

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

Highlights

- On average, the vast majority (83%) of children between the age of 3 and 5 are enrolled in early childhood education (ECE) across the OECD. In a few countries, it is also common for younger children between the age of 0 and 2 to participate in ECE and over 50% of children in this age group are enrolled. However, only 27% of under-threes are enrolled in ECE on average across the OECD.
- In 14 out of 32 countries with available data, the share of older teachers (50 years and over) is more than double that of the share of the youngest teachers (below the age of 30). In 5 countries, older teachers outnumber younger teachers by more than 4 to 1, which may have significant implications for their capacity to replace retiring teachers in the near future.
- Compared to other levels of education, public funding for ECE is more reliant on regional and local sources than central government, although there are great differences between countries. In 2019, central government sources accounted for 48% of initial public funds for pre-primary expenditure on average across OECD countries.

Context

Policy makers are increasingly aware of the key role that early childhood education and care (ECEC) plays in children's cognitive and emotional development, learning and well-being. Children who participate in high-quality organised learning at an early age are more likely to have better education 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]).

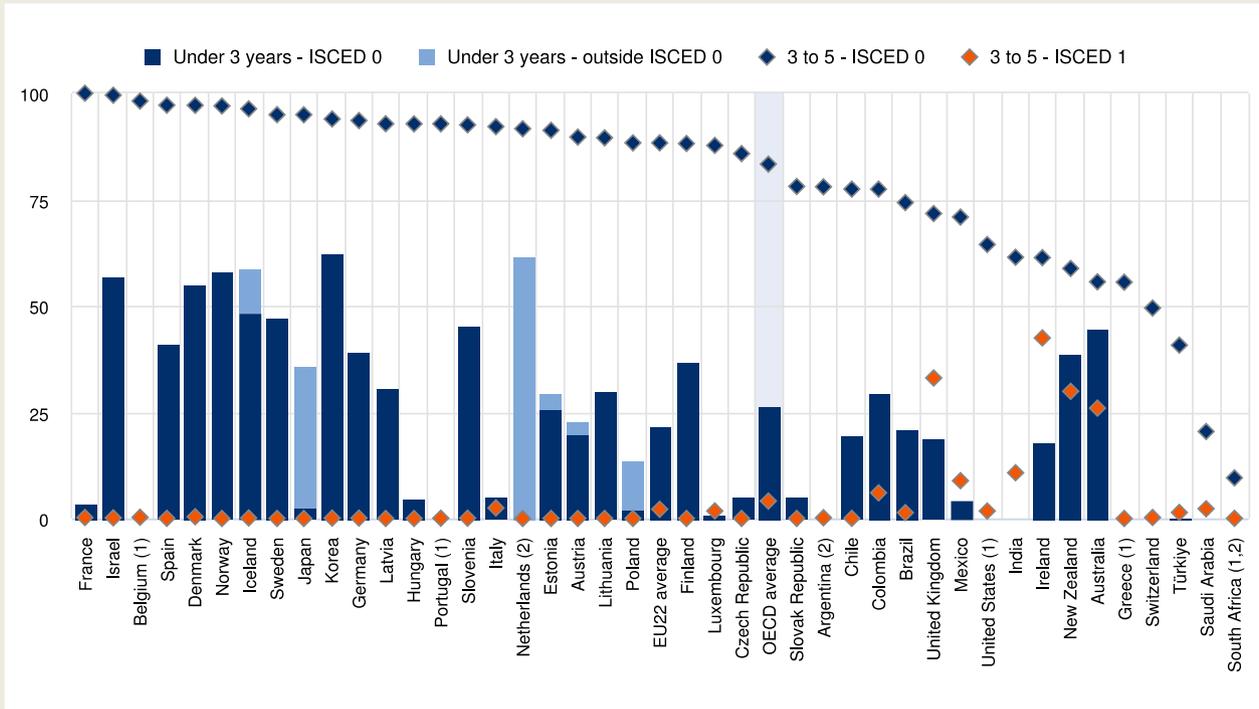
Affordable and accessible ECEC makes it easier for parents to take on employment and contribute to economic prosperity and growth. The increasing number of women entering the labour market has heightened governments' interest in expanding ECEC services. High-quality ECEC services and other provisions to improve parents' work-life balance provide greater opportunities to enter employment and combine work and family responsibilities (OECD, 2018^[2]; 2011^[3]; 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 starting age of compulsory education, and rethink education spending patterns to gain "value for money" (Duncan and Magnuson, 2013^[5]). Despite these general trends, there are substantial differences across OECD countries in the quality of ECEC services provided to young children, the types of ECEC services available and the number of hours per week children usually attend.

The global COVID-19 pandemic has severely affected the delivery of ECEC services as settings around the world closed down to contain the spread of the virus. However, full school closures due to COVID-19 were often shorter at pre-primary than at other levels of education (see chapter on COVID-19). Because ECEC settings in some countries rely heavily on private funding, enrolment disruptions due to health and safety concerns and declining household budgets following job losses and insecurity, have jeopardised the future of a number of them, and hence the participation rates of young children (OECD, 2021^[6]).

Figure B2.1. Enrolment rates of young children by type of programme and by age group (2020)

Education programmes meeting ISCED criteria and other registered ECEC services outside the scope of ISCED, in per cent



Note: Countries may have ECEC programmes on which enrolment statistics are not collected. For more information on which ECEC programmes are available in countries, see Annex 3 and the *Education GPS* (OECD, 2022^[7]).

1. Excludes ISCED 01 programmes.

2. Year of reference 2019; for the Netherlands, 2019 is the reference year for other registered ECEC services only.

Countries are ranked in descending order of the enrolment rates in ISCED 0 of children of 3 to 5 years in 2020.

Source: OECD/UIS/Eurostat (2022), Table B2.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Other findings

- The SDG 4 agenda reaffirms the importance of children’s participation in ECEC, aiming to “ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education” (SDG 4.2). In 33 out of 38 OECD countries, there is full enrolment (over 90%) of children in organised learning in the year before primary education starts (Box B2.1).
- Higher levels of participation in ECE among 3-5 year-olds at the national level tend to be associated with smaller disparities among regions. There were low levels of regional variation in enrolment rates in almost two thirds of countries where the national enrolment rate of 3-5 year-olds in ECEC was 90% or above, with a standard deviation less than 7% (OECD, 2022^[8]).

Note

This indicator only covers formal education and care. Informal care services (generally unregulated care arranged by the child’s parents either in the child’s home or elsewhere, provided by relatives, friends, neighbours, babysitters or nannies) are not covered (see the *Definitions* section for more details). In addition, this indicator focuses mostly on teachers, as they are the staff members with the most responsibility for the learning of children on a day-to-day basis. The analysis also concentrates on the pre-primary level where data are more available and comparable.

Analysis

There is a growing consensus among OECD countries of the importance of high-quality early childhood education and care (ECEC). Research from a variety of contexts suggests that participation in high-quality ECEC is associated with positive outcomes in both the short and long term (OECD, 2021^[9]). Certain ECEC programmes have been shown to help children develop their cognitive, social, and emotional skills. The progress that children make at a young age can have a lasting impact on their academic performance, well-being, and earnings in later life (García et al., 2020^[10]; Heckman and Karapakula, 2021^[11]). Identifying which aspects of ECEC services constitute high-quality provision is therefore of great policy interest. The quality of ECEC provision has often been considered in terms of the structure of services and of the processes at work within settings (Slot, 2018^[12]). Structural characteristics cover the infrastructure and organisation of ECEC services, such as group sizes, funding arrangements, types of staff and workforce training. Meanwhile, process quality concerns the daily interactions that occur between children and their environment as part of their ECEC programme, including their relationships with their peers, staff, families, communities, and physical surroundings (Cadima et al., 2020^[13]).

Multiple studies have stressed the importance of process quality in driving children's development in ECEC in particular (OECD, 2018^[14]; Melhuish et al., 2015^[15]). Process quality is influenced by a multitude of factors such as the characteristics of the children enrolled or the organisation and the competencies of staff, which indicates the need for comprehensive strategies to improve the quality of ECEC (OECD, 2021^[9]). There is also evidence to suggest that process quality can be affected by the structural conditions of ECEC provision, which can be more easily regulated (OECD, 2018^[14]). At the same time, policies governing ECEC programmes also have to take into account other priorities, such as access, demand and funding.

The types of ECEC services available to children and parents in OECD countries differ greatly. There are variations in the targeted age groups, the governance of centres, the funding of services, the type of delivery (full-day versus part-day attendance) and the location of provision, whether in centres or schools, or in homes (OECD, 2017^[1]). The programmes offered by ECEC services can also vary significantly in terms of their content. In order to distinguish between ECEC services that are primarily focused on early childhood education and those that aim to offer childcare, ECEC provision can be classified into two main categories:

Early childhood education (ECE) services that comply with the ISCED 2011 classification, which must: 1) have adequate intentional educational properties; 2) be institutionalised; 3) have an intensity of at least 2 hours per day of educational activities and a duration of at least 100 days per year; 4) have a regulatory framework recognised by the relevant national authorities; and 5) have trained and accredited staff (OECD/Eurostat/UNESCO Institute for Statistics, 2015^[16]).

