

Who uses childcare? Background brief on inequalities in the use of formal early childhood education and care (ECEC) among very young children



June 2016

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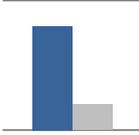
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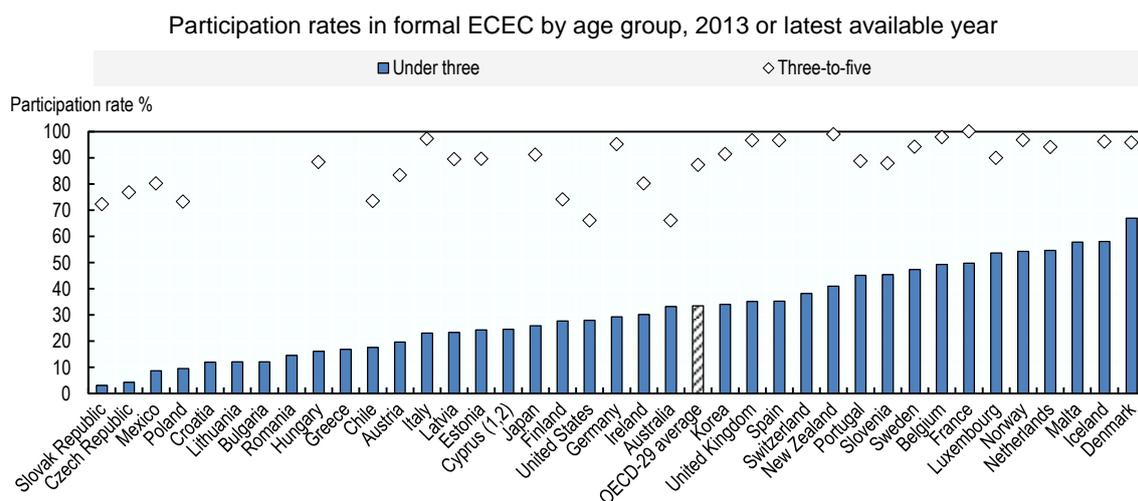
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	<p>On average across the OECD, one-in-three children under age three use formal ECEC. In some countries, like Denmark and Iceland, this is around six-in-ten or more.</p>		<p>Children from disadvantaged backgrounds are disproportionately likely to miss out on formal ECEC. In France and Ireland, for instance, children from high-income families are over four times more likely to use formal ECEC than children from low-income families.</p>
	<p>Childcare costs can be prohibitively high. In some countries, the costs of centre-based care for two children can amount to more than one-fifth of the disposable income of a low-earning couple. Such high costs can act as a barrier to the use of ECEC and discourage parental employment.</p>		<p>Providing all children with access to affordable formal ECEC is key. To encourage equal use, countries should ensure that out-of-pocket childcare costs are kept to a minimum, especially for low-income families, and that high-quality, reasonably-priced services are open to all children, regardless of background.</p>

Formal Early Childhood Education and Care (ECEC) services can help address a range of work, family and child issues. Affordable ECEC helps parents to participate in paid work, increasing family income and reducing the risk of family and child poverty. High-quality ECEC also has positive effects on child cognitive and social development, improving school-readiness (OECD, 2010) and, further down the line, social and labour market outcomes (Camilli et al, 2010; Havnes and Mogstad, 2011; Ruhm and Waldfogel, 2012). These effects stretch across most children, but are strongest for those from lower socio-economic positions where high-quality ECEC can help mitigate many of the effects of a poor start (see e.g. OECD, 2006; Gormley et al, 2008; Dumas and Lefranc, 2010; Ruhm and Waldfogel, 2012; Van Huizen and Plantenga, 2015). Formal ECEC has the potential to play a central role in promoting social mobility and breaking the cycle of disadvantage.

In view of the benefits of formal ECEC, countries across the OECD and Europe have put considerable effort into encouraging participation in ECEC services. Participation rates for children aged between three and five are typically high at around or above 70% (Figure 1), largely on account of comprehensive pre-primary school systems that often guarantee a place from a child's third or fourth birthday (EC/EACEA/Eurydice/Eurostat, 2014; OECD, 2015). Rates for very young children (under age three) tend to be lower, and vary more across countries (Figure 1). In Iceland and Denmark around six-in-ten or more children under age three participate in some form of formal ECEC, while this is less than one-in-twenty in both the Czech and Slovak Republics.

