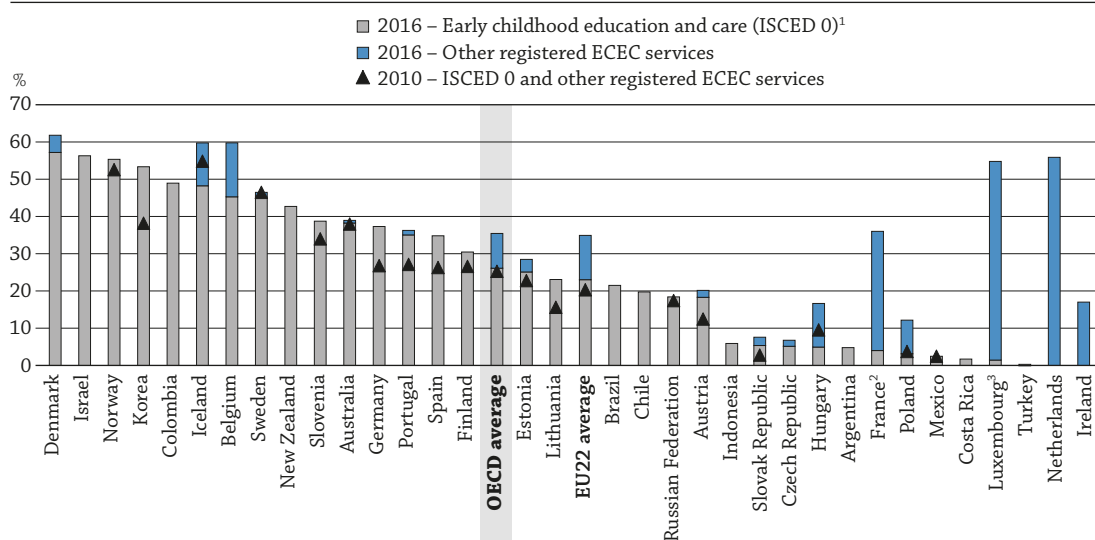


HOW DO EARLY CHILDHOOD EDUCATION SYSTEMS DIFFER AROUND THE WORLD?

- Early childhood education and care (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 2016, around one-third of children under age 3 are enrolled in ECEC, an increase of 5 percentage points compared to 2010.
- 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). Between 2005 and 2016, average enrolment of 3-5 year-olds in pre-primary or primary education rose from 75% to 85%.
- Despite progress, significant inequities persist in the access of very young children to ECEC services. For example, children under age 3 are more likely to participate to ECEC when they come from relatively advantaged socio-economic backgrounds or when their mother has completed tertiary education.

Figure B2.1. Enrolment rates of children under the age of 3 in early childhood education and care, by type of service (2010 and 2016)

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



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 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. curriculum); and 5) have trained or accredited staff (e.g. requirement of pedagogical qualifications for educators).

1. According to ISCED criteria.

2. Data for "Other registered ECEC services" come from the survey "Enquête 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.

3. Year of reference 2014 instead of 2016 for children under the age of 3 enrolled in "Other registered ECEC services". Data come from the OECD family database (www.oecd.org/els/family/database.htm).

Countries are ranked in descending order of the enrolment rates in ISCED 0 of children under the age of 3 in 2016.

Source: OECD (2018), Table B2.1a. See Source section at the end of this indicator for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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■ Context

Economic prosperity depends on maintaining 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. The availability of quality ECEC services and other provisions aiming at improving work-life balance give fathers and mothers greater opportunities to enter employment and to ensure that it is feasible for families to combine work and family responsibilities ([OECD, 2018^[1]]; [OECD, 2011^[2]]) and (OECD, 2016^[3]).

However, 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 for children's development, learning and well-being. Children who start strong will be more likely to obtain better outcomes when they grow older. This is particularly true for children from disadvantaged socio-economic backgrounds, because they have often fewer opportunities to develop these abilities in their home-learning environments (OECD, 2017^[4]).

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

Currently, over half of OECD countries have all ECEC services administered under the responsibility of one leading authority at the national and/or regional level. Those countries also have integrated ECEC curricula adapted to the age of children from below age 1 until the beginning of primary school. An increasing number of countries have recently move towards these types of integrated systems (OECD, 2017^[4]).

■ Other findings

- In 2015, expenditure on ECEC (ISCED 0) accounted for an average of 0.8% of GDP, of which around three-quarters went to pre-primary education (ISCED 02). In pre-primary education, expenditure increased faster than GDP in the 18 countries with available data for 2005 and 2015.
- Affordability is a key driver of equity in participation in ECEC. The share of public funding in total expenditure tends to be lower in early childhood development institutions (ISCED 01) than for pre-primary education. The share of public spending in pre-primary education has increased over the period 2005-15 by 4 percentage points, on average across OECD countries.
- Children under the age of 3 are much more likely to be enrolled in private ECEC settings than older children. The proportion of children enrolled in private early childhood development institutions (ISCED 01) is considerably larger than for pre-primary education (ISCED 02) and exceeds 50% in about two-thirds of OECD countries.
- On average across OECD countries, each teacher (excluding teachers' aides) working in pre-primary education takes care of 14 children. Interestingly, the number of children per teacher has fallen between 2005 and 2016 in about two-thirds of the 21 OECD countries with available data. On average, the number of children enrolled in pre-primary education increased by 18% between 2005 and 2016, a period within which the number of teachers increased by 29%.

Analysis

B2

Types of early childhood education and care services

There is a consensus among OECD countries about the growing need for early childhood education and care. However, the types of ECEC services available to children and parents in OECD countries differ greatly. Variations exist in the targeted age groups, the governance of centres, the funding of services, the type of delivery (full-day versus part-day attendance), as well as the location of provision, either in centres/schools or at home (OECD, 2017^[4]).

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

- The ECEC services reported in the ISCED 2011 classification (OECD/Eurostat/UNESCO Institute for Statistics, 2015^[6]). 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 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. curriculum)
 - 5) have trained or accredited staff (e.g. requirement of pedagogical qualifications for educators).
- 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 educational programmes (e.g. *crèches* in France or *Amas* in Portugal). The distinction between these two categories is explicitly shown in Figure B2.1 and in Table B2.4.

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 in this indicator (see *Definitions* section at the end of this indicator 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 positive effects on children's well-being, learning and development in the first years of life (OECD, 2018^[1]).

On average across OECD countries in 2016, around one-third of children under age 3 are enrolled in ECEC, either full time or part time. This average hides great differences across countries. The length of parental leave also influences the age at which children enrol in ECEC services. ECEC services for children under age 3 are almost non-existent in Mexico (only 2% of children enrolled) and Turkey, while over half of children under age 3 are already enrolled in Belgium, Denmark, Iceland, Israel, Korea, Luxembourg, the Netherlands and Norway (Figure B2.1)

Despite significant differences across countries, a common pattern emerges. The share of children under the age of 3 enrolled in ECEC is on the rise in most countries and has increased on average from 25% to 31% between 2010 and 2016 (Table B2.1b). This is particularly marked in many European countries, as a result of further stimulus by the 2010 objectives set by the European Union (EU) at its Barcelona meeting (to supply subsidised full-day places for one-third of children under the age of 3 by 2010) (OECD, 2017^[4]). More globally, the rise in ECEC provision over the last decades has greatly contributed to the increase in women's participation in the labour force, particularly for mothers with children under age 3. Countries with higher enrolment rates of children under age 3 in 2016 tend to be those in which the employment rates of mothers are highest ([OECD, 2018^[1]] [OECD, 2018^[7]]; Figure B2.1).

However, the wider enrolment in ECEC services does not account for the quality of education provided to children. In countries such as Norway, for instance, not only do more than half of the children below age 3 attend ECEC services, but they also attend programmes integrated within the education system from below age 1 until the beginning of primary school. In these programmes, children are often exposed to an ECEC setting with trained or accredited staff, explicit pedagogical goals and a regulatory framework recognised by the relevant national authorities, even before the age of 3. In other countries with similar enrolment rates, such as Luxembourg and the Netherlands, different standards are often set for different ECEC settings or for different age groups of children (see more details in Table B2.4).