Other registered ECEC services that are an integral part of countries' ECEC provision but that do not comply with one or more of the criteria to be considered an educational programme under the ISCED 2011 classification, e.g. *crèches* in France (OECD/Eurostat/UNESCO Institute for Statistics, 2015^[16]; OECD, 2006^[17]). While such programmes exist in many countries, particularly for children under 3, not all countries are able to report the number of children enrolled in them (Table B2.1). For this reason, the focus of this indicator is mainly on ECE programmes. It should be further noted that some services may not currently be recognised as meeting ISCED criteria but do meet the requirements for classification as an educational programme in practice. Thus, the educational status of programmes may be under review, as is the case with *amas* in Portugal.

Countries organise their national ECEC systems in a variety of ways, primarily regarding the highest administrative authorities in charge and whether the system is split or integrated at the national level. About half of the OECD countries with available data have integrated ECEC services, where one authority is responsible for administering the whole ECEC system and setting adequate intentional education for children from the ages of 0 or 1 until they start primary education (see Box B2.1 in *Education at a Glance 2019* (OECD, 2019^[18])). In such cases, it is usually the education ministry that is in charge of regulating ECEC programmes. In half of the remaining countries with available data, different authorities are responsible for ECEC provision for different age groups. In these countries, older children (generally 3-5 year-olds) are offered services that are regulated by the education ministry, while services for younger children (generally aged 0 to 2) are governed by another authority.

Enrolment in early childhood education and care

Enrolment of children under the age of 3

Despite the benefits of high-quality ECEC in the first years of life, participation in early childhood education is not compulsory in any OECD country for children under the age of 3 (OECD, 2018^[14]; 2018^[2]). In 2020, more than one in four children under 3 were enrolled in formal ECE settings on average across OECD countries, ranging from 2% or less in Luxembourg, Poland and Türkiye to more than 50% in Denmark, Israel, Korea and Norway (Figure B2.1). The availability and length of parental leave and the starting age for ECE programmes influence whether children are enrolled in such services and the age at which they begin to attend. In most countries with early childhood educational development services (ISCED 01), children can be enrolled in relevant programmes within their first year after birth (Table X1.5). However, in Sweden, children can only be enrolled after their first birthday.

Entitlement to ECE is also a significant factor affecting enrolment rates. In Denmark and Korea, for example, children have universal entitlement to early childhood educational development programmes within their first year, while children in Norway have the right to attend ECE after their first birthday (Table X1.5). Significantly, children are also entitled to some free ECE from birth in Korea, the country with the highest enrolment rates in ECE for under-threes. The OECD countries with relatively few under-threes enrolled in ECE (i.e. below the OECD average) have neither universal entitlement nor free provision of such programmes for this age group (Figure B2.1).

Other factors such as maternal employment rates and cultural perspectives on the role of women either in the workplace or as primary caregivers are also likely to be important. Israel has one of the highest enrolment rates of children under 3 in ECE in the OECD, even though free provision and universal entitlement do not begin until children are 3 years old (Table X1.5). However, a 76% of mothers with children under 3 are employed in Israel, higher than the OECD average of 59% (OECD, 2020^[19]). In contrast, relatively few young children are enrolled in ECE in countries where maternal employment rates are low. For example, enrolment rates of under-threes are around 5% in Hungary and the Slovak Republic (Figure B2.1), where the employment rates of mothers whose youngest child is under 3 are below 20%.

In some countries, considerable shares of children under 3 are enrolled in other registered ECEC services targeted at this age group that do not meet ISCED criteria for ECE. For example, over 60% of children under 3 in the Netherlands are enrolled in such services, the highest reported share among OECD countries (Figure B2.1). This reflects the childcare needs of working parents, as over three-quarters of mothers with a child under 3 are employed in the Netherlands but there are no formal ECE programmes meeting ISCED criteria for children of this age (OECD, 2020^[19]). Smaller proportions of mothers with young children are employed in Japan (55%) and Poland (58%), where average enrolment rates in such ECEC programmes are lower, but still significant. In Japan, 33% of under-threes are enrolled in other registered ECEC services, and 11% in Poland. Small shares (less than 3%) of under-threes are also enrolled in ECE programmes in Japan and Poland, although these are targeted primarily at children aged at least 3 (Figure B2.1).

In many European countries, the expansion of ECEC has been 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 3 by 2010 (OECD, 2017^[1]). On average, the enrolment rates of young children have risen steadily in most OECD countries since 2005. In Germany, Norway, Slovenia and Spain, the share of children under the age of 3 enrolled in ECE increased by over 20 percentage points between 2005 and 2020. Some countries have particularly accelerated the expansion of ECE for children under 3 in recent years. For example, 37% of children under 3 were enrolled in ECE (ISCED 0) in Finland in 2020 compared to 28% in 2015 and 25% in 2005. Korea witnessed the largest expansion between 2015 and 2020, with the enrolment of under-threes increasing by 10 percentage points. In some countries, however, the enrolment of young children declined between 2015 and 2020. This is the case in Colombia, Denmark and New Zealand (Table B2.1).

In some countries, the increase in enrolment rates has been encouraged by changes to legal entitlements. In Norway, universal entitlement to ECE for 1-year-olds was implemented in 2009 (OECD, 2017^[1]). In Germany, the legal right to a place in ECE for children over the age of 1 came into force in 2013. However, changes to funding policies have also had a considerable impact. In Spain, for example, the *Educa3* programme was given an initial budget of EUR 100 million for the period 2008-12 to increase the number of places in ECEC services for children from birth to 3 years (Arango and Pastrana, 2011^[20]; Ibáñez and León, 2016^[21]). Meanwhile, in Korea, free child care for 0-2 year-olds was introduced from March 2012.

Despite efforts to increase the affordability and access to ECEC for very young children, the likelihood of participation is still very contingent on family background and income, particularly in early childhood educational development services that rely strongly on private sources of funding. Data from the European Union Statistics on Income and Living Conditions (EU-SILC)

Survey reveal that there are statistically significant differences in participation in ECEC in half of all EU countries for children experiencing socio-economic disadvantage in terms of household income, maternal education, risk of poverty or social exclusion (Flisi and Blasko, 2019^[22]). On average across European OECD countries, 0-2 year-olds in low-income households were one-third less likely to participate in ECEC (centre-based, home-based and organised family child care) than those in high-income households in 2017. In some countries, such as France and Ireland, the difference in participation rates between children from high- and low-income families exceeds 40 percentage points. This is highly concerning since inequitable access to ECE may then mean that development gaps between children from disadvantaged backgrounds and others are widened even before the start of primary school, as these can persist and even worsen as children advance through school (OECD, 2017^[23]). In contrast, in Denmark, there is a high participation rate of young children in ECEC regardless of parents' income level (OECD, 2020^[24]).

Enrolment of children aged 3 and over

Bringing forward the starting age of compulsory schooling has been the focus of policy reform in recent years as research suggests that an early start to a quality education can be beneficial for children's development and can help prepare them for school. A decade ago, most OECD countries saw the start of compulsory education coincide with the start of primary school (at 6 years old in most countries). But today, ECE has become a mandatory level of education in 14 OECD countries, as the starting age of compulsory education has been lowered. In six countries, compulsory education starts one year before entry into primary school but in several cases participation in ECE is mandatory for longer. For example, children are legally required to attend ECE for three years in France, Israel, and Mexico, and for four years in Hungary.

In about one-third of countries, children are not obliged to attend early childhood education for any period but there is universal provision of such services. In several others, universal entitlement to ECE starts from an even earlier age than compulsory attendance. In Sweden, for example, only one year of pre-primary (ISCED 02) education is mandatory but all children have the right to a place in ECE for six years.

Although participation is not compulsory in all countries, enrolment of 3-5 year-olds is still very common across the OECD, with 87% enrolled in ECE and primary education on average. In more than half of the OECD countries with available data, the enrolment of children between the ages of 3 and 5 is nearly universal, i.e. at least 90%. The highest enrolment rates of 3-5 year-olds in ECE and primary education are found in Belgium, Denmark, France, Ireland, Israel, Norway, Spain and the United Kingdom, where they equal or exceed 97%. In contrast, 50% or less are enrolled in education in Saudi Arabia, Switzerland and Türkiye (Table B2.1). Lower enrolment rates may be due to insufficient places available, lack of awareness by parents of the importance of ECEC, limited public coverage and high cost of early learning settings, or low employment rates for mothers with young children (OECD, 2017^[25]).