Figure 1. Participation rates for very young children vary considerably, but can reach as high as 70%



Notes: Participation rates for children under age three include children using organised day care and pre-school, family day care, and paid childminders, although exact definitions may vary slightly across countries. Data for Japan refer to 2010, and for Australia, Chile, Mexico, and the United States to 2011. Data for Mexico do not include services provided by the private sector. Participation rates for children aged between three and five include children in pre-primary education and also in some countries those enrolled in compulsory primary education. The OECD-29 average includes all countries with data available for both age groups.

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Source: OECD Family Database, Indicator PF3.2, www.oecd.org/social/family/database.htm, and OECD Gender Data Portal, www.oecd.org/gender/data/

Inequalities in the use of formal ECEC by very young children

The use of formal ECEC is not evenly spread across all groups of children. In many OECD countries, children are more likely to use ECEC when they come from relatively advantaged socio-economic backgrounds, while children from disadvantaged families – often those who stand to gain the most from participating in formal ECEC – are disproportionately likely to miss out. This applies to children both above and below pre-primary school age (three to five, inclusive), but gaps are often particularly large for very young children below age three.

The chances of a child under age three participating in formal ECEC often increase with household income (Figure 2, panel A; shaded markers represent statistically significant differences across income groups). In France and in Ireland, participation rates for children in low-income families are, at 18% and 12% respectively, less than a quarter of those for children from high-income families (81% and 57%). In Belgium and the Netherlands, participation rates for children from low-income backgrounds are generally a little higher (around 36%), but are still only around half those for children from the richest families (69% and 72%). A similar pattern holds in many other OECD countries too – in both Australia and the United States, for instance, children from high income families are considerably more likely to use formal services than children from low-income families (ABS, 2015; U.S. Census Bureau, 2013).

There are, however, a few countries where participation in formal ECEC by very young children does not differ with income (Figure 2, panel A), nor with maternal level of education (Figure 2, panel B). As indicated by the white markers, in some countries there are no statistical differences in participation rates between children from low-, middle- and high-income families. Denmark, Iceland and Sweden stand out in particular as countries that manage to combine high participation with no real differences across income groups – in these three countries, very young children are likely to be enrolled in formal ECEC regardless of whether they live in poorer or richer families. Moreover, in these countries, participation rates also remain high at around 55-65% irrespective of whether or not the child's mother holds a tertiary degree.

Box 1. Data and definitions

Drawing on data from the 2014 European Union Statistics on Income and Living Conditions survey (EU-SILC) – an EU-wide survey on household income and living conditions, and a source of comparable information on the use of education and care services by children – this brief explores how participation in formal early childhood education and care (ECEC) services by very young children (under age three) differs across socio-economic groups.

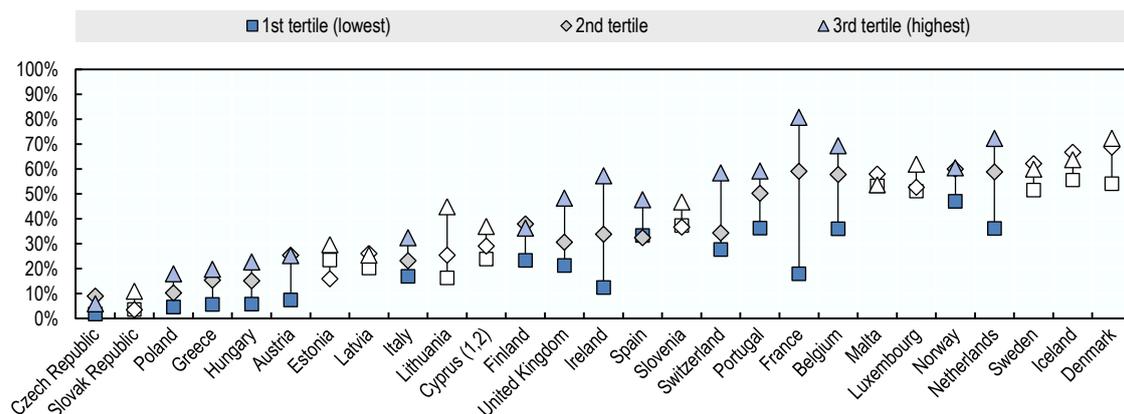
'Formal' ECEC services are defined here as paid ECEC services provided either through organised structures or through direct arrangements between the parents and the care provider, and include centre-based services (e.g. nursery or day care centres and pre-schools), organised family day care, and 'unstructured' care services provided by private childminders. A child is considered as 'participating' in a formal ECEC service if they are reported as using it for at least one hour during a usual week.

