

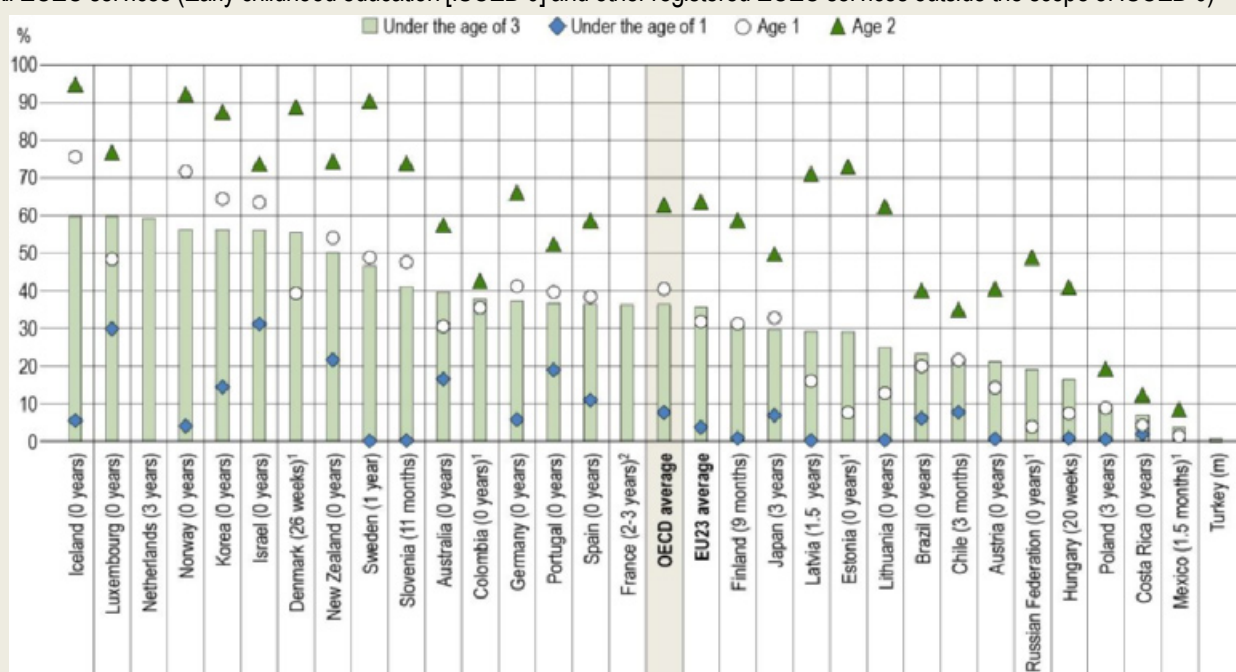
Indicator B2. How do early childhood education systems differ around the world?

Highlights

- More than 70% of the OECD countries with available data have integrated early childhood education and care (ECEC) services, where one or several authorities are responsible for administering the whole ECEC system and setting adequate intentional education for children from the ages of 0 or 1 until entry into primary education.
- ECEC has experienced a surge of policy attention in OECD countries in recent decades, with a focus on children under the age of 3. On average across OECD countries in 2017, more than one-third of children under 3 were enrolled in early childhood education (ISCED 0) and other registered ECEC services outside the scope of ISCED 0, an increase of 8 percentage points compared to 2010. On average, 40% of 1-year-olds and 62% of 2-year-olds were already enrolled in ECEC services.
- Universal or near-universal participation in at least one year of ECEC is now the norm in OECD countries, which is significant progress towards one of the education targets of the United Nations' Sustainable Development Goals (SDG 4.2.2). Enrolment rates for 5 year-olds in pre-primary or primary education is above 90% in 36 out of 43 countries with available data in 2017.

Figure B2.1. Enrolment rates of children under the age of 3 in early childhood education and care, by age (2017)

All ECEC services (Early childhood education [ISCED 0] and other registered ECEC services outside the scope of ISCED 0)



Note: Figures in parentheses refer to the age when ECEC systems start offering intentional education objectives.

1. Age 1 also includes children under the age of 1.

2. Data for other registered ECEC services come from the survey "Modes de garde et d'accueil des jeunes enfants 2013" conducted by the statistical division of the French Ministry for Solidarities and Health (DREES). Figures refer to the primary custody arrangements.

Countries are ranked in descending order of the enrolment rates in ISCED 0 of children under the age of 3.

Source: OECD (2019). Table B2.1. See Source section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

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Context

The benefits of ECEC services are not limited to better labour-market outcomes and fertility rates. There is an increasing awareness of the key role that ECEC plays in children's development, learning and well-being. Children who start strong will be more likely to have better outcomes when they grow older. This is particularly true for children from disadvantaged socio-economic backgrounds, because they often have fewer opportunities to develop these abilities in their home-learning environments (OECD, 2017^[1]).

Economic prosperity also depends on maintaining a high employment-to-population ratio, and the increasing number of women entering the labour market has contributed to greater government interest in expanding ECEC services. High-quality ECEC services and other provision aiming to improve people's work-life balance give parents greater opportunities to enter employment and make it possible for individuals to combine work and family responsibilities (OECD, 2018^[2]; OECD, 2011^[3]; OECD, 2016^[4]).

Such evidence has prompted policy makers to design early interventions, to take initiatives that aim to enhance the quality of ECEC services and improve the equity of access to ECEC settings, lower the age of compulsory education, and to rethink their education spending patterns to gain "value for money" (Duncan and Magnuson, 2013^[5]). Despite these general trends, there are significant differences across OECD countries in the quality of ECEC services provided to young children, the types of ECEC services available and the usual number of hours per week each child attends.

Other findings

- In early childhood educational development services (ISCED 01), public funding accounts for an average of 69% of total expenditure, while in pre-primary education (ISCED 02), it amounts to 83%. In total, expenditure on ECEC (ISCED 0) accounts for an average of 0.8% of gross domestic product (GDP), of which around three-quarters goes to pre-primary education.
- Variations across countries in the duration of ECEC programmes have a strong impact on the level of expenditure allocated to ECEC. For instance, in Ireland, children typically enter primary education at the age of 5 while in Finland they typically enter at age 7. To avoid this distortion, this indicator now calculates expenditure by age and not by ISCED level. Expenditure on all children aged 3 to 5 enrolled in ECEC and primary education amounts to an average of 0.6% of GDP. It exceeds 0.9% only in Iceland, Norway and Sweden.
- A bachelor's degree (ISCED 6) has become the minimum qualification required to be a teacher in ECEC (ISCED 0) in around three-quarters of OECD countries with available data.
- The child-teacher ratio at the pre-primary level for OECD countries, excluding teachers' aides, ranges from more than 25 children per teacher in Colombia and Mexico to fewer than 10 in Finland and Germany. However, some countries make extensive use of teachers' aides in pre-primary education, as shown by their smaller ratios of children to contact staff than of children to teaching staff. In the majority of these countries, teachers' aides need an upper secondary qualification.

Analysis

Types of early childhood education and care services

There is a growing consensus among OECD countries about the importance for good quality ECEC. However, the types of early childhood education and care (ECEC) services available to children and parents in OECD countries differ greatly. There are variations in the targeted age groups, governance of centres, funding of services, type of delivery (full-day versus part-day attendance), and the location of provision, either in centres or schools, or at home (OECD, 2017^[1]).

Generally, formal ECEC services can be classified into two categories:

- The ECEC services reported in the ISCED 2011 classification (OECD/Eurostat/UNESCO Institute for Statistics, 2015^[6]). To be classified as ISCED level 0, ECEC services should:
 1. have adequate intentional educational properties
 2. be institutionalised (usually school-based or otherwise institutionalised for a group of children)
 3. have an intensity of at least two hours per day of educational activities and a duration of at least 100 days a year
 4. have a regulatory framework recognised by the relevant national authorities (e.g. a curriculum)
 5. have trained or accredited staff (e.g. educators are required to have pedagogical qualifications).
- The other registered ECEC services that are considered an integral part of countries' ECEC provision but do not comply with all the ISCED 0 criteria to be considered an educational programme (e.g. *crèches* in France or *amas* in Portugal). The distinction between these two categories is explicitly shown in Tables B2.1 and B2.5.

Informal care services (generally unregulated care arranged by the child's parent either in the child's home or elsewhere, provided by relatives, friends, neighbours, babysitters or nannies) are not covered by this indicator (see the *Definitions* section for more details).

Enrolment in early childhood education and care

Enrolment of children under the age of 3

Participation in high-quality ECEC can have a positive effect on children's well-being, learning and development in the first years of their lives (OECD, 2018^[2]).

On average across OECD countries in 2017, around one-third of children under the age of 3 were enrolled in ECEC, either full time or part time. This average masks great differences across countries. Less than 5% of children under 3 are enrolled in ECEC services in Mexico and Turkey, while this proportion is 50% or over in Denmark, Iceland, Israel, Luxembourg, Korea, the Netherlands, New Zealand and Norway (Table B2.1).

