

PF3.2: Enrolment in childcare and pre-school

Definitions and methodology

This indicator presents information on the use of childcare and pre-primary education services by children under school age across OECD countries. Because in most OECD countries the type and usage of services differs by child age, the information presented in this indicator is separated into usage among very young children aged 0 to 2 and usage among slightly older children aged 3 to 5. The child's third birthday is used as the breakpoint because it is at this age that children are able to move into pre-primary education in most – although not all – OECD countries (see indicator [PF4.1](#)). This indicator captures usage through four main measures:

- i. *Participation rates for 0-to-2-year-olds in formal childcare and pre-school services*, that is, the number of 0-to-2-year-olds that use formal childcare or pre-school services in the given country and given year as a proportion of the 0-to-2-year-old population. This measure looks to capture all children that use 'formal' services – which generally includes centre-based services (e.g. nurseries or day care centres and pre-schools, both public and private), organised family day care, and care services provided by (paid) professional childminders – but excludes children that use unpaid services provided by relatives, friends or neighbours. However, because data on the use of childcare services among 0-to-2-year-olds are gathered from a variety of sources – including national statistical authorities, international organisations and cross-national surveys such as EU-SILC – the exact definitions used may vary slightly from country to country (see the notes to the charts and *data and comparability issues* for more details).

Participation rates for 0-to-2-year-olds are presented both for the age group as a whole, and by income level and the education level of mother:

- *Participation rates for 0-to-2-year-olds in formal childcare and pre-school services by equivalised disposable income tertile*, with 'equivalised disposable income' referring to the disposable (post-tax-and-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.
- *Participation rates for 0-to-2-year-olds in formal childcare and pre-school services by mother's education level*, with 'mother's education level' measured by whether or not the reported mother of the child has attained tertiary education (highest level of education attained at International Standard Classification of Education (ISCED) 2011 levels 5-8). The education level of the female household head is used if there is no mother in the household, and then of the father (or male household head) if there is no mother or female head in the household.

Other relevant indicators: PF3.1: Public spending on childcare and early education; PF3.4: Childcare support; PF4.1: Typology of childcare and early education services; PF4.2: Quality of childcare and early education services; and, PF4.3: Out-of-school-hours care.
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- ii. *Average hours in formal care during a usual week for 0-to-2-year-olds who use formal childcare and pre-school services*, that is, the mean average number of hours 0-to-2-year-old children spend in childcare and pre-school services during a “usual” or “typical” week, among those who spend at least one hour in formal childcare and pre-school services.
- iii. *Full-time equivalent (FTE) participation rates for 0-to-2-year-olds in formal childcare and pre-school services*, that is, the participation rate for 0-to-2-year-olds if all 0-to-2-year-olds that use formal childcare and pre-school services did so on a ‘full-time’ basis. ‘Full-time’ is defined here as 30 hours per week, with the FTE participation rate calculated as:

FTE participation rate = participation rates for 0-to-2-year-olds in formal childcare and pre-school services * (Average hours in formal care during a usual week for 0-to-2-year-olds / 30)