A child's socio-economic background and circumstances is captured through four main indicators:

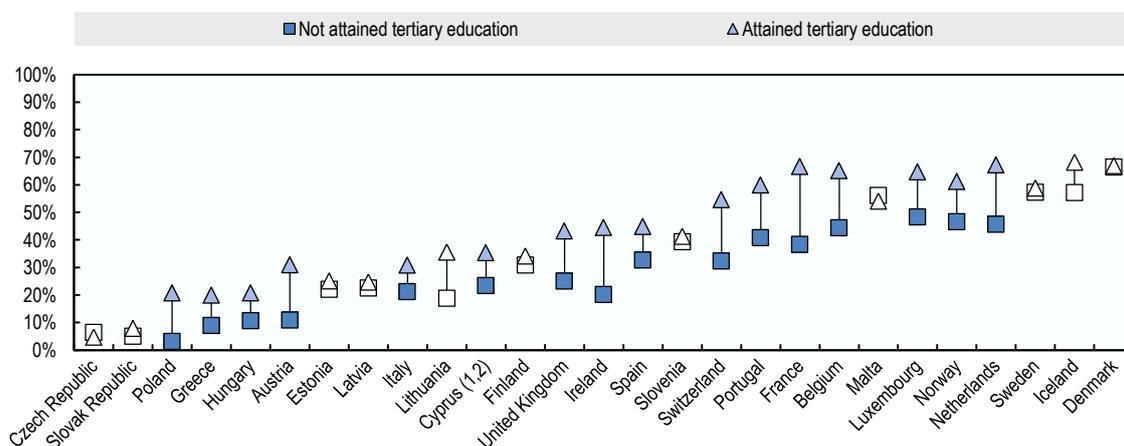
- **Equivalised disposable household income level**, with children (under age six) ranked according to the disposable (post-tax-and-transfer) income of the household in which they live – equivalised using the square root scale, to account for the effect of family size on the household's standard of living – and then divided into tertiles according to their position in the distribution. Tertiles rather than quintiles are used to ensure that sub-group sample sizes are sufficiently large across countries.
- **Education level of the mother**, measured by whether or not the mother of the child has attained tertiary education. The education level of the father is used if there is no mother in the household, and then of the (female) household head if there is no mother or father in the household.
- **Family status**, measured by whether the child lives with one parent or with two parents.
- **Employment status of the mother**, measured by whether or not the mother of the child is in employment, either part-time or full-time. The employment status of the father is used if there is no mother in the household, and then of the (female) household head if there is no mother or father in the household.

Figure 2. Children from disadvantaged backgrounds are disproportionately likely to miss out on formal ECEC

Panel A. Participation rates in formal ECEC by equivalised disposable household income tertile, children under age three, European countries, 2014



Panel B. Participation rates in formal ECEC by whether or not the mother has attained tertiary education, children under age three, European countries, 2014



Notes: Countries are ranked according to the overall participation rate in formal ECEC for children aged under age three in 2014. Shaded markers represent statistically significant differences in participation rates across groups at $p < 0.05$. Non-shaded markers represent no statistically significant difference in participation rates across groups at $p < 0.05$. Income tertiles based on children under age six. Data for Denmark and Switzerland refer to 2013.

1) See note 1) to Figure 1.

2) See note 2) to Figure 1.

Source: OECD calculations based on the European Union Statistics on Income and Living Conditions survey (EU-SILC) 2014 (EU-SILC 2013 for Denmark and Switzerland), ec.europa.eu/eurostat/web/income-and-living-conditions/methodology

Reading note: In the Netherlands in 2014, there were statistically significant differences in participations rates in formal ECEC between children from the 1st, the 2nd, and the 3rd tertiles for equivalised disposable household income. In Iceland in 2014, there were no statistically significant differences in participations rates formal ECEC between children from the 1st, the 2nd, and the 3rd tertiles for equivalised disposable household income.

Maternal employment can help explain much of the gap in the use of formal ECEC...