The length of parental leave and the age when ECEC services start becoming available also influence the age at which children enrol in these services. For instance, only 7 of the 22 countries with available data have enrolment rates of over 10% for children below the age of 1, namely Australia, Israel, Korea, Luxembourg, New Zealand, Portugal and Spain. In contrast, once children reach the age of 1, around 40% will be enrolled in ECEC, with enrolment rates at this age exceeding 50% in Iceland, Israel, Korea, Luxembourg, New Zealand and Norway. By the age of 2, enrolment in ECEC services has become the norm in many countries, with 62% of 2-year-olds enrolled in ECEC. However, this average also hides wide variation. Enrolment rates for 2-year-olds range from less than 20% in Costa Rica, Mexico and Poland to 89% or more in Luxembourg and in all Nordic countries except Finland (Figure B2.1).

Despite significant differences across countries, a common pattern is emerging. The share of children under the age of 3 enrolled in ECEC is rising in most countries with available data for years 2010 and 2017, and has increased on average by 8 percentage points between 2010 and 2017 (from 26% to 34%). The rise has been particularly marked in many European countries, as a result of further stimulus from the objectives set by the European Union (EU) at its Barcelona 2002 meeting, to supply subsidised full-day places for one-third of children under the age of 3 by 2010 (OECD, 2017^[1]). Globally, the rise in ECEC provision over recent decades is strongly correlated to the increase in women's participation in the labour force, particularly for mothers with children under 3. Countries with higher enrolment rates of children under 3 in 2017 tend to be those in which the employment rates of mothers are highest ((OECD, 2018^[2]; OECD, 2018^[7]); Table B2.1).

However, wider enrolment in ECEC services does not guarantee the quality of education provided to children. In countries such as Norway, for instance, not only do more than half of children below the age of 3 attend ECEC services, but they also attend programmes that have integrated ECEC curricula (including intentional educational objectives) adapted to the age of children from 0 until the beginning of primary school. In these programmes, children are often exposed to an ECEC setting with trained or accredited staff, even before they turn 3. In other countries with high enrolment rates, such as France and the Netherlands, different standards are often set for different ECEC settings or for different age groups of children (Table B2.1 and Box B2.1).

Enrolment of children from age 3 until entry to primary education

In many OECD countries, ECEC begins for most children long before they are 5 years old and there are universal legal entitlements to a place in ECEC services for at least one or two years before the start of compulsory schooling. On average, 87% of 3-5 year-olds are enrolled in ECEC (ISCED 0) and primary education, at that age usually in pre-primary education (ISCED 02). In half of the 42 countries with available data, the enrolment of children between the ages of 3 and 5 is near universal, exceeding 90% (Table B2.2).

The highest enrolment rates of 3-year-olds in ECEC are found in Belgium, Denmark, France, Hungary, Iceland, Israel, Norway, Spain and the United Kingdom, where they exceed 95%. Almost nine out of ten 4-year-olds (88%) are enrolled in pre-primary and primary education across OECD countries. In the EU23 countries (countries that are members of both the EU and the OECD), 92% of 4-year-olds are enrolled. OECD enrolment rates at this age vary from 98% or higher in Belgium, Denmark, France, Iceland, Ireland, Israel, Spain and the United Kingdom, to less than 50% in Saudi Arabia, Switzerland and Turkey (Table B2.2).

This situation is the result of the expansion of ECEC services over recent decades in many countries. Between 2005 and 2017, the average enrolment of 3-5 year-olds in pre-primary or primary education in OECD countries rose from 76% to 86%. A few countries have seen spectacular increases in ECEC over this period, as in Chile, Lithuania, Israel, Poland, the Russian Federation and Turkey. In contrast, other countries have not shown much change. For instance, Switzerland reported among the lowest enrolment rates in 2005 and this is still the case in 2017 (Figure B2.2).

Over this period, the increased focus on ECEC policy has resulted in the extension of compulsory education to younger children, increased provision of free ECEC for some ages and targeted population groups, universal provision for older children and, in some countries, the creation of integrated ECEC programmes from the age of 1 until entry into primary education. For instance, compulsory education coincided with the start of primary school in most countries a decade ago. In contrast, compulsory education started at pre-primary level in around one-third of countries with available data in 2017 (Table B2.2).

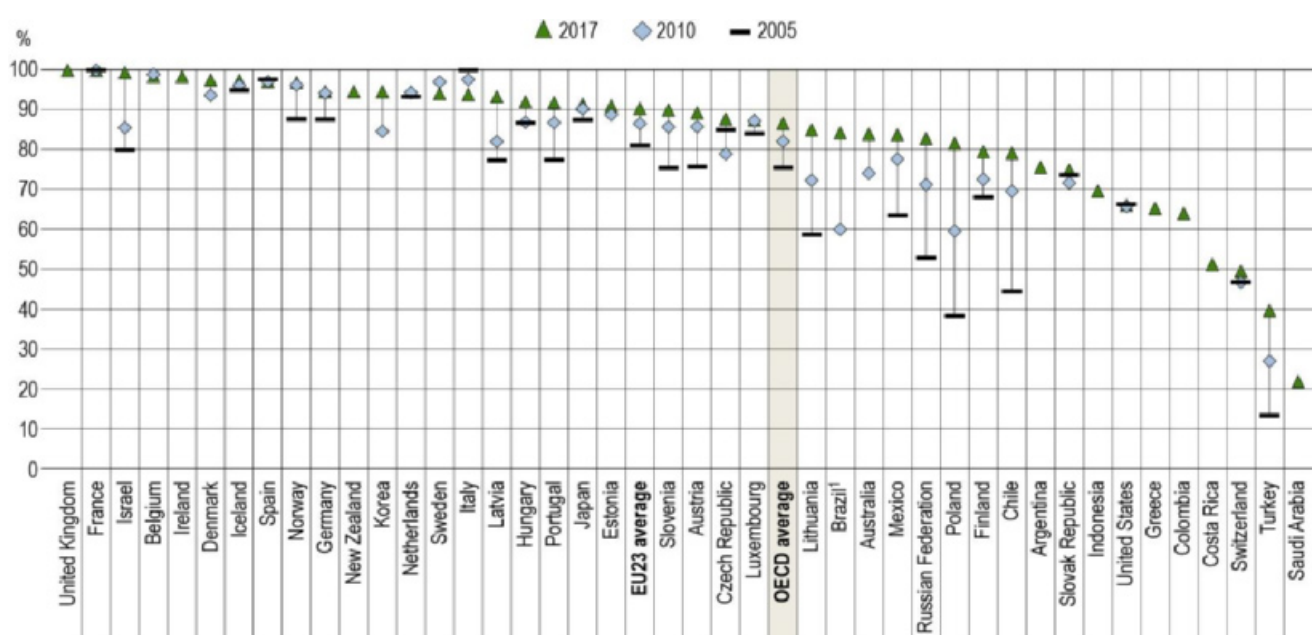
Enrolment in ECEC by subnational regions

If average enrolment of 3-5 year-olds in pre-primary or primary education now exceeds 80% in many countries, some strong subnational differences remain in access to education at these ages. In 7 out of 23 countries with available data, there is a difference of more than 20 percentage points between the regions with the highest and the lowest rates of enrolment. For instance, there are striking differences in the United States, where up to 80% of

3-5 year-olds are enrolled in ECEC and primary education in the District of Columbia, compared to only 46% in North Dakota (OECD, 2019^[8]). Similar strong regional differences are observed in France (from 79% in Mayotte to 100% in several regions), Greece (from 57% in Attica to 78% in Western Macedonia), Lithuania (from 65% in Taurage to 94% in Vilnius), the Slovak Republic (from 63% in East area to 83% in West area) and Switzerland (39% in Central area to 86% in Ticino). In some of these countries, the organisation and governance of ECEC sharply differ between regions. Each region has the autonomy to make the decision to what extent ECEC services should be prioritised and funded, which can lead to wide variations in enrolment rates (see more details in Box B2.1). By contrast, the difference between regions is less than 8 percentage points only in Estonia, Germany, Hungary, Latvia, the Netherlands, Slovenia and Sweden. This emphasises the importance of granting equal access to ECEC across territories and between urban and rural areas.

Figure B2.2. Change in enrolment rates of children aged 3 to 5 years (2005, 2010 and 2017)

Early childhood education (ISCED 0) and primary education



1. Year of reference 2012 instead of 2010.

Countries are ranked in descending order of the enrolment rates of 3-5 year-olds in 2017.

Source: OECD (2019). Table B2.2. See Source section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

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Enrolment in ECEC by type of institution

Parents' needs and expectations regarding accessibility, cost, programme, staff quality and accountability are all important in assessing the expansion of ECEC programmes and the type of providers. When parents' needs for quality, accessibility or affordability are not met by public institutions, some parents may be more inclined to send their children to private pre-primary institutions (Shin, Jung and Park, 2009^[9]).

