

Source: own calculations based on EUROMOD, EU-SILC and FRS

Annex 2: Country notes

Annex A. Belgium

Tine Hufkens & Gerlinde Verbist

Early childhood education and childcare services (ECEC) in Belgium is mostly organized at the regional level. The Flemish Community, the French speaking Community and the German speaking Community all have their own childcare structure. Pre-schools are part of the education system which is also a regional responsibility. In this note we discuss the Belgian childcare and pre-school policies (section A.1) and the extensions of EUROMOD to include childcare subsidies and fees in EUROMOD (section A.2).

A.1 Childcare arrangements in Belgium

In Belgium childcare is predominantly characterized by in kind benefits, supplemented by a tax deduction for parental childcare fees. After a short period of maternal, paternity and/or parental leave, childcare is provided by private and subsidized (public and subsidized private) institutions. Childcare is organized on the level of the communities. This implies small differences between the childcare system in de Flemish, French and German Community.

First period after the birth of a child, a mother is entitled to **maternity benefits**. This cash benefit is 80% of her previous earnings in the first month and 75% in the rest of the period. The maternity leave is 15 weeks. **Paternity leave** is 10 days at 82% of his earnings. Parents also have a right to take **parental leave** at a flat rate for three months full time or six months part time (until the child reaches the age of 12 years).

From 3 months old children can go to childcare services. The childcare landscape in Belgium can be divided in two categories: formal and informal care. In the informal childcare care is mainly provided by friends, grandparents or other family members. Since childcare is a responsibility of the Communities, different childcare institutions exist in the Flemish Community and the French-speaking Community. The formal childcare in the Flemish Community is supervised by Child and Family (*Kind en Gezin*, K&G). In the French speaking part formal childcare is supervised by the Bureau of Birth and Childhood (*Office de la Naissance et de la enfance*, ONE). (The service for the German-speaking Community is called the Service for Child and Family (*Dienst für Kind und Familie*, DKF, as this service only concerns a very small part of the Belgian population, we will not go into detail about it.) Within the formal sector private and subsidized facilities can be distinguished both in the Flemish Community and the French-speaking Community. K&G and ONE are both competent in Brussels.

Formal childcare initiatives in the Belgian communities can be collective facilities or organized family care. Collective facilities include day nurseries, after school day care or in Flanders also local services for neighborhood-oriented care[11]. Child minders care for the children in their own house. These two facilities can be subsidized or non-subsidized. Subsidized day nurseries or child minders are

[11] Local services for neighbourhood-oriented care are small childcare initiatives aimed at providing diverse and easily accessible childcare, especially for more vulnerable families.

recognized by K&G in the Flemish Community or by ONE in the French Community. They have to follow certain conditions and regulations to obtain the recognition. The childcare institutions coordinate childcare for children until 12 years old, but the focus is on children from 3 to 30 months. The table below summarizes the different types of childcare.

Table A.1: Child care types in Belgium

	Subsidized (recognized by K&G/ONE)	Non-subsidized (report childcare activity)	Other
Family care	- Child minders (affiliated with Service for child minders/Service for contracted child minders)	- independent child minder	- Informal care (friends or family) (Everyone taking care of children, except relatives, has to report.)
Collective facilities	- Day nursery (and after school child care in separate places, linked to recognized day nursery) - after school child care - Flanders: local services for neighborhood-oriented care -French Community: different forms of day nurseries -from the age of 2.5/3years: nursery school (*kleuterschool/école maternelle*)	- independent day nursery - independent after school care facility - holiday care	

Source: Child and Family and Bureau of Birth and Childhood

Vande Gaer et al. (2013) show that childcare use for children until 3 years old (both informal and formal childcare) in Flanders increased between 2004 and 2009, while it remained stable between 2009 and 2012. In February 2009 63% of the children between 3 months and 3 years old[12] in Flanders was frequently[13] in childcare, while 31% was in not in childcare; 6 % makes limited use. Most recent data from February 2013 shows about 64.4% of the children between 3 months and 3 years old is frequently in childcare and 30% of the children is not. The number of children that makes limited use of childcare remained constant. The reasons not to use childcare are divers (parents want to take care of the child(ren) themselves, the price and/or availability of childcare, employment, etc.). In 2009 the most used childcare form for frequent childcare (28.5%) is care by a child minder (affiliated with the Service for Child Minders and controlled by K&G). Next is care by the grandparents (22.4%) and a day care centre (18.4%) (Hedebouw & Peetermans, 2009; Vande Gaer et al., 2013).

In the French Community, in 2009 45.1% of the children between 0 and 3 years old are in childcare or in pre-primary education. 20.1% of the children in the French Community is in subsidized childcare. Childcare in the French Community, subsidized by the ONE, represents 72.1% of the total childcare places for children from 0 to 3 years (2009). Most recent numbers for Wallonia are for 2012. In 2012 in total 42.3% of the children from 0 to 3 years old were in childcare or in nursery school (ONE, Annual Reports).

[12] We start at 3 months since this is the end of maternity leave. 30 months/2.5 years is the age that children start going to nursery school.

[13] 'Frequently' in child care means that a non-school going child has to go to child care for at least one uninterrupted period of 5 hours per week. Children between 2.5 and 3 years who attend nursery school (full time) have to go to child care minimum once a week.

Numbers for Belgium show an average enrolment rate of 36.6**%** of children under 3-years of age in formal childcare in 2009. Compulsory school starts at the age of 6. But almost all children are enrolled in nursery school/pre-primary education from the age of 2.5 or 3 years. The enrolment rate of children aged three to five years of age in pre-primary educational programmes is with 99.1% in 2009 quasi-universal (OECD Family Database).

In Flanders 60.5 % of the children in childcare (0 to 2/2.5years) is in subsidized childcare. In the French speaking Community about 72.1 % of the children in childcare are in a subsidized institution. Childcare provision in Brussels is predominantly covered by ONE. When a child reaches 2.5 to 3 years of age, she/he usually starts pre-school. In Belgium pre-primary education starts at 2.5 years, most children start between the age of 2.5 and 3 years. Pre-primary education is free of charge.

The price paid by parents depends of the amount of childcare used, the type of childcare and the income of the parent(s). In 2009 parents in the Flemish Community paid on average €13.56 in a day nursery (*crèches*), €7.86 in a day care services (*peutertuinen*) and €13.42 an average in recognized childcare services. For a child minder parents paid €12.60 on average. Following the tariff structure the price paid by parents lies between €1.41 and €25.18 for children of 0-3 years old (prices 2008-07-01 until 2009-06-30). The price depends of the income of the parents. For an income between €37,947.96 and €54,296.39 the parental fee is calculated by multiplying the income with 0.000380, with a maximum of 19.04 €. With a yearly taxable income of more than 54,296.40 the maximum amount is raised with €0.60 per income bracket of €3700, with €25.18 as the absolute maximum.

Table A.2: Formula for the calculation of the parental fee in Flanders, 2009

taxable yearly income < €37,947.96:
(taxable income) * 0,000385
maximum contribution: €14,42
taxable yearly income €37,947.96 - €54,296.39:
(taxable income) * 0.000380
maximum contribution: €19.04
taxable yearly income >= €54,296.40:
Per income bracket of 3700: maximum contribution + 0.60
19.04 + (((taxable income - 54,296.40) / 3700) *0.6)
maximum contribution: €25.18

Source: Child and Family

Table A.3: Parental fees between €37,947.96 - €54,296.39 (background information).

minimum	maximum	parental fee (per day)
54,296.40	57,996.39	19.64
57,996.40	61,696.39	20.24
61,696.40	65,396.39	20.84
65,396.40	69,096.39	21.44
69,096.40	72,796.39	22.04
72,796.40	76,496.39	22.64
76,496.40	80,196.39	23.24
80,196.40	83,896.39	23.84
83,896.40	87,596.39	24.44
87,596.40	91,296.39	25.04
91,296.40	>91,296.40	25.18

Source: Child and Family

For families with a yearly taxable income lower than €13,144.7, an extra 25 % reduction is given, which is gradually phased out. A discount for subsequent children amounts to €2.85. Childcare providers can choose to apply a social tariff for households in a financially difficult situation.

Table A.4: Formula for the calculation of the parental fee for low wages in Flanders, 2009

taxable yearly income < €13,144.71:
((taxable yearly income) * 0,000385) *0.75
taxable yearly income €13,144.70 - €14,344.70:
((taxable yearly income) * 0,000385) *(1-(0.01*(24-((taxable yearly income- 13,144.70) / 50))))
minimum amount (per day): €1.41

Source: Child and Family

The parental fee for childcare for children from 0 to 3 years in the French Community was on average €10.17 for day nurseries(*crèches parentales*), €12.40 for day care centres (*prégardiennats*), €12.54 for day care subsidizes by the FDS2 (fund for solidarity and the development of childcare[14]), €13.41 for child minders (*accueillantes conventionnées*), €14.60 for day nurseries (*crèches*) and €15.13 for day care centres/centre based services(*MCAE, Les maisons communales d'accueil de l'enfance*). The financial contribution paid by parents lies between € 2.14 and €30.21(2010). The price paid depends on the net household income and the time spent in childcare. The price for the second child and following child(ren) is calculated the same way as for the first child, but with an extra 30% reduction.

Table A.5: Formula for the calculation of the parental fee in the French Community, 2008

First child	**From second child on**
minimum amount(per day): €2.05	minimum amount(per day): €2.05
net monthly income < €838.56:	net monthly income < €838.56:
789.89*0.0026	789.89*0.0026*0.70
net monthly income < €853.08:	net monthly income < €853.08:
838.56*0.0038	838.56*0.0038*0.70
net monthly income < €884.68:	net monthly income < €884.68:
853.08*0.0043	853.08*0.0043*0.70
net monthly income < €916.28:	net monthly income < €916.28:
884.68*0.0046	884.68*0.0046*0.70
net monthly income < €947.87:	net monthly income < €947.87:
916.28*0.005	916.28*0.005*0.70
net monthly income < €979.47:	net monthly income < €979.47:
947.87*0.0053	947.87*0.0053*0.70
net monthly income €979.47- €5,150.12:	net monthly income €979.47- €5,150.12:
(net monthly income) * 0.0056	(net monthly income) * 0.0056*0.70
net monthly income > €5,150.12:	net monthly income > €5,150.12:
maximum amount(per day): €28.91	maximum amount(per day): €28.91 *0.70

Source: Bureau of Birth and Childhood

All financial resources, of all family members, are included in the net monthly income. For informal childcare information about prices is not available.

For children under 12 years in childcare, parents can apply a tax reduction that is 45% of childcare fees (with a maximum fee of €11.20 per day qualifying for this reduction).

Childcare is partly financed by the Community and partly by the financial contributions of the families. In Flanders, childcare supervised by K&G, is financed by the Flemish government for €195,163,000 for day care centers/day care services and €129,069,000 for child minders in 2009. The subsidy for recognized day nurseries depends of several specific conditions (Child and Family, 2012). In the French Community ONE receives €206,554,000 from the French Community to finance and subsidize its services (Rapport d' activité 2009). The Flemish and French Community both receive subsidies from the regional government. Table 5 shows the expenditures on childcare in Belgium (in *Level of subsidies per type of childcare*).

Table A.6 shows the subsidy per child for *subsidized* childcare in Belgium. The subsidy per child is calculated on the basis of the number of children in subsidized childcare and the expenditures for subsidized childcare. For the French Community, the financial support cannot be split up into

[14] Places subventionnées par le Fonds de Solidarité et de Développement de l'Accueil de l'Enfant.

different types of childcare. Because of the lack of more detailed data, the subsidy of the French Community is only indicative.

Table A.6: subsidies per child in childcare, 2009

		childcare 0-3 years	childcare 3-12 years
Flemish Community	children in childcare	54 715	61 893
	Expenditure childcare	€324,232,000	€13,620,000
	subsidy per child	€5,925.8	€220.1
French Community	children in childcare	33 947	
	Expenditure childcare	€206,554,000	
	subsidy per child	*€6084,6*	
Belgium (OECD)	subsidy per child	€2039.1[15]	

Source: Child and Family, Bureau of Birth and Childhood and OECD.

The subsidies in Flanders are different for different types of childcare. Table A.7 gives an overview of the co-payments for subsidized day care centers (*kinderdagverblijven*) and child minders.

Table A.7: Total cost and co-payments in Flanders for day care centers and child minders, 2009

	Day care centers	Child minders
Total Cost		
Total cost childcare (in millions)	195.163	129.069
Subsidy (Flemish government) (in millions)	154.017	67.131
Co-payment families (in millions)	41.146	61.938
Cost per child		
Total cost	11,713.76	4,079.56
Subsidy (Flemish government)	9,244.16	2,121.85
Co-payment families	2,469.60	1,957.71
Number of places	16661	31638

Source: Child and Family

Table A.8: Total cost and co-payments in French Community, 2009-2013

Total	**2009**	**2010**	**2011**	**2012**	**2013**
Total cost childcare	206,554,000	233,205,108	257,028,823	257,844,093	262,429,064
Subsidy (French Community)	*136,325,640*	155,240,975	155,240,975	171,982,010	173,481,800
Co-payment families	*70,228,360*	*77,964,133*	*101,787,848*	*85,862,083*	*88,947,264*

Source: ONE: rapport d'activité 2008, rapport d'activité 2009 (bilan d'une décennie 2000-2009), rapport d'activité 2010, rapport d'activité 2011, rapport d'activité 2012, rapport d'activité 2013. Note : information on subsidies in 2009 was limited, the amount of net subsidies is estimated based on the net subsidies in other years. Co-payments of the families are based on own calculations.

[15] OECD 2008, Expenditure per child (pre-school) on childcare support in national currencies.

Table A.9: Cost and co-payments per child in French community, 2009

Total cost per child	7,702
Subsidy per child	5,083
Co-payment per child	2,619
Number of **places**	26,818

Note: based on own calculations.

Table A.10 describes the subsidy per child for pre-primary education, based on the full time equivalent enrollment in Belgium.

Table A.10: subsidies per child in pre-primary education, Belgium, 2009

children in education	424 853
Expenditure education	€2,095,830,000
subsidy per child	4,933

Source: Social Expenditure, OECD.

A.2 Data and simulations

The following assumptions are made to impute childcare cost in EUROMOD:

- In Flanders 60.5% of all children in childcare is in subsidized childcare, 39.5% is in non-subsidized private childcare. We randomly select children in subsidized childcare according to these numbers. In the French speaking region 72.1% of the children in childcare is in subsidized childcare. For this region we also randomly select the cases in subsidized childcare. In the capital region, Brussels cases in childcare are too limited, so we add these cases to the French speaking region.
- For private childcare we simulate an average fee. Since we only have information on the average fee in Flanders we use this fee (€19.81 per day) for all regions.
- For the cost of childcare in Flanders we use the cost per child in a day care center.
- For private institutions we do not calculate subsidies, although some private childcare centers are entitled to subsidies.
- The tax reduction for parents who pay a fee for childcare is included in EUROMOD . We only calculate the fiscal reduction for children in childcare under three. Parents are eligible for the fiscal reduction for childcare costs until their child is 12 and if it is in childcare. Since we don't simulate out-of school care between 3 years and 12 years, we cannot calculate the fiscal deduction either.