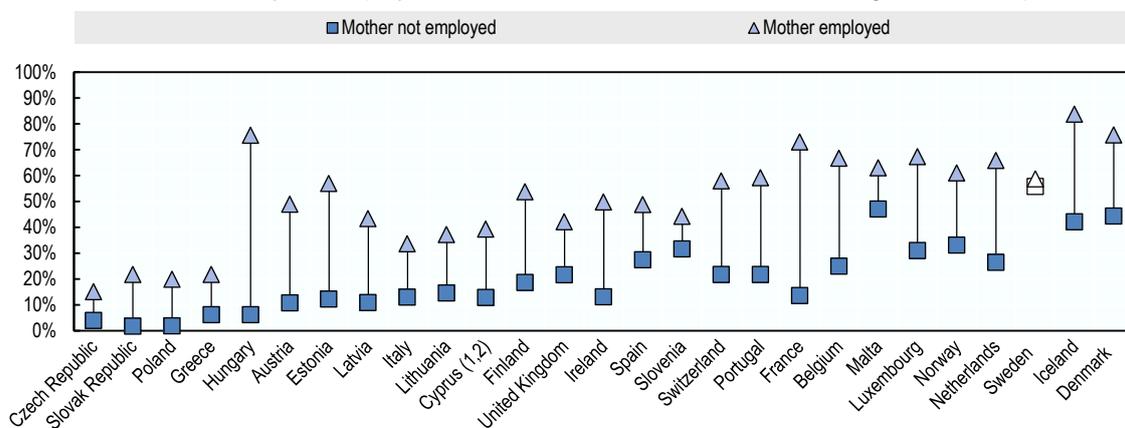
In many countries, it is not maternal education or household income themselves that explain differences in the use of ECEC, but rather their relationship with maternal employment (Van Lancker, 2013). Not surprisingly, having a mother in employment is tightly linked to the chances of a child using formal ECEC (Figure 3). Except for in Sweden – where all children older than one year are entitled to a place in ECEC regardless of parental employment status and childcare fees are low and affordable for all parents (see Figure 5) – very young children are far more likely to use formal ECEC services when their mother works (Figure 3), largely because employment increases the demand for non-parental care.

There are strong links between maternal education, maternal employment and children’s socio-economic position: children are more likely to have an employed mother when she is highly educated, while in almost all countries the children of working mothers are more likely to live in high-income families. The opposite is true for children with mothers who do not work. In many

countries, once the employment status of the mother is taken into account, differences in participation across levels of both maternal education and household income largely shrink or disappear (Figure 4).

Figure 3. Children with working mothers are almost always more likely to use formal ECEC than the children of mothers who do not work

Participation rates in formal ECEC by the employment status of the mother, children under age three, European countries, 2014



Note: Countries are ranked according to the overall participation rate in formal ECEC for children aged under age three in 2014. Shaded markers represent statistically significant differences across groups at $p < 0.05$. Non-shaded markers represent no statistically significant difference across groups at $p < 0.05$. Data for Denmark and Switzerland refer to 2013.

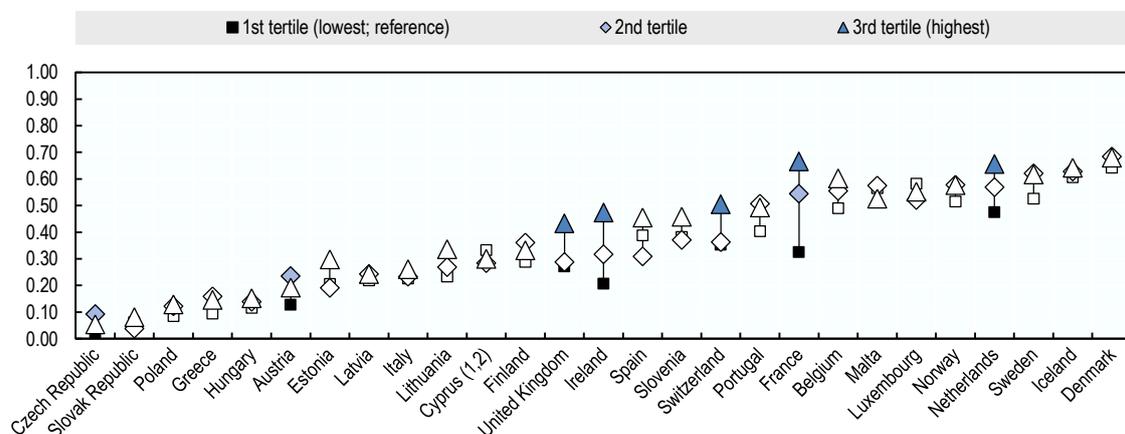
1) See note 1) to Figure 1.

2) See note 2) to Figure 1.

Source: OECD calculations based on EU-SILC 2014 (EU-SILC 2013 for Denmark and Switzerland), ec.europa.eu/eurostat/web/income-and-living-conditions/methodology

Figure 4. In most European countries, living in a low-income household does not itself reduce the chances of a child using formal ECEC

Estimated probability of participation in formal ECEC by equivalised disposable household income, children under age three, European countries, 2014



Note: Countries are ranked according to the overall participation rate in formal ECEC for children aged under age three in 2014. Adjusted average probabilities from individual country-specific logit models taking account of child age and sex, equivalised disposable household income tertile, mother's employment status and mother's education level. Shaded markers represent statistically significant differences from the reference group (1st tertile) at $p < 0.05$. Non-shaded markers represent no statistically significant difference at $p < 0.05$. Income tertiles based on children under age six. Data for Denmark and Switzerland refer to 2013.