In most countries, the share of children enrolled in private institutions is considerably larger in ECEC than in primary and secondary education. Private institutions can be classified into two categories: independent and government-dependent. Independent private institutions are controlled by a non-governmental organisation or by a governing board not selected by a government agency and receive less than 50% of their core funding from

government agencies. Government-dependent private institutions have similar governance structures but they rely on government agencies for more than 50% of their core funding.

On average across OECD countries, about half of the children in early childhood educational development services (ISCED 01) are enrolled in private institutions. This average, however, hides huge discrepancies across countries. In Chile, Denmark, Finland, Hungary, Iceland, Latvia, Lithuania, Slovenia, Sweden and the Russian Federation, 20% or less of the children in early childhood educational development programmes attend private ECEC institutions, while in Costa Rica, Indonesia, Israel, Korea, New Zealand and the United Kingdom, more than three-quarters of all children attend private institutions (Table B2.3).

Private institutions usually are more common for children under the age of 3 than for older ones. About two-thirds of children enrolled in pre-primary education (ISCED 02) attend public institutions across OECD countries, and up to three-quarters of children across EU23 countries, reflecting the development of policies promoting the public provision of ECEC that occurred in most European countries over the past two decades. In a few countries, however, ECEC remains mostly privately provided and funded: in Australia, India, Indonesia, Ireland, Japan, Korea and New Zealand, at least 70% of children attending pre-primary programmes are in private institutions (Table B2.3). In Ireland, the government provides a capitalisation fee to participating playschools and day-care services.

Financing early childhood education and care

Sustained public financial support is critical for the growth and quality of ECEC programmes. Appropriate funding helps to recruit trained staff who are qualified to support children's cognitive, social and emotional development. Investment in early childhood facilities and materials also helps support the development of child-centred environments for well-being and learning. In countries that do not channel sufficient public funding towards achieving both broad access and high-quality programmes, some parents may be more inclined to send their children to private ECEC services. Moreover, if the cost of ECEC is not sufficiently subsidised, the ability of parents to pay will greatly influence the participation to ECEC of children from disadvantaged socio-economic backgrounds (OECD, 2017^[11]).

Expenditure per child

In pre-primary education, annual expenditure per child for both public and private settings averages USD 8 349 in OECD countries, ranging from less than USD 5 000 in Colombia, Ireland, Mexico, and the Russian Federation to more than USD 10 000 in Austria, Finland, Germany, Iceland, Luxembourg, Norway, Sweden and Switzerland. Annual expenditure per child enrolled in early childhood educational development services (ISCED 01) is significantly higher than in pre-primary education (ISCED 02) in 10 out of the 15 OECD countries with available data for both programmes, averaging USD 12 080 for ISCED 01. The smaller child-to-staff ratio in early childhood development services (ISCED 01) is one of the main drivers of this difference (Tables B2.3 and B2.4). The average number of hours children spend in ECEC settings per year also influences different countries' spending (see Box B2.2 in (OECD, 2018^[10])).

Expenditure as a percentage of GDP

Spending on ECEC can also be analysed relative to a nation's wealth. Expenditure on all ECEC settings accounts for an average of 0.8% of GDP across OECD countries, of which three-quarters are allocated to pre-primary education. While 0.3% or less of GDP is spent on pre-primary education in Australia, Colombia, Greece and Japan, countries such as Iceland, Norway and Sweden spend at least 1% of GDP (Table B2.4).

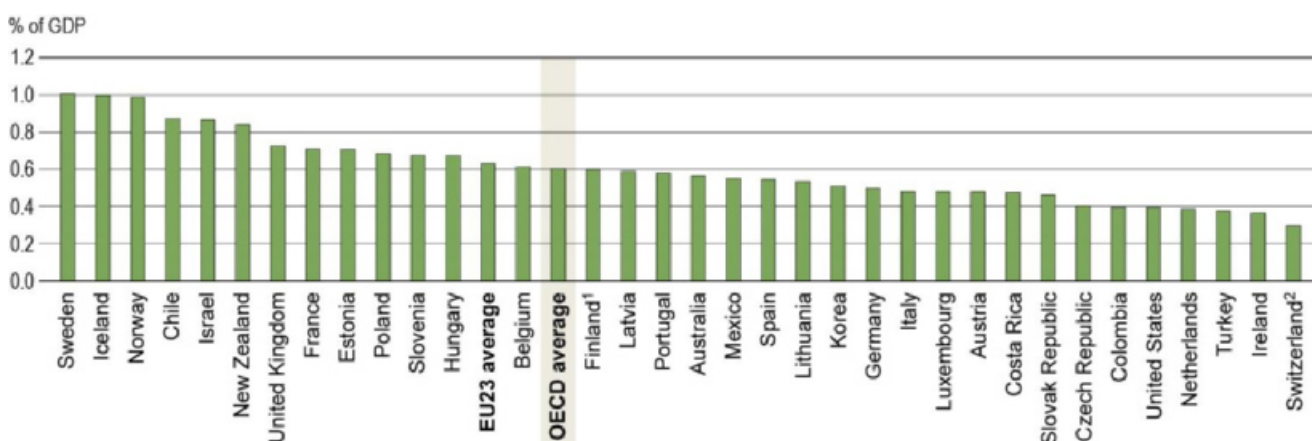
These differences are largely explained by enrolment rates, legal entitlements and the intensity of participation, as well as the different starting ages for primary education. On the latter point, the shorter duration of pre-primary education, as the result of children's earlier transition from pre-primary to primary education in Australia, Ireland, New Zealand and the United Kingdom, partly explains why the expenditure on ECEC as a percentage of GDP is

below the OECD average in these four countries. Similarly, late entry into primary education, as in Estonia, Finland, Latvia, Poland and Sweden, means a longer duration of ECEC than in other countries and may explain why they spend more as a percentage of GDP than the OECD average (see the starting age of primary education in Tables B2.1 and B2.4).

To avoid this distortion, the indicator on the financing of ECEC is presented by age as well as by ISCED level. As this is first time this indicator is presenting estimates expenditure on all children aged 3 to 5 enrolled in either ECEC or primary education, data should be interpreted with caution. This new methodology avoids the distortion arising from the differences in age groups attending ECEC, and compares expenditure on children of the same ages, giving a more accurate picture of countries' investment in young children. Across OECD countries, the share of national resources devoted to 3-5 year-olds enrolled in ECEC and primary education is 0.6% of GDP. It ranges from less than 0.4% of GDP in Colombia, the Czech Republic, Ireland, the Netherlands, Switzerland, Turkey and the United States, to more than 0.8 % in Chile, Israel, Iceland, New Zealand, Norway and Sweden (Figure B2.3).

Figure B2.3. Expenditure on all children aged 3 to 5 enrolled in early childhood education and care (ISCED 0) and primary education, as a percentage of GDP (2016)

Public and private institutions



1. Expenditure on all children aged 3 to 5 are underestimated due to the estimation method used.

2. Public sources only.

Countries are ranked in descending order of expenditure as a percentage of GDP.

Source: OECD (2019). Table B2.4. See Source section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

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Public and private funding of ECEC

The source of funding for ECEC settings varies across countries. In many countries, the public sector provides universal access from a certain age. Many governments may also delegate responsibility for the public funding of ECEC to local authorities. In general, public funding of ECEC is more decentralised than at any other level of education (OECD, 2018^[11]).

Generally, there has been a substantial and increasing public investment in ECEC, although there are differences between pre-primary (ISCED 02) and early childhood educational development (ISCED 01). On average, public sources account for 69% of total expenditure on early childhood educational development, while for pre-primary education, the share of public expenditure is 83%. Japan and the United Kingdom are the only countries where private funds account for more than 40% of total expenditure on pre-primary education. In the United Kingdom,

most of the private funding comes from households. In Japan, the high cost is shared between households, foundations and the business sector (Table B2.4).

Box B2.1. Who is responsible for early childhood education and care?

Countries present different profiles when the governance of ECEC is analysed (Figure B2.a).

Currently, about half of OECD countries have an integrated system, where responsibility for administering all ECEC services lies with one lead authority at the national and/or regional level. In all the countries with an integrated system except Hungary and Iceland, the education ministry is in charge of the entire ECEC age group at the central level. The responsibilities of the leading authority in those countries may stretch from curriculum development to standard setting, monitoring and financing. Countries with integrated systems also have integrated ECEC curricula adapted to the age of children from under 1 until the beginning of primary school. An increasing number of countries have recently moved towards these types of integrated systems.

Figure B2.a. Who is responsible for early childhood education and care (ECEC)?