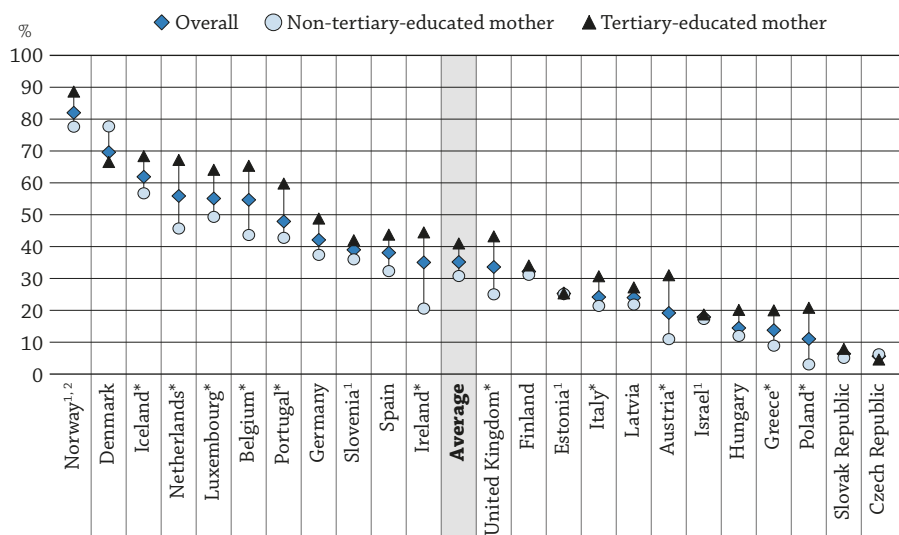
Enrolment of children under the age of 3, by socio-economic profiles

Research shows that children coming from a disadvantaged family or children with an immigrant background can benefit the most from attending high-quality ECEC (see Box B2.1). While promoting equity in education from the earliest age possible is paramount, the existence of inequalities in the economic, social and cultural backgrounds of children in ECEC centres is becoming more of a challenge in OECD countries. This is particularly true as children from poorer families traditionally face greater barriers in accessing ECEC services. It is also often reported that although the children of deprived families need high-quality ECEC the most, these families often have lack of knowledge about existing ECEC services ([OECD, 2017^[4]] and Box B2.1).

Children below the age of 3 with tertiary-educated mothers are more likely to participate in ECEC. In particular, on average across countries with available data, children with tertiary-educated mothers are more likely to participate in an ECEC programme than those whose mothers are without tertiary education, by about 10 percentage points. The difference is statistically significant and exceeds 20 percentage points in Austria, Belgium, Ireland and the Netherlands (Figure B2.2 and [OECD, 2018^[7]]). Women with tertiary education are more likely to be employed and have higher income than those without tertiary education, and they are therefore more likely to be able to afford private costs to enrol their children in such programmes ([OECD, 2018^[1]] [OECD, 2018^[7]]).

Figure B2.2. Participation rates of children under the age of 3, by mother's educational attainment (2014)

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



Note: For most European countries, data refer to the 2014 wave of the EU-SILC survey led by Eurostat. EU-SILC data are based on surveys and may as a result be affected by sample size and sample selection issues. The EU-SILC survey includes unregulated paid childminders' services. Differences in enrolment rates across groups are not statistically significant at $p < 0.05$ for a few countries. In countries with an *, differences in enrolment rates across groups are statistically significant at $p < 0.05$.

1. 2016 data, provided by the country. No sampling, therefore, no p-value reported. In Norway, data are based on children aged 1 and 2 years old.

2. Data provided by the country only for ISCED 0.

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

Source: OECD (2018), Table B2.1c, available on line, and OECD Family Database. See *Source* section at the end of this indicator for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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Indeed, children under the age of 3 are more likely to be enrolled in ECEC programmes when they come from relatively advantaged socio-economic backgrounds. On average across OECD countries, only 28% of children in households where income is in the lowest tertile are enrolled in ECEC services, compared to over 44% of those from the wealthiest tertile (Table B2.1c, [OECD, 2018^[7]] and [OECD, 2016^[8]]). This difference across income groups is statistically significant in more than half of the countries with available data, notably in those where the overall enrolment rates are the lowest, i.e. countries in which only a small proportion of children globally are enrolled in ECEC services (such as the Czech Republic, Hungary and Poland).

Enrolment of children from age 3 until entry to primary education

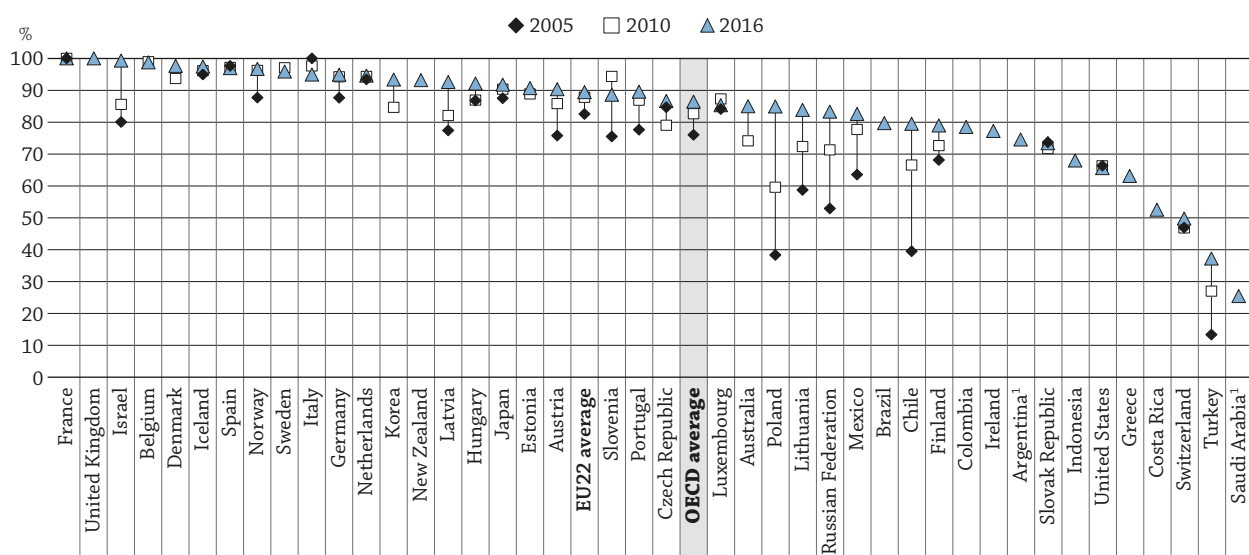
In many OECD countries, ECEC begins for most children well before they are 5 years old. Almost nine out of ten 4-year-olds (88%) are enrolled in pre-primary and primary education across OECD countries. In the OECD countries that are part of the European Union, 91% of 4-year-olds are enrolled. OECD enrolment rates in pre-primary education at this age vary from 98% or higher in Belgium, Denmark, France, Iceland, Israel and the United Kingdom, to less than 50% in Switzerland and Turkey. The highest enrolment rates of 3-year-olds in ECEC are found in Belgium, Denmark, France, Hungary, Iceland, Israel, Korea, Norway, Spain and the United Kingdom, exceeding 95% (Table B2.1a).

In many OECD countries, legal entitlements to a place in ECEC services are universal for at least one or two years before the start of compulsory schooling. On average, 86% of children between age 3 and age 5 are enrolled in ECEC services, at that age usually in pre-primary education (ISCED 02). In 18 of the 42 countries with available data, the enrolment of children between age 3 and age 5 is near universal, exceeding 90%.

This trend is the result of the expansion of ECEC services over the past decades in many countries. Over this period, the increased focus on ECEC policy has resulted in the extension of compulsory education to lower ages, an 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 age 1 until entry into primary education. In figures, between 2005 and 2016, average enrolment of 3-5 year-olds in pre-primary or primary education rose from 75% to 85%. A few countries have had spectacular increases in ECEC over this period, as in Chile, Lithuania, Poland, the Russian Federation and Turkey. By contrast, other countries have not shown much change. For instance, Switzerland was in the group of countries that reported the lowest enrolment rates in 2005 and still in 2016 (Figure B2.3).