In the past few decades, enrolment of 3-5 year-olds in education has been expanding as a result of the extension of compulsory education to younger children, the increased provision of free ECE for some ages and targeted population groups, and universal provision for older children. In Japan, for example, the right to free ECEC was introduced for 3-5 year-olds in 2019. Between 2015 and 2020, the average enrolment of 3-5 year-olds in ECE and primary education in OECD countries rose by 1 percentage point. A few countries have seen spectacular increases, of more than 5 percentage points, in the enrolment of 3-5 year-olds over this period, including Finland, Greece, Lithuania, Poland and the Slovak Republic. In contrast, other countries have not shown much change, mostly as enrolment levels were already high in 2015. In France, for example, the starting age of compulsory education was lowered from 6 years to 3 in September 2019 but this did not lead to an increase in the enrolment rate of 3-5 year-olds as it was already 100%. Switzerland is the only country where enrolment was low in 2015 (less than half of 3-5 year-olds were enrolled in education) and there has not been any significant progress since. This is due to the lack of public provision and the high financial cost of ECE for parents (OECD, 2020^[24]), despite the fact that pre-primary education is compulsory for children aged 4 and over (Table B2.1).

The vast majority of 3-5 year-olds enrolled in education attend pre-primary programmes across most OECD countries. However, in countries such as Australia, Ireland, New Zealand and the United Kingdom, primary education begins at age 5 (Annex 1). Meanwhile, children do not start primary education until the age of 7 in Estonia, Finland, Latvia, Lithuania, Poland, Sweden and Switzerland. The age at which children transition to primary education has long been debated across OECD countries. ECEC programmes aim to develop the cognitive, physical and socio-emotional skills needed to participate in school and society, primary education is designed to give pupils a sound basic education in reading, writing and mathematics, along with a preliminary understanding of other subjects (OECD/Eurostat/UNESCO Institute for Statistics, 2015^[16]). While good quality ECEC can have a beneficial impact on young children, a large body of evidence indicates the crucial importance to

young children's development of free play and child-initiated exploration, before they engage in more academically oriented programmes (OECD, 2017^[25]).

Some learning areas are commonly included in the curriculum frameworks designed to guide the development of children participating in ECEC. A study of 56 curriculum frameworks from 26 OECD countries found that respect for others was specified as a learning area in every curriculum, and most also included literacy/oral language, co-operation, respect for diversity, play, artistic expression and appreciation, and physical well-being (OECD, 2021^[9]). However, the organisation and structure of programmes at pre-primary level can differ considerably both within and between countries. For example, in most countries, subject-based learning in disciplines like mathematics, sciences or arts is a mandatory component of pre-primary programmes (see Annex 3, https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf). In Hungary, such activities are recommended but not obligatory for children attending *Óvoda*. In contrast, the regulatory framework for *Segundo ciclo de educación infantil* programmes for 3-5 year-olds in Spain does not include provisions for subject-based learning. Similarly, *Kindergarten* programmes for 3-5 year-olds in Austria do not have such regulations although *Vorschulstufe* programmes for 6-year-olds do.

Countries may also vary in their view of the importance of care components, even between programmes classified as early childhood education (as opposed to other registered services that are not classed as educational). In Finland and Norway, for example, care is an integral part of the national curriculum, alongside sections specifically related to education (Norwegian Directorate for Education and Training, 2017^[26]; Opetushallitus, 2016^[27]).

Box B2.1. Preparing children for primary school through pre-primary education

The SDG 4 agenda reaffirms the importance of children's participation in ECEC, by dedicating an entire target (4.2) to "ensuring that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education". Indicator 4.2.2, in particular, measures participation in organised learning – the share of children who are enrolled in ECE or primary education – one year before the official starting age of primary school. On average across OECD countries, about 98% of children are enrolled in ECE one year before the official primary school entry age. There is, however, substantial cross-country variation, with values ranging from around 80% in Australia and Türkiye to 100% in Colombia, France, Ireland, Mexico, Portugal, Switzerland and the United Kingdom ().

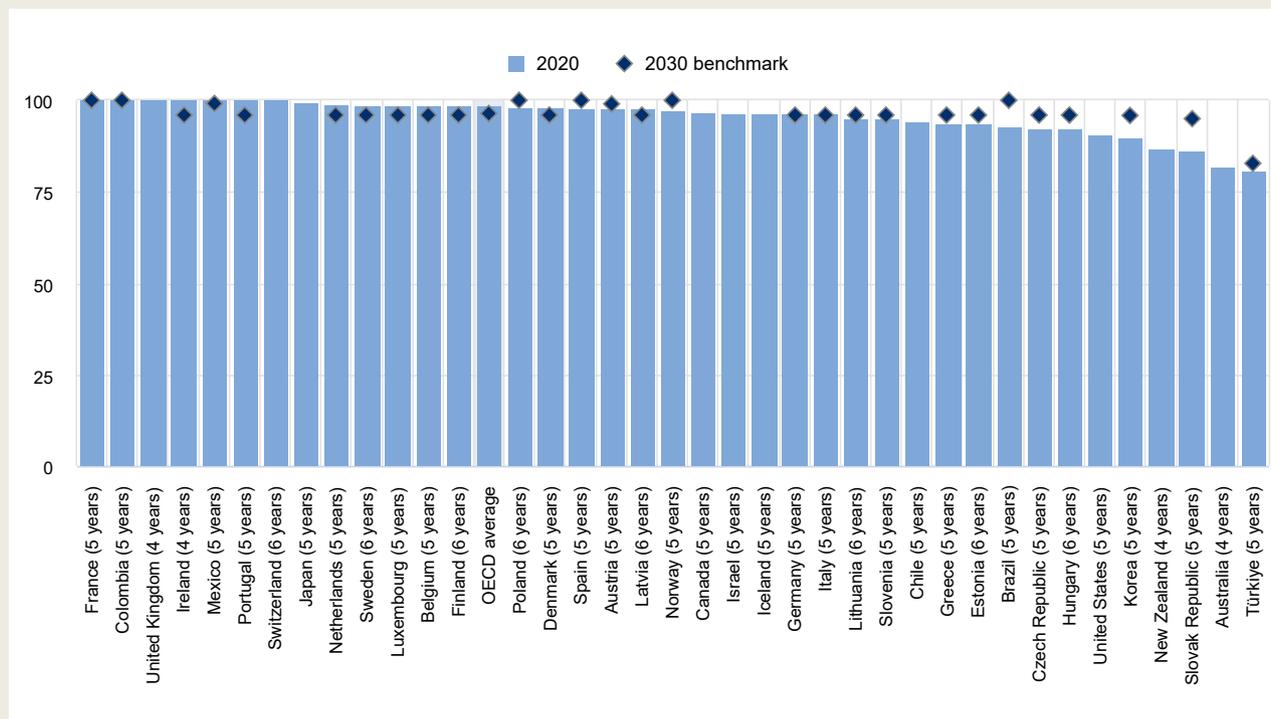
Most OECD countries have full enrolment (over 90%) of children in organised learning in the year before primary (33 out of 38). In 12 of 29 countries which have set relevant benchmarks, participation rates in organised learning in the year before primary entry are already above the stated goal for 2030. Only three countries, Brazil, Korea and the Slovak Republic, have not yet reached full enrolment for children in the year before primary school and are still over 5 percentage points below their benchmark goals for 2030. In Türkiye, although participation in organised learning is still relatively low it has greatly increased in recent years, with the share of children aged 3-5 enrolled in ECE or primary education rising by 29 percentage points between 2005 and 2020 (Table B2.1). It is now only 2 percentage points below its 2030 goal ().

In most countries, the participation rate in organised learning one year before the official primary entry age is higher than the enrolment rate of 3-5 year-olds (Table B2.1). The difference is over 10 percentage points in nine countries, reaching 50 percentage points in Switzerland. In some, these differences are due to the fact that regulations surrounding ECE and entitlements to such services differ for children in their final year before entering primary school. For example, in Finland, children are only entitled to universal free access to pre-primary education for a year before the start of primary school (Table X1.5). Pre-primary education during this year has been mandatory since the Basic Education Act was revised in 2015, although pre-primary education is still not part of compulsory education as stipulated in the Compulsory Education Act. Meanwhile in Austria, Colombia, Greece, the Netherlands, Poland and Sweden the last year of pre-primary is compulsory.

Some countries offer distinct one-year programmes specifically for children in the year before starting primary school. This is the case, for example, in Australia, Austria, Canada, Costa Rica, Finland, Germany, Greece, Iceland, the Slovak Republic, Sweden and the United States. These are often designed to help children with the transition from ECE to primary education. For example, in Finland, the *Esiopetus* programme for 6-year-olds is the only type of ECE that can be offered in school-based settings. It follows a different curriculum framework, which is explicitly aligned with the one for primary education (OECD, 2017^[25]). It is also the only ECE service in Finland that has minimum required levels of attendance, at an average of 4 hours per day, 700 hours per school year.

Figure B2.2. Participation rate in organised learning one year before the official primary entry age against benchmark values (2020)

SDG Indicator 4.2.2, in per cent



Note: The year before official primary entry age is indicated in parentheses after country names. 2030 benchmark values refer to national targets submitted by countries during a benchmark-setting exercise in August 2021. Mostly, these are based on rates of progress using historical and current data, focusing on the period from 2000 to 2018. A minority of countries did not submit benchmark values but had relevant targets in their national plans, and some did not have data available. Benchmarks for some EU member states do not represent national benchmarks but those agreed through regional processes. For these countries, the 2030 benchmark refers to the European Education Area target for participation in ECE, which is based on a larger age group of children aged 3 to primary starting age. For more information, see *National SDG 4 benchmarks: fulfilling our neglected commitment* (UNESCO, 2021^[28]).