Table A.11: Summary to simulate child care: Belgium

	Description	Characteristics/ Conditions	Budget (as % of GDP, 2009)	Use (as % of targeted children)	In EUROMOD (feasibility): simulated, imputed?	Country/region level (NUTS classification SILC)
Cash benefits						
- Home care allowance	Not applicable	-	-	-	-	-
- Maternity leave, paternity leave, parental leave	ML: 15 weeks at 80% (first month) – 75% (rest) of (capped) earnings PtL: first 3 days: full ways, then at 82% of (capped) earnings PrL: 3(6) months full (part) time, at flat rate.	-	0.20%	ML : 0.80 % (of population, 2010)	No data to simulate.	Belgium
- Financial support through tax system	Tax deduction for parental fees.	If in recognized childcare facility	-	-	included in tin_be (income tax) in EUROMOD.	Belgium
"In kind" benefits						
- Family care (subsidized)	Childcare initiatives that follow regulations of K&G (Flemish) or ONE (French Community) for family care initiatives.	Income and family size dependent Partly paid by parents, partly by Community.	0.1% (childcare spending)	39.2% (2010, average enrolment rate of children under 3 in formal childcare)	Flemish public childcare and childcare French Community added to EUROMOD.	Flemish and French Community
- Collective child care (subsidized)	Childcare initiatives that follow regulations of K&G (Flemish Community) or ONE (French) for day nurseries/collective care services.	Income and family size dependent Partly paid by parents, partly by Community.				Flemish and French Community
- Private childcare (non-subsidized)	Family care or collective child care	For children from 3 m - 2.5/3 y or after school care for those above 2.5/3ys. Can set its own price. Report to K&G / ONE mandatory.	n.a.-	20.9 % (2008, 0-2 years old, Use of informal childcare arrangements during typical week by children's age) 26.8% (2008, 3-5 years old, during a typical week)	Private childcare added to EUROMOD.	Belgium
- Pre-primary education	Nursery school (kleuterschool/école maternelle): age 2.5 to 6	free of charge (only incidental costs)	0.6% (pre-primary spending)	99% (2010, average enrolment rate of children aged 3-5 year in pre-school educational programmes)	/	Belgium: all Communities

n.a. = not available *Sources: OECD expenditures data, OECD Family Database, Federale Overheidsdienst Financiën*

Annex B. Estonia

Alari Paulus

This report provides an overview of early childhood education and childcare services (ECEC) in Estonia for children under the schooling age. The report refers to the system and policies in place in 2009, also indicating later developments, and focuses in particular on the form and extent of public subsidies. The section B.1 provides background information and Section B.2 discusses options for extending the modelling of childcare benefits, subsidies and fees in EUROMOD.

B.1 Childcare arrangements

Childcare in Estonia is dominated by two types of arrangements: parental leave and pre-school institutions both of which receive very significant public funding. In addition, there are non-educational childcare services and informal services which are essentially private funded. The system is summarized in Table B.1.

Table B.1: Childcare system in Estonia

		Publicly funded	
		Yes (or to a large extent)	No (or to a limited extent)
Part of education system	Yes	Pre-school institutions (crèche, kindergarten, kindergarten-school)	
	No	Parental leave	(Non-educational) child care services; informal services (e.g. other family members and relatives)

First, there are cash benefits to support parental leave from paid work prior to childbirth and afterwards, providing replacement income at the level of 100% of previous earnings and for a combined duration of 18 months. More specifically, an insured pregnant woman can receive **the maternity benefit** (*sünnitushüvitis*) for up to 140 calendar days, and afterwards **the parental benefit** (*vanemahüvitis*) until 575 calendar days since the pregnancy and maternity leave commenced. The gross entitlement of each benefit is equal to person's average gross earnings in the previous calendar year and both benefits are taxable. The parental benefit is capped at three times the national average gross earnings (two years ago) and persons who worked in the previous year but had average earnings below the national minimum wage, receive the parental benefit in the amount equal to the minimum wage. Persons who did not have any earnings are paid at the lower rate (equal to the level of minimum wage in the previous year, since 2008). The duration of the parental benefit and minimum and maximum rates in 2009-14 are shown in Table B.2. Part of the parental leave could be also taken up by fathers (and hence receive the parental benefit) though this option has been used very little in practice: only about 3.5% of the recipients of the parental benefit in 2008 were men (Võrk et al., 2009). In 2009, there were more than 12 thousand people receiving the maternity benefit and nearly 20 thousand people receiving the parental benefit (see Table B.3). In comparison, the number of births in 2009 was 15.8 thousand, falling gradually to 13.8 thousand in 2011-13.

Table B.2: The parental benefit

	2009	2010	2011	2012	2013	2014
Maximum duration, days	575	575	575	575	575	575
Minimum rate if worked previously (i.e. minimum wage), EUR per month	278	278	278	290	320	355
Minimum rate if no previous earnings, EUR per month	278	278	278	278	290	320
Maximum rate, EUR per month	1,965	2,257	2,157	2,143	2,234	2,378

Source: Võrk and Paulus (2013), the Parental Benefit Act, State Budget Acts.

Once the parental benefit is exhausted, one of the parents can receive **the childcare allowance** (*lapsehooldustasu*) which is a non means-tested benefit paid in relation to raising a child aged under 3 (€38.35 per child per month) or children aged 3-8 (€19.17 per child per month) if there are 3 or more children or a child aged under 3. (The amounts have been kept constant since 2001.) The eligibility does not depend on whether the parent is working or not. While the number of recipients of the childcare allowance exceeds that of the parental benefit by more than two-folds, the total expenditure is only about 10% of the latter (Table B.3). There is an additional **parental allowance for large families** (*seitsme- ja enamalapselise pere vanema toetus)* raising seven or more children (€168.73 per month per family, since 2007) but its share of aggregate expenditure is very minor due to very narrow targeting.

Table B.3: The number of recipients and total expenditure of childcare and child related cash benefits

	Recipients				Expenditure (mln EUR)			
	2009	2010	2011	2012	2009	2010	2011	2012
Childcare related								
Maternity benefit	12,456	11,007	10,012	9,770	42.3	36.1	31.1	32.2
Parental benefit	19,668	19,768	19,004	17,706	152.7	174.0	173.3	159.5
Childcare allowance*	40,928	40,629	41,034	41,581	14.6	14.8	14.8	14.7
Large family parent allowance*	1,346	1,227	1,205	1,161	0.4	0.3	0.3	0.3
Child related								
Childbirth allowance*	15,930	15,724	15,361	13,724	5.1	5.0	4.9	4.5
Child allowance*	261,443	258,695	255,522	252,255	70.8	70.0	68.9	68.5
Single parent child allowance	24,310	23,260	22,223	21,106	5.7	5.5	5.3	5.0

*Source: Võrk and Paulus (2013), Tables 4.5-4.8. Notes: recipients refer to the number of parents in the case of the maternity benefit and the parental benefit, the number of children for other benefits. * denotes benefits currently simulated in EUROMOD (the rest are non-simulated but included in the input dataset). In 2013, a subsistence benefit for families with children was introduced, which is also simulated in EUROMOD.*

The rest of cash support takes the form of family benefits and an additional income tax allowance which are not meant to assist specifically with childcare. The main family benefits are the childbirth allowance (*sünnitoetus*), the child allowance (*lapsetoetus*), the single parent child allowance (*üksikvanema lapse toetus*) and, since 2013, the subsistence benefit for families with children (*vajaduspõhine peretoetus*). Among these, the child allowance is by far the largest instrument, both in terms of recipients and expenditure, and in comparison with the childcare related instruments only surpassed by the expenditure of the parental benefit (Table B.3). For further details on cash benefits, see Võrk and Paulus (2013), section 1.2.2 and section 2.5. The child-related tax allowance

allows one of the parents to claim a tax allowance in the same amount as the basic allowance for every child from the second onwards - see Võrk and Paulus (2013), section 2.7.3.

Second, there is a system of pre-school child care institutions (*koolieelsed lasteasutused*) which provide **full-time** day care in combination with pre-primary education.[16] While the attendance is voluntary, every local municipality must ensure that all resident children aged from 1.5 to 7 years, i.e. under the compulsory schooling age[17], have the opportunity to attend a pre-school institution. There are two types of institutions: crèche for children up to the age of 3 and kindergarten for children up the age of 7. The latter can be also combined with a basic school. Kindergartens account for the majority of pre-school institutions (83% in 2009), followed by kindergarten-basic schools which number (and share) has increased from 89 (14%) in 2007 to 122 (19%) in 2013, while the share of crèches is only 1% (see Table B.4). The total number of pre-school institutions was 652 in 2013, having increased by 5% since 2007. In terms of the number of children attending pre-school child care institutions, kindergartens are even more dominant with about 93-94% share.

Table B.4: Pre-school child care institutions by type

	2007	2008	2009	2010	2011	2012	2013
Crèche	8	8	6	6	6	6	6
Kindergarten	527	529	529	525	521	521	524
Kindergarten-school	89	99	100	107	116	117	122
Total	**624**	**636**	**635**	**638**	**643**	**644**	**652**

Source: ESA statistical database, indicator HT02, accessed on 9/10/14.

According to the Estonian Education Information System (EHIS), over 90% of pre-school child care institutions are run by local municipalities and less than 10% are private. Municipal pre-school institutions are largely publicly funded as the fees which parents can be charged are limited to 20 percent of the national minimum wage (Table B.2, row 2) plus the full cost of catering. The fees are set by local municipality councils and can be differentiated on the basis of the age of the child, operating costs of the institution, financial situation of the family etc. Across local municipalities the fees varied from 0 to €56 per month and the average catering cost per child was €20 per month in the beginning of 2009 (Ainsaar and Soo, 2009). While total cost (including investments) per child in a municipal kindergarten is lower on average in towns compared with rural municipalities, co-payments by parents are on average higher in towns – see Table B.5. Due to this, parents covered on average 11% of total costs in rural municipalities and 18% in towns in 2009 (and 12% overall). By 2012, the proportion had increased to 12% for rural municipalities and 21% for towns (and 14% overall). Table B.5 also shows the average monthly total cost per child, but calculated as the aggregate cost divided by the number of enrolled children.

[16] Regulated by the Pre-School Child Care Institutions Act (*Koolieelse lasteasutuse seadus*).

[17] According to the Basic Schools and Upper Secondary Schools Act, the school year starts on the 1st of September and is compulsory for children aged 7 or older by the 1st of October that year (and until they acquire basic education or reach the age of 17). In exceptional circumstances, compulsory school attendance can be postponed by one year. Compulsory schooling is provided free of charge.

Table B.5: Average monthly total cost and co-payments by parents for municipal kindergartens

	Rural municipalities	Towns	All municipalities
Total cost per child			
2008	n/a	n/a	n/a
2011	€ 245	€ 192	€ 208
Co-payments per child			
2009 (Jan)	€ 28	€ 39	€ 30
2012 (Jan)	€ 34	€ 47	€ 36
Share of co-payments			
2008	11%	18%	12%
2011	12%	21%	14%

Source: own calculations based on data collected by Ainsaar and Soo (2012); Cost per child calculated as aggregate cost / total number of enrolled children; co-payments per child calculated as the average across local municipalities.

Overall, large public subsidies explain why nearly 90% of children aged 3-6 attend pre-school child care institutions (Table 8). The share for children aged 0-2 is only about one third, presumably due to the relatively well paid parental leave which can last up to 18 months after the birth. Furthermore, the legal obligation to provide pre-school services on the one hand and limited scope for charging users on the other hand, results in waiting lists as not all municipalities are able to provide places for all their resident children. According to Ainsaar and Soo (2009, p. 9), 39% of municipalities had waiting lists in 2009 and were short of approximately 4 thousand places, the problem being more acute for the largest centres. Limited supply has forced some parents to opt for private kindergartens instead and this has put pressure on local municipalities to provide subsidies also for the latter, at least when they are unable to provide enough places in municipal kindergartens. While existing legislation allows local municipalities to support private kindergartens, it is not required and only after several recent successful legal cases has this become general practice.

Table B.6: Children attending pre-school child care institutions

	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Crèche	357	378	334	338	347	346	349
Kindergarten	55,396	58,031	58,780	60,033	61,599	62,477	63,619
Kindergarten-school	3,181	3,707	3,690	3,888	4,261	4,211	4,716
Total	**58,934**	**62,116**	**62,804**	**64,259**	**66,207**	**67,034**	**68,684**
Share of children aged 0-2, %	n/a	n/a	35	34	34	30	32
Share of children aged 3-6, %	89	90	87	86	87	87	88
Share of children aged 1-6, %	73	74	73	72	72	73	75

Source: ESA statistical database, indicator HT01 and HT02, accessed on 9/10/14. Notes: share of age groups based on age as of Dec 31st in 2007-08 and age as of Sep 1st in 2009-13.

Third, there are non-educational childcare services among which we can distinguish between formal and informal service provision. Formal (non-educational) childcare services (*lapsehoiuteenused*)[18] are dominated by private service providers whose number increased rapidly in 2008-10 and since then has been going through some consolidation (see Table B.7). By informal (non-educational) childcare services we refer to (unpaid) childcare provided by other family members, relatives or friends.

[18] Regulated by the Social Welfare Act (*Sotsiaalhoolekande seadus*).

Table B.7: Formal (non-educational) child care providers by ownership

	2007	2008	2009	2010	2011	2012	2013
Public	3	9	9	34	29	23	26
Private	81	132	220	305	272	272	262
Total	**84**	**141**	**229**	**339**	**301**	**295**	**288**

Source: Ministry of Social Affairs, S-Veeb, indicator LH05/LI05/LI15, accessed on 9/10/14.

The number of formal (non-educational) child care providers appears initially relatively large compared with pre-educational institutions but is due to the fact that many of the former are much smaller service providers. This is reflected in the number of children aged 0-6 receiving such service: about 3 thousand in 2009 (Table B.8) or less than 5% of those attending pre-school institutions (Table B.6) – though the numbers have been increasing steadily throughout the period of 2007-13. The age breakdown further reveals that non-educational child care services are mostly used for children aged 2 (and younger) which suggests that the availability of pre-school institutions for young children (aged 1.5-3, i.e. the target age group for the crèche level) might be more limited compared with the older children (aged 3-6). There does not appear to be statistics available on how the entry-level age threshold varies across pre-school institutions which is likely to be higher than the legal requirement of 1.5 years. Table B.8 also provides information on the share of children who receive child care service less than 4 hours per day (recall that pre-school institutions usually provide full time service). It shows that more hours of child care is used for older children (except partly for those aged 4-6) and the intensity of service usage has increased notably in 2008-2012 (though decreasing somewhat again in 2013).

Table B.8: Children attending (non-educational) child care service

	2007	2008	2009	2010	2011	2012	2013
Total number of children							
aged 0-1	811	698	686	711	790	911	1126
aged 2	1,020	1,496	1,524	1,738	2,042	2,309	2,442
aged 3	255	465	460	633	785	792	1058
aged 4-6	131	200	259	392	513	612	716
total (aged 0-6)	**2,217**	**2,859**	**2,929**	**3,474**	**4,130**	**4,624**	**5,342**
Share of age group, %							
aged 0-2	4.2	4.8	4.7	5.1	6.0	7.1	8.2
aged 3-6	0.7	1.3	1.3	1.8	2.2	2.3	2.9
Share of children receiving service less than 4 hours per day, %							
aged 0-1	53	49	57	29	25	23	28
aged 2	47	39	34	22	17	15	22
aged 3	31	25	27	27	18	13	20
aged 4-6	26	29	19	35	27	19	15
total (aged 0-6)	**46**	**38**	**37**	**26**	**20**	**17**	**22**

Source: Ministry of Social Affairs, S-Veeb, indicator LH01/LI01 and LH03/LI03/LI13, accessed on 9/10/14; own calculations. Notes: share of age group is calculated with respect to the yearly average size of the age group (ESA indicator RV0212).