Figure B2.3. Change in enrolment rates of children aged 3 to 5 years (2005, 2010 and 2016)

Early childhood education (ISCED 0) and primary education



1. Year of reference 2015 instead of 2016.

Countries are ranked in descending order of the enrolment rates of 3-5 year-olds in 2016.

Source: OECD (2018), Tables B2.1a and b. See Source section at the end of this indicator for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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Enrolment in ECEC, by subnational regions

If 3 is the starting age of universal entitlement to ECEC in many countries, some strong regional differences remain in access to pre-primary education at this age. For instance, a striking difference is observed in Austria, where up to 90% of 3-year-olds are enrolled in pre-primary in the Burgenland and Niederösterreich area, compared to only 54% in Styria (Steiermark) (OECD/NCES, 2018^[9]). The difference between regions in enrolment rates of 3-year-olds equals or exceeds 20 percentage points in Poland, the Russian Federation, Spain and the United States. This emphasises the importance of granting equal access to ECEC across urban and rural areas.

At age 4, enrolment is universal or near universal in most of the countries. However, differences between subnational regions still exist in the 14 countries with available data by subnational regions (see *Source* section). In Austria, Finland, Italy, Korea, Poland, the Russian Federation, Spain, Turkey and the United States, there is a difference of more than 10 percentage points in enrolment of 4-year-olds in pre-primary or primary education between the region with the highest rate and the region with the lowest rate.

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, 2009^[10]).

Box B2.1. Integrating young immigrant children by encouraging their enrolment in high-quality early childhood education and care

The populations of OECD countries are becoming increasingly heterogeneous because of migration. On average across the OECD, the share of the foreign-born population has increased from 6% to over 9% in the last two decades. Increased mobility leading to greater diversity requires particular efforts towards integration, especially in the early stages of education (OECD, 2016^[11]).

Integrating young immigrant children into their new communities is of key importance in the long run. Education systems can help by encouraging their enrolment in ECEC services. However, in most countries, the participation of immigrant children in these programmes is considerably lower than for those without an immigrant background (OECD, 2017^[4]; Magnuson and Waldfogel, 2006^[12]). On average in the OECD Programme for International Student Assessment (PISA) 2015, immigrant students who reported that they had attended an ECEC setting (ISCED 0) for at least one year scored 36 points higher in the science assessment than those who had attended for less than one year (the equivalent of around one year of formal schooling). After accounting for the socio-economic status of children, a significant difference of 25 score points remains (OECD, 2017^[4]).

Expansion of ECEC programs has been implemented across countries to serve a variety of objectives, such as providing care to children living in remote areas, providing equity for economically disadvantaged children, easing the transition of new immigrants into new cultures, or supporting indigenous cultures. In several countries (Denmark, Finland, the Netherlands, Norway and Sweden), policies have been implemented to expand access to early childhood services for immigrant and ethnic minority groups. They are meant to expose children and families to the language and traditions of their new home and provide opportunities for parents to establish social contacts and networks.

Countries with indigenous populations (Australia, Canada, New Zealand and the United States) also implemented measures to preserve traditional languages and cultures, while seeking to empower families within society. Despite this progress, the need for early childhood staff and provision to value and respond to the needs of ethnically, culturally and linguistically diverse families still remains a challenge in many countries (OECD, 2017^[4]).

The quality of ECEC services is crucial for ensuring that ECEC benefits those who need it most. On this key question, the literature review and meta-analysis findings summarised in the report *Engaging Young Children* (OECD, 2018^[13]) show that children in ECEC classrooms or playrooms with a larger share of immigrant or bilingual children seemed to experience lower-quality staff-child interactions. Similarly, it was shown that classrooms or playrooms with a larger share of immigrant or bilingual children affect children's development: children from disadvantaged backgrounds attending preschools with a larger percentage of other children with similarly disadvantaged backgrounds presented lower language and literacy skills.

The lower quality of settings with a large percentage of immigrant or bilingual children might reflect the barriers to access and the added risk experienced overall by disadvantaged families (EACEA P9 Eurydice, 2009^[14]) and ethnic minority or multilingual families in specific locations (Stewart and Waldfogel, 2017^[15]). A further explanation that has been suggested is that working with disadvantaged children is more challenging, and additional resources might be needed to counteract these challenges to raise process quality (Pianta et al., 2005^[16]; OECD, 2018^[13]).

In most countries, the share of children enrolled in private ECEC institutions is considerably larger than in primary and secondary education. Private institutions can be classified under two different categories: independent private 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. Although government-dependent private institutions have similar governance structures, they rely on government agencies for more than 50% of their core funding.

On average across OECD countries, about half of children in early childhood educational development programmes (ISCED 01) are enrolled in private institutions. This average, however, hides huge discrepancies across countries. In Denmark, Finland, Hungary, Iceland, Slovenia, Sweden, Lithuania and the Russian Federation, 20% or less of children in early childhood educational development programmes attend private ECEC institutions, while in Belgium, Indonesia, Israel, Korea, New Zealand, Portugal, Turkey and the United Kingdom, all or almost all children are in private institutions (Table B2.2).

Private institutions usually are more common for children under the age of 3 than for older ones. Thus, about two-thirds of children enrolled in pre-primary education (ISCED 02) attend public institutions across OECD countries, and up to about three-quarters of children for EU22 countries, reflecting the development of public 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 India, Ireland and Japan, more than 70% of children attending pre-primary programmes are in independent private institutions (Table B2.2).

Box B2.2. How many hours per year, on average, does a child participate in pre-primary education?

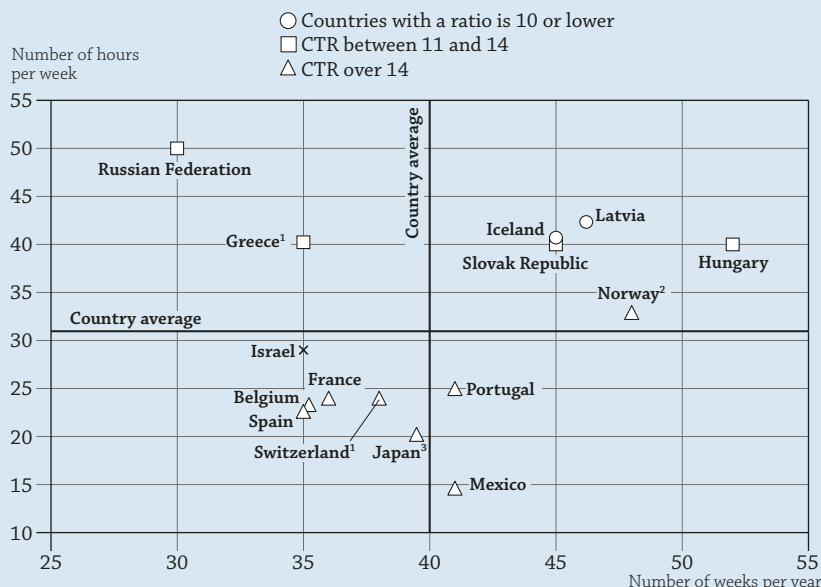
From a child development perspective, there is little evidence on the optimal hours of participation to ECEC. Therefore, research on the benefits of full-time compared to part-time ECEC attendance is less conclusive than evidence regarding the benefits of a longer period of participation to ECEC. However, from a labour-market perspective, the availability of ECEC services with an adequate number of hours per week is a crucial factor to enable parents of young children to take up full-time employment (OECD, 2017^[4]).

While participation rates by age provide a proxy of how long children are enrolled in ECEC over their childhood (e.g. in years), they do not provide any information about the intensity of participation in pre-primary education (i.e. whether children are enrolled only a few hours per day or all day long). On average, a child attends pre-primary education for an average of 31 hours per week and 40 weeks per year. This average, however, hides huge differences across countries and excludes out-of-school-hours activities. Children attend pre-primary education from 15 hours per week in Mexico to up to 50 hours per week in the Russian Federation. Similarly, pre-primary settings are typically open 30 weeks per year in the Russian Federation and up to 52 weeks per year in Hungary.