The entire ECEC system (ISCED 01 and ISCED 02) is under the responsibility of the ministry of education	Pre-primary education (ISCED 02) is administered under the responsibility of the ministry of education. ECEC services for younger children (ISCED 01 and other services outside ISCED) are under the responsibility of another authority (e.g. ministry of health and welfare; ministry of Labour, Social Affairs and Family) or subject to regional arrangements.	The entire ECEC system (ISCED 01 and 02) is administered by different authorities (which may vary depending on regional arrangements)
17 countries	10 countries	9 countries
Australia, Brazil, Chile, Costa Rica, Estonia, Finland, Hungary ¹ , Iceland ² , Latvia, Lithuania, Luxembourg, New Zealand, Norway, Slovenia, Spain, Sweden and the United Kingdom ³	Belgium, the Czech Republic, France, Italy, Korea ⁴ , the Netherlands ⁵ , Portugal ⁶ , Poland, the Slovak Republic and Switzerland	Austria ⁶ , Canada, Colombia ⁷ , Denmark, Germany, Ireland ⁸ , Japan, Mexico and the United States

1. The state Secretariat for Education is responsible for ISCED 0 while the state Secretariat for Family and Youth Affairs is responsible for ECEC services outside ISCED 0. Both are under the auspices of the Ministry of Human Capacities.

2. The entire ECEC system (ISCED 01 and ISCED 02) is administered under the responsibility of the Ministry of Health and Welfare.

3. In England, Scotland and Northern Ireland the entire ECEC system is the responsibility of the education ministry, but for Wales ECEC services for younger children is the responsibility of the health and welfare ministry.

4. In ISCED 02, the health and welfare authority has also an important role.

5. For 3-year-olds, the welfare authority is responsible for ECEC, except for targeted programmes where the education authority is responsible. For ages 4 and 5, the education authority is responsible for ECEC.

6. Tageseltern, Kinderkrippe and Kindergarten are governed by regional legislation; regarding Vorschulstufe (ISCED 02) education authority is responsible.

7. The entire ECEC system is under the authority of the Inter-sectoral Commission for Early Childhood, composed by different sectors

8. The Department of Children and Youth Affairs, in collaboration with the Department of Education and Skills, has overall responsibility for policy in relation to ECEC.

Source: INES ad-hoc survey. See *Source* section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

Ten out of the 36 countries with available data have what is called a “split system”. In many countries with a split system, policies for care and early education have developed separately and fall under the responsibility of different authorities. In these countries, ECEC services for children under the age of 3 are often under the

authority of the social affairs, family, or health and welfare ministries, while settings providing ECEC for older children are under the authority of the education ministry. In countries with split systems, different quality standards are often set for different ECEC settings or for different ages. ECEC services for children under the age of 3 are also often outside the scope of ISCED 0 in these countries. In contrast, in all countries with an integrated system, the same quality standards are applied to any ECEC setting.

Finally, in a third group of countries, multiple authorities (which may vary depending on regional arrangements) administer the entire ECEC system (ISCED 01 and ISCED 02) and ECEC services are for most of them in adherence with ISCED 0 criteria. Countries in this group are often federal countries. For instance, early childhood development services (ISCED 01) are governed by regional legislations in Austria while *Vorschulstufe* (ISCED 02) falls under the responsibility of the ministry of education. In Ireland, the Department of Children and Youth Affairs, in collaboration with the Department of Education and Skills, has overall responsibility for policy in relation to ECEC. Finally, Germany concentrates responsibility for the entire ECEC age bracket on the welfare sector, under the auspices of the Federal Ministry of Family Affairs, Senior Citizens, Women and Youth, as well as the federal states and municipalities. Most of the countries in this group have an integrated curriculum including intentional education objectives starting from the ages of 0 or 1 until the beginning of primary school (OECD, 2017_[11]).

In principle, children should not have any difficulty making the transition from childcare to early education in countries with integrated administration of early childhood services, where there is generally a common curriculum for children aged 1 to 5 years, which applies to the majority of countries with available data. In contrast, there can be fundamental differences in goals, means and quality between the childcare and early education sectors in countries operating split or two-tier early childhood systems. The result can be a lack of coherence for children and families, with confusing differences in objectives, funding streams, operational procedures, regulatory frameworks, and staff training and qualifications.

Staffing of early childhood education and care

Minimum qualifications among ECEC teaching staff

Prospective teachers should be provided with high-quality initial training. The type of qualification, duration of training and the programme content provided can influence how well initial teacher education prepares teachers for their role. Evidence from the literature shows that the level and duration of initial staff training are positively associated with overall ECEC quality (Manning, 2017_[12]). Highly qualified staff result in a more stimulating environment and high-quality pedagogical practices, which boost children's well-being and learning outcomes (Litjens, 2010_[13]).

The qualification awarded at the completion of a teacher-training programme for almost all ECEC teaching staff is a tertiary qualification. In 19 out of the 25 countries with available data, an individual can teach in ECEC (ISCED 0) after earning at least a bachelor's degree or equivalent (ISCED level 6) at the end of their initial teacher education. However, there are some exceptions. In the Slovak Republic, pre-primary teachers can start teaching with an upper secondary diploma, but an increasing number of teachers now have a bachelor's or a master's degree. In Germany, they can begin teaching after graduating from a tertiary vocational programme (e.g. *Erzieherausbildung*, ISCED 6); in Austria and Israel, they typically graduate at ISCED level 5 after a two-year short-cycle tertiary programme. At the other end of spectrum, in France, Poland and Portugal pre-primary school teachers are required to have a master's degree or equivalent (ISCED level 7). For France, since school year 2010/2011, each student who wants to become an ECEC or primary teacher must obtain a master's degree or equivalent (Table B2.3).

However, no matter how high the quality of pre-service training, it cannot be expected to prepare teachers for all the challenges they will face throughout their careers. Given the changes in student demographics, the length of most teachers' careers, and the need to update knowledge and competencies, initial teacher education must only

be viewed as the starting point for teachers' ongoing development. Recent research also shows that in pre-primary education, the effects of specialised in-service training on process quality are greater than those of pre-service training, particularly when it comes to collaborative work, support for play and support for early literacy, mathematics and science (Assel, 2006^[14]; de Haan, 2013^[15]).

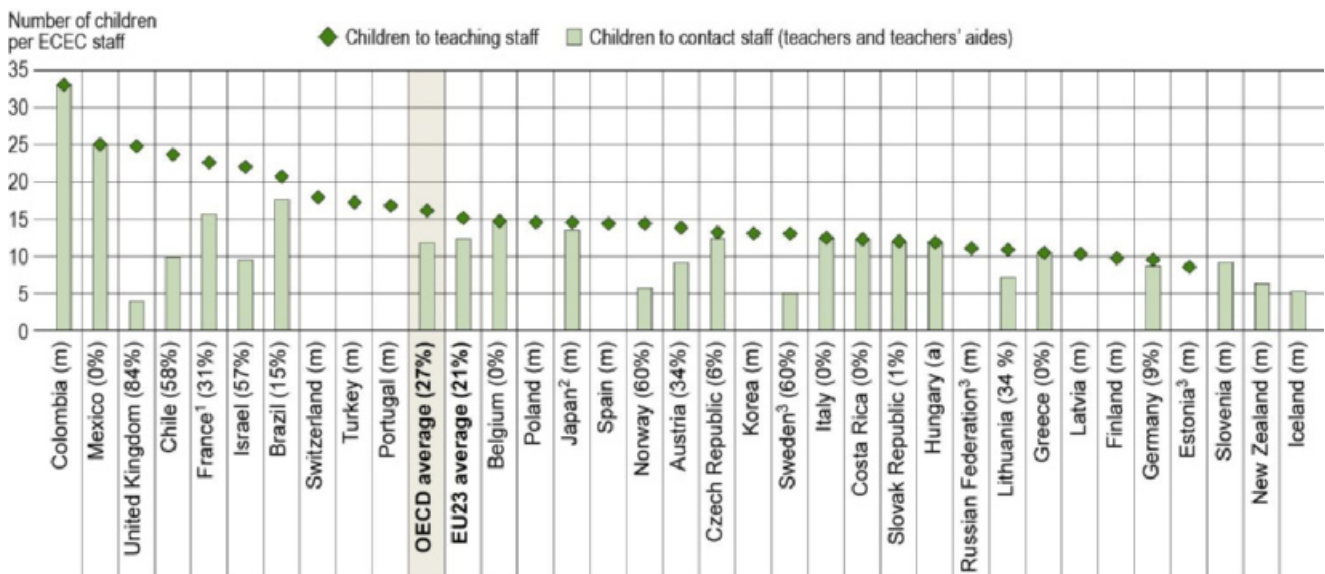
Child-staff ratios

Research demonstrates that enriched, stimulating environments and high-quality pedagogy are fostered by better-qualified practitioners, and that better-quality staff-child interactions facilitate better learning outcomes. In that context, lower child-staff ratios are found to be consistently supportive of staff-child relationships across different types of ECEC settings. Smaller ratios are often seen as beneficial, because they allow staff to focus more on the needs of individual children and reduce the amount of class time needed to deal with disruptions (OECD, 2018^[16]).