Table B.9 provides some insights to the cost of (non-educational) child care services. The average monthly cost per child in 2009 was €77 which is about one third of the average total cost per child in municipal kindergartens in 2008 (see Table B.5) though the former is unadjusted for hours of childcare. The same data source (i.e. Ministry of Social Affairs database) includes information on child

care hours only for 2007 on which basis the full-time equivalent cost (i.e. for 160 hours per month) is €622 per child which is roughly twice the average cost for municipal kindergartens (in 2008). There is also information available for 2007 showing that 57% of funding was covered by parents, 19% by public funds and 24% by other (unspecified) sources.

Table B.9: Financing of (non-educational) child care service

	2007	2008	2009	2010	2011	2012	2013
Number of children (aged 0-17)	2,277	2,997	3,137	3,762	4,459	4,987	5,771
Total annual expenditure (mln €)	1.713	2.722	2.905	4.008	4.592	5.814	7.116
Average monthly cost per child (€)	63	76	77	89	86	97	103

Source: Ministry of Social Affairs, S-Veeb, indicator LH04/LI04, accessed 9/10/14; own calculations.

In parental fees catering costs are excluded, these costs account for about 2/3 of the average co-payment. Table B.10 shows the monthly cost per child per county for 2008 and 2011. As these are considered to be part of educational expenses, parental fees for kindergartens are also tax deductible. For working parents this means effectively about a discount of 20% on gross fees.

Table B.10: Monthly cost per child (EUR), 2008 and 2011

County	Total cost		Paid by local government		Co-payment*	
	2008	2011	2008	2011	2008	2011
Harjumaa	211	184	168	147	43	52
Hiiumaa	260	227	197	172	28	33
Ida-Virumaa	265	231	238	208	27	32
Jõgevamaa	309	270	240	209	27	32
Järvamaa	299	261	208	182	29	35
Läänemaa	250	218	209	182	31	37
Lääne-Virumaa	295	257	205	179	27	32
Põlvamaa	325	283	217	189	24	29
Pärnumaa	258	225	235	205	32	38
Raplamaa	253	221	209	182	33	39
Saaremaa	230	200	183	160	25	30
Tartumaa	245	214	207	181	31	37
Valgamaa	257	224	228	198	26	31
Viljandimaa	261	227	221	193	33	39
Võrumaa	249	217	195	170	23	27
Total	239	208	195	170	30	36

Source: own calculations based on data collected by Ainsaar and Soo (2012); Note: 2008 are 2011 figures deflated by growth in average amount.

*Note: * calculated as the average across local municipalities.*

There are no administrative data sources available which could provide comprehensive information covering all forms of childcare discussed above as the oversight for different institutional forms is divided between various government departments. Some overall insights are only possible to gain from the survey data – the Estonian Labour Force Survey (LFS) and the Estonian SILC. These are also the only sources available covering informal (unpaid) services. Table B.11 draws on the 2010 LFS and shows that 66% of children aged 0-6 use some form of child care and confirms that pre-school

institutions are the most prevalent form (55%). However, it is also notable that a very substantial share (27%) draws additionally – the LFS allows for multiple choices – on unpaid informal care. The share of paid (and largely private) care is very minor (2-3%). Table B.11 also indicates average hours by type of activity: pre-school institutions provide effectively full-time child care and those drawing on unpaid informal care use it 9.5 hours per week on average. Those relying on other (paid) care use it more than 14 hours per week on average (cf. Table B.8) which is another indication that it substitutes rather than complements pre-school institutions. Finally, there is also some variation across the income distribution in terms of childcare usage. First, the share of children attending pre-school institutions is slightly lower in the first quartile (52% vs 55-59%). Second, a much larger proportion of children from better off households attends hobby groups and is taken care by relatives and friends.

Table B.11: Use of childcare services for children aged 0-6 by household income quartile, 2010

	Number of children (thousand)					Share of total (%)					Average weekly hours
	Q1	Q2	Q3	Q4	**Total**	Q1	Q2	Q3	Q4	**Total**	
Pre-school institutions	23	14.1	10.5	9.6	**57.2**	51.7	58.8	57.4	55.5	**54.9**	39.9
Hobby group	3.1	3.6	2.6	3.4	**12.7**	7	15	14.2	19.7	**12.2**	2.8
Other institution or paid child-minder	n/a	n/a	n/a	n/a	**2.3**	n/a	n/a	n/a	n/a	**2.2**	14.4
Relatives and friends (unpaid)	11.8	5.4	4.9	6	**28.1**	26.5	22.5	26.8	34.7	**27**	9.5
None of above	15.5	7.7	6.3	5.6	**35.1**	34.8	32.1	34.4	32.4	**33.7**	-
Total	**44.5**	**24**	**18.3**	**17.3**	**104.2**	**100**	**100**	**100**	**100**	**100**	**38**

Source: ESA statistical database, indicator TTP01 and TTP04 (based on the Estonian LFS), accessed on 9/10/14.
Note: multiple choices allowed.

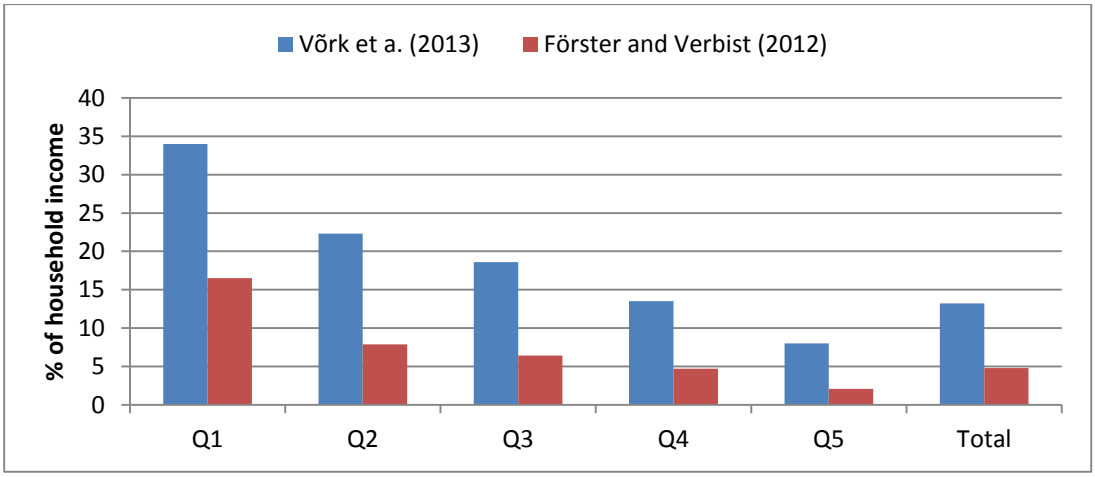
Drawing on information in Ainsaar and Soo (2012), the Estonian SILC 2011 and EUROMOD, Võrk et al. (2013) estimate the distributional effects of public subsidies for pre-school education (and childcare) together with family cash benefits and tax concessions. The results are based on average spending on pre-primary education per child (reported by local municipalities in 2011). They find that cash support and public subsidies account similarly for a much larger share of extended income for poorer families and it is only slightly more pronounced for public subsidies. Their estimates are notably higher than those by Förster and Verbist (2012) who use the SILC 2007 and cost information on pre-primary education from the OECD Education Database (the amounts for childcare come from various national sources) – see Figure B.1. These amounts are per user of pre-primary education. The differences are likely driven by different data sources on public subsidies rather than methodological differences (see notes for the figure)[19]. Another difference between the two analyzes is that Võrk and Paulus only consider households with young children using childcare services childcare services, while Förster and Verbist consider all households with young children. This presumably includes those aged 0-2 who use formal childcare very little. Võrk et al. consider households with children under the age of 7, Förster and Verbist under the age of 6. Võrk et al. present the ECEC-costs as the percentage of the extended income, Förster and Verbist present the costs as a percentage of the

[19] The estimate of total ECEC for Estonia in Verbist and Matsaganis (2012, Figure 2f) and Verbist et al. (2012, Figure 20), which uses the same data sources as in Förster and Verbist (2012), is calculated across all households and hence lower (1.5-1.6% of household disposable income).

disposable income. The first assume full time use, not adjusted with the hours in childcare, Förster and Verbist adjusted with hours. In both studies, the effect of tax deduction is not included.

Võrk et al. (2013) also simulate the effects of alternative pre-school and childcare policy options on the income distribution and work incentives. In addition, Võrk and Paulus (2007) have analysed in detail the impact of family cash benefits on poverty and Võrk et al. (2009) the effect of the parental benefit on fertility and employment.

Figure B.12: Share of ECEC public subsidies of household income by income quintile



Source: Võrk et al. (2013), Figure 10; Förster and Verbist (2012), Table 4.

Notes: Võrk et al. (2013) provide results for households with children aged under 7, as the percentage of (equivalised) extended income with quintiles constructed on the basis of all households. Förster and Verbist (2012) provide results for households with children aged under 6, as the percentage of disposable income with quintiles based on households with young children only.

B.2 Data and simulations

Previous section provides an overview of national information available on the usage and cost of various forms of childcare. On this basis, Table B.12 validates survey estimates from the EU-SILC 2010. Statistics on pre-school attendance match well with information from the administrative sources (Table B.6), the relatively small discrepancies shown are likely due to how age cut-offs are defined. The proportion of children attended by a professional child minder (or attending a day care centre) is similarly to Table B.8 very low, though the age-pattern does not match. On the other hand, there are rather few observations in the SILC, so the variation across age groups is not strongly established there. There are no administrative data sources available for the share of unpaid child care but another survey (LFS) shows a similar magnitude for the proportion of families relying on this.

Table B.12: Validation of EU-SILC2010 statistics on childcare

	EU-SILC 2010	Alternative estimates	Source
Pre-school (aged 0-2)	26.2%	35% (2009)	Table (register)
Pre-school (aged 3-5)	92.5%	87% (aged 3-6, 2009)	
Pre-school (aged 6)	97.4%		
Pre-school (aged 6-12)	17.4%		
Compulsory school (aged 6-12)	82.4%		
Centre-based services (aged 6-12)	18.0%		
Day care centre (aged 0-5)	<0.5%	4.7% (aged 0-2, 2009),	Table (register);

Professional child minder (aged 0-2)	2.0%	1.3% (aged 3-6, 2009); 2.2% (aged 0-6, 2010)	Table(LFS)
Professional child minder (aged 3-5)	4.6%		
Professional child minder (aged 6-12)	1.1%		
Unpaid child care (aged 0-2)	32.8%	27% (aged 0-6, 2010)	Table (LFS)
Unpaid child care (aged 3-5)	33.4%		
Unpaid child care (aged 6-12)	16.0%		

Source: EU-SILC 2010 results from the WP8 guideline notes.

To impute the value of public childcare (i.e. cost) and fees in EUROMOD, it seems reasonable to take the following approach:

- we assume that all are public. Because of the regional differences, we use the average monthly cost per child per region. We have no information on the average cost in 2009, so we use the deflated 2011 cost. The costs are deflated using the growth rates based on Table 3 in the Appendix (even though it provides 2008 and not 2009 figures). In de period 2008-2011 the total cost per child decreased (presumably, due to cost cutting and saving following the crisis) and co-payments increased. (By using e.g. the general CPI, one would miss this trend.) The attendance at pre-school institutions is typically full-time (less than 10% of children attending pre-school institutions in EU-SILC 2010 report fewer than 30 hours of service per week). While some families are waived of fees on the grounds of their financial situation, their number is likely to be small and hence the overall income gradient of fees is weak and can be ignored.
- Other (paid) childcare: assume all is privately provided and apply average costs at the national level of which a small proportion (20%) can be assumed to be funded by local municipalities (see above). This is anyway used only by a very small proportion of families with young children and at very low intensity (nearly 80% of children taken care by a professional child minder receive only 2 hours of service per week according to EU-SILC 2010). (average of € 77 per month)
- For unpaid childcare we assume no costs.
- The fees for kindergarten are tax deductible. The tax deduction is also simulated.
- Local currency in Estonia in 2009 was Estonian Kroon. This currency is used as the input and output currency in EUROMOD.

Table B.3 above also indicates which child and childcare cash benefits are simulated in EUROMOD, while the rest are read off from the input dataset. It is essentially the maternity benefit and the parental benefit which are currently non-simulated (due to the lack of information on previous earnings).

Annex C. Greece

Niki Kalavrezou & Manos Matsaganis

This report provides an overview of early childhood education and childcare services (ECEC) in Greece for children under the schooling age. The report refers to the system and policies in place in 2009, also indicating later developments, and focuses in particular on the form and extent of public subsidies. The first section provides background information and Section C.2 discusses options for extending the modelling of childcare benefits, subsidies and fees in EUROMOD.

C.1 Childcare arrangements in Greece

Formal childcare policies[20] are traditionally given low priority in Greece not only by the government, but by families as well. High rates of informal childcare provided mainly by family members (and consequently low enrolment rates in formal childcare providers, especially for children under 3) reveal deeply rooted cultural preferences linked to strong family ties as well as an inadequate state interest in the proper functioning of formal childcare.

During the last years, there has been an improvement in the official organizational structure of childcare reflecting the late adaptation to the socioeconomic changes that occurred during the last four decades. These altered the composition and needs of families, and significantly raised the demand for childcare services. Nonetheless, policy has adapted slowly and inadequately to the changing context: Greece still displays one of the lowest rates in official childcare enrolment in the EU, and is far from achieving the 2002 Barcelona objectives[21]. EU-SILC data for 2012 showed that only 20% of children under 3 received formal childcare in Greece, while among children between 3 and compulsory schooling age the proportion receiving formal childcare was 75%.

Table C.1: childcare system in Greece

	Publicly funded		**Privately funded**		**Informal care**
	7 months to 5 years	4 to 6 years	2 months to 5 years	4 to 6 years	
Type of care	Early childhood care	Early childhood education	Early childhood care	Early childhood education	Family care: in the home of the child
Provider	Nurseries and day-care centres	Kindergartens	Nurseries and day-care centres	Kindergartens	Babysitter/ child minder
Regulator	Ministry of Interior and Municipalities	Ministry of Education and Religious Affairs	Ministry of Interior and Municipalities	Ministry of Education and Religious Affairs	-

[20] The European Commission refers to childcare policies as Early Childhood Education and Care (ECEC).

[21] The Barcelona target encourages member states to provide childcare to at least 33% of children under 3 years old and to at least 90% of children between the age of 3 and mandatory school age by 2010.

The cash benefits for **maternity leave** differ significantly between private and public sector workers. Table C.2 provides an overview of parental leave policy in Greece. Note that enforcement of parental leave in the private sector is incomplete. The maternity benefit is 20 weeks in the public sector. Two months before and three months after child birth. Workers in the private sector receive 17 weeks of paid maternity leave. 8 weeks before and 9 weeks after child birth. **Parental leave** in Greece is 14 weeks, this is unpaid.