Countries are ranked in descending order of the participation rate in organised learning one year before the official primary entry age in 2020

Source: UNESCO Institute for Statistics, 2020. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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In other countries, the organisation of ECE programmes for children is similar for all years of pre-primary education. In France and Italy, for example, there is a single curriculum framework for all children enrolled in pre-primary, and children start attending programmes in school-based settings from the age of 3. Meanwhile, in Estonia, there is only one ECE programme offered for children from birth to the age of 6, which is offered in centre-based settings, and is regulated by a single curriculum framework (see Annex 3, https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Regional variation in the enrolment of 3-5 year-olds

Equitable access to quality ECE can strengthen the foundations of lifelong learning for all children and support the families' wider educational and social needs. Among the various equity dimensions, geographical location may hinder access to a quality education. For example, it may be more challenging to recruit qualified staff in some rural regions and families may have to travel long distances to access the nearest setting (Oberhuemer and Schreyer, 2018^[29]; Raban and Kilderry, 2017^[30]).

Higher levels of participation in ECE among 3-5 year-olds at the national level tend to be associated with smaller disparities among regions. There were low levels of regional variation in enrolment rates in almost two thirds of countries where the national enrolment rate of 3-5 year-olds in ECEC was 90% or above, with a standard deviation less than 7% (OECD, 2022^[8]). At the other end of the spectrum, the countries with the lowest levels of participation in ECE also had the highest regional disparities. More than 40 percentage points separate the regions with the highest (86%) and lowest (38%) enrolment rates of 3-5 year-olds in Switzerland, a country with a highly federal system and a great degree of autonomy in the organisation of

ECE. Low levels of enrolment may be due to more limited provision of ECE and the inability of some families to travel to the nearest ECE setting in certain regions, particularly the more rural ones.

Children in capital cities are less likely to participate in ECE in a number of countries. For example, in Chile, the Santiago metropolitan region has one of the lowest enrolment rates in the country, at 71% of 3-5 year-olds. Only Antofagasta has a lower enrolment rate (66%). There are also relatively low participation rates in the capital cities of the Czech Republic, Greece, Italy, Norway, Portugal or Sweden. In some cases, these differences in participation rates among 3-5 year-olds may be partly explained by demand outstripping the provision of ECE (Bucaite-Vilke, 2021^[31]; Ünver, Bircan and Nicaise, 2018^[32]). In addition, publicly managed centres are significantly more likely to be located in more rural areas, underlining the role of the public sector in ensuring equal access to ECEC settings across the national territory (OECD, 2019^[33]).

Staffing of early childhood education and care

Teachers play a central role during children's early years, helping them develop in many aspects of their lives: cognitively, socially and emotionally. In ECE, teachers are the individuals with the most responsibility for a group of children at the class or playroom level and may be referred to as pedagogues, educators or childcare practitioners. They have varying levels of qualification across countries, but are generally expected to hold qualifications commensurate with the professional nature of their work, often a tertiary degree (OECD, 2020^[34]).

In some countries, teachers constitute the vast majority of staff working with children in ECEC. In Japan, centre leaders reported that more than 70% of pre-primary staff working in ECEC centres are teachers (OECD, 2022^[35]). However, in other countries, the workforce is more diverse and there are fewer teachers. ECEC centre leaders in Chile reported that teachers make up only around 20% of all pre-primary staff.

There is a large degree of variation among OECD countries regarding the share of contact staff who are teachers as opposed to teachers' aides. Teachers' aides support teachers and have lower levels of responsibility and autonomy but perform educational functions on a regular basis. In most countries, they have a lower qualification level than teachers, often an upper secondary vocational qualification. In some countries, additional selection is required to qualify as a pre-primary school assistant. For example, in Slovenia, it is required to pass a state professional examination in education to qualify as an assistant at pre-primary level. On average in countries with available data, there are larger shares of teachers' aides among contact staff in early childhood educational development services (49%) than in pre-primary education (35%) but there are great differences between countries at both levels of ECE (Table B2.2). At pre-primary level, teachers' aides do not exist as a separate category of staff in nearly one-quarter of OECD countries. Where they do exist, they comprise 10% of contact staff or less in Germany, Japan and the Slovak Republic but 60% or more in Chile, Norway and the United Kingdom.

Positive relationships with teachers are an important element of process quality, associated with both improved literacy and numeracy skills, and with better behavioural and social skills (OECD, 2018^[14]). The quality of teachers' interactions with children is influenced by a range of factors, notably the preparation and support that they receive to enter the profession and in their continuing professional development (OECD, 2021^[9]). However, teachers' capacity to foster positive relationships with young children are also influenced by their working conditions, which can affect their well-being and motivation to stay in the profession (OECD, 2020^[36]).

Age profile of early childhood education teachers

The age distribution of ECE staff varies considerably across countries, and can be affected by a variety of factors, such as the size and age distribution of the population, as well as the attractiveness of the ECE profession in terms of staff salaries and working conditions. On average across OECD countries, the youngest teachers (below the age of 30) make up 18% of teachers at the pre-primary level. However, this share varies considerably across countries, ranging from 3% in Portugal to 49% in Japan. Meanwhile, older staff (50 years and over) make up 29% of all teachers at pre-primary level on average across OECD countries. In 15 out of 33 countries with available data, the share of teachers aged 50 and over is at least double that of the share of those under 30, which may have some significant implications for their capacity to replace retiring teachers in the near future (Figure B2.3).

Competitive salaries, good working conditions and career development opportunities are some of the factors that may attract young people to teaching in ECE, and remaining in the profession. In most OECD countries with available data, however, the average salaries of pre-primary teachers are substantially lower than those of full-time, full-year workers with tertiary education. In Hungary, the Slovak Republic and the United States, pre-primary teachers' salaries are less than 60% of those

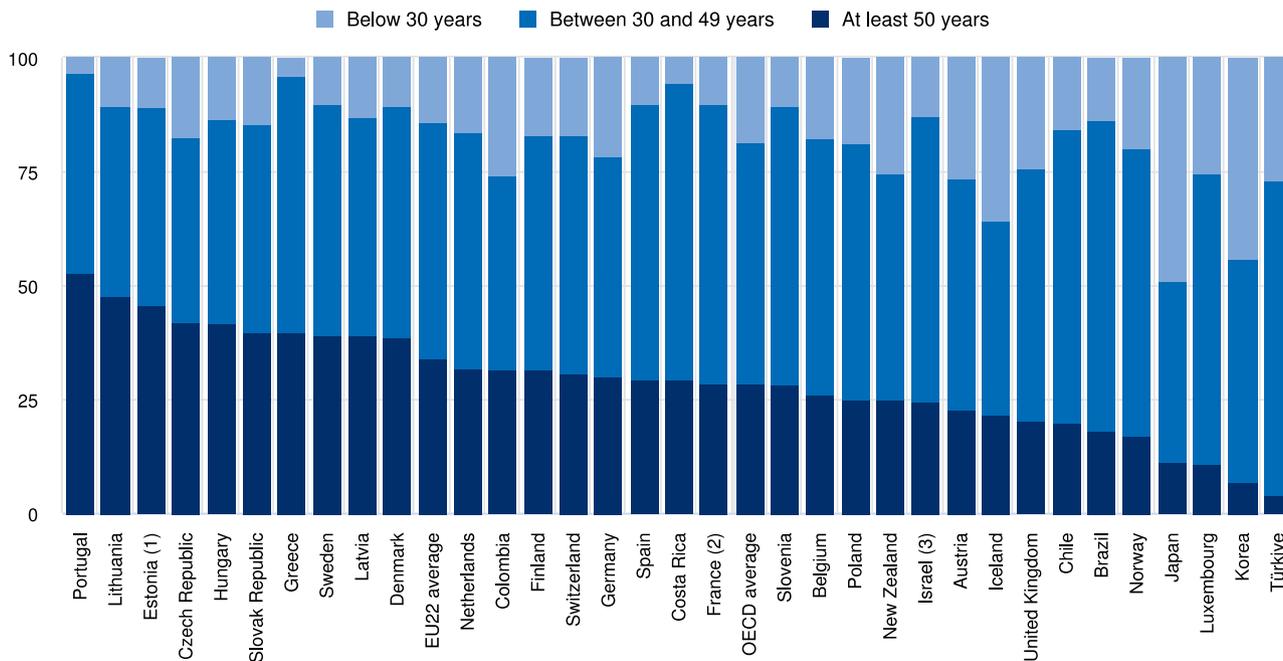
of tertiary-educated workers on average (see Indicator D3). In many countries, teachers' average salaries tend to increase with the level of education, meaning that salaries for teachers in ECE are particularly uncompetitive. In a few countries, however, the salaries of pre-primary teachers are equal to or significantly higher than those of teachers at higher levels of education and well above the wages of tertiary-educated workers. Pre-primary teachers in Australia earn 5% more than tertiary-educated workers on average, rising to 30% more in Lithuania and 50% more in Portugal (Table D3.2).