In addition to other factors such as teachers' salaries, ECEC provision or child-to-staff ratios, the number of hours per year a child attends pre-primary education largely influences the amount of public budgets to invest in pre-primary education. For instance, increasing the number of hours children spend on pre-primary education, or decreasing the staff-to-child ratio, results in a need for additional staff, thus increasing the public budget. Figure B2.a shows that, with the exception of Norway, countries with the highest number of opening hours per week and weeks per year are also countries in which child-to-teacher ratios are below the OECD average. Among these countries, Iceland, Latvia, and Hungary spend more on pre-primary education as a percentage of GDP than OECD countries on average, while expenditure as a percentage of GDP is at the level of the average in the Slovak Republic (Table B2.3a).

For a more complete understanding of ECEC provision however, enrolment rates and intensity of participation need to be analysed together. Countries such as Belgium, France and Spain offer relatively lower opening hours and weeks in pre-primary settings and child-to-staff ratios are above the OECD average of 14, but enrolment is universal for children age 3 to age 5 (Table B2.1b). In the Slovak Republic, on the other hand, pre-primary schools are open over 40 hours per week, but enrolment rates are below the OECD average, as 73% of children age 3 to age 5 are enrolled in pre-primary education (Table B2.1a).

...

Figure B2.a. Number of hours per week and weeks per year children attend pre-primary education (ISCED 02) (2016)


Note: The three different symbols correspond to the ratio of children to teaching staff (CTR) in pre-primary education. Data on the CTR for Israel are missing.

1. Year of reference of data on CTR: 2014 for Switzerland and 2015 for Greece.

2. Average attendance hours of children enrolled in ISCED 02 programmes.

3. The average hours and weeks per year in pre-primary education (ISCED 02) may be inconsistent with the actual situation because these data are based on a regulation defined by National Curriculum Standards for Kindergarten.

Source: OECD (2018) and INES ad-hoc survey. See *Source* section at the end of this indicator for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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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 influence greatly the participation to ECEC of children from disadvantaged socio-economic backgrounds (OECD, 2017^[4]).

Expenditure per child

In pre-primary education, annual expenditure per child for both public and private settings averages USD 8 528 in OECD countries, ranging from USD 5 000 or less in Brazil, Colombia and the Czech Republic to more than USD 13 000 in Luxembourg, Norway and Sweden. Annual expenditure per child enrolled in early childhood educational development programmes (ISCED 01) is significantly higher than in pre-primary education (ISCED 02) in 12 out of the 14 OECD countries with available data for both programmes, averaging USD 12 433. The smaller child-to-staff ratio in early childhood development programmes is one of the main drivers of this difference (Tables B2.3a and B2.2). The average number of hours children spend in an ECEC setting per year also influences different countries' spending (Box B2.2).

Public and private funding of ECEC

The source of funding for ECEC settings varies across countries. In some countries, the public sector provides universal access from a certain age. In others, ECEC settings are mainly provided by the private sector, or there is a mix of the two (Table B2.3b). Many governments may also delegate responsibility for ECEC public funding to local authorities. In general, public funding is more decentralised in ECEC than at any other level of education (OECD, 2018^[17]).

Generally, a substantial and increasing public investment in ECEC is observed on average across OECD countries, although differences exist between pre-primary (ISCED 02) and early childhood educational development (ISCED 01). On average across OECD countries, in early childhood educational development, public sources account for 72% of total expenditure, while in pre-primary education, the share of public expenditure is higher, at 83% of the total. Public spending in pre-primary education has also increased over the period from 2005 to 2015, by 4 percentage points on average for countries with available data for both reference years, and by more than 10 percentage points in Chile, Germany, Israel and Korea (Table B2.3b, available on line). In 2015, Japan, Turkey and the United Kingdom are the only countries where private funds account for more than 40% of total expenditure in pre-primary education. In Turkey, most of the private funding comes from households but families have access to well-developed public subsidies system. In Japan, the high cost is shared between households, foundations and the business sector while a large part of the private funding comes from households in the United Kingdom (Table B2.3b, available on line).

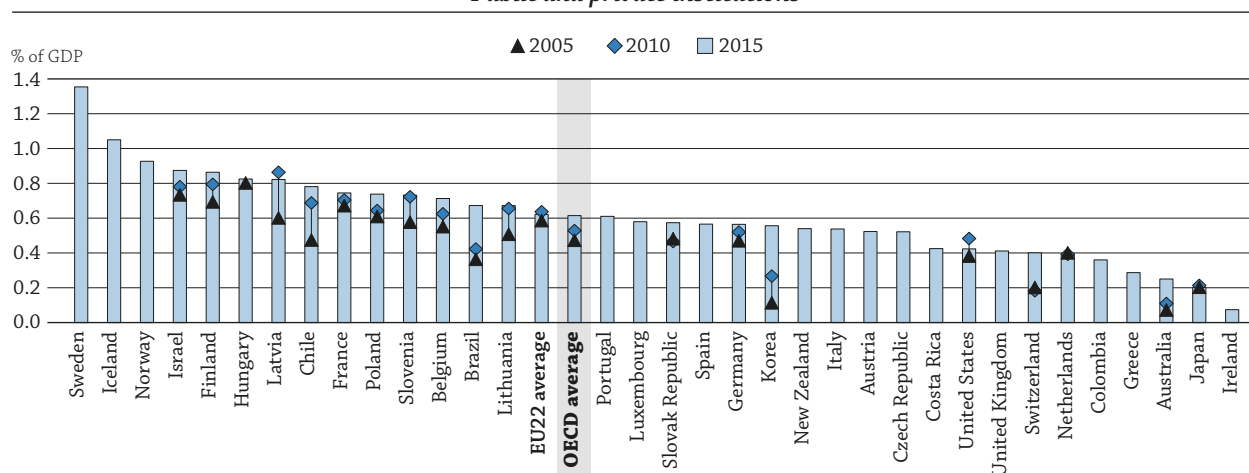
Expenditure as a percentage of GDP

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 (Figure B2.4). While 0.3% or less of GDP is spent on pre-primary education in Australia, Greece, Ireland and Japan, countries such as Iceland and Sweden spend over 1% of GDP (Table B2.3a). These differences are largely explained by enrolment rates, legal entitlements and intensity of participation, as well as the different starting ages for primary education. Comparison between countries' relative expenditure on ECEC is also a function of the duration of pre-primary education. For example, a shorter duration of pre-primary education as the result of an earlier transition between pre-primary to primary education, such as in Australia, Ireland, New Zealand and the United Kingdom, partly explains why these four countries have expenditure on ECEC as a percentage of GDP below the OECD average. Table B2.4 summarises the theoretical duration of countries' ECEC programmes and the OECD family database provides additional information (OECD, 2018^[7]).

Investments in high-quality ECEC pay dividends in terms of children's short-term and long-term learning and development. That is why many OECD countries have increased spending on ECEC, particularly to expand access or to increase the number of hours per week covered by legal entitlements to a place in ECEC (Box B2.2). This direction has also been the result of further stimulus by the 2010 objectives set by the European Union (EU) at its Barcelona meeting. In the 18 countries with available data, the increase in the number of children enrolled in pre-primary education between 2005 and 2015 goes hand in hand with an increase in financial investment.

Figure B2.4. Expenditure on pre-primary (ISCED 02) education as a percentage of GDP (2005, 2010 and 2015)

Public and private institutions



Note: Comparison between countries' relative expenditure on ECEC is also a function of the duration of pre-primary education. For example, a shorter duration of pre-primary education as the result of an earlier transition to primary education may explain why some countries have expenditure on ECEC as a percentage of GDP below the OECD average (see duration of pre-primary education in Table B2.4, available on line). Countries are ranked in descending order of expenditure as a percentage of GDP in 2015.

Source: OECD (2018), Table B2.3a. See *Source* section at the end of this indicator for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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A corrigendum has been issued for this page. See: http://www.oecd.org/about/publishing/Corrigendum_EAG_2018.pdf

In all these countries, expenditure on pre-primary educational settings increased at a faster rate than GDP, resulting on average across OECD countries in an increase in expenditure on educational institutions as a percentage of GDP of 0.1 percentage points between 2005 and 2015. The increase is at least of 0.3 percentage points over this period in Brazil (from 0.4% to 0.7%), Chile (from 0.5% to 0.8%) and Korea (from 0.1% to 0.6%) (Figure B2.4).

Variation in child-staff ratios across OECD countries

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^[13]).