Table C.2: Parental leave in Greece

Type	Maximum length	Value	Beneficiary
Maternity leave			
public sector	20 weeks	paid (earnings and social contributions)	mother
private sector	17 weeks		
Paternity leave			
public sector	2 days	paid (wage only)	father
private sector	2 days		
Parental leave			
public sector	14 weeks	Unpaid	either parent
private sector	14 weeks		
Reduced hours of work			
public sector	208 weeks / 4 years (aged 0-2: 2h/pw; aged 2-4: 1h/pw)	no reduction in earnings	mother
private sector	120 weeks at 1 h/pw (or 52w at 2h/pw + 20w at 1h/pw)		
Special leave			
public sector	n.a.		mother
private sector	24 weeks	benefit at minimum wage paid by Public Employment Service	

Source: General Confederation of Workers of Greece

Other cash support for families with children include the birth grant, the child benefits (since 2013), the large family benefit, the 3rd child benefit and income support to families with children in compulsory education. As for the level of public spending for family benefits and services, some information is available from the OECD Family Database (including all children, below as well as above compulsory schooling age). The data show that the overall level of public spending for families with children in Greece is well below the OECD average.

Table C.3: Public spending on family benefits (as % of GDP) in 2009

	Cash benefits	Services	Tax relief	Total
Greece	1.02	0.40	n.a.	1.43
OECD average (33 countries)	1.41	0.94	0.28	2.61

Source: OECD Family Database

Children can go to childcare from two months or 7 months. Pre-primary school care and education in Greece is split into two main categories. Nurseries or day-care centres provide *early childhood care* to children between 2 months (or 7-8 months for the public sector nurseries) and up to 5 years of age. Kindergartens provide *early childhood education* to children between 4 years and up to 6 years of age. The compulsory schooling age in Greece is 6 years and lasts for 10 years, but pre-school at the age of 5 is also compulsory (1 year of pre-school + 6 years of primary school + 3 years of junior high school).

Table C.4: childcare system in Greece

	Child age		
	2 months to 5 years	7 months to 5 years	4 to 6 years
Type of care	Early childhood care	Early childhood care	Early childhood education
Provider	Nurseries and day-care centres	Nurseries and day-care centres	Kindergartens/ pre-schools
Regulator	Ministry of Interior and Municipalities	Ministry of Interior and Municipalities	Ministry of Education and Religious Affairs
Type	Private	Public	Public and private

Families with a 4-year old child can either choose nurseries or kindergartens, even though care is not compulsory until children reach 5 years of age. It is also clear that there is a gap in public childcare provision for infants aged below 7 months. The operation of kindergartens is under the jurisdiction of the Ministry of Education and Religious Affairs (reflecting the educational dimension of care given to children just before primary school), whereas the operation of nurseries and day-care centres is under the jurisdiction of the Ministry of Interior and is run by the Municipalities (reflecting the care or welfare aspect of childcare for younger children).

As to the differences between private and public provision, these are not extensively documented. The Hellenic Statistical Authority (ElStat) data on pre-school attendance (at the ages of 5 and 6) show that in 2012-2013 private kindergartens accounted for 8.3% of schools catering for children aged 5 and 6, and for 6.6% of all children attending such schools. In 2008-2009 the corresponding shares were 5.3% and 6.7% respectively. Table C.5 shows the evolution of primary education between 2000 and 2013, this gives an indication of the public-private provision of pre-schools/kindergartens.

According to EU-SILC data, 89% of children under 3, and 42% of children between 3 and compulsory schooling age, in 2009 were not receiving any formal childcare in Greece. Figures from the OECD Family Database provide a more detailed, but similar, picture of enrollment rates by age: in 2010 only 11,3% of children under 3, 1,7% of children aged 3, 54,1% of children aged 4 and 89,7% of children aged 5 were enrolled in official childcare in Greece. It is notable that 10% of pre-school children at compulsory schooling age (5 year-olds) were not receiving any formal pre-school education.

Table C.5: Primary education (kindergartens): Schools and number of pupils, 2000/2001 – 2012/2013

Total	2000/01	2002/03	2004/05	2006/07	2008/09	2009/10	2010/11	2012/13
All								
Schools	5,624	5,670	5,676	5,693	5,979	6,064	6,027	5,792
Pupils	145,513	142,305	142,369	143,716	158,290	159,502	165,233	166,576
Public								
Schools	5,511	5,560	5,557	5,576	5,660	5,658	5,572	5,309
Pupils	140,340	137,572	137,770	139,226	147,692	147,606	153,217	155,541
Private								
Schools	113	110	119	117	319	406	455	483
Pupils	5,173	4,733	4,599	4,490	10,598	11,896	12,016	11,035
Private as % of all								
Schools	2,0%	1,9%	2,1%	2,1%	5,3%	6,7%	7,5%	8,3%
Pupils	3,6%	3,3%	3,2%	3,1%	6,7%	7,5%	7,3%	6,6%

The **fees** are significantly lower in the case of public provision, while the demand for childcare places with public providers (at subsidised prices) exceeds their supply. Also, childcare provision in some geographical areas is especially problematic. Fees for public *early childhood care* (nurseries) are set by local, not national, government. On the other hand, public *early childhood education* (provided by kindergartens under the Ministry of Education) is free of charge.

Table C.6 shows the fee structure for the nurseries belonging to the City of Athens in 2010, Table C.7 shows the current fee structure City of Athens. Between 2010 and 2014 monthly fees were reduced and the tariff structure was changed in the Municipality of Athens.

Table C.6: Childcare fees at municipal nurseries in Athens, 2009-2010

Family Income (in euros)	Monthly fee (in €) for	
	1 Child	2 Children
12001-13000	45	65
13001-15000	60	90
15001-18000	70	105
18001-24000	80	120
24001-30000	100	140
30001-33000	110	150
33001-36000	120	160
36001 and over	150	180

Source: Municipality of Athens

Table C.7: Childcare fees at municipal nurseries in Athens, 2014-2015

Annual family income (in €)	Monthly fee (in €) for	
	1 Child	2 Children
below 15,000	0	0
15,001-20,000	50	65
20,001- 25,000	60	75
25,001-30,000	70	100
30,001- 35,000	100	135
35,001-40,000	120	170
40,001-50,000	150	190
50,001-75,000	175	220
75,001-100,000	200	250
100,001- 200,000	260	330
200,001- 300,000	330	400
over 300,001	400	500

Source: Municipality of Athens

It should be noted that families with 3 children or more, those with disabled parents, single-parent families and other vulnerable groups usually pay reduced fees or are exempted from paying fees altogether. The above mentioned criteria, as well as the employment status of parents, are also taken into account during the selection procedure, with these families receiving priority (via a point system), as childcare places in many areas are not sufficient for all interested families. When a child is not allocated a place in a public childcare facility, then the family may turn to the private sector[22].

[22] This is also true for kindergartens; by law, children of compulsory schooling age (5-year olds) receive priority over younger children (4-year olds) when applying for a kindergarten place. Places are rationed randomly: lots are drawn at the beginning of each school year.

Prices in private nurseries in Attica (the broader area of Athens) range from €350 to €500 per month. Full-time childcare is 8 hours at both nurseries and day-care centres at both public and private providers.

There are two types of subsidies for childcare in Greece. On one hand, there is the subsidy provided by municipalities for the financing of public childcare over the share paid for through fees. Own calculations for the city of Athens nurseries reveal that in 2009 municipal subsidies accounted for 92% of total costs (corresponding to €9,348 annually per child).

Table C.8: Childcare subsidies provided by the Municipality of Athens (2007-2011)

	2007	2008	2009	2010	2011
Total subsidy (€ million)	15.9	41.3	42.2	37.4	29.6
Monthly net subsidy per child	298	734	779	709	469
% of total cost	36	92	92	91	83
Monthly gross subsidy per child	*827*	*797*	*847*	*779*	*565*

Note: Own calculations.

Source: Municipality of Athens.

Note, that municipal provision is often characterized by huge waste and inefficiency. When the City of Athens changed hands after the local elections of 2010, the new Mayor and his team set to improve services while reducing costs. By all accounts, childcare provision has been a successful example of this approach: as Tables C.8 shows, average costs per child (net of fees) fell from €9,348 in 2009 to €5,623 in 2011 without loss of service quality or number of places available, and without fee increases (on the contrary, as the recession deepened, more families fell into lower-fee categories). The evolution of the fees can be seen in Tables C.9 and C.10 .

The second type of subsidy, introduced in 2008, *concerns both public and private childcare providers* and is funded under the National Strategic Reference Framework (NSRF). The programme is funded by the European Social Fund, and is administered by the Hellenic Agency for Local Government and Local Development (EETAA). The agency is responsible, among other things, for the screening and handling of applications from both providers and families concerned[23].

Table C.10 provides the level of annual subsidies paid to each provider participating in the programme in 2009-2010. The subsidy structure varied by child age – or, more precisely, by the capacity of childcare providers to host children of various ages. For instance, most public providers are unable to offer places to children below the age of 8 months, as a result of which demand is catered for mostly by private providers.

Table C.9: Childcare subsidies provided by EETAA (2009-2010)

Child age	Annual subsidy (in €)
2m - 2.5y	4,200
8m - 2.5y	6,000
2.5 y- 5y	3,500
2.5y- 6.5y (children with disabilities)	6,000

Source: Ministry for Development and Competitiveness

[23] In 2009 the Programme was implemented by the Workers' Social Welfare Organization (OEE), under the jurisdiction of the Ministry of Labour, Welfare and Social Protection. Since OEE was abolished in 2012, its competences have been transferred to a series of other public providers and organizations.

In view of the resulting confusion (and possible inconsistency), the subsidy structure was revised subsequently. The new structure is flat, except for children with disabilities. Table C.10 provides the level of subsidies in 2014-2015.

Table C.10: Childcare subsidies provided by EETAA (2014-2015)

Child age	Annual subsidy (in €)	
	excluding meals	including meals
2m- 2.5 y	2,500	3,100
8m- 2.5 y		
2.5 y- 5y		
2.5y- 6.5y (children with disabilities)	5,500	5,500

Source: Hellenic Agency for Local Government and Local Development (EETAA)

EETAA subsidies shown in Table C.10 and C.11 cover the entire cost of childcare at both public and private childcare providers participating in the NSRF programme. The collection of additional fees from parents is not allowed, except for transportation costs (only covered by the programme in the case of children with disabilities).

Table C.11 shows the percentage of children in part time and full time childcare. Most public and private childcare providers offer full-time services (8 hours daily). Opening hours are fixed (i.e. 8.00-16.00), and sometimes do not coincide with parents' work schedules. Public childcare facilities in particular close early in the afternoon, which is an additional reason why families may choose a private facility instead. As for the full-time use of childcare in 2009, only 7% of children under 3 received more than 30 hours of formal childcare per week. For children between 3 and 5, the relevant proportion was 25%.

Table C.11: Level of part-time and full-time use (2009)

Child age	% in part-time childcare	% in full-time childcare
0-3	4	7
3-5	33	25

Source: Eurostat (EU-SILC data)

Quality is another neglected aspect of childcare in Greece. Even though the available research is limited, most studies converge to the conclusion that, especially in nurseries, emphasis is given on safety, cleanliness and child-minding, rather than on providing a child-centred education, oriented to child development (Mantziou, 2001; Tsakiri, 1999). A more detailed older study revealed that public nurseries paid little attention to educational aspects of early childcare even in comparison to private ones, offering a lower quality of services (Lambidi & Polemi-Todoulou, 1992).

C.2 Data and simulations

There is no systematic data collection on childcare policies and childcare use at the national level in Greece. Most relevant studies analyse the micro-level data available in EU-SILC. Some macro-level data are available from the OECD Family Database. Section 2 provides an overview of the available information on the usage and the cost of various forms of childcare. Because we of the limited availability of national administrative sources we cannot validate the survey estimates from the EU-SILC 2010.

To impute the parental fees for childcare in EUROMOD, we make following assumptions:

- SILC does not distinguish public and private childcare. In Greece similar private and public institutions provide childcare: nurseries, day care centres and, from the age of 4 years, pre-schools/kindergartens. All ECEC- variables (rl030, rl040 and rl010) are taken together (rl050 is excluded here).
- To determine which children are public childcare and which in private, we identify all households with children aged 0 until 5 in formal childcare (ECEC-variables: rl030,rl040 and rl050). Drawing from all income quintiles (based on equivalized incomes) except the poorest, we randomly select 25% of children (in formal childcare). They are assumed to attend private day care centers, and therefore to receive no subsidy. The parental fee in private childcare is higher in urban areas than it is in rural areas. We have no regional data and no regional averages. To be more accurate than simulating an average for all children in private childcare, we use the urbanization rate (db100 in SILC and drgur in EUROMOD) and simulate a lower average for families in rural areas and an higher average for families in urban areas. The remaining 75% of children (in formal childcare) are assumed to attend publicly-funded childcare. For this group the parental fee is programmed following the rules for parental fees in municipal nurseries in Athens (see Table C.6). We use the 2009-2010 fees for families in the municipality of Athens because there is no regional information in de Greek SILC-2010 data. The quintiles are calculated based on the simulated disposable household incomes.
- There is no reduced time fee, the childcare fees are fixed for standard hours so we simulate the full monthly fee for all children in childcare (rl030>0; rl040>0; rl010>0).
- Single parents and large families (3 children or more) don't have to pay a parental fee (simulated fee of 0 euros).
- Child minders in Greece are an informal form of childcare. Child minders are often migrant workers. For the informal fees we simulate 700 euros a month for full time care (8 hours/5 days a week) by a professional/native babysitter at home and 400 euros for part-time care (3-5 hours/5 days a week).
- For unpaid childcare we assume no costs.

Annex D. Hungary

Tine Hufkens, Gerlinde Verbist & András Gábos

In this note we briefly sketch the childcare context in Hungary, as well as the policy rules regarding childcare. These policy rules will then be further included in EUROMOD, as detailed as possible.

D.1 Childcare arrangements in Hungary

In Hungary childcare consists of both in kind benefits and cash benefits. Day care services and family day care is subsidized by the government but places are limited. The period of maternal or parental leave is long in Hungary, compared to other EU-countries (it is the second longest in the OECD). For children under 3 years parents are eligible to receive a child care allowance if they stay away from work to care for the children.

The Hungarian childcare landscape is characterised by both formal subsidized and non-subsidized institutions, besides from informal childcare arrangements (see Table D.1). Formal subsidized childcare for 0 to 3 year old includes both nurseries and family day care. Public childcare in Hungary is available for almost all children aged 3 or above (kindergarten/pre-primary education). In 2009 87.4% of the children aged 3-5 are enrolled in pre-primary educational programmes (86.7% in 2010). In Hungary pre-primary school starts at 3 and compulsory education starts at the age of 6. The final year of pre-primary education/kindergarten is also compulsory (5-6 years). From 1 September 2015 kindergarten attendance will be compulsory from age 3 (Public Education Law CXC/2011.)

Table D.1: Childcare system in Hungary

	Subsidized	**Non subsidized**	**Other**
Family care	- Family day care (since the 1990s)	- private childcare	- Informal care (grandparents and relatives)
Collective facilities	- day care services -3 to 6 years: pre-primary educational programmes (kindergarten)	- private childcare	

Source: OECD, Blasko and Gabos, Korintus

The system to support parents with young children includes leaves for insured and uninsured parents, paid at different levels; financial support in the form of family allowance and tax credit; and childcare services. **Maternity leave** is 24 weeks and up to 4 weeks before the birth of the child. Mothers receive 70% of earnings. A combination of different leave benefits cover a period until the third birthday of the child. Parents with an employment history that is too limited, and therefore, are not insured, receive a flat sum (**child care allowance**). Insured parents receive 70% of their previous earnings(up to a ceiling) until their child becomes two years old (**child care fee**). Then, they receive the flat sum until third birth day of the child (child care allowance). For families with three or more children and the youngest child between three and eight years of age, there is a child support allowance. The flat sum allowance is the same as the child care allowance. Most mothers in Hungary care for their child from the birth of the child until the child is 3 years old and starts pre-primary

education. **Informal care** by relatives and/or friends is used for 31.6% (2008) of the children under 3 years old.