The ratio of children to teaching staff is an important indicator of the resources devoted to education. Child-staff ratios and group size are often the most commonly used regulations to improve ECEC quality. On average across OECD countries, there are 16 children for every teacher working in pre-primary education but wide variations are observed across countries. Thus, the child-teaching staff ratio, excluding teachers' aides, ranges from more than 20 children per teacher in Brazil, Chile, Colombia, France, Israel, Mexico and the United Kingdom to less than 10 in Finland and Germany (Table B2.3).

Figure B2.4. Ratio of children to staff in pre-primary (ISCED 02) education (2017)

Public and private institutions, calculation based on full-time equivalents



Note: Figures in parentheses show the percentages of teachers' aides among ECEC contact staff (teachers and teachers' aides).
 1. Excluding independent private institutions. Data on teachers are not comparable with previous years due to a new methodology introduced.
 2. Data on staff do not cover all ECEC services.
 3. ISCED 0 instead of pre-primary education (ISCED 02).
 Countries are ranked in descending order of the ratio of children to teaching staff in pre-primary education.
Source: OECD (2019). Table B2.3. See Source section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

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Some countries – Austria, Chile, France, Israel, Lithuania, Norway, Sweden and the United Kingdom – also make extensive use of teachers' aides, which can be seen from the smaller ratios of children to contact staff than of children to teaching staff. Teachers' aides assist teachers in their daily tasks and deal with children with special needs. In most countries, they have an upper secondary qualification, often vocationally oriented (Table B2.3 and Figure B2.4).

Child-to-staff ratio matters more for interactions with children under the age of 3 than for 3-5 year-olds (OECD, 2018^[16]). In most countries, the ratios of children to contact staff (teachers and teachers' aides) are smaller in early childhood development programmes than in pre-primary education. On average across the 13 OECD countries with available data for both programmes, there are 12 children for every contact staff working in pre-primary education, while the ratio is only 5 children per teacher in early childhood development (Table B2.3). However, the number of hours per week that represent typical full-time enrolment in an education programme at ISCED level 0 varies widely between countries. Because of this, figures should be interpreted with caution (see *Methodology* section).

Definitions

Adults refer to 25-64 year-olds.

ECEC services: The types of ECEC services available to children and parents differ greatly. Despite those differences, most ECEC settings typically fall into one of the following categories (OECD, 2017^[11]) and Table B2.5):

- **Regular centre-based ECEC:** More formalised ECEC centres typically belong to one of these three sub-categories:
 - *Centre-based ECEC for children under the age of 3:* Often called "crèches", these settings may have an educational function, but they are typically attached to the social or welfare sector and associated with an emphasis on care. Many of them are part time and provided in schools, but they can also be provided in designated ECEC centres.
 - *Centre-based ECEC for children from the age of 3:* Often called kindergarten or pre-school, these settings tend to be more formalised and are often linked to the education system.
 - *Age-integrated centre-based ECEC for children from birth or age 1 up to the beginning of primary school:* Called kindergarten, pre-school, or pre-primary, these settings offer a holistic pedagogical provision of education and care (often full-day).
- **Family childcare ECEC:** Licensed home-based ECEC, which is most prevalent for children under age 3. These settings may or may not have an educational function and be part of the regular ECEC system.
- **Licensed or formalised drop-in ECEC centres:** Often receiving children across the entire ECEC age bracket and even beyond, these drop-in centres allow parents to complement home-based care by family members or family childcare with more institutionalised services on an ad-hoc basis (without having to apply for a place).

Some of these ECEC services are in adherence with the criteria defined in the ISCED 2011 classification (see ISCED 0 definition). Others are considered an integral part of countries' ECEC provision but are not in adherence with all the ISCED criteria. Table B2.5 makes the distinction between these two categories explicit.

Informal care services: Generally unregulated care arranged by the child's parent either in the child's home or elsewhere, provided by relatives, friends, neighbours, babysitters or nannies, these services are not covered in this indicator.

ISCED 01 refers to early childhood educational development services, typically aimed at children under the age of 3. The learning environment is visually stimulating, and the language is rich and fosters self-expression, with an emphasis on language acquisition and the use of language for meaningful communication. There are

opportunities for active play so that children can exercise their co-ordination and motor skills under supervision and in interaction with staff.

ISCED 02 refers to pre-primary education, aimed at children in the years immediately prior to starting compulsory schooling, typically aged between the ages of 3 and 5. Through interaction with peers and educators, children improve their use of language and their social skills, start to develop logical and reasoning skills, and talk through their thought processes. They are also introduced to alphabetical and mathematical concepts, understanding and use of language, and are encouraged to explore their surrounding world and environment. Supervised gross motor activities (i.e. physical exercise through games and other activities) and play-based activities can be used as learning opportunities to promote social interactions with peers and to develop skills, autonomy and school readiness.

For data-reporting purposes, data from age-integrated programmes designed to include children younger and older than 3 are allocated to levels 01 and 02 according to the age of the children. This may involve the estimation of expenditure and personnel at levels 01 and 02.

Teachers and comparable practitioners: Teachers have the most responsibility for a group of children at the class or playroom level. They may also be called pedagogue, educator, childcare practitioner or pedagogical staff in education, while the term teacher is almost universally used at the primary level.

Teachers' aides: Aides support the teacher in a group of children or class. They usually have lower qualification requirements than teachers, which may range from no formal requirements to, for instance, vocational education and training. This category is only included in the *Education at a Glance* indicator on children-to-staff ratio.

Please see Indicators C1, C2 and D2 for definitions of expenditure per student on educational institutions, expenditure on educational institutions relative to GDP, and child-to-staff ratios.

Methodology

Enrolment rates

Net enrolment rates are calculated by dividing the number of students of a particular age group enrolled in ECEC by the size of the population of that age group. While enrolment and population figures refer to the same period in most cases, mismatches may occur due to data availability and different sources used in some countries resulting in enrolment rates exceeding 100%.

Full-time and part-time children

The concepts used to define full-time and part-time participation at other ISCED levels, such as study load, child participation, and the academic value or progress that the study represents, are not easily applicable to ISCED level 0. In addition, the number of daily or weekly hours that represent typical full-time enrolment in an education programme at ISCED level 0 varies widely between countries. Because of this, full-time equivalents cannot be calculated for ISCED level 0 programmes in the same way as for other ISCED levels.

For data-reporting purposes, countries separate ISCED level 0 data into ISCED 01 and ISCED 02 by age only, as follows: data from age-integrated programmes designed to include children younger and older than 3 are allocated to levels 01 and 02 according to the age of the children. This may involve the estimation of expenditure and personnel at levels 01 and 02.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics* (OECD, 2018_[17]) and Annex 3 for country-specific notes (<https://doi.org/10.1787/f8d7880d-en>).

Estimated expenditure for all children aged 3 to 5 enrolled in ECEC and primary education

The calculation of this new measure is based on the distribution of children aged 3 to 5 enrolled in ISCED 01, ISCED 02 and primary education (ISCED 1). For each country, the calculation was based on what proportion of all children enrolled at each of these three ISCED levels were aged 3 to 5. For instance, in Australia, children aged 3 to 5 accounted for 5% of all children enrolled in ISCED 01, 99% of all children enrolled in ISCED 02 and 12% of all children enrolled in ISCED 1. These percentages were used to estimate total expenditure for all children aged 3 to 5 enrolled in ECEC and primary education. Total expenditure for all children aged 3 to 5 are calculated by: 5% of all expenditure in ISCED 01 and 99% of all expenditure in ISCED 02 and 12% of all expenditure in ISCED 1. A similar calculation was made for all countries.

Source

Data refer to the reference year 2017 (school year 2016/17) and financial year 2016.

Data from Argentina, the People's Republic of China, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

Data are based on the UNESCO-UIS/OECD/EUROSTAT data collection on education statistics administered by the OECD in 2018 (for details, see Annex 3 at <https://doi.org/10.1787/f8d7880d-en>) and on a special survey administered by the OECD in 2018.

Data on subnational regions for selected indicators are available in the OECD Regional database (OECD, 2019^[8]).

Note regarding data from Israel

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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Indicator B2 Tables

- Table B2.1** Enrolment rates of children under the age of 3 in early childhood education and care, by type of service and age (2005, 2010 and 2017)
- Table B2.2** Enrolment rates in early childhood education and care (ECEC) and primary education, by age (2005, 2010 and 2017)

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Table B2.3 Enrolment of children in early childhood education and care (ISCED 0) in private institutions, ratio of children to teaching staff and minimum qualification of ECEC staff (2017)

Table B2.4 Financing of early childhood education and care (ISCED 0) and change in expenditure as a percentage of GDP (2012 and 2016)

WEB Table B2.5 Coverage of early childhood education and care in OECD and partner countries

Cut-off date for the data: 19 July 2019. Any updates on data can be found on line at <http://dx.doi.org/10.1787/eag-data-en>. More breakdowns can also be found at <http://stats.oecd.org/>, Education at a Glance Database.