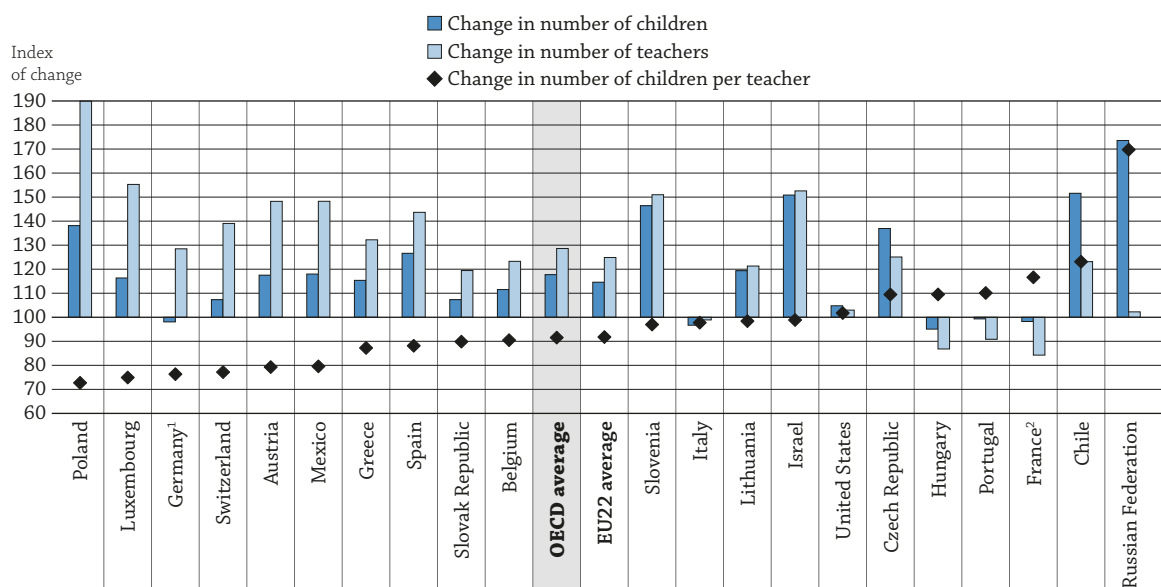
The ratio of children to teaching staff is an important indicator of the resources devoted to education. Child-staff ratios and group size are often the most commonly used regulations to improve ECEC quality. On average across OECD countries, there are 14 children for every teacher working in pre-primary education. But wide variations are observed across countries. Thus, the child-teacher ratio, excluding teachers' aides, ranges from more than 20 children per teacher in Brazil, Chile, Colombia, France, Mexico and South Africa to less than 10 in Iceland and Slovenia.

Some countries also make extensive use of teachers' aides at the pre-primary level to assist teachers in their daily tasks and deal with children with special needs: 11 of the 22 countries with available data reported smaller child-to-staff ratios than child-to-teacher ratios. Among these countries, the child-to-staff ratios are substantially lower than child-to-teacher ratios (at least three children or fewer) only in Austria, Brazil, Chile, France, Lithuania and Norway (Table B2.2).

Child-to-staff ratio matters more for interactions with children under the age of 3 than with children age 3 to age 5 (OECD, 2018^[13]). In most countries, the ratios of children to teacher are smaller in early childhood development programmes than in pre-primary education. On average across the 11 OECD countries with available data for both programmes, there are 14 children for each teacher working in pre-primary education, while the ratio is only 8 children per teacher in early childhood development programmes (Table B2.2).

Figure B2.5. Changes in number of children, number of teachers and number of children per teacher in pre-primary education (2005, 2016)

Index of change between 2005 and 2016 (2005 = 100), based on head counts



1. Year of reference 2006 instead of 2005.

2. Excluding independent-private institutions.

Countries are ranked in ascending order of the change over the period 2005–2016 in number of children per teacher in pre-primary education (ISCED 02).

Source: OECD (2018), Table B2.2. See Source section at the end of this indicator for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

StatLink <https://doi.org/10.1787/888933803292>

A corrigendum has been issued for this page. See: http://www.oecd.org/about/publishing/Corrigendum_EAG_2018.pdf

Over the last decade, many countries have implemented policies to increase participation in ECEC and reduce child-to-staff ratios. As a result, the number of children per teacher has fallen between 2005 and 2016 in two-thirds of the 20 OECD countries with available data for pre-primary education. On average, the number of children enrolled in pre-primary education increased by 18% between 2005 and 2016, a period over which the number of teachers increased by 29%. However, some exceptions exist. In Chile, the Czech Republic, France, Hungary, Portugal, the Russian Federation and the United States, the number of children per teacher is higher in 2016 than a decade ago (Figure B2.5).

Definitions

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^[4]] and Table B2.4):

- **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 day care 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 day care 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. Figure B2.1 and Table B2.4 make 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 level 0 refers to early childhood programmes that have an intentional education component. To be reported in ISCED level 0, a programme must:

- have adequate intentional educational or pedagogical properties
- take place in an institutionalised setting (usually school-based or otherwise institutionalised for a group of children)
- meet a minimum intensity/duration (an intensity of at least 2 hours per day and a duration of at least 100 days a year)
- have a regulatory framework recognised by the relevant national authorities (e.g. curriculum, guidelines, standards or instructions)
- be delivered by trained or accredited staff (e.g. requirement of pedagogical qualifications for educators)

There are two categories of ISCED level 0 programmes, which are classified depending on age and the level of complexity of the educational content:

- **ISCED 01** refers to early childhood educational development programmes, 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 programmes, aimed at children in the years immediately prior to starting compulsory schooling, typically aged between age 3 and age 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.

Equivalised disposable income tertile refers to the disposable (i.e. post-tax and post-transfer) income of the household in which the child lives, equivalised using the square root scale to account for the effect of family size on the household's standard of living. The income tertiles are calculated based on the distribution by equivalised disposable income of children aged less than or equal to 12.

Mother's educational attainment measures whether or not the mother of the enrolled child has attained tertiary education (highest level of education attained at ISCED levels 5 to 8).

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

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 01 and 02 according to the age of the children. This may involve estimation of expenditure and personnel at levels 01 and 02.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018^[18]) and Annex 3 for country-specific notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

Lithuania was not an OECD member at the time of preparation of this publication. Accordingly, Lithuania does not appear in the list of OECD members and is not included in the zone aggregates.

Source

Data refer to the school year 2015/16 and financial year 2015 and are based on a special survey administered by the OECD in 2017 (for details see Annex 3 at <http://dx.doi.org/10.1787/eag-2018-36-en>).

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

Data on subnational regions for selected indicators have been released by the OECD, with support from the US National Centre for Education Statistics (NCES) and are currently available for 14 countries: Austria, Colombia, Finland, Germany, Ireland, Italy, Korea, Poland, the Russian Federation, Slovenia, Spain, Sweden, Turkey and the United States. Subnational estimates were provided by countries using national data sources or were calculated by Eurostat based on data for Level 2 of the Nomenclature of Territorial Units for Statistics (NUTS 2) for all countries except the United Kingdom (NUTS 1).

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


StatLink  <https://doi.org/10.1787/888933803121>

Table B2.1a Enrolment rates in early childhood education and care and primary education, by age (2016)

Table B2.1b Trends in enrolment rates in early childhood education and care (ECEC) and primary education, by age (2005, 2010, 2015 and 2016)

WEB Table B2.1c Participation of children under the age of 3 in early childhood education and care, by socio-economic profile (2016)

Table B2.2 Enrolment of children in early childhood education and care by type of institution and ratio of children to teaching staff (2016)

Table B2.3a Expenditure on early childhood education and care (ISCED 0) (2005, 2010, 2014 and 2015)

WEB Table B2.3b Relative proportions of public and private expenditure on early childhood education and care (ISCED 0) (2005 to 2015)

WEB Table B2.4 Coverage of early childhood education and care in OECD and partner countries

Cut-off date for the data: 18 July 2018. Any updates on data can be found on line at <http://dx.doi.org/10.1787/eag-data-en>. Data can also be found at <http://stats.oecd.org/>, Education at a Glance Database.