The **paternity leave** is five days in the first two months after the birth of the child. It is fully paid.

Table D.2: The parental benefit

	2009	2010	2011	2012	2013	2014
Maternity leave / child care fees (insured women) GYED (HUF) per month	-	-	130,200	130,200	130,200	142,100
Parental leave / child care allowance, GYES (HUF) per month	28,500	28,500	28,500	28,500	28,500	28,500

Source: EUROMOD country report, OECD.

Table D.3 shows the number of recipients of the different child care benefits in Hungary.

Table D.3: Number of recipients of childcare allowances and childcare benefits

Year	Monthly average number of families receiving family allowance, thousands	Number of those receiving child-care	
		allowance	fee
		in December	
2009	1,246	176,009	96,680
2010	1,224	180,696	92,476
2011	1,191	169,216	82,934
2012	1,168	166,652	80,878
2013	1,150	154,717	78,956

Source: KSH

For young children the number of places in childcare is much lower. According to EU SILC-data 10.9% of the children under 3 years old is enrolled in 2010 in formal childcare (7.5% in 2009, see Table D.2). The access to **childcare services** for children under 3 is very limited. The demand is much higher than the number of available places. This is especially the case in small villages. The limited presence of childcare services is a result of administrative costs and inadequate financing of day care services. This creates long waiting lists and overbooked nurseries, which decreases the quality. Working women are given priority in subsidies childcare services. Due to administrative burdens and limited access to central government subsidies, entering the service market a private provider is relatively difficult. Therefore private childcare is rare and in general more expensive and only affordable for wealthy families. Table D.4 shows the number of children aged 0 to 2 years old, enrolled in infant nurseries.

Table D.4: Number of children enrolled in nurseries

Year	Number of children in infant nurseries
2009	34,694
2010	35,782
2011	36,685
2012	37,163
2013	36,819

Source: KSH

The last decade the use of formal childcare for children from 0-2 slowly increased from 6% in 2000 to just below 10% in 2011 (KSH Stadat). In 2009 the number of active places in nurseries was 26,687. In

2012 the amount of active places increased to 36,635. See Table D.5 for the evolution of childcare institutions and the number of places.

Table D.5: Number of childcare institutions and places for 0-2 year old children

Year	Number of ECEC centers	Number of places
2007	556	24 934
2008	594	25 937
2009	625	26 687
2010	667	32 516
2011	689	35 450
2012	704	36 635

Source: presentation Korintus, M.

For children aged 3 to 6 there is a system of public pre-school child care/ kindergarten. Most children are enrolled in kindergarten from the age of three. Kindergarten institutions are part of the education system. Kindergartens are free of charge, except for the cost of meals and other expenses. Kindergartens can charge a compensation for extra services not included in their basic tasks, e.g. for meals, excursions and extracurricular activities. Non state kindergartens may charge fees. Table D.6 shows more detailed information on the share of children in childcare and in kindergarten.

Table D.6: The share of children at a given age in nurseries and kindergartens, 2011

age group	in nurseries (%)	in kindergartens (%)	Total (%)
< 1 year	0.1		0.1
between 1 and 2	4.1		4.1
between 2 and 3	21.31	7.47	28.79
between 3 and 4	12.30	74.15	86.46
between 4 and 5		93.15	93.15
between 5 and 6		95.64	95.64

Source: own calculations based on: Hungarian Statistical Office's data, 1 January 2012; Hungarian Statistical Office's Social Annual Report, 2011; Hungarian Statistical Office's Education Annual Report 2011/2012.

The childcare system is supply funding, where money from the state budget goes to eligible service providers, based on the number of children attending on a given day. From 1 January 2014 funding is based on the number of children enrolled in childcare. Local authorities are responsible for service provision of childcare institutions. But municipalities can agree to work together. Opening hours and access differ between municipalities. Table D.7 shows the children enrolled in kindergarten.

Table D.7: Children enrolled in kindergarten (3-6 years old)

School year	Kindergarten children
2008/2009	325,677
2009/2010	328,545
2010/2011	338,162
2011/2012	341,190
2012/2013	340,204
2013/2014	330,184

Source: KSH

The price paid by parents for the childcare institutions is not income related in Hungary. Until 2009 public day care centres could only charge meals (300-500 HUF a day). Formal childcare services are free of charge but parents pay for the meals and make minor material contributions (toilet paper,

etc.). Approximate contribution is € 20 per month or **300** to 500 **HUF**. Some of the nurseries owned by schools, churches, foundations or private owners also offer their services for free, others charge a fee (approximately 100 to 150 euros a month). According to the Public Education Law CXC/2011, from 2012 on also public institutions can charge a parental fee. The monthly fees are regulated: in day care centres fees and meals cannot exceed 25 % of net family income per child. In home-based ECEC, the limit is drawn at 50 % of net family income per child. Some municipalities offer free ECEC from 4 months and charge only for meals (Eurydice and Eurostat report, 2014).

The parental fees in private child care institutions are very high, though we do not have information on the amounts. Table D8 shows the total expenditure in Hungary ECEC.

Table D.8: Expenditure on Early Childhood Education and Care

(in millions of HUF)	**2008**	**2009**	**2010**	**2011**
Family - Early childhood education and care	172,123.3	168,576.9	176,997.4	176,753.1

Source: OECD Social expenditure data

Day care services and family day care are subsidized in different ratios. The government subsidies vary according to the type of service and the service provider. We do not have detailed information on government expenditures on both types of childcare. The mmunicipalities have the responsibility to provide ECEC services but they can ensure these through contracting the Church, NGOs or other private providers. However, most services are maintained directly by municipalities because of the substantial co-funding needed to match the earmarked funding. The state contribution in financing ECEC services is 35-40%, the municipal or other (= providers who have a contract with the municipality) contribution is 40 to 50 % and the parental contribution is 15 to 20%.

Table D.9: State contribution and total cost per child in ECEC (0-2 years old)

Year	**HUF per year per child**	**EUR per year per child**	**Estimated total childcare cost per child (HUF)**
2007	547 000	1886	*1,458,666*
2008	547 000	1886	*1,458,666*
2009	540 150	1862	*1,440,400*
2010	494 100	1704	*1,317,600*
2011	494 100	1704	*1,317,600*
2012	494 100	1704	*1,317,600*

Source: ppt presentation Korintus, M.; based on own calculations (total is calculated based on the state contribution and the fact that we know that the state contribution covers 35 to 40% of the total cost of children (Korintus M.))

From 2012 government regulation sets the maximum level of parental fees at 25% of the family's income per member. People who live with some disabilities or who receive a child protection benefit (a form of financial support) don't have to pay the parental fee. For families with 3 or more children the fee is lowered by 50%. Besides, municipalities have discretional power to set criteria for regulating and lowering fees.

Parental fees cover the cost of meals. Municipalities can also decide to introduce a fee for care but the combined amount for meals and care cannot exceed the maximum. However, families can be asked to pay for extra services, if they wish to use them.

More information on the subsidy of pre-schools can be found in Table D.10.

Table D.10: cost of pre-school/kindergarten (3-5 years old)

	2000	2009	2010	2011
kindergarten *(Budgetary expenditures in millions of HUF)*	92,731	186,979	195,249	182,743
kindergarten children	353,100	328,545	338,162	341,190
expenditure per child (HUF)	*262,620*	*569,112*	*577,383*	*535,605*

Source: Statistical Yearbook of Hungary, 2011; own calculations

The central government provides financing for all services for young children through local governments. The local authorities have the duty to provide childcare services (both nurseries and pre-primary education).

We do not have detailed information on **full time and part time use of** childcare, not in EU-SILC nor according to any other source. If we focus on the full-time equivalent participation rates for children under 3 years of age in 2010, the average hours of attendance per week for a child is 30 hours.

D.2 Data and simulations

- We assume all children in childcare are in subsidized childcare. Both childcare and pre-school education is free of charge in 2009 in Hungary. For childcare parents have to pay the cost of meals and other minor expenses. For each day in childcare we simulate this average cost.
- We only use rl040 and rl050 for the simulation of the childcare fee for children under three; rl010 for children in pre-school; rl030 is not used since these cases are identical to the cases in rl010.
- We simulate pre-primary education from the age of two, so a small overlap between childcare and pre-primary education is possible.
- We recalculate the hours per week in childcare to a number of days per week in childcare to calculate the monthly fee based on daily amounts.
- The monthly amount in EUROMOD is calculated by multiplying by 10 and dividing by 12. We assume children are in childcare for 10 months per year.

Table D.11: Summary to simulate child care : Hungary

	Description	Characteristics/ Conditions	Budget (as % of GDP)	Use (as % of targeted children)	In EUROMOD (feasibility): simulated, imputed?	Country/region level (NUTS classification SILC)
Cash benefits						
- Home care allowance	'Child care allowance': Flat-rate benefit to parents who stay away from work to care for their children under age 3 (under age 10 in case of permanently ill or severely disabled children) or for grandparents who care for grandchildren aged between 1-3 years in household of parent. Monthly amount equals minimum old age pension.	Caring parent of children under 1 year cannot pursue gainful activity, while parents of children older than 1 year can pursue a gainful activity without restriction. Universal, no income test.	*64,192,099,733 HUF (2009)= expenditure per year on child care allowance.*	*174,153 (2009) = average monthly number of recipients child care allowance.*	Bccnc_hu, simulated in EUROMOD.	HU
- Home care allowance	'Child care fee': contributory benefit paid after expiry of Maternity Allowance until child reaches 2 years if the parent(s) does not work. Eligibility criterion is at least 180 days of insurance during last two years before delivery of parent who wants to take care of child at home. Amount is 70% of daily average gross earnings of previous year with maximum of 70% of twice minimum wage.	Contributory benefit		*95, 050 (2009) = average monthly number of recipients child care fee.*	BCCCT_hu, included in EUROMOD but not simulated because no data on contribution history.	HU
- Home care allowance	'Child Raising Support': universal benefit financed by state budget for parents who raise three or more children in their own home, if youngest child is between 3 and 7 years old. Monthly amount	Universal.		*40,263 (2009) = families receiving child raising support.*	Bcclt_hu, simulated in EUROMOD	HU

	equals the minimum old age pension, irrespective of number of children.					
- Maternity leave, paternity leave, parental leave	ML: 24 weeks (70% of earnings) PtL: 1 week PrL: 136 weeks, flat rate payment		0.8 % (2009)	Off all employed women with a child under age 1; 72.1 % is in maternity or parental leave.	Bmanc_hu, included in EUROMOD but not simulated because no data on contribution history.	HU
- Financial support through tax system	Not applicable	-	-	-	-	-
"In kind" benefits			0.1 % (2009, childcare spending)	7.5% (2009, Av. enrolment rate of children under 3-years in formal childcare)		
- Family care (subsidized)	Family care services: rather limited, quiet recent.	Income and family size dependent Partly paid by parents, partly by Community.	n.a.	-	Not simulated in EUROMOD	HU
- Collective child care (subsidized)	Nurseries.	Not income. Very small parental fee.	n.a.	-	Not simulated in EUROMOD	HU
- Private childcare (non-subsidized)	Family care or collective child care	For children from 0 to 14 years/after school. No information	n.a.	-	No data to simulate.	HU
- Pre-primary education	Nursery school: age 3 to 6 years.	free of charge, parents pay for meals except for low income families.	0.6 % (2009, pre-primary spending)	87.4% (2009, av. enrolment rate of children aged 3-5 years of age in pre-school educational programmes)	/	HU

n.a. = not available *Sources: OECD expenditures data, OECD Family Database, KSH*

Annex E. Italy

Francesco Figari

This note describes the childcare policies in place in 2009, but also describes developments in childcare policies until 2014. Section E.2 describes the assumptions to model childcare fees and subsidies in EUROMOD.

E.1 Childcare arrangements in Italy

Italy combines different cash benefits and services to regulate the care for children in the early childhood. In overview Table E.1 gives an overview of the childcare system.

Table E.1: Childcare system in Italy

	Publicly funded		
	Yes (or to a large extent)		No (or to a limited extent)
	State level	Municipal level	
Services	Public pre-primary schools	Formal subsidized childcare (nurseries)	Formal private (non-subsidized) childcare (nurseries or child minders) Private pre-primary schools
Cash benefits	Mandatory Maternity Leave Allowance; Parental leave	State Maternity Benefit; Municipalities Maternity Benefit	

Italian law provides a mandatory maternity leave allowance and a parental leave allowance. The **Mandatory Maternity Leave Allowance** is a substitute for the wage and it lasts at most five months, divided in two periods: two months before and three months after the child birth (or one month before the child birth and four after, up to the mother if she is in a good health status). For the self-employed mothers, there is no mandatory leave from work. Entitled to receive the allowance are employee mothers, self-employed mothers enrolled in the lists of the craftsmen, wholesale traders, farmers, who paid the corresponding social contributions, and some temporary workers depending on their contract. For the employees the allowance is the 80% of the average daily wage. For the self-employed mothers, it is the 80% of the *conventional* daily remuneration, which are fixed each year by law. Each parent can **parental leave** from work until the child is eight years old. The leave cannot exceed jointly for the two parents ten (to eleven) months. Employed mothers, employed fathers, lone parents and self-employed mothers have are entitled to a parental leave. Employed mothers can leave up to a continuative or fragmented period of up to six months until the child is eight years old. Employed fathers also have a right to parental leave. Lone parents can take up to ten months of parental leave and self-employed mothers can leave for three months within the first year of the child life. The allowance (30% of the average daily wage) is granted without income test for at most six months cumulated between the parents within the first three years of the child. If the parental leave exceeds six months, from age three to eight, the allowance is means tested: the income of the applicant parent cannot be higher than 2.5 times the minimum pension fixed by law in the year of the application.

Moreover, there are a State and a Municipalities dependency benefits. The **State Maternity Benefit** is a benefit granted to mothers who are not eligible to the maternity leave allowance and are (i) working mothers who have at least three months of contribution in the last 18 to 9 months before the delivery (or the adoption); (ii) unemployed mothers if the period between the loss of the social insurance and the delivery or adoption) is shorter than nine months; (iii) mothers who voluntary resigned during pregnancy and have at least three months of contribution in the last 18 to 9 months before the delivery (or the adoption); (iv) mothers who are entitle to some social allowances (for example unemployment benefit or sickness benefit). The State allowance is given to eligible mothers without income test. The amount was 1.902.90 euro in 2009, 1.916.22 euro in 2010, 1.946.88 in 2011 and 1.999.45 in 2012. The **Municipalities Maternity Benefit** is for mothers who do not receive any other maternity benefit, or receive another benefit which is smaller than the municipality one (in this cased the municipality supplies the difference). The benefit is means tested by using the Indicator of Economic Situation, and the threshold is fixed each year by law for a reference family of three members. The amount was 1.545.55 euro in 2009, 1.556.35 euro in 2010, 1.581.25 in 2011 and 1.623.95 in 2012.