1) See note 1) to Figure 1.

2) See note 2) to Figure 1.

Source: OECD calculations based on EU-SILC 2014 (EU-SILC 2013 for Denmark and Switzerland), ec.europa.eu/eurostat/web/income-and-living-conditions/methodology

... but income remains important in a few countries, even after controlling for maternal employment

There are, however, a few countries where household income continues to play an important role even after controlling for the employment status of the mother (Figure 4). In the Netherlands, Switzerland, and the United Kingdom, for example, very young children (under age three) from low-income (and also, for the latter two, middle-income) backgrounds are roughly around a

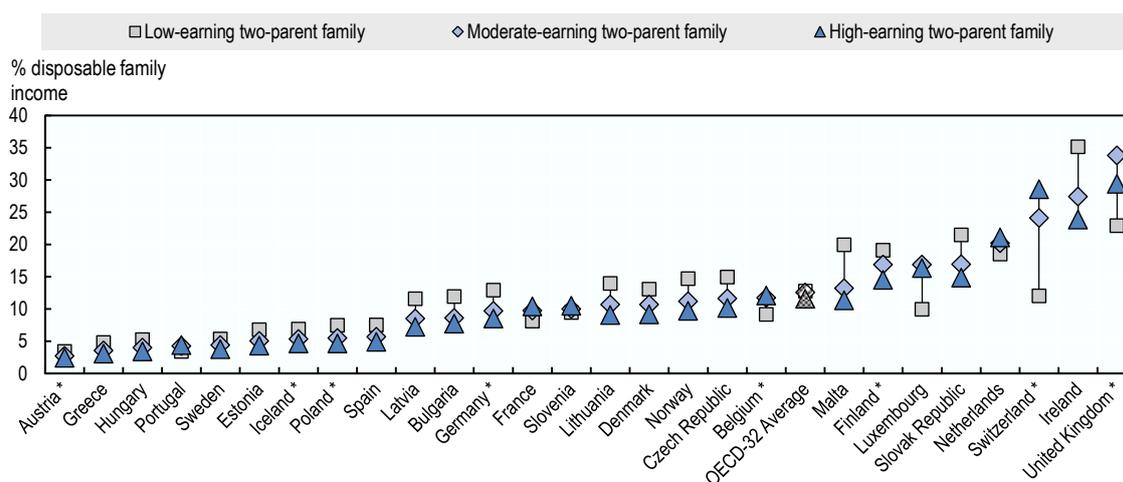
quarter to a third less likely to use formal ECEC than children from high-income backgrounds, all else equal. In France and in Ireland, children from the poorest families are less than half as likely to use formal ECEC as otherwise similar children from the richest families.

What's different in these countries? For Ireland, the Netherlands, and the United Kingdom, part of the answer may lie in the structure and organisation of ECEC services for children under three. In contrast to most European countries, where many services for very young children are either publicly operated or directly subsidised, these countries run demand-led systems, with provision largely private (often for-profit) and with funding directed almost entirely through parental contributions, sometimes with public support channelled through the demand side (Bennett, 2010; Penn, 2014). These types of systems can quickly expand supply when faced with excess demand. However, without a direct relationship between public authorities and providers there is less control over fees and less control over when and where services are provided. Market dynamics can result in for-profit providers drifting away from less profitable areas, so that very young children in poorer neighbourhoods are sometimes left without the option of attending quality ECEC services at all (OECD, 2006; Noailly and Visser, 2009; Warner and Gradus, 2011; Lloyd and Penn, 2014).

Levels of costs charged to parents for centre-based care are also often high in these countries. Parents in Ireland, the Netherlands, Switzerland and the United Kingdom face some of the highest out-of-pocket costs for centre-based care in Europe. Even though all countries except Ireland provide additional financial support for families on very low incomes, net costs still often remain high in absolute terms (Figure 5). In the Netherlands and the United Kingdom the out-of-pocket cost of full-time centre-based care for two children (aged two and three) in a low-earning dual-earner family works out at around 20% of family disposable income, and at 35% in Ireland.