Table B2.1a. **Enrolment rates in early childhood education and care (ECEC) and primary education, by age (2016)**

B2

		Under the age of 2			Age 2			Under the age of 3			Age 3			Age 4			Age 5			Age 6		
		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)	Primary education (ISCED 1)	Total	Pre-primary (ISCED 02)	Primary education (ISCED 1)	Total	Pre-primary (ISCED 02)	Primary education (ISCED 1)	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
OECD	Australia	29	1	30	57	1	58	38	1	39	63	1	64	89	2	91	20	80	100	2	99	100
	Austria	7	x(8)	x(9)	41	x(8)	41	18	2	20	76	m	76	92	0	92	97	0	97	41	57	98
	Belgium	x(7)	x(8)	x(9)	53	x(8)	53	45	14	60	99	0	99	99	0	99	98	1	99	4	95	98
	Canada	m	a	m	m	a	m	m	a	m	m	a	m	m	m	m	95	0	95	0	100	100
	Chile	13	a	13	33	a	33	20	a	20	56	a	56	86	0	86	95	0	95	16	81	97
	Czech Republic	0	x(8)	x(9)	16	x(8)	16	5	2	7	78	m	78	91	0	91	91	0	91	46	48	94
	Denmark	41	x(8)	41	90	x(8)	90	57	5	62	97	m	97	98	0	98	95	2	98	7	92	99
	Estonia	6	1	7	64	7	71	25	3	28	87	3	90	92	0	92	93	0	93	92	1	93
	Finland	16	m	16	58	m	58	30	m	30	73	m	73	79	0	79	84	0	84	98	0	98
	France ¹	0	x(8)	x(9)	12	x(8)	x(9)	4	32	36	99	m	99	100	0	100	100	1	100	1	99	100
	Germany	24	a	24	65	a	65	37	a	37	92	a	92	96	0	96	97	0	97	35	63	98
	Greece ¹	2	m	m	11	m	m	5	m	m	27	m	27	65	0	65	94	0	94	3	93	96
	Hungary	1	4	4	14	28	42	5	12	17	85	13	98	95	0	95	96	0	96	60	30	91
	Iceland	24	17	41	95	0	95	48	12	60	97	0	97	98	0	98	96	2	98	0	99	99
	Ireland	a	x(8)	x(9)	a	x(8)	x(9)	a	17	17	49	m	49	59	31	90	0	92	92	0	97	97
	Israel	48	a	48	73	a	73	56	a	56	100	a	100	98	0	98	96	0	97	14	83	97
	Italy	m	m	m	16	m	m	5	m	m	92	0	92	96	0	96	88	8	96	1	96	97
	Japan	0	m	m	1	m	m	0	m	m	84	0	84	95	0	95	96	0	96	0	100	100
	Korea	36	a	36	87	a	87	53	a	53	97	a	97	93	0	93	90	1	90	0	95	95
	Latvia	m	m	m	m	m	m	m	m	m	89	m	89	93	0	93	97	0	97	93	4	97
	Luxembourg ²	0	m	m	4	m	m	1	53	55	67	m	67	93	0	93	91	5	95	5	93	99
	Mexico	1	a	1	5	a	5	2	a	2	45	a	45	91	0	91	76	24	100	1	99	100
	Netherlands	a	x(8)	x(9)	a	x(8)	x(9)	a	56	56	86	2	88	96	0	96	99	0	99	0	100	100
	New Zealand	31	m	31	66	m	66	43	m	43	89	m	89	93	0	93	3	95	98	0	99	99
	Norway	37	0	37	92	0	92	55	0	55	96	0	96	97	0	97	97	0	97	1	99	100
	Poland	0	x(8)	x(9)	9	x(8)	x(9)	3	9	12	71	m	71	86	0	86	98	0	98	21	74	95
	Portugal	28	1	29	49	1	50	35	1	36	83	0	83	90	0	90	95	0	95	8	89	97
Slovak Republic	0	x(8)	x(9)	16	x(8)	x(9)	5	2	8	67	m	67	71	0	71	82	0	82	39	49	89	
Slovenia	23	m	23	70	m	70	39	m	39	84	m	84	90	0	90	92	0	92	7	90	97	
Spain	24	m	24	57	m	57	35	m	35	96	m	96	96	0	96	98	0	98	1	97	98	
Sweden	24	1	25	88	2	90	45	1	46	92	2	95	94	0	94	95	0	95	97	1	99	
Switzerland	m	m	m	m	m	m	m	m	m	2	m	2	48	0	48	98	1	99	55	45	100	
Turkey	m	m	m	1	a	1	0	a	0	9	a	9	34	0	34	55	15	70	0	94	94	
United Kingdom	x(7)	m	m	51	m	m	18	m	m	100	m	100	100	3	100	0	97	97	0	98	98	
United States	m	m	m	m	m	m	m	m	m	38	m	38	67	0	67	87	4	91	22	81	100	
OECD average	16	m	25	45	m	45	25	9	34	75	1	76	87	1	88	82	12	95	22	76	98	
EU22 average	11	m	21	41	m	41	22	11	33	81	1	82	90	2	91	85	9	95	30	67	97	
Partners	Argentina ³	2	m	m	10	m	m	5	m	m	40	m	40	85	0	85	99	1	99	1	100	100
	Brazil	13	m	13	39	m	39	22	m	22	62	m	62	90	0	90	90	7	97	10	92	100
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	50	m	50	47	m	47	49	m	49	49	m	49	44	0	44	56	18	74	7	76	82
	Costa Rica	1	m	m	3	m	m	2	m	m	5	m	5	64	0	64	90	0	91	1	88	89
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	3	m	m	12	m	m	6	m	m	35	m	35	71	0	71	96	3	99	x(21)	x(21)	100
	Lithuania	6	a	6	58	a	58	23	a	23	78	a	78	84	0	84	90	0	90	95	4	99
	Russian Federation	4	m	4	48	m	48	18	m	18	79	m	79	84	0	84	91	0	91	81	11	92
	Saudi Arabia	a	m	m	a	m	m	a	m	m	5	m	5	22	0	22	45	5	50	2	96	97
	South Africa ³	m	m	m	m	m	m	m	m	m	5	m	5	8	0	8	17	22	39	22	53	75
	G20 average	m	m	m	m	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 "Enquête 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. For Greece, ECEC data include only part of the children enrolled in early childhood development programmes (ISCED 01).

2. Year of reference 2014 instead of 2016 for children under the age of 3 enrolled in "Other registered ECEC services". Data come from the OECD family database (www.oecd.org/els/family/database.htm).

3. Year of reference 2015 instead of 2016.

Source: INES ad-hoc survey and OECD/UIS/Eurostat (2018). See Source section for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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


StatLink  <https://doi.org/10.1787/888933803140>

Table B2.1b. **Trends in enrolment rates in early childhood education and care (ECEC) and primary education, by age (2005, 2010, 2015 and 2016)**