StatLink: <https://doi.org/10.1787/888933980944>

Table B2.1. Enrolment rates of children under the age of 3 in early childhood education and care, by type of service and age (2005, 2010 and 2017)
Public and private institutions

	Age when ECEC services (ISCED 0) start offering intentional education objectives	Under the age of 1			Age 1			Under the age of 2			Age 2			Under the age of 3				
		2017			2017			2017			2017			2017			2010	2005
		ECEC services (ISCED 0)	Other registered ECEC services	Total	ECEC services (ISCED 0)	Other registered ECEC services	Total	ECEC services (ISCED 0)	Other registered ECEC services	Total	ECEC services (ISCED 0)	Other registered ECEC services	Total	ECEC services (ISCED 0)	Other registered ECEC services	Total	Total	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
OECD																		
Countries																		
Australia	0 years	16	0	16	43	0	44	30	0	31	57	0	57	39	0	40	38	m
Austria	0 years	1	x(15)	1	14	x(15)	14	7	x(15)	7	40	x(15)	40	18	3	21	12	m
Belgium	Fl: 3-6 Months; Fr: 2 years	m	m	m	m	m	m	m	m	m	53	m	m	m	m	m	m	m
Canada	3-4 years	m	a	m	m	a	m	m	a	m	m	a	m	m	a	m	m	m
Colombia	0 years	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	35	0	35	43	0	43	38	0	38	m	m
Chile	3 months	7	0	8	21	0	22	14	0	15	34	1	35	21	0	22	m	m
Czech Republic	2-3 years	a	x(9)	x(10)	a	x(9)	x(10)	a	m	m	17	m	m	6	m	m	m	m
Denmark	26 weeks	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	39	m	39	89	m	89	55	m	55	m	m
Estonia	0 years	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	6	1	8	66	7	73	26	3	29	23	m
Finland	9 months	1	m	1	31	m	31	16	m	16	59	m	59	31	m	31	27	25
France ¹	2-3 years	a	m	m	a	m	m	a	m	m	12	m	m	4	32	36	m	m
Germany	0 years	6	a	6	41	a	41	23	a	23	66	a	66	37	a	37	27	17
Greece ¹	2 months	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	2	m	m	14	m	m	6	m	m	m	m
Hungary	20 weeks	1	0	1	6	7	1	3	4	14	27	41	5	11	16	10	7	
Iceland	0 years	2	4	5	45	31	76	24	17	41	95	0	95	48	12	60	55	53
Ireland	3 years	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	4	m	m	15	m	m	8	m	m	m	m
Israel	0 years	31	a	31	64	a	64	47	a	47	74	a	74	56	a	56	m	m
Italy	2-3 years	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	a	m	m	15	m	m	5	m	m	m	m
Japan	3 years	a	7	7	a	33	33	a	20	20	6	43	50	2	27	30	19	16
Korea	0 years	14	a	14	64	a	64	40	a	40	88	a	88	56	a	56	38	m
Latvia	1.5 years	0	a	0	16	a	16	8	a	8	71	a	71	29	a	29	18	17
Lithuania	0 years	0	a	0	13	a	13	7	a	7	62	a	62	25	a	25	16	13
Luxembourg	0 years	27	2	30	64	4	68	46	3	49	73	5	78	55	4	59	m	m
Mexico	1.5 months	x(3)	a	x(10)	x(5)	a	x(10)	1	a	1	8	a	8	4	a	4	2	2
Netherlands	3 years	x(14)	x(15)	x(16)	x(14)	x(15)	x(16)	x(14)	x(15)	x(16)	x(14)	x(15)	x(16)	0	59	59	m	m
New Zealand	0 years	18	4	22	48	6	54	33	5	38	67	7	74	44	6	50	m	m
Norway	0 years	4	0	4	72	0	72	38	0	38	92	0	92	56	0	56	53	33
Poland	3 years	0	0	0	0	9	9	0	5	5	7	12	19	2	7	9	4	3
Portugal	0 years	18	1	19	38	1	40	26	1	29	51	1	52	36	1	37	27	21
Slovak Republic	2-3 years	a	m	m	a	m	m	a	m	m	15	m	m	5	m	m	3	7
Slovenia	11 months	0	0	0	48	0	48	24	0	24	74	0	74	41	0	41	34	25
Spain	0 years	11	m	11	38	m	38	25	m	25	59	m	59	36	m	36	26	15
Sweden	1 year	0	0	0	48	1	49	24	1	24	88	2	90	45	1	47	46	m
Switzerland	m	a	m	m	a	m	m	a	m	m	a	m	m	a	m	m	m	m
Turkey	m	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	m	m	m	m	m	m	0	a	0	m	m
United Kingdom	0 years	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
United States	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
OECD average		m	m	9	m	m	40	21	3	24	49	13	62	26	10	36	25	18
EU23 average		m	m	6	m	m	31	16	3	19	46	17	62	23	12	36	21	15
OECD average (all countries with 2010 and 2017 data)		m	m	m	m	m	m	m	m	m	m	m	m	m	m	34	26	m
Partners																		
Argentina ¹	m	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	2	m	m	11	m	m	5	m	m	m	m
Brazil ¹	0 years	6	a	6	20	a	20	14	a	14	40	a	40	23	a	23	10	m
China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Costa Rica	0 years	1	1	2	1	5	7	1	3	4	3	10	12	2	5	7	m	m
India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Indonesia	m	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	3	m	m	12	m	m	6	m	m	m	m
Russian Federation	0 years	x(3)	x(9)	x(10)	x(5)	x(9)	x(10)	4	m	4	49	m	49	19	m	19	17	21
Saudi Arabia	m	a	m	m	a	m	m	a	m	m	m	m	m	m	m	m	m	m
South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
G20 average		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Early childhood education = ISCED 0, other registered ECEC services = ECEC services outside the scope of ISCED 0, because they are not in adherence with all ISCED criteria. To be classified in ISCED 0, ECEC services should: 1) have an adequate intentional educational properties; 2) be institutionalised (usually school-based or otherwise institutionalised for a group of children); 3) have an intensity of at least 2 hours per day of educational activities and a duration of at least 100 days a year; 4) have a regulatory framework recognised by the relevant national authorities (e.g. curriculum); and 5) have trained or accredited staff (e.g. requirement of pedagogical qualifications for educators). 1. For France, data for other registered ECEC services come from the survey "Modes de garde et d'accueil des jeunes enfants 2013" conducted by the statistical division of the French Ministry for Solidarity and Health (DREES). Figures refer to the primary custody arrangements. For Greece, ECEC data include only part of the children enrolled in early childhood development programmes (ISCED 01). 2. Year of reference 2016 instead of 2017. 3. Year of reference 2012 instead of 2010.

Source: OECD/UIS/Eurostat (2019). See *Source* section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

Please refer to the *Reader's Guide* for information concerning symbols for missing data and abbreviations.

StatLink  <https://doi.org/10.1787/888933977771>

Table B2.2. Enrolment rates in early childhood education and care (ECEC) and primary education, by age (2005, 2010 and 2017)
Public and private institutions, from age 3 to age 6