Given the wage gaps in most other countries, however, it is not surprising that fewer than two in five ECEC staff members report being satisfied with their salary in OECD countries with available data (OECD, 2019^[33]). This is a concern as there is some evidence to suggest that higher wages for ECEC staff are associated with higher-quality interactions with children (OECD, 2018^[14]). Teachers' views of their value in society are also likely to be affected by their comparative earnings and these factors could discourage them from staying in the profession. Research suggests that lower salaries are often linked to higher levels of staff turnover, which is troubling given that positive child outcomes are consistently related to stability (Hunstan, 2008^[37]).

To some extent, the age distribution of teachers in ECE reflects the levels of experience in the workforce. In Korea, for example, two-thirds of pre-primary teachers reported having less than 10 years of experience in the Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) in 2018, which aligns with the country's large share of teachers under 30 (OECD, 2019^[33]). However, not all countries with higher proportions of young teachers have lower proportions of experienced staff. For example, the share of pre-primary teachers under 30 is more than three times higher in Japan than in Israel, but the share of pre-primary teachers with at least 10 years of experience is actually 3 percentage points higher in Japan (OECD, 2019^[33]). Studies on the importance of teachers' experience for children's outcomes have produced mixed findings, but research on other levels of education tends to suggest that more professional experience is associated with greater teacher quality (Hanushek and Rivkin, 2006^[38]; McMullen et al., 2020^[39]).

Figure B2.3. Age profile of teachers at pre-primary level (2020)

In per cent



1. Includes data from early childhood education and care (ISCED 01).

2. Excludes data from independent private institutions (and government-dependent institutions for teachers' aides).

3. Includes some non-teaching staff (managers).

Countries are ranked in descending order of the share of teachers at pre-primary level above 50 years (2020).

Source: OECD/UIE/Eurostat (2022), Table B2.2. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink  <https://stat.link/hpfoqy>

Ensuring that young teachers working in ECEC are offered career development opportunities is central to avoiding teacher attrition. Survey data reveal that pre-primary staff under the age of 30 are most likely to want to leave the profession to take up further studies in an education programme, reflecting that young staff are seeking further qualifications for career progression, either within the ECEC sector or elsewhere (OECD, 2020^[36]).

Gender profile of early childhood education and care staff

Women tend to dominate the teaching profession in most levels of education, and the over-representation of women in the workforce is particularly marked in ECE. On average across the OECD, the greatest concentration of female teachers occurs in the earlier years of schooling, with women making up 96% of teaching staff at pre-primary level. The share of women shrinks with each successive level of education, to 83% at primary level, 63% at secondary level and only 44% at tertiary level (OECD, 2020^[40]). Meanwhile, in Korea and Lithuania, almost all ECE teachers were women (Table B2.2).

The gender imbalance of teaching staff in ECE raises questions as to why women are much more likely to enter the profession and what the implications are for the understanding of gender for children, staff and society. Gender stereotypes of women as carers contribute to the perception of teaching at pre-primary level as a female profession (Peeters, Rohrmann and Emilsen, 2015^[41]). It is not necessarily the case that female teachers reinforce gender stereotypes in their interactions with children nor that the mere presence of more male teachers would tackle gender essentialism. However, scholars have argued that children's understanding of gender is broadened when they are able to observe a variety of gender expressions both within and between genders (Warin, 2019^[42]; McGrath et al., 2020^[43]). On a staff and societal level, the inclusion of more men in the ECEC workforce could help to challenge dominant discourses about masculinity regarding the participation of men in young children's lives.

In this regard, governments in several OECD countries have made efforts to attract more men to the ECE workforce in recent years. In Norway, for example where men make up less than 10% of pre-primary teachers, one measure undertaken has been the "Play Resources" project. As part of the initiative, boys are encouraged to experience work in ECEC settings, and consider working with young children as a professional career. For example, the county of Oppland financed a project where boys in secondary school (13-16 years old) were invited to work in ECEC settings for 1-2 weeks during their holidays, or 1 day a week after school, for a set period of time (OECD, 2020^[36]).

Child-staff ratios and staff qualifications

Child-staff ratios and group sizes are important indicators of the resources devoted to education. Research into the impact of lower child-staff ratios have found that they can be supportive of child-staff 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 time spent addressing disruptions (OECD, 2020^[40]). Thus, the regulation of these measures can be used to improve the quality of ECE. On average across OECD countries, there are 15 children for every teacher working in pre-primary education, but wide variations exist across countries. The ratio of children to teaching staff, excluding teachers' aides, ranges from fewer than 10 children per teacher in Finland, Germany, Iceland and New Zealand to more than 20 in Chile, Colombia, France and the United Kingdom (Table B2.2).

Lower child-staff ratios are particularly important for high-quality interactions with children under 3 (OECD, 2018^[14]). With the exception of Hungary and Mexico, the child-to-teacher ratio in early childhood development services (ISCED 01) is consistently lower than for pre-primary education (ISCED 02) across all OECD member and partner countries. On average across OECD countries, there are 10 children for every teacher working in early childhood educational development services, ranging from 31 in the United Kingdom to 3 in Iceland and New Zealand (Table B2.2).

It should be noted, however, that teaching staff may have experienced rather different pathways as part of their preparation to become a teacher in different countries (see Indicator D6). Initial staff qualifications are a strong predictor of high process quality, so these need to be considered alongside child-staff ratios in assessing the quality of ECE provision (Manning et al., 2019^[44]). Even within the same country, regulations on the minimum level of qualification required can differ between early childhood development services and pre-primary education. For example, teachers working with younger children (usually under 3 years) in the Flemish Community of Belgium, the Netherlands, and Türkiye are required to have an upper secondary qualification. Meanwhile, teachers working with children from the age of 3 (or 4 in the Netherlands) are required to have a tertiary degree (see Annex 3, https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Some countries – Austria, Chile, France, Lithuania, Norway, Slovenia, Sweden and the United Kingdom – also make extensive use of teachers' aides, as can be seen from the smaller ratios of children to contact staff compared to children to teaching staff. In most cases, the share of teachers' aides among contact staff is similar between early childhood development services and pre-primary education, with differences of less than 5 percentage points. In Chile, however, the share of teachers' aides in pre-primary is nearly 1.5 times that in early childhood development services. Thus, while the ratio of children to contact staff in Chile is below average at pre-primary, the ratio of children to teaching staff (23:1) is far above the OECD average of 15:1. Meanwhile in Mexico, three-quarters of contact staff in early childhood development services are teachers' aides but this staff category does not exist at the pre-primary level (Table B2.2).

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, as well as ensure their ongoing professional development. Investment in early childhood facilities and materials also helps support the development of child-centred environments for well-being and learning. Moreover, if the cost of ECEC is not sufficiently subsidised, the ability of parents to pay will greatly influence participation in ECEC among children from disadvantaged socio-economic backgrounds (OECD, 2017^[1]). 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.

Expenditure per child

In pre-primary education, annual expenditure for both public and private settings averaged about USD 9 600 per child in OECD countries in 2019, ranging from less than USD 5 000 in Colombia and Ireland to more than USD 16 000 in Iceland, Luxembourg, and Norway (Table B2.3). Child-to-staff ratios and teacher compensation are the main drivers of spending at pre-primary level, as countries with lower child-to-staff ratios tend to spend more per child. Other factors, such as the number of hours per year an ECEC setting is required to be open also influence expenditure levels. For example, pre-primary settings in Norway are open 48 weeks a year on average, compared to about 35 weeks in Belgium, Greece, Israel and Spain (see Box B2.2 in *Education at a Glance 2018* (OECD, 2018^[45])).

Annual expenditure per child enrolled in early childhood educational development services is substantially higher than for pre-primary education, averaging about USD 15 500 across OECD countries with available data. However, this masks wide variation in spending between these levels of education across countries: in Chile and Lithuania, spending in early childhood educational development services is at most USD 1 000 more per child than at pre-primary level, compared to a difference of at least USD 11 000 more in Denmark, Finland and Norway. Australia, Hungary and Israel are the only OECD countries with data where spending per child in early childhood development services is lower than at pre-primary level (Table B2.3).

Smaller child-to-staff ratios in early childhood development services are one of the main drivers of this difference (Table B2.2). However, they do not account for all of it. For example in Chile, although the child-to-teacher ratio in early childhood development services is more than half its value in pre-primary education, spending increases by less than USD 1 000 per child (Table B2.3). This may be partly due the lower qualifications required of teaching staff at this level, resulting in a lower salary costs in some countries.

Expenditure as a percentage of gross domestic product

Spending on ECE can also be analysed relative to a country's output. Expenditure on all ECE settings in 2019 accounted for an average of 0.9% of gross domestic product (GDP) across OECD countries, of which two-thirds was allocated to pre-primary education (ISCED 02). While 0.3% or less of GDP was spent on pre-primary education in Colombia, Greece, Japan and the United Kingdom, countries such as Iceland, Norway and Sweden spent at least 1% of GDP at this level (Table C2.1). Besides, spending on other registered ECEC services might vary across countries; in Japan, for example, the right to free ECEC was introduced for 3-5 year-olds and economically disadvantaged 0-2 year-olds in 2019.