		Enrolment rates in ECEC and primary education																Index of change between 2005 and 2016 (2005 = 100) in enrolment rates in ECEC and primary education of children aged 3 to 5			
		Under the age of 3				Age 3			Age 4			Age 5			Ages 3 to 5				Change in number of children enrolled	Change in population	Change in enrolment rates
		ISCED 0 and other registered ECEC services				ISCED 0 and primary education			ISCED 0 and primary education			ISCED 0 and primary education			ISCED 0 and primary education						
		2005	2010	2015	2016	2005	2010	2015	2005	2010	2015	2005	2010	2015	2005	2010	2015	2016			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)			
OECD	Australia	m	38	39	39	m	73	70	m	51	90	m	99	100	m	74	87	85	m	122	m
	Austria	m	12	19	20	51	66	75	83	90	93	93	96	97	76	86	90	90	123	103	119
	Belgium	m	m	m	60	100	99	98	100	99	99	100	99	99	100	99	99	99	112	113	99
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	95	m	m	m	m	113	m	m
	Chile	m	m	19	20	23	38	56	42	75	87	53	87	94	39	67	79	79	176	87	201
	Czech Republic	m	m	4	7	66	60	77	91	86	85	97	93	91	85	79	85	87	129	126	102
	Denmark ¹	m	m	58	62	m	87	97	m	97	98	m	98	99	m	94	98	98	m	93	m
	Estonia	m	23	24	28	m	85	86	m	90	91	m	91	92	m	89	90	91	m	118	m
	Finland ¹	25	27	28	30	62	67	68	69	73	74	73	77	79	68	73	74	79	125	108	116
	France ¹	9	5	4	4	100	99	99	100	100	100	100	100	100	100	100	100	100	103	103	99
	Germany ²	17	27	37	37	80	90	93	89	96	97	93	97	98	88	94	96	95	101	93	108
	Greece ¹	m	m	m	m	m	26	m	m	66	79	95	94	m	m	64	63	m	97	m	m
	Hungary	7	10	16	17	85	84	94	91	93	95	97	96	95	87	87	91	92	100	94	106
	Iceland	53	55	60	60	94	95	97	95	97	97	97	96	94	95	96	96	97	110	107	103
	Ireland	m	m	m	17	m	38	m	m	89	97	100	96	m	m	74	77	m	134	m	m
	Israel	m	m	28	56	66	78	100	84	83	98	91	96	97	80	86	99	99	152	122	124
	Italy	m	m	m	m	99	95	92	100	99	96	100	99	97	100	98	95	95	96	102	94
	Japan	16	19	23	m	69	75	80	95	97	94	99	99	97	87	90	90	92	93	89	105
	Korea	m	38	52	53	m	80	92	m	84	91	m	90	93	m	85	92	93	m	82	m
	Latvia	m	m	m	m	66	73	87	73	82	92	94	93	96	77	82	92	93	119	100	120
	Luxembourg ³	m	m	m	55	62	73	66	95	97	95	94	93	99	84	87	86	85	114	113	101
	Mexico	2	2	2	2	26	37	46	69	85	89	96	100	100	64	78	82	83	126	97	130
	Netherlands	m	m	56	56	82	84	83	98	100	96	100	99	99	93	94	93	95	89	88	101
	New Zealand ¹	m	m	42	43	m	m	89	m	m	94	m	m	97	m	m	94	93	m	110	m
	Norway	33	53	55	55	83	95	95	89	97	97	91	97	98	88	96	97	97	117	106	110
	Poland	3	4	9	12	29	46	66	38	59	79	49	76	95	38	60	80	85	235	106	222
	Portugal	21	27	35	36	64	78	82	79	87	91	89	96	97	78	87	90	90	97	84	115
	Slovak Republic ¹	7	3	5	5	61	60	60	74	73	76	85	82	81	74	72	72	73	109	110	100
Slovenia ¹	25	34	38	39	67	84	83	76	100	89	84	99	92	75	94	88	89	145	124	117	
Spain ¹	15	26	34	35	94	96	95	99	97	97	100	99	98	98	97	97	97	111	112	99	
Sweden	m	46	46	46	m	95	94	m	98	95	m	99	97	m	97	95	96	m	129	m	
Switzerland	m	m	m	m	9	4	3	39	41	47	91	95	98	47	47	49	50	120	112	106	
Turkey	m	m	m	0	2	4	9	5	17	32	32	61	72	13	27	38	37	251	90	279	
United Kingdom	m	m	m	m	m	m	100	m	100	100	99	99	98	m	m	100	100	m	120	m	
United States	m	m	m	m	39	41	43	68	65	66	93	92	91	66	66	67	66	102	103	99	
OECD average	18	25	31	33	63	71	75	78	84	88	88	94	95	76	83	86	86	126	106	119	
Average for countries with available data for all reference years	20	25	30	31	61	70	76	76	84	87	86	93	94	75	80	84	85	126	104	122	
EU22 average	14	20	28	31	73	80	80	85	90	91	91	94	95	83	88	89	89	119	108	111	
Partners	Argentina	m	m	5	m	m	m	40	m	m	85	m	m	99	m	m	m	75	m	m	m
	Brazil ¹	m	m	21	22	m	m	61	m	61	84	m	72	93	m	m	80	80	m	82	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia ¹	m	m	29	49	m	m	60	m	m	81	m	m	95	m	m	78	78	m	98	m
	Costa Rica ¹	m	m	2	2	m	m	5	m	m	61	m	m	89	m	m	52	53	m	93	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	3	6	m	m	24	m	m	67	m	100	m	m	65	68	m	m	m	m
	Lithuania	13	16	22	23	53	68	77	58	73	86	65	77	89	59	72	84	84	131	91	144
	Russian Federation ¹	21	17	18	18	51	63	76	54	74	88	54	78	87	53	71	83	83	216	136	159
	Saudi Arabia	m	m	m	m	m	m	1	m	m	10	m	m	37	m	m	16	25	m	m	m
South Africa	m	m	m	m	m	m	5	m	m	8	m	m	39	m	m	17	m	m	m	m	
G20 average	m	m	m	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. Includes only early childhood education and care (ISCED 0) for children under the age of 3. For Greece, ECEC data include only part of the children enrolled in early childhood development programmes (ISCED 01).

2. Year of reference 2006 instead of 2005.

3. Year of reference 2014 instead of 2016 for children under the age of 3 enrolled in "Other registered ECEC services". Data come from the OECD family database (www.oecd.org/els/family/database.htm).

Source: INES ad-hoc survey and OECD/UIS/Eurostat (2018). See Source section for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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A corrigendum has been issued for this page. See: http://www.oecd.org/about/publishing/Corrigendum_EAG_2018.pdfTable B2.2. **Enrolment of children in early childhood education and care (ISCED 0) by type of institution and ratio of children to teaching staff (2016)***Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02*

B2

	Distribution of children in ISCED 01, by type of institution				Distribution of children in ISCED 02, by type of institution				Ratio of children to staff in full-time equivalents, by type of ECEC service						Index of change between 2005 and 2016 (2005 = 100) in number of children per teacher in pre-primary education (ISCED 02) (based on head counts)		
	Public	Private			Public	Private			ISCED 01		ISCED 02		Total (ISCED 0)		Change in number of children enrolled	Change in number of teachers	Change in number of children per teacher
		Government-dependent private	Independent private	Total		Government-dependent private	Independent private	Total	Children to contact staff (teachers and teachers' aides)	Children to teaching staff	Children to contact staff (teachers and teachers' aides)	Children to teaching 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) = (15) / (16)
OECD																	
Australia	m	m	m	m	16	84	a	84	m	m	m	m	m	m	m	m	m
Austria	33	x(4)	x(4)	67	71	x(8)	x(8)	29	6	9	9	13	8	12	118	148	79
Belgium	16	74	11	84	47	53	0	53	m	m	15	15	m	m	112	123	90
Canada	m	m	m	m	93	x(8)	x(8)	7	m	m	m	m	m	m	m	m	m
Chile	68	30	2	32	32	61	7	68	4	11	10	25	10	24	152	123	123
Czech Republic	a	a	a	a	96	4	a	4	a	a	13	13	13	13	137	125	109
Denmark	85	15	0	15	79	21	0	21	m	m	m	m	m	m	m	m	m
Estonia	x(5)	a	x(7)	x(8)	96	a	4	4	m	x(14)	m	x(14)	m	8	m	m	m
Finland	80	20	a	20	88	12	a	12	m	m	m	10	m	m	m	m	m
France ¹	a	a	a	a	87	13	0	13	a	a	15	23	15	23	98	84	117
Germany ²	27	x(4)	x(4)	73	35	x(8)	x(8)	65	5	5	9	10	7	8	98	128	76
Greece ¹	62	a	38	38	91	a	9	9	m	m	m	m	m	m	115	132	87
Hungary	86	8	7	14	90	7	3	10	10	10	12	12	12	12	95	87	110
Iceland	83	17	0	17	85	15	0	15	3	3	5	5	4	4	m	m	m
Ireland	a	a	a	a	2	0	98	98	a	a	m	m	m	m	m	m	m
Israel	a	33	67	100	63	30	7	37	m	m	m	m	m	m	151	153	99
Italy	a	a	a	a	72	0	28	28	a	a	13	13	13	13	97	99	98
Japan	a	a	a	a	26	a	74	74	a	a	14	15	14	15	93	m	m
Korea	9	91	a	91	21	79	a	79	5	5	13	13	9	9	m	m	m
Latvia	m	m	m	m	93	a	7	7	m	m	m	10	m	10	m	m	m
Luxembourg	a	a	a	a	89	0	11	11	a	a	11	11	11	11	116	155	75
Mexico	36	a	64	64	86	a	14	14	5	14	25	25	21	24	118	148	80
Netherlands	a	a	a	a	70	a	30	30	a	a	14	16	14	16	m	m	m
New Zealand	1	99	a	99	1	99	a	99	m	m	m	m	m	m	m	m	m
Norway	48	52	a	52	52	48	a	48	3	9	6	15	5	12	m	m	m
Poland	a	a	a	a	78	3	20	22	a	a	m	14	m	14	138	190	73
Portugal	4	79	18	96	53	31	16	47	m	m	m	17	m	m	100	91	110
Slovak Republic	a	a	a	a	94	6	a	6	a	a	12	12	12	12	107	119	90
Slovenia	94	6	0	6	95	4	0	5	6	6	9	9	8	8	146	151	97
Spain	51	15	33	49	68	29	4	32	m	10	m	15	m	13	127	144	88
Sweden	81	19	0	19	83	17	0	17	m	m	m	m	5	13	m	m	m
Switzerland	a	a	a	a	95	1	4	5	a	a	m	m	m	m	107	139	77
Turkey	a	a	100	100	84	a	16	16	m	m	m	17	m	m	m	m	m
United Kingdom	18	78	4	82	52	43	5	48	m	m	m	m	m	m	m	m	m
United States	m	a	m	m	59	a	41	41	m	m	11	13	m	m	105	103	102
OECD average	44	m	m	56	67	m	m	33	5	8	12	14	11	13	118	129	92
EU22 average	53	m	m	47	74	m	m	26	7	8	12	13	11	13	115	127	90
Partners																	
Argentina ³	44	x(4)	x(4)	56	68	x(8)	x(8)	32	m	m	m	m	m	m	m	m	m
Brazil	64	a	36	36	76	a	24	24	8	14	18	21	12	18	m	m	m
China	a	a	a	a	46	x(8)	x(8)	54	a	a	m	19	m	19	m	m	m
Colombia	100	a	a	a	77	a	23	23	m	m	m	33	m	m	m	m	m
Costa Rica	23	x(4)	x(4)	77	88	x(8)	x(8)	12	8	8	12	12	11	11	m	m	m
India	a	a	a	a	23	5	72	77	a	a	m	m	m	m	m	m	m
Indonesia	0	x(4)	x(4)	100	5	x(8)	x(8)	95	m	32	m	11	m	18	m	m	m
Lithuania	90	a	10	10	96	a	4	4	7	10	7	10	7	10	119	121	98
Russian Federation	99	a	1	1	99	a	1	1	x(13)	x(14)	x(13)	x(14)	7	11	174	102	170
Saudi Arabia	a	a	a	a	56	x(8)	x(8)	44	a	a	m	11	m	11	m	m	m
South Africa ³	m	m	m	m	94	x(8)	x(8)	6	m	m	30	30	m	m	m	m	m
G20 average	m	m	m	m	58	m	m	42	m	m	m	17	m	15	m	m	m