	Typical starting age of primary education	Starting age of compulsory education	Age 3			Age 4			Age 5			Age 6			Ages 3 to 5					
			ISCED 0	Other registered ECEC services	Total	ISCED 0	Primary education (ISCED 1)	Total	ISCED 0	Primary education (ISCED 1)	Total	ISCED 0	Primary education (ISCED 1)	Total	ECEC (ISCED 0) and primary education					
			2017			2017			2017			2017			2017			2017	2010	2005
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
OECD	Countries																			
	Australia	5	6	66	1	67	85	1	86	20	79	99	2	99	100	84	74	m		
	Austria	6	6	76	x(3)	76	93	0	93	98	0	98	42	57	99	89	86	76		
	Belgium	6	6	98	0	98	99	0	99	98	1	99	3	95	98	98	99	100		
	Canada	6	6	m	a	m	m	m	m	98	0	98	0	100	100	m	m	m		
	Chile	6	6	58	1	58	85	0	85	94	0	94	16	81	98	79	70	45		
	Colombia	6	5	53	0	53	62	0	63	58	19	77	6	73	79	64	m	m		
	Czech Republic	6	6	79	0	79	88	0	88	96	0	96	48	49	96	88	79	85		
	Denmark	6	6	96	0	96	98	0	98	97	1	98	7	93	99	98	94	m		
	Estonia	7	7	88	3	91	92	0	92	93	0	93	92	1	93	91	89	m		
	Finland	7	7	73	m	73	80	0	80	85	0	85	98	0	99	79	73	68		
	France	6	6	100	a	100	100	0	100	100	1	100	1	100	100	100	100	100		
	Germany	6	6	91	a	91	95	0	95	97	0	98	36	63	99	95	94	88		
	Greece ¹	6	5	30	m	m	70	0	70	92	0	92	3	93	97	65	m	m		
	Hungary	7	3	85	14	99	96	0	96	96	0	96	61	31	92	92	87	87		
	Iceland	6	6	97	0	97	98	0	98	98	0	98	0	99	99	97	96	95		
	Ireland	5	6	92	0	92	73	28	100	1	100	100	0	100	100	98	m	m		
	Israel	6	3	100	a	100	98	0	98	97	0	97	13	83	96	99	86	80		
	Italy	6	6	91	0	91	95	0	95	88	8	96	1	96	97	94	98	100		
	Japan	6	6	83	0	83	95	0	95	96	0	96	0	100	100	91	90	87		
	Korea	6	6	94	a	94	97	0	97	92	1	93	0	92	92	95	85	m		
	Latvia	7	5	90	a	90	94	0	94	97	0	97	94	4	98	93	82	77		
	Lithuania	7	7	80	a	80	86	0	86	90	0	90	97	4	101	85	72	59		
	Luxembourg	6	4	70	m	m	95	0	95	93	5	98	6	91	97	88	87	84		
	Mexico	6	3	47	a	47	92	0	92	75	25	100	1	100	100	84	78	64		
	Netherlands	6	5	88	5	93	96	0	96	99	0	99	0	100	100	94	94	93		
	New Zealand	5	5	90	5	95	96	0	96	3	94	98	0	99	99	95	m	m		
	Norway	6	6	96	0	96	97	0	97	98	0	98	1	99	100	97	96	88		
	Poland	7	6	67	2	69	85	0	85	92	0	92	80	18	98	82	60	38		
	Portugal	6	6	86	0	86	93	0	93	95	0	96	10	86	96	92	87	78		
	Slovak Republic	6	6	68	m	68	79	0	79	78	0	78	41	51	91	75	72	74		
	Slovenia	6	6	86	m	86	90	0	90	94	0	94	8	89	98	90	86	75		
	Spain	6	6	96	0	96	98	0	98	97	0	97	1	97	98	97	97	98		
	Sweden	7	7	93	2	95	94	0	94	95	0	95	98	1	99	94	97	m		
	Switzerland	6	4.5	2	m	2	48	0	48	98	1	98	54	46	100	50	47	47		
	Turkey	6	5-6	10	a	10	37	0	37	59	15	73	0	95	95	40	27	13		
	United Kingdom	5	4.5	100	0	100	100	3	100	0	97	97	0	98	98	100	m	m		
	United States	6	4.6	42	m	42	66	0	66	86	5	90	23	77	100	66	66	66		
	OECD average	m	m	77	3	79	87	1	88	82	12	94	25	72	97	87	82	76		
	EU23 average	m	m	84	4	88	91	1	92	86	9	95	36	62	98	90	87	81		
	OECD average (all countries with 2005, 2010 and 2017 data)	m	m	m	m	m	m	m	m	m	m	m	m	m	m	86	81	76		
Partners	Argentina ²	m	5	41	0	41	86	0	86	99	1	100	0	100	100	76	m	m		
	Brazil ³	6	4	64	0	64	90	0	90	91	7	98	11	93	100	84	60	m		
	China	6	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m		
	Costa Rica	6	4	5	14	19	63	0	63	85	1	85	1	93	95	51	m	m		
	India	6	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m		
	Indonesia	m	7	36	0	36	73	0	73	99	3	100	X(14)	X(14)	100	70	m	m		
	Russian Federation	7	7	79	0	79	84	0	84	85	0	85	85	10	95	83	71	53		
	Saudi Arabia	m	6	3	0	3	12	0	12	45	5	51	4	96	100	22	m	m		
	South Africa	m	7	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m		
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m		

Note: Early childhood education = ISCED 0, other registered ECEC services = ECEC services outside the scope of ISCED 0, because they are not in adherence with all ISCED criteria. To be classified in ISCED 0, ECEC services should: 1) have an adequate intentional educational properties; 2) be institutionalised (usually school-based or otherwise institutionalised for a group of children); 3) have an intensity of at least 2 hours per day of educational activities and a duration of at least 100 days a year; 4) have a regulatory framework recognised by the relevant national authorities (e.g. curriculum); and 5) have trained or accredited staff (e.g. requirement of pedagogical qualifications for educators).

1. ECEC data include only part of the children enrolled in early childhood development programmes (ISCED 01).

2. Year of reference 2016 instead of 2017.

3. Year of reference 2012 instead of 2010.

Source: OECD/UIS/Eurostat (2019). See Source section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table B2.3. Enrolment of children in early childhood education and care (ISCED 0) in private institutions, ratio of children to teaching staff and minimum qualification of ECEC staff (2017)

	Percentage of children enrolled in private institutions (government-dependent and independent private institutions)			Ratio of children to staff in full-time equivalents, by type of ECEC service (public and private institutions)									Minimum ISCED qualification required to enter ECEC profession	
				ISCED 01			ISCED 02			Total (ISCED 0)				
	ISCED 01	ISCED 02	Total (ISCED 0)	Share of teachers' aides among contact staff	Children to contact staff (teachers and teachers' aides)	Children to teaching staff	Share of teachers' aides among contact staff	Children to contact staff (teachers and teachers' aides)	Children to teaching staff	Share of teachers' aides among contact staff	Children to contact staff (teachers and teachers' aides)	Children to teaching staff	Total (ISCED 0)	
													Teachers	Teachers' aides
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
OECD														
Countries														
Australia	m	84	m	m	m	m	m	m	m	m	m	m	m	m
Austria	67	29	36	31	6	9	34	9	14	33	8	13	ISCED 5	ISCED 3
Belgium	m	53	m	m	m	m	0	15	15	m	m	m	ISCED 6	a
Canada	m	7	m	m	m	m	m	m	m	m	m	m	m	m
Chile	4	63	50	45	6	12	58	10	24	58	10	23	ISCED 6	ISCED 3, vocational
Czech Republic	m	m	m	a	a	a	6	12	13	6	12	13	m	m
Colombia	m	23	m	m	m	m	m	33	33	m	m	m	m	m
Denmark	14	21	18	m	m	m	m	m	m	m	7	x(11)	ISCED 6	x(13)
Estonia	x(3)	x(3)	4	x(10)	x(11)	x(12)	x(10)	x(11)	x(12)	m	m	9	ISCED 6	m
Finland	20	12	14	m	m	m	m	m	10	m	m	m	ISCED 6 or 7	m
France ¹	a	13	13	a	a	a	31	16	23	31	16	23	ISCED 7	ISCED 3, vocational
Germany	73	65	67	8	5	5	9	9	9	9	7	8	ISCED 6, vocational	ISCED 3, vocational
Greece	40	9	19	m	m	m	0	10	10	m	m	m	m	a
Hungary	14	11	11	a	11	11	a	12	12	a	12	12	m	a
Iceland	20	15	17	m	3	m	m	5	m	m	4	m	m	m
Ireland	a	99	99	a	a	a	m	m	m	m	m	m	m	m
Israel ¹	100	36	59	m	m	m	57	9	22	m	m	m	ISCED 5	ISCED 3
Italy	a	28	28	a	a	a	0	12	12	0	12	12	m	a
Japan ²	a	76	76	a	a	a	m	13	15	m	13	15	ISCED 5 or 6	m
Korea	90	78	82	m	m	5	m	m	13	m	m	9	ISCED 5	m
Latvia	15	7	8	m	m	8	m	m	10	m	m	10	ISCED 5	ISCED 3
Lithuania	11	5	6	36	7	11	34	7	11	35	7	11	ISCED 6	ISCED 3
Luxembourg	a	10	10	a	a	a	m	m	m	m	m	m	m	m
Mexico	64	14	17	64	5	14	0	25	25	12	21	24	ISCED 6	ISCED 2 and training
Netherlands	a	30	30	a	a	a	m	m	m	m	m	m	m	m
New Zealand	99	99	99	m	4	m	m	6	m	m	5	m	ISCED 6	m
Norway	52	48	49	60	3	8	60	6	14	60	4	11	ISCED 6	ISCED 2 or ISCED 3
Poland	a	24	24	a	a	a	m	m	15	m	m	15	ISCED 7	m
Portugal	m	47	47	m	m	m	m	m	17	m	m	m	ISCED 7	m
Slovak Republic	a	6	6	a	a	a	1	12	12	1	12	12	ISCED 3	ISCED 3, vocational
Slovenia	6	4	5	m	6	m	m	9	m	m	8	m	ISCED 6	ISCED 3, vocational
Spain	49	33	37	m	m	10	m	m	14	m	m	13	ISCED 5 for ISCED 01; ISCED 6 for ISCED. 02	m
Sweden	20	17	18	x(10)	x(11)	x(12)	x(10)	x(11)	x(12)	60	5	13	ISCED 6	m
Switzerland ¹	a	5	5	a	a	a	m	m	18	m	m	18	ISCED 6	m
Turkey	100	15	16	m	m	m	m	m	17	m	m	m	m	m
United Kingdom ³	81	49	55	89	2	20	84	4	25	86	3	23	ISCED 5 or 6	m
United States	m	41	m	m	m	m	m	m	m	m	m	m	m	m
OECD average	47	34	33	47	5	10	27	12	16	33	9	14	m	m
EU23 average	34	27	26	41	6	10	21	12	15	32	9	13	m	m
Partners														
Argentina ⁴	56	31	33	m	m	m	m	m	m	m	m	m	m	m
Brazil	35	23	28	40	8	14	15	18	21	29	12	17	ISCED 6	ISCED 3
China	a	55	55	m	m	m	m	m	m	m	m	m	m	m
Costa Rica	76	11	15	0	5	5	0	12	12	0	11	11	m	m
India	a	77	77	m	m	m	m	m	m	m	m	m	m	m
Indonesia	100	95	98	m	m	m	m	m	m	m	m	m	m	m
Russian Federation	1	1	1	x(10)	x(11)	x(12)	x(10)	x(11)	x(12)	m	m	11	m	m
Saudi Arabia	a	64	64	m	m	m	m	m	m	m	m	m	m	m
South Africa	m	7	m	m	m	m	m	m	m	m	m	m	m	m
G20 average	m	42	47	m	m	m	m	m	m	m	m	m	m	m