Table E.2: The parental benefits

	2009	2010	2011	2012	2013
Mandatory Maternity Leave Allowance	80% av. daily wage	80% av. daily wage	80% av. daily wage	80% av. daily wage	80% av. daily wage
Parental leave	30% av. daily wage	30% av. daily wage	30% av. daily wage	30% av. daily wage	30% av. daily wage
State Maternity Benefit	1.902.90	1.916.22	1.946.88	1.999.45	2,059.43
Municipalities Maternity Benefit	1.545,55	1.556,35	1.581.25	1.623.95	1,672.65

Source: Euromod Country Report Italy 2009-2013

Next to the cash benefits, there is a system of childcare services. In Italy we can distinguish between private (non-subsidized) and public childcare services: the use of the former is completely paid by the families, while the use of the latter requires a family fee which depends on family characteristics and income. In addition there are some private subsidized childcare services. Table E.3 shows the early childhood education and childcare services in Italy. Compulsory education starts at the age of 6.

The public support related to childcare mostly consists of in kind benefits (i.e. provision of public childcare services). In addition, families who pay childcare fees can claim a tax credit equal to 19% of the fees paid up to 632€ per year).

Apart from the formal childcare system, the childcare landscape in Italy is characterized by a large proportion of informal care. Informal childcare relies mainly on grandparents who provide the day care.

Table E.3: pre-primary institutions by age

	Publicly funded	Privately funded
0-2 years	Nurseries	Nurseries, child minder
3-5 years	Pre-schools	Pre-schools

The availability of the public childcare slots is limited and the fees to be paid by the families are relatively high. This has a potential direct impact on mothers labour market participation given that

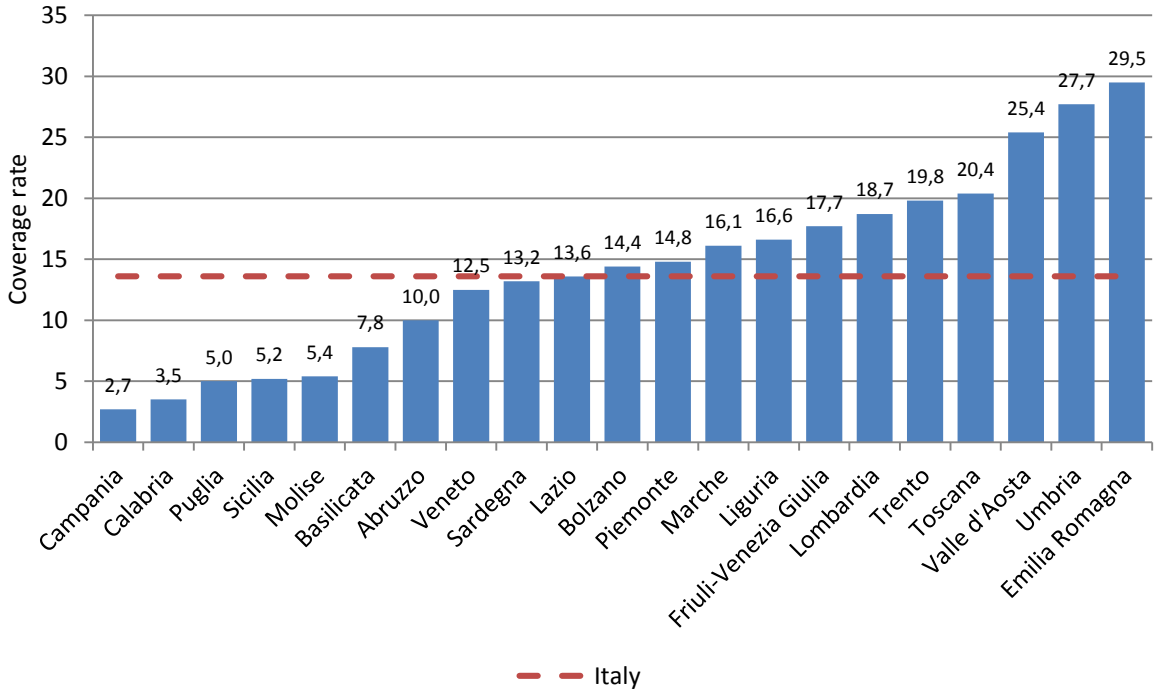
childcare costs increase her reservation wage. Childcare services are managed by the municipalities (i.e. more than 8.000) with a lot of variation in terms of coverage and fees.

Both in public and private childcare institutions families have to pay a fee. Fees in public childcare are means-tested, the tariff structure differs between municipalities. The cost of private childcare (either nurseries or child minders) is entirely paid by the families, while the use of public childcare services (mainly day nurseries) requires a family fee which depends on family characteristics and income. In addition there are subsidized private childcare services and pre-primary school. Around 12% of the children aged 3 to 5 goes to a private pre-primary school. The public pre-primary schools are free of charge, except for the cost of meals. In private pre-primary school fees are paid by the families. The private school are, to a limited extent, also subsidized.

Despite the important policy initiatives implemented since the end of the 90s aiming at increasing the childcare availability many Italian households are still confronted with availability and cost constraints. The 2002 European target of a childcare slot for at least 33% of children under three years of age has been clearly missed, although the share of children who attend childcare is highly differentiated across regions.

According to the administrative data provided by Istat (2011), the national coverage rate in 2009 was about 13.4%, ranging from more than 25% of children aged 0-2 attending public pre-primary education in Emilia Romagna, Umbria and Valle d'Aosta to less than 5% in some Southern regions such as Calabria and Campania (Figure E.1).

Figure E.1: Coverage rate of public childcare services for children aged 0-2, by regions, in 2009



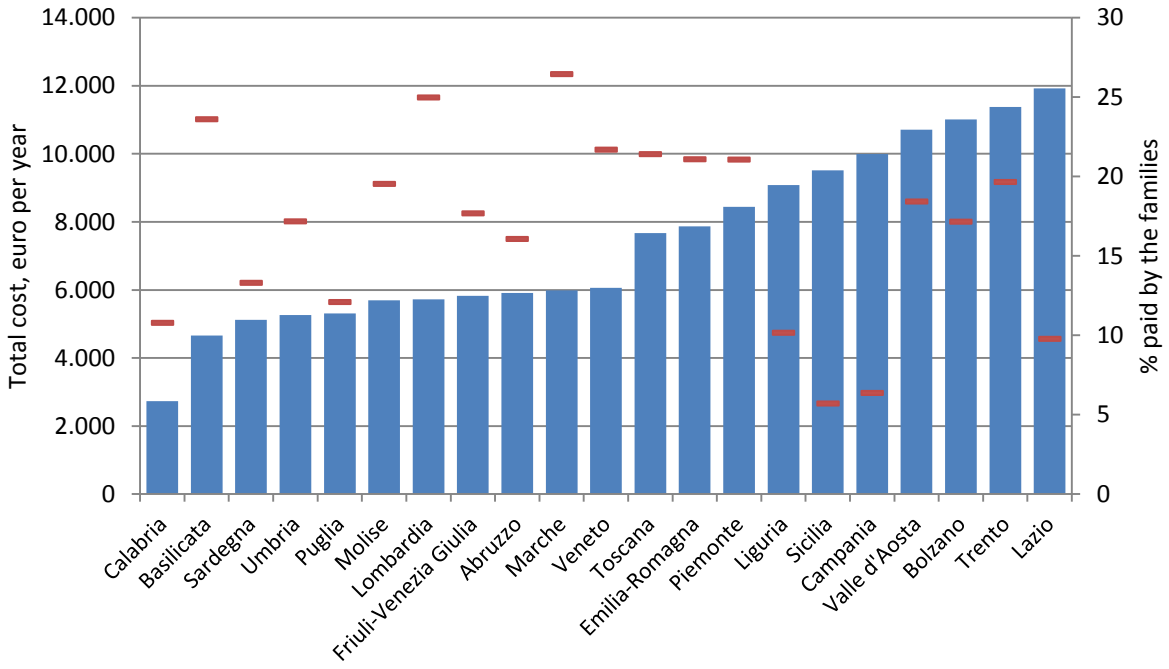
Source: ISTAT (2011)

Such a coverage rate considers only public centers and private centers subsidized by the public, while non-subsidized private centers are not considered even if they contribute to reach the European target. Survey data (ISTAT based on Multiscopo 2010) report that overall 16.3% of children aged 0-2

attend a childcare so it is possible to derive that, on average, the private childcare covers around 3% of children. Such an estimate is confirmed by administrative data (Istituto degli Innocenti, 2011). However, the private provision does not help in compensating the variations across regions because it tends to be larger where there is already higher public provision (Brilli Del Boca, and Pronzato, 2013). In order to meet the European target one has to consider also almost 5% of children attending already primary school by the end of the year when they are two years old. Overall, it is reasonable to assume that around 21% of children aged 0-2 attended a childcare service in 2009.

The average cost for each child enrolled in the public child care was about 7500 euro in 2009, with huge disparities across regions showing costs ranging from less than 3000 euro per year in Calabria to more than 11000 euro per year in Lazio and Trentino. On average 18% of the overall cost has been covered by the families but again with differences across regions, reflecting the different selection and financial criteria (**Fout! Verwijzingsbron niet gevonden.**Fig. E.2).

Figure E.2: Cost of public childcare services and % covered by families for children aged 0-2, by regions, in 2009



Source: ISTAT (2011)
See Table E.4 for detailed information on the childcare coverage in Italy.

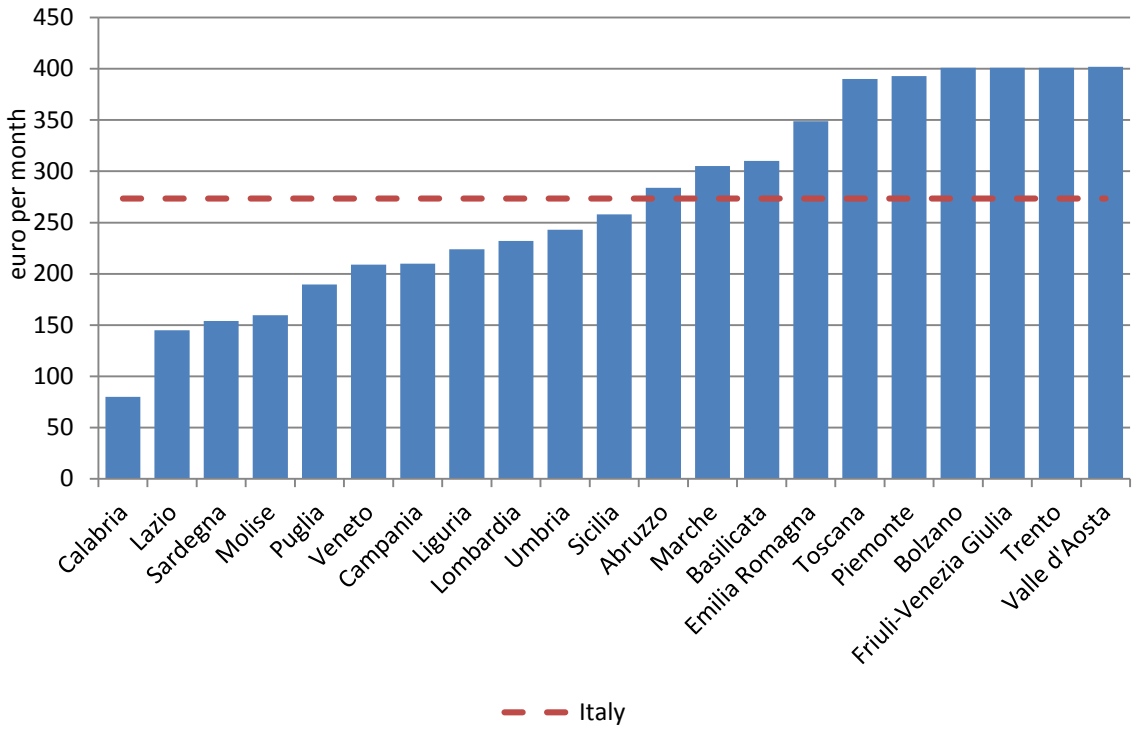
Table E.4: Cost of public childcare services and % covered by families for children aged 0-2, by regions, in 2009

Regions	Children	Total public cost	Total cost	% paid by the families	Average cost per child	
					Paid by the public	Paid by the families
Calabria	1,671	4,069,855	4,561,055	10.8	2,436	294
Basilicata	1,101	3,922,722	5,133,701	23.6	3,536	1,100
Sardegna	4,379	19,435,344	22,414,616	13.3	4,438	680
Umbria	5,171	22,541,715	27,211,332	17.2	4,351	903
Puglia	4,631	21,608,872	24,578,447	12.1	4,666	641
Molise	343	1,571,429	1,952,751	19.5	4,517	1,112
Lombardia	44,083	189,225,724	252,196,804	25.0	4,207	1,428
Friuli-Venezia Giulia	4,591	22,017,178	26,739,221	17.7	4,796	1,029
Abruzzo	2,776	13,784,154	16,420,913	16.1	4,956	950
Marche	6,201	27,303,376	37,119,925	26.4	4,402	1,583
Veneto	15,359	72,980,588	93,176,883	21.7	4,729	1,315
Toscana	17,134	103,381,368	131,510,941	21.4	6,032	1,642
Emilia-Romagna	31,290	194,321,417	246,187,713	21.1	6,209	1,658
Piemonte	13,465	89,771,530	113,710,858	21.1	6,657	1,778
Liguria	5,094	41,570,320	46,268,663	10.2	8,150	922
Sicilia	7,560	67,838,385	71,938,684	5.7	8,973	542
Campania	3,069	28,734,623	30,686,734	6.4	9,363	636
Valle d'Aosta	752	6,569,819	8,052,490	18.4	8,736	1,972
Bolzano	639	5,831,974	7,037,896	17.1	9,127	1,887
Trento	2,548	23,292,668	28,987,439	19.6	9,142	2,235
Lazio	21,087	226,898,561	251,458,447	9.8	10,754	1,165
Nord-ovest	63,394	327,137,393	420,228,815	22.2	5,098	1,468
Nord-est	54,427	318,443,825	402,129,152	20.8	5,844	1,538
Centro	49,593	380,125,020	447,300,645	15.0	7,661	1,355
Sud	13,591	73,691,655	83,333,601	11.6	5,416	709
Isole	11,939	87,273,729	94,353,300	7.5	7,310	593
ITALIA	**192,944**	**1,186,671,622**	**1,447,345,513**	**18.0**	**6,126**	**1,351**

Source: ISTAT (2011)

Those who get a slot in the public child care contribute to the costs according to their family situation measured by the equivalent financial situation index (ISEE) which takes into account income, wealth and family composition and the rules determined by each municipality (Cittadinanza Attiva, 2011). The average out-of-pocket monthly fee, for a family with an ISEE of around 20.000 euro per year, in 2009 was 270€, with huge differences across regions determined by fees ranging from 80€ in Calabria to around 400€ in most of the Northern regions (Toscana, Piemonte, Bolzano, Friuli, Trento and Valle d'Aosta).

Figure E.3: Monthly fee for a public child care slot by regions, 2009



Notes: Authors' calculations based on the rules in place in the main city of each region for a hypothetical family with an equivalent financial situation index (ISEE) of 20.000 euro per year.