Figure 5. In some countries, childcare costs for low-earning families consume around or above 20% of disposable income

Out-of-pocket childcare costs for a two-child dual-earner family as a proportion (%) of disposable family income, by family income level, European countries, 2012



Note: Data reflect the net cost (gross fees less childcare benefits/rebates and tax deductions, plus any resulting changes in other benefits received following the use of childcare and/or change in family income) of full-time care in a typical childcare centre for a two-parent two-child family, where both parents are in full-time employment and the children are aged 2 and 3. Gross earnings for the two earners in the 'low earning' two-parent family are set equal to 67% of average earnings for the first earner and 50% of average earnings for the second earner, those for the two earners in the 'moderate earning' family at 100% of average earnings for the first earner and 67% of average earnings for the second earner, and those for the two earners in the 'high earning' family at 100% of average earnings. 'Full-time' care is defined as care for at least 40 hours per week. Data for countries marked with an * are based on estimates for a specific region or city, rather than for the country as a whole. For example, the data for Switzerland refer to the situation in the city of Zürich only, with funding models and out-of-pocket costs varying considerably across cantons and municipalities. See the OECD Tax and Benefit Systems website (www.oecd.org/els/soc/benefits-and-wages.htm) for more detail on the methods and assumptions used and information on the policies modelled for each country.

Source: OECD Tax and Benefit Models 2012, www.oecd.org/els/soc/benefits-and-wages.htm

France also shows a large gap in participation across levels of income, despite a completely different system of childcare provision. Most centre-based services in France are both operated and subsidised by local public family allowance funds (CAFs), providing authorities with some discretion over the fees charged for services and allowing public bodies to target areas – such as disadvantaged neighbourhoods – where services are lacking. However, centre-based services are in short supply overall, with the childcare sector for children under three increasingly dominated instead by private childminders (Villaume and Legendre, 2014). And despite public financial support for parents who use childminders, costs remain high, particularly for low-income families (Thévenon, 2016). This limits the use of private childminders by those on low earnings. In 2013, just 3% of children

under age three from families in the lowest income quintile were cared for primarily by a childminder, compared to 37% of children under age three from families in the highest income quintile (CNAF, 2015).

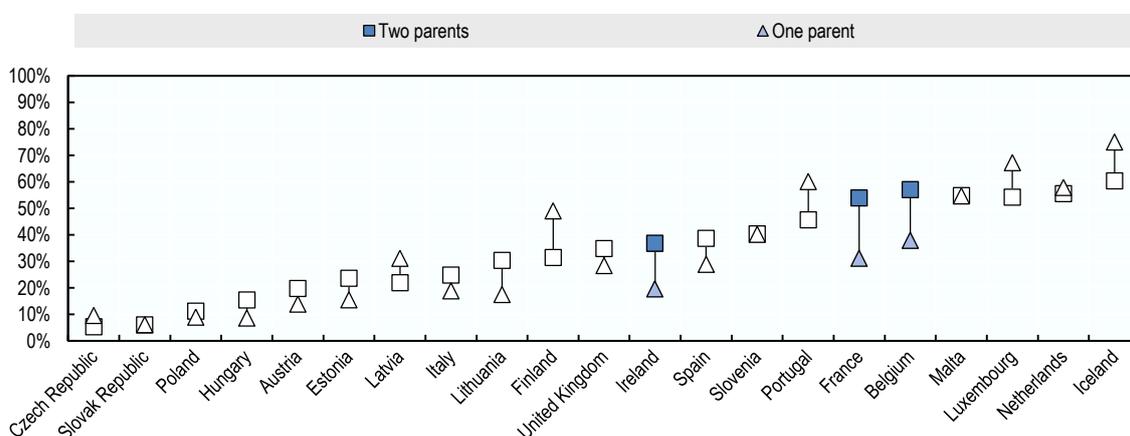
Box 2. In most countries, the children of single parents are just as likely to participate in formal ECEC as the children of couples

Motivated by concerns about the ability of single parents to participate in paid work and about access to ECEC for the children of single parents, many countries provide single parents with additional childcare support. In some cases, their children are given priority access to subsidised services, as in the Flemish community in Belgium, for example (EC/EACEA/Eurydice/Eurostat, 2014; Eurydice, 2016). In others, such as Denmark and Reykjavik in Iceland, they are offered reduced fees or increased financial support (OECD, 2016a).

Perhaps as a result of these efforts, participation in formal ECEC does not vary much between the children of couples and the children of single parents (Figure 6). Only in three countries (Belgium, France and Ireland) are there statistically significant differences in participation between very young children living with two parents and very young children living with one parent (as signified by the shaded markers). The difference is largest in France, where participation rates for children living with one parent are about 23 percentage points lower than those for children living with two parents, and where the high cost of private childminders (see above) pose significant barriers to single-parent low-income families.

Figure 6. Participation in formal ECEC does not vary much between the children of couples and the children of single parents

Participation rates in formal ECEC by number of parents in the household, children under age three, European countries, 2014



Note: Countries are ranked according to the overall participation rate in formal ECEC for children aged under age three in 2014. Shaded markers represent statistically significant differences across groups at $p < 0.05$. Non-shaded markers represent no statistically significant difference across groups at $p < 0.05$. Data for children living with no parents not shown due to small sample sizes in most countries.