The differences in expenditure are largely explained by enrolment rates, legal entitlements and the intensity of participation, as well as the different ages at which children start primary education. The shorter duration of pre-primary education, as a result of children's earlier transition from pre-primary to primary education in Australia, Ireland and the United Kingdom, partly explains why expenditure on ECEC as a percentage of GDP is below the OECD average in these three countries. Similarly,

late entry into primary education, as in Estonia, Finland, Latvia, Lithuania and Sweden, means a longer duration of ECEC than in other countries and may explain why those countries spend more as a percentage of GDP than the OECD average (see the information on starting ages for primary education in Table B2.1).

To avoid this distortion, an estimation of spending by age group has been included in the ECE spending indicators since the 2019 edition of *Education at a Glance*. This methodology avoids the distortion by comparing expenditure on children of the same age, giving a more accurate picture of countries' investment in their young children. As this indicator presents an estimation of the actual cost, the data should be interpreted with caution. Across OECD countries, the share of national resources devoted to 3-5 year-olds enrolled in ECE and primary education is 0.6% of GDP. It ranges from 0.3% of GDP in Greece and Ireland to 1.0% in Chile, Iceland and Norway (Table B2.3).

Public and private provision and funding of early childhood education and care

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, availability, accessibility or affordability are not met by public institutions, some parents may be more inclined not to enrol children in ECEC, or to send their children to private institutions (Shin, Jung and Park, 2009^[46]).

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 rely on government agencies for more than 50% of their core funding (OECD, 2018^[47]). In most countries, the share of children enrolled in private institutions is considerably higher in early childhood education than at primary and secondary levels. On average across OECD countries, about half of the children in early childhood educational development services and one-third of those in pre-primary education are enrolled in private institutions. This average, however, hides huge discrepancies across countries. In the Czech Republic, Lithuania, Slovenia and Switzerland, 5% or less of the children in pre-primary education attend private institutions. In other countries, pre-primary remains mostly private: in Australia, Ireland, Japan, Korea and New Zealand, 75% or more of children attending pre-primary programmes are enrolled in private institutions (Table B2.3).

Generally, there has been a substantial and increasing degree of public investment in ECE, although there are differences between pre-primary (ISCED 02) and early childhood educational development (ISCED 01). On average across OECD countries, private funding represented 29% of total expenditure on early childhood educational development and 17% on pre-primary education in 2019 (Table B2.3). While the share of private funding varies greatly across countries, the source of funding does not necessarily reflect the entity providing the service. In all OECD member and partner countries, the public sector provides for at least 50% of the total cost of pre-primary education, even in countries where almost all pre-primary children attend private institutions. In Korea, for example, although 75% of pre-primary children attend private institutions, private sources account for less than 20% of total costs, a lower share than in countries with significantly higher public provision of pre-primary education, such as Denmark or Slovenia (Table B2.3). Different private entities may contribute to the funding of pre-primary education. In the United Kingdom, most of the private funding comes from households. In Japan, private costs are shared between households, foundations and the business sector, although private ECE centres are publicly subsidised and household contributions to ECE are capped.

Early childhood education and care remains expensive for many parents, particularly for children under 3, where households' financial contributions tend to be higher than at the pre-primary level. Calculations using comparable data on childcare prices charged to parents, and accounting for all relevant support provisions, show that the net costs average 17% of women's median full-time earnings for a middle-income two-earner couple. This varies from over half of female median earnings in Japan and the United Kingdom to almost zero in Chile, the Czech Republic, Germany and Italy, where families with children in public childcare centres can benefit from heavily subsidised childcare fees or may be exempt from paying fees altogether (OECD, 2020^[24]).

Distribution of funds for education at pre-primary by level of government

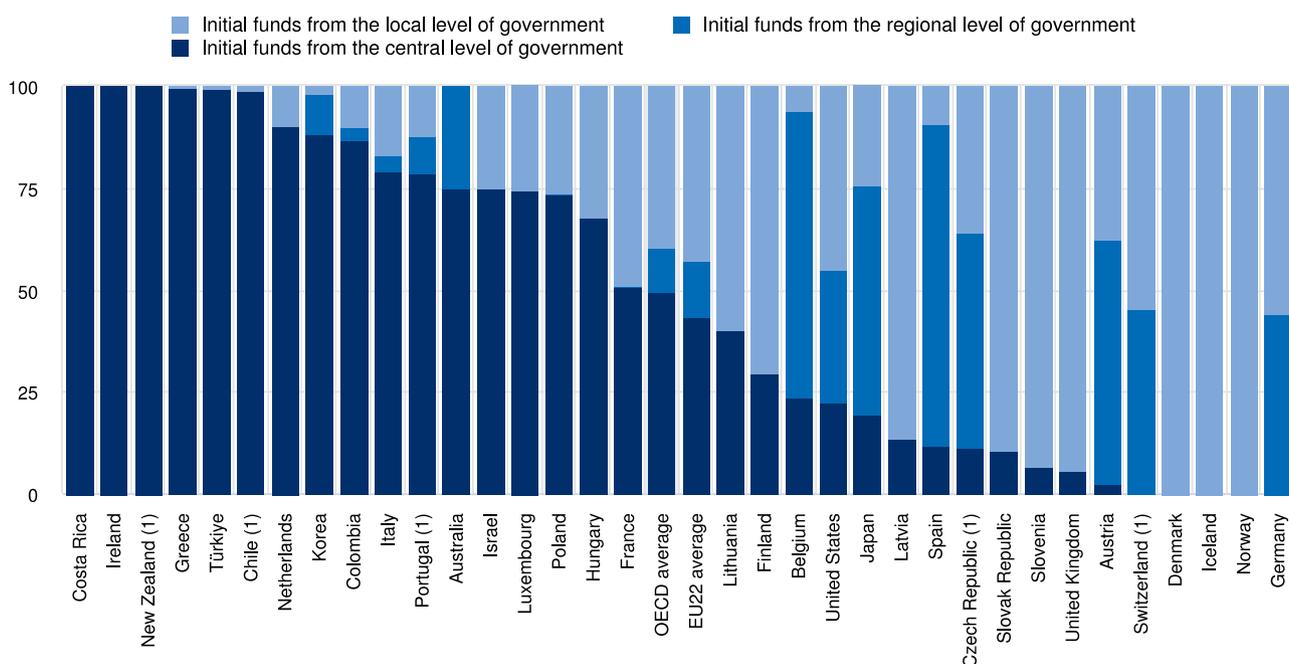
Compared to other levels of education, public funding for ECE is more reliant on regional and local sources than central sources of government. In 2019, spending from central government sources represented 49% of initial public funds for pre-primary expenditure on average across OECD countries. However, this masks wide differences across countries. The central government is the source of over 85% of funds in Chile, Colombia, Costa Rica, Greece, Ireland, Korea, , the Netherlands,

New Zealand and Türkiye, while local and regional sources account for over 90% of funds in Austria, Denmark, Germany, Iceland, Norway, Slovenia Switzerland and the United Kingdom (Figure B2.4).

These variations reflect different governance models for ECE systems as well as the distribution of regulatory and funding responsibilities between levels of government. For example, in Denmark, where 100% of initial public funds for pre-primary education are from the local level, municipalities are responsible for all expenditure on compulsory education and decide how funds are allocated to individual schools (Figure B2.4). However, municipalities administer a range of key local services and some may choose to prioritise spending on education more than others when fixing their budget (Nusche et al., 2016^[48]). Furthermore, municipalities use a range of different models to allocate funds, and factors like socio-economic background and school size do not have the same weight or measure across the various funding formulae in use. Similarly, in Germany, each state (Land) determines its own legislation and administration, and assists households with the costs of childcare. In contrast, 99% of initial public funds for pre-primary education are from central government in Chile (Figure B2.4). Here, most public funds are allocated through school grants directly from the state to school providers. For example, schools receive a basic grant (*Subvención de Escolaridad*), which is calculated from monthly average student attendance and adjustment factors by level and type of education (Santiago et al., 2017^[49]).

Figure B2.4. Distribution of initial sources of public funds for pre-primary education, by level of government (2019)

In per cent



1. Year of reference differs from 2019. Refer to the source table for more details.

Countries are ranked in descending order of the share of initial funds from the central level of government.

Source: OECD/UIS/Eurostat (2022), Table B2.3. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf; https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Definitions

ECE: ECEC services in adherence with the criteria defined in the ISCED 2011 classification (see ISCED 01 and 02 definitions) are considered early childhood education programmes and are therefore referred to as ECE in this indicator. Others are considered an integral part of countries' ECEC provision, but are not in adherence with all the ISCED criteria. Annex 3, available on line, makes the distinction between these two categories explicit.

- **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]) (see Annex 3, https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf):
 1. **Regular centre-based ECEC:** More formalised ECEC centres typically belong to one of these three subcategories:
 - a. *Centre-based ECEC for children under age 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.
 - b. *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.
 - c. *Age-integrated centre-based ECEC for children from birth or age 1 up to the beginning of primary school:* These settings offer a holistic pedagogical provision of education and care (often full-day).
 2. **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.
 3. **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).