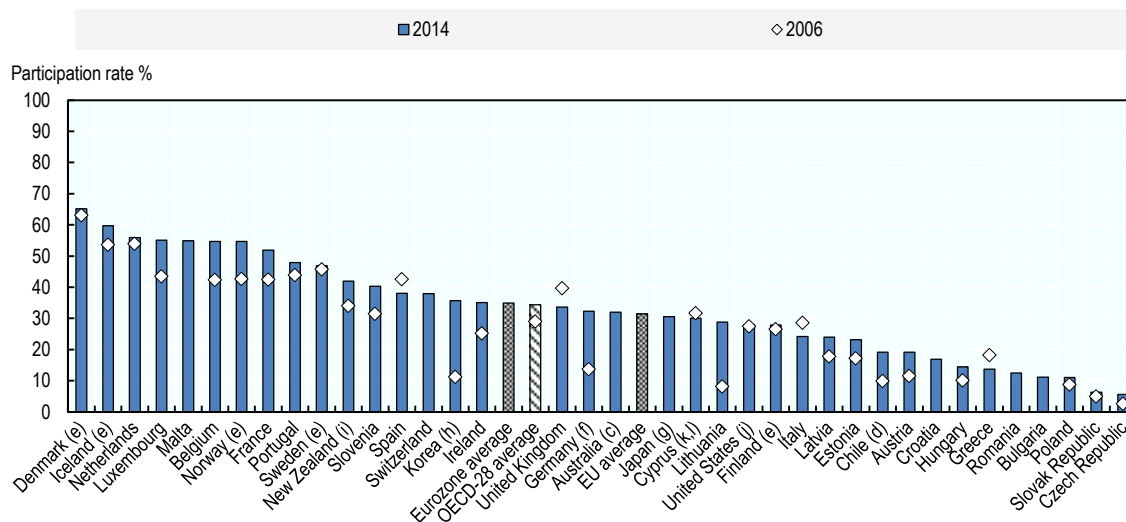
- iv. *Enrolment rates for 3-to-5-year-olds in pre-primary education or primary school*, that is, the number of 3-to-5-year-olds that are enrolled in pre-primary education or primary school in the given country and given year as a proportion of the 3-to-5-year-old population. Data here capture children enrolled in pre-primary education services (ISCED 2011 level 02), and also children enrolled in primary education services (ISCED 2011 level 1) in those countries where the entry age of compulsory primary education is lower than 6. For most countries it is possible to disaggregate enrolment rates for 3-to-5-year-olds by individual years of age, so this measure is presented both in aggregated form for the overall group (i.e. for all 3-to-5 year olds) and in disaggregated form by single years of age (i.e. participation rates for 3-year-olds, for 4-year-olds, and for 5-year-olds individually).

Key findings

Participation rates for 0-to-2-year olds in formal childcare and pre-school services differ considerably across the OECD (Chart PF3.2.A). On average across OECD countries around 35% of children aged 0-to-2 participate in some form of childcare, but this ranges from as low as just under 6% in the Czech Republic to as high as almost 66% in Denmark. Participation rates tend to be highest at around or above 50% in many of the Nordic (Denmark, Iceland, Norway and Sweden, but not Finland) and ‘Benelux’ OECD countries (Belgium, Luxembourg and the Netherlands), plus also France and Portugal. Rates tend to be lowest in the Eastern European OECD countries, particularly in the Czech and Slovak Republics.

Participation rates for 0-to-2-year olds in formal childcare and pre-school are increasing across most of the OECD (Chart PF3.2.A). Between 2006 and 2014, the OECD-28 average participation rate – that is, the mean average rate across the 30 OECD countries for which data are available at both time points – increased by over 5 percentage points, from 29% to just over 34%. Increases in participation have been particularly pronounced in Germany (18.7 percentage points) and especially Korea (24.5 percentage points), but have also been considerable at around 10-12 percentage points in Belgium, France, Ireland, Luxembourg, and Norway. Only four OECD countries (Greece, Italy, Spain and the United Kingdom) have seen participation rates for 0-to-2-year-olds fall since 2006.

Chart PF3.2.A. Participation rates for 0-to-2-year-olds in formal childcare and pre-school services^a, 2006 and 2014 or latest available^b



a) Data generally include children using centre-based services (e.g. nurseries or day care centres and pre-schools, both public and private), organised family day care, and care services provided by (paid) professional childminders, and exclude those using unpaid informal services provided by relatives, friends or neighbours. Exact definitions do however differ across countries.

b) Data for the United States refer to 2011, and for Chile to 2015

c) For Australia, data include children using regulated care services (e.g. regulated centre-based services and regulated family day care services), only. All non-regulated care is excluded regardless of whether it is paid or unpaid. Any children using pre-school services are also excluded.

d) For Chile, data include children using centre-based childcare and pre-school services only

e) For Denmark, Finland, Iceland, Norway and Sweden, data refer to children enrolled in day care institutions and local authority family day care. Data for Denmark, Finland, and Iceland also include children using publicly-subsidised private and non-profit childcare, and data for Norway any children in public and private kindergartens.

f) For Germany, data include children using registered centre-based services and registered family day care services only.

g) For Japan, data include children using centre-based services (licensed and non-licensed), only. Services can be publicly or privately provided and may or may not receive subsidies. Any children using employer-provided services are not included.

h) For Korea, data include children in regulated centre-based services only.

i) For New Zealand, data include children using licensed centre-based (e.g. 'Education and Care' services, Playcentres, Kōhanga Reo, Kindergartens) and home-based services, only. All non-licensed care is excluded regardless of whether it is paid or unpaid.

j) For the United States, data cover children who are living with their mother only. Data include children regularly using organised care (e.g. day care centres, nursery school and Head Start), family day care, and services provided by non-relatives (in or outside the child's home) regardless of whether they are paid or unpaid. The data allow for the reporting of multiple regular arrangements, and the figures shown may overestimate the number of children using services if children use more than one type of service on a regular basis.