Source: OECD calculations based on EU-SILC 2014 (EU-SILC 2013 for Denmark and Switzerland), ec.europa.eu/eurostat/web/income-and-living-conditions/methodology

Policies to promote equal access to formal ECEC among very young children

Provide further financial support for low-income families, especially when childcare costs are very high

Most OECD and European countries already put considerable effort into ensuring that ECEC is affordable for low-income families, but there are a several ways in which governments could further reduce the costs of ECEC for low income parents. Countries with the lowest out-of-pocket costs for low-earning parents tend to have low fees in the first place, largely because fees are strictly regulated or because subsidies are given directly to providers, or both. Limiting fees where they are high or tying charges to family income would help reduce costs further. But countries can also reimburse parents for the costs of formal services through the tax-benefit system. One option is to refund costs directly through cash benefits, as in Australia, for example, where working parents who meet means-tested criteria can choose to claim back up to AUD 208.50 per week through ‘Child Care Benefit’. Another is to offer tax credits or deductions to parents who use formal services, as in Portugal, where 30% of the costs of formal ECEC are tax deductible, up to a limit equal to 160% of the national minimum wage. These deductions are most helpful to low-income families when they are fully refundable (i.e. with any amount not off-set against a tax liability paid out as a cash benefit), since low-earners are more likely to pay little or no income tax and therefore less likely to be able claim the full value of the deduction.

Generous cost subsidies can be expensive, of course, particularly if take-up is high. But, where needed, countries can limit expenditure by restricting additional support through means-tests, for example. In Denmark, for instance, ECEC services are offered free to very poor families and at reduced rates to families on moderate incomes; fees are adjusted in line with household income up to threshold of just over DNK 500,000, roughly one-and-a-quarter times the average Danish wage. However, means-tests on childcare supports need to be designed carefully – targeting too sharply can leave parents on moderate incomes with little support and damage work incentives for parents on low earnings (see below). Assistance should be phased-out only gradually in order to avoid ECEC becoming unaffordable for middle-income families and parents becoming better off out of work or working only a limited number of hours.

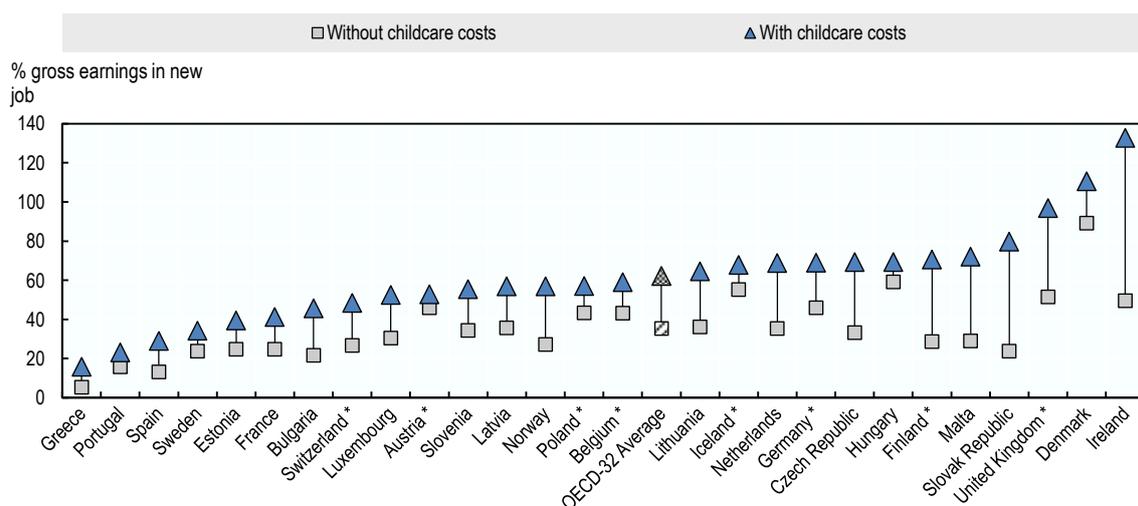
Improve employment opportunities and work incentives for mothers from lower socio-economic positions

Given the close link between formal ECEC and maternal employment, improving employment opportunities and encouraging paid work among mothers from lower socio-economic positions would help increase the demand for formal ECEC services among disadvantaged families. This requires a labour market environment that allows families with limited resources to combine work with caring responsibilities. Statutory ‘family-friendly’ flexible working policies can help here, as can employment-projected paid leave programmes – which are likely to be especially beneficial for less skilled women since job guarantees are particularly valuable for employees in precarious positions – as long as the leave is not so lengthy as to risk encouraging mothers to stay outside of the labour force until children turn two or three (Thévenon and Solaz, 2013; Adema et al, 2015).