Full enrolment: As in Indicator B1, full enrolment is defined as enrolment rates exceeding 90%.

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 age 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 3-5. 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.

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 the child-to-staff ratio.

Please see Indicators C1 and C2 for definitions of expenditure per student on educational institutions and expenditure on educational institutions relative to GDP.

Methodology

Enrolment rates

Net enrolment rates are calculated by dividing the number of children 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, see the *OECD Handbook for Internationally Comparative Education Statistics* (OECD, 2018^[47]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Estimated expenditure for all children aged 3-5 enrolled in ECE and primary education as a percentage of GDP

The calculation of this new measure is based on the distribution of children aged 3-5 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 3-5. For instance, in Australia, children aged 3-5 accounted for 5% of all children enrolled in ISCED 01, 99% of all children enrolled in ISCED 02 and 11% of all children enrolled in ISCED 1. These percentages were used to estimate total expenditure for all children aged 3-5 enrolled in ECEC and primary education. Total expenditure for all children aged 3-5 is 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 2020 (school year 2019/20) and financial year 2019.
- 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 2021 (for details, see Annex 3 at (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf)).
- Data on subnational regions for selected indicators are available in the *OECD Regional Statistics* (database) (OECD, 2022^[8]).

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Indicator B2 tables

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

Table B2.1	Trends in enrolment rates in early childhood education and care (ECEC) and primary education, by age group (2005, 2015 and 2020)
Table B2.2	Age and gender profiles of teachers and ratio of children to staff in early childhood education (ECE), by level (2020)
Table B2.3	Financing of early childhood education (ECE) in public and private institutions (2019)

StatLink  <https://stat.link/nxr4t1>

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf. More breakdowns can also be found at <http://stats.oecd.org>, *Education at a Glance Database*.

Table B2.1. Trends in enrolment rates in early childhood education and care (ECEC) and primary education, by age group (2005, 2015 and 2020)

Public and private institutions

	Age when early childhood education (ECE) services (ISCED 0) start offering intentional education objectives	Typical starting age of primary education	Starting age of compulsory education	Under age 3						Age 3 to 5						
				ECE (ISCED 0)		Other registered ECEC services		ECE (ISCED 0)		Primary education		ECE (ISCED 0)		Primary education		
				2020	2005	2015	2020	2005	2015	2020	2005	2015	2020	2005	2015	2020
				(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
OECD	Countries															
	Australia	0 years	5	6	m	m	39	1	45	m	m	25	58	28	56	26
	Austria	0 years	6	6	6	m	17	2	20	3	76	0	88	0	90	0
	Belgium ¹	Fl.: 3-6 months; Fr.: 2 years	6	6	m	m	m	m	m	m	0	98	0	98	0	0
	Canada	3-5 years	6	6	m	m	m	m	m	m	m	0	m	0	m	0
	Chile	3 months	6	6	m	m	19	0	20	m	m	6	78	0	77	0
	Colombia	0 years	6	5	m	m	32	m	30	m	m	m	72	7	77	6
	Costa Rica	0 years	6	4	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	2-3 years	6	6	m	m	4	m	5	m	85	0	85	0	86	0
	Denmark	26 weeks	6	6	m	m	58	m	55	m	m	m	97	1	97	0
	Estonia	0 years	7	7	m	m	24	3	26	4	84	0	90	0	91	0
	Finland	9 months	7	7	25	m	28	m	37	m	68	0	74	0	88	0
	France	2-3 years	6	3	9	m	4	m	4	m	100	0	100	0	100	0
	Germany	0 years	6	6	17	a	37	a	39	a	87	0	96	0	94	0
	Greece ¹	2 months	6	5	m	m	5	m	m	m	0	63	0	56	0	
	Hungary	20 weeks	7	3	m	7	5	11	5	m	0	91	0	93	0	
	Iceland	0 years	6	6	39	13	47	13	49	10	95	0	97	0	96	0
	Ireland	3 years	5	6	m	m	m	m	18	m	m	47	m	45	61	42
	Israel	0 years	6	3	m	a	28 ^b	a	57	a	m	0	99	0	100	0
	Italy	3 years	6	6	4	m	5	m	5	m	98	2	92	3	92	2
	Japan	3 years	6	6	m	16	m	22	3	33	88	0	91	0	95	0
	Korea	0 years	6	6	m	a	52	a	63	a	m	0	92	0	94	0
	Latvia	1.5 years	7	5	17	a	26	a	31	a	77	0	92	0	93	0
	Lithuania	0 years	7	7	13	a	22	a	30	a	59	0	84	0	90	0
	Luxembourg	0 years	6	4	m	m	1	m	1	m	83	1	85	2	88	2
	Mexico	1.5 months	6	3	2	a	2	a	5	a	60	3	73	9	71	9
	Netherlands ²	3 years	6	5	a	m	a	56	a	62	m	0	93	0	92	0
	New Zealand	0 years	5	5	34	m	42	6	39	m	62	33	62	32	59	30
	Norway	0 years	6	6	33	m	55	m	58	m	88	0	97	0	97	0
	Poland	3 years	7	6	1	2	3	5	2	11	38	0	80	0	88	0
	Portugal ¹	0 years	6	6	19	m	m	1	m	m	77	1	89	0	93	0
	Slovak Republic	3 years	6	6	7	m	5	m	5	m	73	0	72	0	78	0
	Slovenia	11 months	6	6	25	m	38	m	46	m	75	0	88	0	93	0
	Spain	0 years	6	6	15	m	34	m	41	m	98	0	97	0	97	0
	Sweden	1 year	7	6	m	m	45	1	48	m	m	0	93	0	95	0
	Switzerland	4 years	6	4-5	2	m	a	m	a	m	47	0	49	0	49	0
	Türkiye	0 years	6	5-6	m	a	0	a	0	a	10	3	31	7	41	1
	United Kingdom	0 years	5	4-5	m	m	m	m	19	m	m	46	68	33	72	33
	United States ¹	m	6	4-6	m	m	m	m	m	m	64	2	65	2	64	2
	OECD average				m	m	24	m	27	m	74	5	82	4	83	4
	EU22 average				m	m	22	m	22	m	78	3	87	2	88	2
Partners	Argentina ²	m	m	m	2	m	5	m	m	m	63	0	75	0	78	0
	Brazil	0 years	6	4	m	a	18	a	21	a	m	m	69	2	74	1
	China	m	6	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	6	m	m	m	m	m	m	m	m	m	m	m	61	11
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	18	0	20	2
	South Africa ^{1,2}	m	m	m	m	m	m	m	m	m	m	m	9	7	10	0
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	75	4

Note: Early childhood education (ECE) = 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 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). See *Definitions* and *Methodology* sections for more information.

1. Excludes ISCED 01 programmes. For Belgium, excludes ISCED 01 programmes for the French Community of Belgium.

2. Year of reference 2019; for the Netherlands, 2019 is the reference year for other registered ECEC services only.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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

StatLink  <https://stat.link/z5os1d>

Table B2.2. Age and gender profiles of teachers and ratio of children to staff in early childhood education (ECE), by level (2020)