The parental fees to be paid for a full-time slot in the private sector can be approximated using available information aggregated at macro regional area showing that the private childcare costs around 10% more than the maximum public fee in the North, 35% in the Center and 21% in the South (Cittadinanza Attiva, 2011).

Pre-primary education is also organized at the regional level. Table E.5 shows the cost per child in pre-primary education for all regions.

Table E.5: total annual cost per student in pre-primary school by region, 2009

drgn2	Regions	Total cost, € / year	drgn2	Regions	Total cost, € / year
1	Piemonte	6045	12	Marche	5788
2	Valle d'Aosta	5828	13	Lazio	5673
3	Lombardia	6858	14	Abruzzo	6155
4	Bolzano	5828	15	Molise	6141
5	Trento	5828	16	Campania	5459
6	Veneto	6477	17	Puglia	5159
7	Friuli-Venezia Giulia	6946	18	Basilicata	6628
8	Liguria	5767	19	Calabria	6381
9	Emilia-Romagna	5769	20	Sardegna	6803
10	Toscana	5923	21	Sicilia	4710
11	Umbria	6012		**Italy**	5828

In pre-primary education parents pay a monthly cost for meals. The monthly amount is income dependent. Table E.6 shows the average monthly fees for Italy.

Table E.6: Monthly fees in pre-primary education (cost for meals)

FASCE ISEE/ISEC		montly cost(€)
min	**max**	
0	5000	39
5000	6800	56
6800	9400	81
9400	12200	107
12200	15000	110
15000	19500	128
19500	24000	132
24000	28000	147
28000	32000	150
32000		155

E.2 Data and simulations

To simulate parental fees for public and private ECEC services in Italy, we make the following assumptions:

- Italian law provides a mandatory maternity leave allowance and a parental leave allowance. In EUROMOD these allowances are either included in employment income (yem), self-employment income or reported separately in the variables bmase or bmals.
- To simulate parental fees for children in childcare we use the attendance rates from IT-SILC. We take all the childcare variables together: rl030, rl040, rl050 and rl010. (most children under three are in rl010/preschool, however pre-primary education in Italy start at the age of three.) For the children under three we simulate private childcare and public childcare. SILC data do not provide information on the private versus public provision of childcare services so we randomly select cases for public and private childcare. The random selection is done on regional level, but because of the limited amount of cases we use the Statistical regions: Central Italy, Isole, Northeast Italy, Northwest Italy and the South of Italy. (+/- 50 cases per ISTAT region) To simulate the subsidized childcare we use the average of all regions per statistical region to select the cases in subsidized childcare. See table E.7 for more information.
- At first sight the attendance rate in the SILC data is very different from the ISTAT attendance rates (described in section 2). Although, if we focus on full time attendance in SILC, percentages are similar. We take all childcare variables together and focus on attendance rates of 30 hours or more. We find 21% of the children aged 0 to 2 are in childcare. We randomly simulate 13% of the children in public childcare, 3% of the 0 to 2year olds in childcare are in private childcare and 5 % is in preschool. For the 5% in preschool we simulate public preschool. Public and private childcare are simulated at the region level. For the random selection private-public we only use full time attendance.
- All parental fees for public and private childcare are simulated at the regional level.
- Cost of childcare (gross and net subsidy) is also calculated at the regional level .
- For children aged 3 to 5 we simulate pre-primary education (based on variables rl020 and rl010). For pre-primary education, we assume all children are in public pre-school. Due to lack of detailed information on the use and the cost of a child in private pre-primary school, we cannot simulated this.
- Pre-primary public education is free of charge, except for the cost of meal (see Table E.6 for the monthly fees for the cost of meals.
- The monthly amount in EUROMOD is calculated by multiplying by 10 and dividing by 12. We assume children are in childcare for 10 months per year.

Table E.7 summarizes the Italian childcare system, its characteristics and what is simulated in EUROMOD.

Table E.7: Summary to simulate the effects of child care and pre-primary education

	Description	Characteristics/ Conditions	Budget (as % of GDP, 2009)	Use (as % of targeted children)	In EUROMOD (feasibility): simulated, imputed?	Country/region level (NUTS classification SILC)
Cash benefits or tax reliefs						
- Home care allowance	n/a	-	-	-	-	-
- Maternity leave, paternity leave, parental leave	ML: 5 months at 80% of gross wage PtL: n/a PrL: 10 months (joint by both parents), at 30% of gross wage.	-	0.2 % (3065 million euro)	-	Included in yem or yse. Residual payments in bmal and bmase	Italy
- Financial support through tax system	Tax credit: 19% of fees paid for formal childcare services, up to maximum of €632 per year (i.e. maximum tax credit €120/year)	Children enrolled in formal childcare services	-	-	To be included inAdded to the simulation of income tax in EUROMOD	Italy
"In kind" benefits						
- Public child care	Cost of public child care covered by the public. Different coverage rates and fees per region.	0 to 2 year old children	0.7% (all in kind benefits ECEC)	No info on public vs private use.	include in a new policy sheet in EUROMOD. Added to EUROMOD based on rules of the capital of each region.	Regions at NUTS-2 level (drgn2)
- Public pre-primary school	Cost of public pre-primary school covered by the public	3 to 5 year old children		No information on public vs private use.	include in a new policy sheet in EUROMOD-	Regions at NUTS-2 level (drgn2)
Family fees						
- Public child care	Family fees paid for each child enrolled in the public child care	Dependent on family size and income\assets (ISEE indicator	-	No information on public vs private use.	Added to EUROMOD	Regions at NUTS-2 level (drgn2)
- Public pre-primary school	n/a	Families mainly pay only for meals	-			
- Private child care	Cost paid by families	-	-	No information on public vs private use.	Can be simulated as % addition to maximum public child care fees at regional level	Regions at NUTS-2 level (drgn2)
- Private pre-primary school	Parental fees for each child in pre-primary school.	?	-			

Note: n.a. = not available *Sources: OECD expenditures data, OECD Family Database, ISTAT 2011.*

Annex F. Sweden

Tine Hufkens

This report provides an overview of early childhood education and childcare services (ECEC) in Sweden for children under the schooling age. The report refers to the system and policies in place in 2009, also indicating later developments, and focuses in particular on the form and extent of public subsidies. The next section provides background information and Section F.2 discusses options for extending the modelling of childcare benefits, subsidies and fees in EUROMOD.

F.1 Childcare arrangements

In Sweden childcare has traditionally been publicly provided. Nowadays the private facilities occupy a minority place in the childcare landscape. These private facilities are also subsidized. From the age of one year children are predominantly present in preschool. Until this age most children are cared for at home. Per child parents are entitled to 480 days of **paid parental leave** (*Föräldrapenning*, cash benefit). Each parent can take half of these days, 60 days are reserved for the father and 60 days are reserved for the mother. 390 days are paid at 80% of earnings, the remaining 90 days at a flat rate. In 2013 men took almost 25 % of all parental benefit days. Table F.1 shows the minimum and maximum amounts. To increase the incentive for parents to share the parental leave and participate in working life, there is an equality bonus. The **equality bonus** is SEK 50 per day per parent. Most days of the equality bonus are paid before a child's third birthday. Conditions to receive the bonus are joint custody when the parents receive parental benefit, it is only paid after the 60 days reserved for each parent have been taken and when the parent who has taken the fewer number of days receives the parental benefit. Other parental benefits are the temporary parental benefit for care of children, the temporary parental benefit in connection with the death of a child, the temporary parental benefit for contact days and the temporary parental benefit in connection with birth or adoption.

Table F.1: The parental benefit

	2009	2010	2011	2012	2013	2014
Paid parental leave as % of earning, maximum amount per day in SEK	910	901	910	935	946	-
Paid parental leave as % of earning, minimum amount per day in SEK	180	180	180	180	180	180
Paid parental leave, flat rate per day in SEK	180	180	180	180	180	180

Source: Sweden.se , Försäkringskassan

If the work conditions make it impossible to work, a pregnant woman can apply for a **maternity allowance/pregnancy benefit** during maximum 60 days or 14 weeks. The benefit rules are the same as for the sickness benefit, the benefit is taxable.

Childcare or kindergarten starts from the age or 1. Childcare services are provided for children aged 1 to 5. The year a child turns 6, he/she can participate in a non-compulsory pre-school year. Compulsory school age is 7 years (compulsory school is until 16).

Table F.2: child care types in Sweden

	Subsidized	Non subsidized	Other
Family care	- Family day care home (with one or more child minders) (1-12 years)	/	- Informal care (friends or family) (Everyone that takes care of children, except for family, has to report.)
Collective facilities	- pre-school (1-5years) - pedagogical care - leisure time centres/ recreation centres -Open pre-schools		

Source: The Swedish Education System

Pre-school/kindergarten (*Förskola*) is for children aged 1 to 5, but children start pre-school at different ages. Pre-school hours are from 6.30 to 18.30 every weekday, expect for certain public holidays. Children can attend for varying hours. Pre-school is organized by the municipalities. Three types of childcare services can be distinguished in Sweden (See Table F.2). Pre-school services, family day care homes and open pre-schools. The municipalities are obliged to provide family day care or pre-school for children aged 1 or older. Pre-school places are for children when their parents are working or pursuing studies or when their parents are unemployment or on parental leave. For unemployed parents or parents on parental leave a place is to be made available to each child for at least 3 hours a day or 15 hours a week. A place in pre-school is to be offered within 3 or 4 months after the parents notified the municipality of their requirement. Pre-school services also have to offer 'universal pre-school/ordinary pre-school'. This means municipalities have to offer pre-school places for all children for at least 525 hours per year or 15 hours per week free of charge for all children from the age of three until the age of five (NOSOSKO, 2013)[24]. In 2014 about 80% of the children from one to five years of age spend part of their weekdays in pre-school education. Most children attend pre-school **full time**.

The year a child turns 6, he/she is eligible to start pre-school class(*Förskoleklass*). The pre-school class is voluntary and free of charge. It prepares children to start compulsory school at the age of 7. Attendance is usually three hours a day, during the rest of the day, the pupils are in the leisure-time center or in pedagogical care. Pre-school class are organized by the municipalities.

In a family day care home a child minder receives children into his or her home. The children are between 1 and 12 years but most are between 1 and 5 years old. Concerning the provision of places, family day care homes also have to offer a place for a child without unreasonable delay and a place has to be made available for at least 3 hours a day or 15 hours a week.

Open pre-schools are for children and their parents together. Children can do educational activities while the adults have a chance for social contact. Many open pre-schools cooperate with other activities, such as social services or maternal and child health care. The visitors are not enrolled but decide themselves when and how often they want to attend. This type of childcare will not be discussed further in this note.

The number of pre-school institutions and the share of enrolled children between 2008 and 2013 are shown in Table F.3.

[24] We are grateful to Laure Doctrinal for clarifications to the Swedish childcare system.

Table F.3: Number of pre-school institutions and enrolled children, 2008-2013

	2008	2009	2010	2011	2012	2013
Municipal level						
number of pre-school institutions	7,447	7,280	7,223	7,339	7,267	7,142
Number of enrolled children	354,616	362,990	370,290	380,263	387,357	391,874
Percentage of enrolled children (%)	82	81.4	80.9	80.5	80.3	80.1
Other (family care, other type of public care, etc)						
number of pre-school institutions	2,502	2,586	2,646	2,694	2,724	2,749
Number of enrolled children	78,005	83,090	87,706	91,898	94,952	97,401
Percentage of enrolled children (%)	18	18.6	19.1	19.5	19.7	19.9

Source: Skolverket

For children aged from 6 to 12 years (school children) after school care (*Fritidshem*) is available in family day care homes, leisure time centers or open leisure time centers. This form of childcare is also organized by the municipalities. From 7 to 16 children are required to attend primary school. Primary school and the non-compulsory pre-school year (pre-school class) are free of charge and include a hot lunch.

Between 2001 and 2003 Sweden carried out a reform on parental fees for childcare. The maxtaxa reform entailed the introduction of a maximum parental fee and the obligation for municipalities to keep available pre-school slots for certain groups. Since the reform fees ought to be related to gross income. Municipalities are allowed to charge a reasonable fee for a pre-school place, but there is also a maximum fee system. This means that there is a cap on how high fees can be for a family. The maximum fee system is voluntary for municipalities. The municipalities who apply it are entitled to a government grant to compensate them for loss of income and to secure quality. Since 2003 all municipalities in Sweden apply a system with a maximum fee. The tariff system is based on the household income, the maximum monthly cost for the first child is SEK 1,260 (€140 in 2014).

The maxtaxa reform states that parents should only have to spend one to three per cent of the family's income on childcare, depending on how many children they have. Table F.4 shows the formula. The fees are a percentage of the gross monthly household income. For fee-based income the following is **not** counted: Maintenance allowance/maintenance support, Child allowance, State study support, Housing allowance, Disability allowance, Maintenance support/Financial assistance/Social allowance, Municipal care allowance, Establishment allowance, Compensation from the Swedish Migration Board.

Table F.4: fees for childcare and pre-school facilities as a percentage of income (1-5 years), 2002-2014

	Preschool	After school/leisure time centers	family day care homes
Child 1	3 % – maximum 1 260 SEK per month	2 % – maximum 840 SEK per month	2.1 % – maximum 822 SEK per month
Child 2	2 % – maximum 840 SEK per month	1 % – maximum 420 SEK per month	1.4 % – maximum 588 SEK per month
Child 3	1 % – maximum 420 SEK per month	1 % – maximum 420 SEK per month	0.7 % – maximum 294 SEK per month
Child 4	Free of charge	Free of charge	Free of charge

Source: http://www.avesta.se/In-English/English/Fees-for-child-care-/; Skolverket, 2007; Linköping Kommun
Note: the youngest child in the family counts as "Child 1".

Since the maxtaxa reform the proportion of children enrolled in pre-school had increased in all municipalities. In the family day care homes both the proportion and the number of children have decreased, but this development has been in process from before the maxtaxa reform. The parental fee in pre-school or a leisure time center does not depend on the attendance time. Since the reform the attendance time at pre-school and family day care home has decreased. Also the attendance time in leisure time centers has fallen.

The availability of pre-school institutions is very high, while the availability of leisure time centers varies among municipalities. In 2009 46.7% of the children under 3 years old are in formal childcare in Sweden. 92.9 % of the children aged 3 to 5 are in pre-school educational programmes (OECD, 2009). Since maternity leave is relatively long in Sweden, childcare only starts for children aged 1. The majority of Swedish children attend publicly financed childcare between 1 year and 5 years. A smaller group is in after-school care (7 to 12 years).

Government expenditure on pre-primary education in Sweden in 2009 is 22,558 million SEK. The expenditures rose to 24,895 million SEK in 2011. Table F.6 shows an overview of the total cost for pre-school and childcare services and Table F.7 the annual expenditures.

Table F.5: Total cost of ECEC

	2009	2013
total cost (thousand) (SEK)	50,641,955	62,222,631
enrolled children	466,470	489,275
cost per enrolled child (SEK)	114,400	128,100

Source: Skolverket

Table F.6: Annual government expenditures pre-school

	2008	2009	2010	2011
SEK, millions	21,310	22,558	23,716.1	24,895.2

Source: OECD Education Database

F.2 Data and simulations

To impute the value of public pre-school in Sweden in EUROMOD, we take the following approach:

- We assume all ECEC services in Sweden are subsidized. Childcare and preschool variables all taken together. If children attend childcare/pre-school we assume they attend full time and calculate a full time fee. Fees are calculated on a monthly basis. For children from three to five years old we simulate that 15 hours per week are free of charge. For these children we reduce the monthly amount so they only pay part time childcare.
- At the age of six children can go to pre-school class (non-compulsory).The pre-school class is free of charge but the additional childcare is not. Based on the childcare variables rl030, rl040 and rl050 we calculate the fee for the additional care. This fee depends on the amount of hours in the care institution.
- Fees are regulated at the local level, but we cannot account for regional differences.