But it also means ensuring that work pays for the parents of young children, especially for those on low wages. In many European countries work incentives for low-paid second-earner parents are weak with participation tax rates often well above 60% (Figure 7). Put another way, after various deductions and changes in benefit entitlements, low-paid second-earner parents entering employment often take home less than 40% of their additional gross earnings. Childcare costs frequently contribute a large chunk to these participation tax rates. In Ireland, for example, out-of-pocket childcare costs consume about 70% of additional gross earnings for a low-paid second-earner entering work. But other factors – including tax and social security contributions, as well as the phasing-out of income-tested benefits – play a role too. In the United Kingdom, for instance, a low-paid second-earner parent moving into employment must sacrifice over 50% of their additional gross earnings even before childcare costs are taken into account. Reducing these participation tax rates – either by cutting out-of-pocket childcare costs for low-income families, by reducing tax burdens on low-wage second-earners, or by flattening benefit withdrawal rates – would encourage employment among low-earning mothers with young children, in turn increasing the chances of their children using formal ECEC services.

Figure 7. Low-paid second-earner parents often face weak incentives to enter work

Participation tax rates for low-paid second earners entering employment, with and without net out-of-pocket childcare costs, as a proportion (%) of gross earnings in new job, European countries, 2012



Note: Data reflect the implicit participation tax rate for a second earner moving from labour market inactivity (i.e. without unemployment benefits) to a full-time job on gross earnings at 50% of the national average wage. The second earner is assumed to live in a two-parent two-child family, with children aged 2 and 3 and a partner in full-time employment with gross earnings at 67% of average earnings. In the ‘with childcare costs’ scenario, both children are assumed to use centre-based care services on a full-time basis (i.e. for at least 40 hours per week). Assumes no childcare costs while out of work. Data for countries marked with an * are based on fee estimates for a specific region or city, rather than for the countries as a whole. See the OECD Tax and Benefit Systems website (www.oecd.org/els/soc/benefits-and-wages.htm) for more detail on the methods and assumptions used and information on the policies modelled for each country.

Source: OECD calculations based on OECD Tax and Benefit Models 2012, www.oecd.org/els/soc/benefits-and-wages.htm

Provide publicly-subsidised ECEC to children as a legal right

Providing children with a legal right to a place in ECEC in a publicly-subsidised system can help ensure that all children regardless of background or circumstances attend formal ECEC. This approach is most common in the Nordic countries. There, with the exception of Iceland, high-quality publicly-subsidised ECEC is offered as a legal right to all children from around or before their first birthday. Public authorities – usually the municipalities – are responsible for ensuring that all those who want a place get one. In Denmark, for instance, municipalities are obliged to offer all children older than 26 weeks a place in the publicly-subsidised ECEC system. Similarly, in Sweden municipalities must provide at least 15 hours of subsidised ECEC per week to all children older than one year. But an increasing number of other OECD countries are now providing ECEC as a legal right too – Germany, for example, has recently introduced a legal entitlement to ECEC for children older than one year, and has increased its public investment in ECEC services.

To be meaningful, a legal right to ECEC needs to be accompanied by the appropriate childcare infrastructure, but in many countries formal services, particularly subsidised services, are in short supply (Plantenga and Remery, 2009). In Germany, for instance, despite recent expansion and the introduction of the legal entitlement, the supply of subsidised services does not yet meet parental demand (BMFSFJ, 2015). In many cases, expanding coverage and subsidies to levels similar to those seen in Denmark and Sweden would not be cheap – public expenditure on ECEC services in these two countries stands at 1.4% and 1.6% of GDP, respectively, well above the average for OECD countries (0.7% of GDP) (OECD, 2016b).

Legal rights to ECEC do not by themselves ensure equal participation in ECEC by children from different socio-economic groups. Parents, for their part, must still choose to put their child(ren) into formal ECEC. Having developed their systems from the late 1960s, Denmark and Sweden have a long tradition of ECEC for young children, and in these countries full-time participation in ECEC has become the norm (Mills et al., 2014). In other countries with less developed systems and shorter histories, individuals are more likely to believe that family members should be the primary providers of childcare for young children (ISSP, 2012). Legal rights to ECEC are likely to be most effective where parents hold favourable attitudes towards non-parental care, and where other policies aimed at families with young children – such as ‘cash-for-care’ allowances – do not provide strong financial incentives for parents to care for children at home.

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