	Share of teachers by age group					Share of female teachers				Ratio of children to staff in full-time equivalents, by type of ECE service (public and private institutions)								
	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)			All ECE (ISCED 0)	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)			All ECE (ISCED 0)	Early childhood educational development (ISCED 01)			Pre-primary (ISCED 02)			All ECE (ISCED 0)	
		< 30 years	< 30 years	30-49 years			>= 50 years	< 30 years	Total		< 30 years	All ECE (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
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD																		
Countries																		
Australia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Austria	m	26	51	23	28	98	98	98	98	36	6	9	35	8	13	35	8	12
Belgium	m	18	56	26	m	m	97	94	m	m	m	a	14	14	m	m	m	
Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Chile	21	15	65	20	16	99	99	98	99	36	5	8	60	9	23	59	9	23
Colombia	m	26	43	32	m	m	97	97	m	m	m	m	m	m	41	m	m	m
Costa Rica	6	5	65	29	5	80	93	87	91	a	5	5	a	11	11	a	10	10
Czech Republic	a	17	41	42	17	a	99	99	99	a	a	a	11	11	12	11	11	12
Denmark	11	10	51	39	10	93	93	89	93	36	3	5	36	7	10	36	5	8
Estonia	x(5)	x(5)	x(5)	x(5)	11	x(9)	x(9)	m	99	m	m	x(18)	m	m	x(18)	m	m	8
Finland	m	17	51	32	m	m	97	97	m	m	m	m	m	m	9	m	m	m
France ¹	a	10	61	29	10	a	91	91	91	a	a	a	38	14	23	38	14	23
Germany	22	22	48	30	22	95	95	92	95	9	4	5	10	8	9	9	7	7
Greece	m	4	56	40	m	m	99	99	m	m	m	a	10	10	m	m	m	m
Hungary	16	13	45	42	14	99	100	99	100	a	14	14	a	13	13	a	13	13
Iceland	36	36	43	22	36	93	93	87	93	a	3	3	a	5	5	a	4	4
Ireland	m	m	m	m	m	m	m	m	m	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	18	3	4
Israel ²	m	13	63	25	m	m	99	100	m	m	m	m	m	m	m	m	m	m
Italy	a	m	m	m	m	a	99	98	99	a	a	a	a	12	12	a	12	12
Japan	a	49	40	11	49	a	97	98	97	a	a	a	9	12	13	9	12	13
Korea	19	44	49	7	30	100	99	99	99	a	5	5	a	12	12	a	8	8
Latvia	13	13	48	39	13	99	99	98	99	m	m	5	m	m	11	m	m	9
Lithuania	11	10	42	48	10	100	99	97	99	36	6	9	35	6	10	35	6	10
Luxembourg	a	25	64	11	25	a	93	86	93	a	a	a	a	12	12	a	12	12
Mexico	m	m	m	m	m	97	96	m	96	75	6	23	a	20	20	10	18	20
Netherlands	a	16	52	32	16	a	88	87	88	a	a	a	17	13	16	17	13	16
New Zealand	25	25	50	25	25	97	97	97	97	m	m	3	m	m	6	m	m	5
Norway	20	20	63	17	20	91	91	87	91	60	3	7	60	5	12	60	4	9
Poland	a	19	56	25	19	a	98	99	98	a	a	a	m	m	13	m	m	13
Portugal	m	3	44	53	m	m	99	99	m	m	m	m	m	m	16	m	m	m
Slovak Republic	a	14	46	40	14	a	100	100	100	a	a	a	2	11	11	2	11	11
Slovenia	11	11	61	28	11	98	98	98	98	51	5	11	51	9	20	51	8	16
Spain	10	10	60	29	10	98	93	94	95	m	m	9	m	m	14	m	m	12
Sweden	11	10	51	39	10	97	96	94	96	60	5	13	56	6	14	57	6	14
Switzerland	a	17	52	31	17	a	97	97	97	a	a	a	m	m	18	m	m	18
Türkiye	m	27	69	4	m	m	94	91	m	m	m	m	m	m	16	m	m	m
United Kingdom	28	24	56	20	25	94	92	92	93	91	3	31	88	4	37	89	4	35
United States	m	m	m	m	m	m	93	m	m	m	m	m	17	10	12	m	m	m
OECD average	17	18	53	29	19	96	96	95	96	49	5	10	35	10	15	34	9	13
EU22 average	13	14	52	34	15	97	97	95	97	38	6	9	29	10	13	28	9	12
Partners																		
Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Brazil	16	14	68	18	15	97	94	92	96	38	8	14	13	18	20	28	12	17
China	a	m	m	m	m	a	97	m	97	a	a	a	m	m	16	m	m	16
India	a	m	m	m	m	a	m	m	m	a	a	a	m	m	m	m	m	m
Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Saudi Arabia	m	m	m	m	m	0	100	m	100	m	m	m	m	m	13	m	m	13
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	72	m	71	m	m	m	m	m	13	m	m	12

Note: Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02. See *Definitions* and *Methodology* sections for more information.

1. Excludes data from independent private institutions (and government-dependent private institutions for teachers' aides).

2. Includes some non-teaching staff (managers).

3. The ratio of children to teaching staff refers only to public institutions.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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

StatLink  <https://stat.link/398a62>

Table B2.3. Financing of early childhood education (ECE) in public and private institutions (2019)

Expenditure per child, distribution of sources of public funds and relative share of private expenditure

	Percentage of children enrolled in private institutions (government-dependent and independent private institutions)			Expenditure on all children aged 3 to 5 enrolled in ECE and primary education (based on head counts)		Annual expenditure per child in USD, converted using PPPs (based on head counts)			Distribution of initial funds (before transfers) between levels of government			Relative proportions of private expenditure on early childhood education (after public to private transfers)		
	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	All ECE (ISCED 0)	As a % of GDP	Per child (in USD PPP)	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	All ECE (ISCED 0)	Pre-primary (ISCED 02)			Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	All ECE (ISCED 0)
									Central	Regional	Local			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
OECD Countries														
Australia	m	86	m	0.6	10 131	8 757	9 599	9 243	75	25	0	40	33	35
Austria	63	29	36	0.5	11 350	15 014	11 143	11 877	3	60	38	27	13	17
Belgium ¹	m	53	m	0.6	9 734	m	9 728	m	23	71	6	m	2	m
Canada	m	7	m	m	m	m	m	m	m	m	m	m	m	m
Chile ²	11	63	52	1.0	7 846	8 782	7 812	8 026	99	a	1	17	27	24
Colombia	m	20	m	0.4	1 623	m	1 450	m	86	3	10	85	25	42
Costa Rica	74	11	15	m	m	m	m	m	100	a	a	m	m	m
Czech Republic ²	a	4	4	0.4	6 818	a	6 818	6 818	11	53	36	a	10	10
Denmark	15	22	20	0.6	m	22 508	11 431	15 569	0	0	100	24	24	24
Estonia	x(3)	x(3)	4	0.8	9 889	x(8)	x(8)	9 889	m	a	m	x(14)	x(14)	13
Finland	24	14	16	0.6	12 718	25 119	12 718	15 022	29	a	71	6	8	8
France	a	14	14	0.7	9 554	a	9 555	9 555	51	0	49	a	7	7
Germany	73	65	67	0.6	11 998	19 207	12 000	13 975	0	44	56	13	13	13
Greece ¹	m	11	m	0.3	6 250	m	6 250	m	100	a	0	m	13	m
Hungary	18	11	12	0.6	m	7 775	7 818	7 816	68	a	32	x(14)	x(14)	12
Iceland	21	15	17	1.0	17 146	25 575	17 150	19 899	a	a	100	9	13	11
Ireland	100	99	99	0.3	m	x(8)	x(8)	4 964	100	a	a	x(14)	x(14)	13
Israel	100	35	59	0.9	6 088	3 710	6 083	5 224	75	a	25	71	9	25
Italy	a	28	28	0.6	10 455	a	10 458	10 458	79	4	17	a	15	15
Japan ³	a	77	77	m	m	a	8 118	8 118	19	56	24	a	34	34
Korea ¹	87	75	79	0.5	8 606	m	8 601	m	88	10	2	m	16	m
Latvia ¹	19	8	10	0.7	6 637	m	6 637	m	13	a	87	m	8	m
Lithuania	11	5	6	0.6	8 339	8 743	8 339	8 418	40	a	60	18	14	15
Luxembourg	a	11	11	0.5	21 944	a	21 938	21 938	75	a	25	a	2	2
Mexico	70	16	18	0.6	2 870	m	m	2 856	m	m	m	x(14)	x(14)	17
Netherlands	a	28	28	0.4	7 985	a	7 985	7 985	90	0	10	a	15	15
New Zealand ⁴	99	99	99	0.2	m	m	m	m	100	0	0	m	m	m
Norway	52	49	50	1.0	16 777	30 199	16 777	21 599	0	a	100	13	13	13
Poland	a	26	26	0.6	8 003	a	8 003	8 003	73	0	26	a	15	15
Portugal ¹	96	47	62	0.5	8 113	m	8 147	m	79	9	12	m	35	m
Slovak Republic	a	7	7	0.5	6 623	a	6 623	6 623	11	a	89	a	15	15
Slovenia	7	5	6	0.6	9 250	12 067	9 249	10 116	7	a	93	23	23	23
Spain	49	33	37	0.5	7 828	9 596	7 827	8 303	12	79	9	33	16	21
Sweden	20	18	18	0.9	14 150	20 386	14 150	15 794	m	a	m	6	6	6
Switzerland ²	a	5	5	m	m	a	m	m	0	45	55	a	m	m
Türkiye ¹	100	17	17	0.4	5 017	m	5 075	m	99	a	1	m	19	m
United Kingdom	m	55	m	m	m	m	m	m	6	a	94	54	38	40
United States ¹	m	40	m	0.4	10 545	m	10 456	m	22	33	45	m	24	m
OECD average	53	33	32	0.6	9 458	15 531	9 598	10 724	49	11	40	29	17	18
EU22 average	41	26	25	0.6	9 876	15 602	9 841	10 729	43	14	43	19	13	13
Partners														
Argentina	54	30	31	m	m	a	a	a	m	m	m	a	a	a
Brazil	35	23	28	m	m	m	m	m	m	m	m	m	m	m
China	a	57	57	m	m	m	m	m	m	m	m	m	m	m
India	a	22	22	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
Saudi Arabia	m	47	47	m	m	m	m	m	m	m	m	m	m	m
South Africa	m	6	m	m	m	m	m	m	m	m	m	m	m	m
G20 average	62	32	32	m	m	m	m	m	m	m	m	m	m	m

Note: The percentage of children enrolled in private institutions for 2020 is available on OECD.stat. See *Definitions* and *Methodology* sections for more information.

1. Expenditure on all children aged 3 to 5 excludes expenditure and enrolment in ISCED 01 programmes.

2. Year of reference 2018.

3. Data do not cover day care centres and integrated centres for early childhood education and care.

4. Year of reference 2020.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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

StatLink  <https://stat.link/8edfqa>



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