Table F.7 summarizes the Swedish childcare and pre-school system and indicates what can be simulated using EUROMOD.

Table F.7: Summary to simulate child care: Sweden

	Explanation	Characteristics/ Conditions	Budget (as % of GDP, 2009)	Use (as % of targeted children)	In EUROMOD (feasibility): simulated? imputed?	Country/region level (NUTS classification SILC)
Cash benefits						
- Home care allowance	Not applicable	-	-	-	-	-
- Maternity leave, paternity leave, parental leave	PrL: 480 days of parental leave to be divided between both parents. 390 days paid at 80% of earnings, remaining 90 days at flat rate. 60 days reserved exclusively for mothers, 60 days for fathers, and remaining days divided between them as they choose.	-	0.8 %	-	Not simulated, taken from data	SE
- Financial support through tax system	-	-	-	-	-	
"In kind" benefits			0.9% childcare spending)	-		
- Family care (subsidized)		Maximum amount per child, parental fee depends on income of parent(s) and rank of child in family.	n.a.	-	Not simulated	SE
- Collective child care (subsidized)	-	-	-	-	-	SE
- Pre-primary education	- Nursery school/kindergarten: age 1 to 5 - Pre-school classes: age 6 - Primary for 7 years	Maximum amount per child, parental fee depends on income of parent(s) and rank of child in family.	0.5 % (pre-primary spending)	75% (2010, av. enrolment rate of children 0-6y in pre-school education programs) 97% (2010, 3-5 years)	Added to EUROMOD.	SE

n.a. = not available *Sources: OECD expenditures data, OECD Family Database, Skolverket.*

Annex G. United Kingdom

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Early childhood education and childcare services (ECEC) in the UK consists of maternity benefits, and registered childcare services. The UK has a mixed market included structures in the maintained sector (i.e. state-funded schools) and center-based childcare facilities run by private, voluntary or independent organisations, including day nurseries, playgroups, or, in very few instances, registered child minders. The public support for childcare exists in different forms. In this note we discuss the UK childcare and pre-school policies (section G.1) and the extensions of EUROMOD to include childcare subsidies and fees in EUROMOD (section G.2).

G.1 Childcare arrangements in the UK

Childcare in the UK consists of both in kind benefits and cash benefits. Cash benefits include two schemes of maternity leave. Public support for childcare services is partly in kind by financing childcare facilities and partly targeted directly to the families by the childcare element of the Working Tax credit and by the employer-supported childcare vouchers. Compulsory education starts at 5 years but most children start full-time compulsory schooling in the September after they turn four. The school year runs from September to August and is split into three terms, starting September, January and after Easter.

In terms maternity leave schemes there are two main schemes. The Maternity Allowance (MA) is a flat-rate benefit payable for up to 26 weeks if the claimant has herself met contribution, employment and earnings conditions and does not qualify for Statutory Maternity Payment (SMP, see below). A standard rate is paid to women whose average earnings at least equal the National Insurance Lower Earnings Limit and to self-employed women who have paid a Class 2 contribution (see 1.4 below). There are no additions for dependents. Maternity Allowance is not taxable. The Statutory Maternity Pay (SMP) payable to employees by the employer for the first 18 weeks of maternity leave. For SMP there is a minimum flat rate payment and a higher rate (payable for only six weeks) equal to 90% of usual earnings. SMP is treated as earnings by the rest of the tax-benefit system. The paternity leave is one or two weeks. It is 90% of your average weekly earnings fully paid, with a maximum amount of £139.58.

The UK has a mixed market for childcare including structures in the maintained sector (i.e. state-funded schools) and center-based childcare facilities run by private, voluntary or independent organisations, including day nurseries (usually offering childcare 10 hours a day, all year round), playgroups, or, in very few instances, registered child

minders. Maintained settings include a small number of nursery schools (i.e. schools providing early education exclusively) and a larger number of nursery classes attached to infant or primary schools (covering ages 3 to 7 or 3 to 11), together offering places to approximately 17% of four year olds (with a further 58% in full-time schooling) and around 38% of three year olds (Brewer et al. 2014).

Table G.1: Childcare system in the UK

	Subsidized	**Non subsidized**	**Other**
Family care	free part time early years education for 3 and 4 years old	registered child minders	Informal care (grandparents, relatives, neighbours)
Collective facilities	- free part time early years education for 3 and 4 years old - 4 years old children in compulsory schooling	- private/ independent center based childcare facilities - day nurseries	

Source: Department for education

Moreover, most of the childcare services for those younger than 3 years old are provided by the private and not-for-profit sector: for example, in England 91% of nursery care, 94% of sessional and pre-school education are delivered by the private and not-for-profit sectors (Department for Education, 2012a). In principle, childcare operates on a regulated free-market principle, although the increasing prices show that supply is lower than demand without sufficient new entrants to meet the unsatisfied demand.

As mentioned, different forms of childcare exist in the UK: day nursery (most of which are run by private or not-for-profit organisations), sessional pre-schools (most of which offer part-time provision), nurseries attached to primary schools, registered childminders. At the school-age, many parents use breakfast and after-school clubs to look after their children before and after the school day, and holiday childcare, particularly during half-term periods and over the summer holidays (Family and Childcare Trust, 2013b). With respect to informal – unregulated – childcare, 27% of families use grandparents to provide childcare during term-time, 4% rely on older siblings, 6% other relatives and 6% friends and neighbours.

Table G.2: Number of children in ECEC services, 2009

	FRS	OECD	EUROSTAT
0-3 years old	25%	41%*	35%^^
3- 5 years old	50%	92%*	91%
0-5 years old	41%	93%^	-

Source: FRS 2009-2010; OECD

Note: 1) enrolment in formal childcare and preschool; ** enrolment in preschool educational programmes, ^enrolment in formal care and preschool; 2) big overlap between the cases in primary education and the cases in childcare. ^^ EUROSTAT information is based on SILC, 0-2:*

31%(1 to 29 hours in formal childcare) + 4%(>30hours); 3 years to compulsory schooling age: 70%(1 to 29 hours) + 21%(>30hours).

Most public support targeted to childcare is included in the childcare element of the Working Tax credit, the employer-supported childcare vouchers and the free early education offer (directly subsidized by the government).

Childcare services are managed by local authorities (around 150 in England) and the Childcare Act 2006 obliges all local authorities in England and Wales to provide sufficient childcare for working parents. In spite of increases in the supply of childcare over recent years, the childcare costs survey found that just over two-thirds (69 per cent) of Family Information Services (FIS) in England and Wales said that parents had reported a lack of childcare in their area in 2009. The table below shows the regional averages for a full time place in a nursery or with a childminder (50 hours per week) and 15 hours per week in an out-of-school club.

Table 1: Childcare costs in Britain

Region	Nursery (under 2)	Nursery (2 and over)	Childminder (under 2)	Childminder (2 and over)	Out-of-school club
Inner London	£226	£200	£196	£180	£40
Outer London	£192	£177	£189	£175	£52
South East	£199	£182	£173	£177	£40
South West	£161	£153	£165	£163	£36
East of England	£168	£158	£163	£158	£37
West Midlands	£146	£141	£115	£112	£40
East Midlands	£141	£135	£139	£135	£44
Yorks & Humber	£148	£139	£144	£143	£36
North West	£145	£137	£131	£130	£37
North East	£144	£136	£149	£149	£40
England Regional Average	£167	£156	£156	£152	£40
Scotland Average	£158	£143	£155	£154	£49
Wales Average	£146	£142	£150	£148	£41

Between 2009 and 2014, prices have gone up by 27 per cent while wages have remained the same, making childcare ever more unaffordable for parents (Family and Childcare Trust, 2014). Not all children in childcare pay a childcare fee (FRS 2009-2010). Especially children from 3 years to the compulsory schooling age (5 years). This is due to the free part-time early years education for all three and four year olds.

The fiscal benefit is in place to reduce the amount that parents actually have to pay (Daycare trust, 2010). According to the relevant rules, families can claim up to 80% of childcare costs through the childcare element of the Working Tax Credit, although not all take up this opportunity.

Working parents on low incomes can receive up to 80% of their childcare costs through tax credits, up to a maximum cost of £175 per week for one child in childcare and £300

per week for two or more children. This means that a family can receive up to £122.50 help with childcare costs for one child and up to £210 for two or more children, although for almost all families the amount of help is much lower because this depends on income.

A tax-efficient employer supported childcare system, worth up to £1,196 a year, is also available to assist with childcare costs. This can take the form of an additional benefit on top of the salary or a salary sacrifice before the payment of income tax. However, only 19 per cent of parents receive any support with childcare costs from their employer. In London there is also the Childcare Affordability Programme which subsidises the costs of childcare by up to £30 a week for parents on a low income.

The most widely used childcare subsidy is the free part-time early years education that all three- and four-year olds are entitled to receive. Working parents of children in England, Scotland and Wales qualify for part-time free early education in the term after their third birthday. This means that they receive 570 free hours every year.

In practice, central government and local authorities provide around £4 per hour to childcare providers in order to guarantee free part-time services although providers complain that this support is not enough to cover their costs (Rutter et al. 2012) and the consequence is that they charge a higher rate for the additional extra hours that the parents purchase.

The free part-time early education for all 3 and 4 year olds in England (effective from 2001 for the 4 year olds and from 2005 for the 3 year olds) is an expensive policy: £1.9 billion a year for 831,800 three- and four-year-olds were receiving the entitlement (NAO, 2012) with a take up rate of around 93%. The kid becomes eligible for a free part-time early education entitlement at the beginning of the term after she\he turns three. From 2013 some 2 year olds are also entitled to a free part-time place. Two year olds entitled to a free part-time place are looked after by the local authority or in families who would be eligible for free school meals (Brewer et. al., 2014).

G.2 Data and simulations

EUROMOD uses the FRS 2009/10 survey as input data for the UK. The family resources Survey (FRS) is a cross-sectional household survey based on a two-stage stratified clustered probability sample of private households and collected throughout the fiscal year (April-March). It was launched in 1992 to meet the information requirement of the Department for Work and Pensions (See http://research.dwp.gov.uk/asd/frs/2009_10/frs_2009_10_report.pdf).

One of the original files (i.e. childcare.dta) includes information of childcare as detailed in the following table:

File	Variable	Label
CHLDCARE	BENCCDIS	Does benefit account for childcare cost
CHLDCARE	BENUNIT	Benefit Unit
CHLDCARE	CHAMT	Costs of childcare
CHLDCARE	CHHR	How many hours in last seven days
CHLDCARE	CHLOOK	Childcare arrangements
CHLDCARE	CHPD	Pcode: Costs of childcare
CHLDCARE	COST	Whether childcare costs anything
CHLDCARE	CTRM	Week of childcare
CHLDCARE	EMPLPROV	Does employer provide this form of childcare
CHLDCARE	HOURLY	Whether payment is hourly rate
CHLDCARE	ISSUE	Whether Mainstage or Reissue
CHLDCARE	PERSON	Person
CHLDCARE	PMCHK	Time spent with provider
CHLDCARE	REGISTRD	Whether registered
CHLDCARE	SERNUM	Sernum
CHLDCARE	_MONTH_	Month code (Source)

The EUROMOD variable xcc has been derived using the info contained in the variables cost, registrd and chamt (i.e. xcc = chamt*(52/12) if cost==1 & registrd==1).

If needed, this file can be merged with EUROMOD input file by using the variables idorighh (sernum) and idorigperson (person). Another file (i.e. child.dta) includes variables on school attendance.

In EUROMOD the maternity allowances are either included in employment income (yem), self-employment income or reported separately in the variables bmana or bmaer.

In EUROMOD the childcare element (sin03_s) is simulated within the Working tax credit to meet the cost of 'relevant childcare' (xcc). Those eligible are lone parents in employment or couples with both partners in employment or one partner receiving disability benefits. 'Relevant childcare' essentially refers to registered childcare for which the childcare element can be claimed. The calculation of the childcare tax credit element is based on average weekly amounts, i.e. the cost of childcare over the whole year is added together and then divided by the number of weeks that childcare has been used. This average childcare amount is then multiplied by 52 and treated as the annual amount. The childcare element is designed to meet a proportion of those costs up to a set limit. The proportion was 80% from 2009, but was decreased to 70% in 2011, up to £175 per week per child if only one child and £300 per week if two or more children. Moreover, within the simulation of the Housing benefit, EUROMOD simulates an additional disregard for childcare costs, designed so that those receiving the childcare element of WTC do not lose any of the payment through the HB means-test.. An allowance for childcare costs (sin13_s) up to £175 per week for one child and up to £300

for two or more children can be deducted from earnings if the claimant is a lone parent and working 16 hours or more per week or if a couple are claiming who are either both working 16 hours or more or one is working 16 hours or more and the other is 'incapacitated', i.e. unable to work and in receipt of income replacement disability benefits (such as Incapacity Benefit, Employment and Support Allowance or the disability element of IS).

We do not simulate the childcare fees in EUROMOD for the UK. We built on information in EUROMOD and the UK-input data. Some additional assumptions are described below.

- We use the EUROMOD –input variable xcc for the cost of childcare. The childcare element of the working tax credit is simulated in EUROMOD.
- To capture the children in childcare that are in free part time early year education we use the variable registrd. If a child is in registrd childcare, is 3 or 4 years old and does not pay any childcare fees, we assume the child is in the part-time early years education and does not use any additional childcare.
- We simulate net subsidies for all 3 and 4 year olds in registered childcare (whether they pay parental fees or not).
- For all 0-2 year olds, we assume private childcare.
- The childcare element is simulated for all children in childcare and eligible to this tax advantage.

ImPRovE: Poverty Reduction in Europe. Social Policy and Innovation

Poverty Reduction in Europe: Social Policy and Innovation (ImPRovE) is an international research project that brings together ten outstanding research institutes and a broad network of researchers in a concerted effort to study poverty, social policy and social innovation in Europe. The ImPRovE project aims to improve the basis for evidence-based policy making in Europe, both in the short and in the long term. In the short term, this is done by carrying out research that is directly relevant for policymakers. At the same time however, ImPRovE invests in improving the long-term capacity for evidence-based policy making by upgrading the available research infrastructure, by combining both applied and fundamental research, and by optimising the information flow of research results to relevant policy makers and the civil society at large.

The two central questions driving the ImPRovE project are:

> How can social cohesion be achieved in Europe?
>
> How can social innovation complement, reinforce and modify macro-level policies and vice versa?

The project runs from March 2012 till February 2016 and receives EU research support to the amount of Euro 2.7 million under the 7th Framework Programme. The output of ImPRovE will include over 55 research papers, about 16 policy briefs and at least 3 scientific books. The ImPRovE Consortium will organise two international conferences (Spring 2014 and Winter 2015). In addition, ImPRovE will develop a new database of local projects of social innovation in Europe, cross-national comparable reference budgets for 6 countries (Belgium, Finland, Greece, Hungary, Italy and Spain) and will strongly expand the available policy scenarios in the European microsimulation model EUROMOD.

More detailed information is available on the website http://improve-research.eu.

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