1. Data for Columns 11 to 17 represent public and government-dependent private institutions only.

2. Year of reference 2006 instead of 2005.

3. Year of reference 2015 instead of 2016.

Source: OECD/UIS/Eurostat (2018). See Source section for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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


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Table B2.3a. **Expenditure on early childhood education and care (ISCED 0) and change in expenditure as a percentage of GDP in pre-primary education (2005, 2010, 2014 and 2015)***Public and private institutions*


		Annual expenditure per child in USD, converted using PPPs (2015)			Expenditure on ECCE services as a percentage of GDP (2015)			Expenditure on pre-primary education (ISCED 02) as a percentage of GDP		
		ISCED 0			ISCED 0					
		Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	Total	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	Total	2005	2010	2014
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD	Australia	7 123	7 097	7 112	0.3	0.3	0.6	0.1	0.1	0.2
	Austria	11 815	9 439	9 824	0.1	0.5	0.7	m	m	0.5
	Belgium ¹	m	7 929	m	0.1	0.7	0.8	0.6	0.6	0.7
	Canada	m	m	m	m	m	m	m	m	m
	Chile	9 148	5 100	5 910	0.4	0.8	1.1	0.5	0.7	0.9
	Czech Republic	a	4 953	4 953	a	0.5	0.5	m	m	0.5
	Denmark	m	m	m	m	m	m	m	m	m
	Estonia	x(3)	x(3)	6 514	x(6)	x(6)	1.2	m	m	1.2
	Finland	19 423	10 654	12 332	0.4	0.9	1.2	0.7	0.8	0.9
	France	a	7 813	7 813	a	0.7	0.7	0.7	0.7	0.8
	Germany	14 769	9 827	11 122	0.3	0.6	0.9	0.5	0.5	0.6
	Greece	m	5 249	m	m	0.3	m	m	m	m
	Hungary	6 818	6 836	6 835	0.0	0.8	0.9	0.8	m	m
	Iceland	17 349	12 339	13 886	0.7	1.1	1.7	m	m	1.1
	Ireland	a	6 106	6 106	a	0.1	0.1	m	m	0.1
	Israel	2 713	5 021	4 185	0.3	0.9	1.1	0.7	0.8	0.8
	Italy	a	6 249	6 249	a	0.5	0.5	m	m	0.5
	Japan	a	7 499	7 499	a	0.2	0.2	0.2	0.2	0.2
	Korea	m	7 814	m	m	0.6	m	0.1	0.3	0.5
	Latvia	m	5 313	m	m	0.8	m	0.6	0.9	0.9
	Luxembourg	a	20 495	20 495	a	0.6	0.6	m	m	0.6
	Mexico	x(3)	x(3)	2 685	x(6)	x(6)	0.6	m	m	m
	Netherlands	a	8 352	8 352	a	0.4	0.4	0.4	0.4	0.4
	New Zealand	15 506	12 209	13 466	0.4	0.5	1.0	m	m	0.6
	Norway	24 228	13 457	17 225	0.9	0.9	1.8	m	m	0.9
	Poland	a	6 222	6 222	a	0.7	0.7	0.6	0.6	0.8
	Portugal	m	7 099	m	m	0.6	m	m	m	0.6
	Slovak Republic	a	5 811	5 811	a	0.6	0.6	0.5	0.5	0.6
	Slovenia	10 520	7 844	8 610	0.4	0.7	1.1	0.6	0.7	0.8
	Spain	8 166	6 596	6 977	0.2	0.6	0.8	m	m	0.6
	Sweden	16 917	14 212	14 917	0.6	1.4	1.9	m	m	1.4
	Switzerland ²	a	m	m	a	0.4	0.4	0.2	0.2	0.2
	Turkey	x(3)	x(3)	3 591	x(6)	x(6)	0.2	m	m	m
	United Kingdom	9 560	8 957	9 048	0.1	0.4	0.5	m	m	0.4
	United States	m	10 830	m	m	0.4	m	0.4	0.5	0.4
	OECD average	12 433	8 528	8 759	0.2	0.6	0.8	0.5	0.5	0.6
	Average for countries with available data for all reference years	m	m	m	m	0.6	m	0.5	0.5	0.6
	EU22 average	12 249	8 298	8 952	0.2	0.6	0.8	0.6	0.6	0.7
Partners	Argentina ²	m	m	m	x(6)	x(6)	0.4	m	m	m
	Brazil ²	m	m	3 846	m	0.7	m	0.4	0.4	0.6
	China	m	m	m	m	m	m	m	m	m
	Colombia	m	1 250	m	0.1	0.4	0.5	m	m	0.3
	Costa Rica ²	m	m	m	0.1	0.4	0.5	m	m	m
	India	m	m	m	m	m	m	m	m	m
	Indonesia	x(3)	x(3)	170	x(6)	x(6)	0.1	m	m	m
	Lithuania	5 589	5 457	5 479	0.1	0.7	0.8	0.5	0.7	0.6
	Russian Federation	x(3)	x(3)	5 062	x(6)	x(6)	1.0	m	m	1.0
	Saudi Arabia	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m

1. Public sources only for ISCED 01.

2. Public sources only for ISCED 01 and ISCED 02.

Source: INES ad-hoc survey and OECD/UIS/Eurostat (2018). See *Source* section for more information and Annex 3 for notes (<http://dx.doi.org/10.1787/eag-2018-36-en>).

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

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