Note: Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02; ISCED 5 = Short tertiary cycle; ISCED 6 = Bachelor's degree or equivalent; ISCED 7 = Master's degree or equivalent.

1. France: Data for Columns 7 to 12 represent public and government-dependent private institutions only. Data on teachers are not comparable with previous years due to a new methodology introduced. Israel and Switzerland: Public institutions only.

2. Data on staff do not cover all ECEC services.

3. The minimum qualification of ECEC staff is ISCED 6 in England and ISCED 5 in Scotland.

4. Year of reference 2016 instead of 2017.

Source: OECD/UIS/Eurostat (2019). See Source section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table B2.4. Financing of early childhood education and care (ISCED 0) and change in expenditure as a percentage of GDP (2012 and 2016)
Public and private institutions

	Annual expenditure per child in USD, converted using PPPs (based on head counts)			Expenditure on ECEC services as a percentage of GDP						Expenditure on all children aged 3 to 5 enrolled in ECEC and primary education (based on head counts)		Relative proportions of private expenditure on early childhood education and care (after transfers from public sources)		
	2016			2016			2012			2016		2016		
	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	Total	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	Total	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	Total	As a % of GDP	Per child	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD														
Countries														
Australia	7 648	7 536	7 582	0.2	0.3	0.6	0.3	0.2	0.4	0.6	8 325	40	34	36
Austria	11 995	10 028	10 364	0.1	0.5	0.7	0.1	0.5	0.6	0.5	10 112	25	13	15
Belgium	m	8 427	m	m	0.7	m	m	m	m	0.6	8 433	m	3	m
Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Chile ¹	8 018	6 599	6 908	0.3	0.9	1.2	m	0.8	m	0.9	6 641	18	18	18
Colombia ¹	m	1 579	m	0.1	0.3	0.5	m	m	m	0.4	1 771	89	28	45
Czech Republic	a	5 125	5 125	a	0.5	0.5	a	0.5	0.5	0.4	5 125	a	11	11
Denmark	m	m	m	m	m	m	x(9)	x(9)	1.3	m	m	m	m	m
Estonia	x(3)	x(3)	7 146	x(6)	x(6)	1.2	x(9)	x(9)	0.4	0.7	7 146	x(3)	x(3)	13
Finland ²	20 815	10 961	12 819	0.4	0.9	1.2	0.4	0.8	1.2	0.6	10 961	9	11	10
France	a	8 165	8 165	a	0.7	0.7	a	0.7	0.7	0.7	8 164	a	7	7
Germany	16 169	10 101	11 724	0.3	0.6	0.9	0.3	0.5	0.8	0.5	10 100	19	19	19
Greece	m	5 697	m	m	0.3	m	0.3	0.2	0.5	m	m	m	9	m
Hungary	6 834	7 171	7 155	0.0	0.8	0.9	0.0	0.7	0.7	0.7	7 169	8	8	8
Iceland	18 934	13 230	15 012	0.7	1.0	1.7	0.6	1.0	1.6	1.0	13 228	11	15	13
Ireland	x(3)	x(3)	3 705	X(6)	X(6)	0.1	x(9)	x(9)	0.1	0.4	6 269	X(3)	X(3)	3
Israel	2 971	5 466	4 568	0.3	0.9	1.2	m	0.7	m	0.9	5 469	84	9	27
Italy	a	7 395	7 395	a	0.5	0.5	a	0.5	0.5	0.5	7 411	a	12	12
Japan ³	a	7 473	7 473	a	0.2	0.2	a	0.2	0.2	m	m	a	51	51
Korea	m	7 359	m	m	0.5	m	m	m	m	0.5	7 366	m	18	m
Latvia	a	5 574	5 574	a	0.8	0.8	a	0.8	0.8	0.6	5 574	a	3	3
Lithuania	6 189	6 178	6 180	0.2	0.7	0.9	0.1	0.6	0.7	0.5	6 178	19	15	16
Luxembourg	a	17 533	17 533	a	0.5	0.5	a	0.7	0.7	0.5	17 539	a	2	2
Mexico	x(3)	x(3)	2 296	X(6)	X(6)	0.5	x(9)	x(9)	0.6	0.6	2 317	m	m	16
Netherlands	a	6 538	6 538	a	0.4	0.4	a	0.4	0.4	0.4	6 538	a	12	12
New Zealand	9 762	8 141	8 783	0.4	0.6	1.0	0.4	0.6	0.9	0.8	8 191	29	14	21
Norway	25 365	14 344	18 244	1.0	1.0	2.0	1.0	1.1	2.1	1.0	14 344	14	14	14
Poland	a	6 832	6 832	a	0.8	0.8	a	0.7	0.7	0.7	6 832	a	18	18
Portugal	m	7 451	m	m	0.6	m	m	0.6	m	0.6	7 451	m	36	m
Slovak Republic	a	6 169	6 169	a	0.6	0.6	a	0.5	0.5	0.5	6 169	a	15	15
Slovenia	10 701	7 819	8 653	0.4	0.7	1.1	0.4	0.8	1.3	0.7	7 819	25	25	25
Spain	8 202	6 916	7 238	0.2	0.5	0.8	0.2	0.7	0.9	0.5	6 918	41	18	24
Sweden	17 508	14 528	15 303	0.6	1.4	1.9	0.5	1.2	1.8	1.0	14 528	6	5	6
Switzerland ⁴	a	12 592	12 592	a	0.4	0.4	a	m	m	0.3	12 607	a	m	m
Turkey	x(3)	x(3)	5 568	X(6)	X(6)	0.3	x(9)	x(9)	0.2	0.4	5 381	X(3)	X(3)	28
United Kingdom	5 658	5 932	5 880	0.1	0.4	0.5	0.1	0.5	0.6	0.7	7 561	62	50	52
United States	m	9 151	m	m	0.4	m	m	0.4	m	0.4	9 213	m	26	m
OECD average	12 080	8 349	8 605	0.3	0.6	0.8	0.3	0.6	0.8	0.6	8 141	31	17	18
EU23 average	11 809	9 114	9 342	0.3	0.7	0.9	0.3	0.7	0.9	0.6	8 926	25	16	17
Partners														
Argentina ⁴	m	m	m	m	0.5	m	m	m	m	m	m	m	m	m
Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m
China	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Costa Rica ^{1, 4}	m	m	m	0.1	0.4	0.5	m	m	m	0.5	m	m	m	m
India	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Russian Federation	x(3)	x(3)	4 394	X(6)	X(6)	0.9	x(9)	x(9)	0.8	m	m	X(3)	X(3)	13
Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
South Africa	m	m	m	m	m	m	m	m	m	m	m	m	27	m
G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m

1. Year of reference 2017 instead of 2016.

2. Expenditure on all children aged 3 to 5 are underestimated due to the estimation method used.

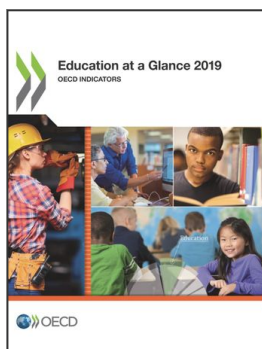
3. Data on financing do not cover all ECEC services.

4. Public sources only.

Source: OECD/UIS/Eurostat (2019). See Source section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

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