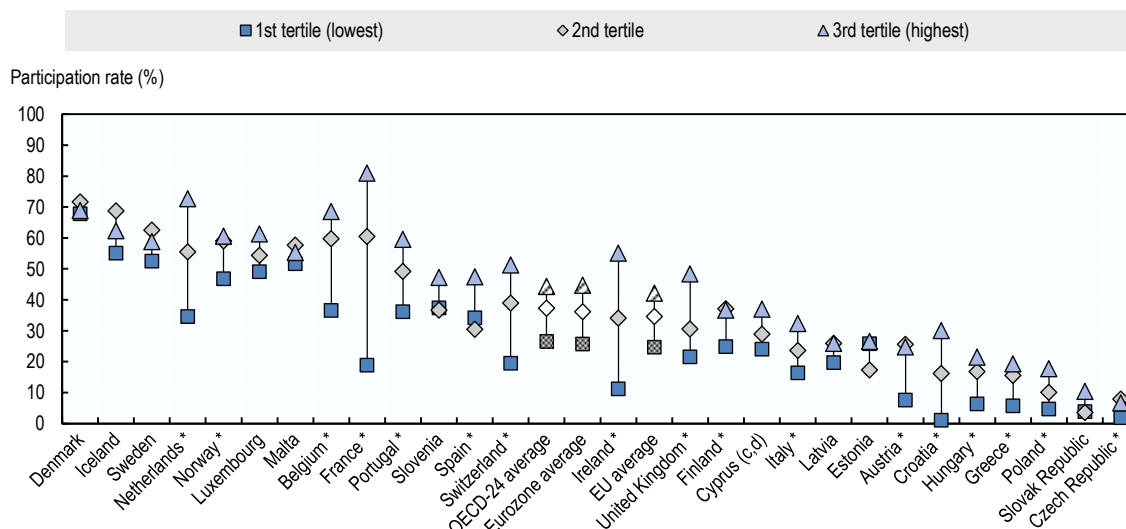
k) Footnote by Turkey: The information in this document with reference to « Cyprus » relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the "Cyprus issue";

l) Footnote by all the European Union Member States of the OECD and the European Commission: The Republic of Cyprus is recognized by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Sources: [For Australia, Australian Bureau of Statistics](#); [For Chile and New Zealand, OECD questionnaire](#); [For Denmark, Finland, Iceland, Norway and Sweden, NOSOSCO Social Protection in the Nordic Countries](#); [For European countries, EU SILC \(unless otherwise stated\)](#); [For Germany, Destatis and OECD Questionnaire](#); [For Japan, Ministry of Health, Labour and Welfare and OECD Questionnaire](#); [For Korea, Statistics Korea](#); [For the United States, US Census Bureau](#)

In most OECD countries, very young children are more likely to use formal childcare and pre-school services when they come from relatively advantaged socio-economic backgrounds. For example, in many OECD countries participation rates for children aged 0-to-2 increase with household income (Chart PF3.2.B). In France and in Ireland, participation rates for children in low-income families are, at 19% and 11% respectively, less than a quarter of those for children from high-income families (81% and 55%). In Belgium and the Netherlands, participation rates for children from low-income backgrounds are generally a little higher (around 35-36%), but are still only about half those for children from the richest families (68% and 73%). Similarly, in a number of OECD countries children are also more likely to use when their mother is education at least to degree-level (Chart PF3.2.C). In Austria, the participation rate for children with a mother that has attained tertiary education is, at 31%, 20 percentage points higher than the rate for children with a mother that has not attained tertiary education (11%). In Switzerland, the gap is as large as 30.5 percentage points.

Chart PF3.2.B. Participation rates for 0-to-2-year-olds in formal childcare and pre-school services^a, by equivalised disposable income tertile^b, 2014



Note: In countries marked with an *, differences in participation rates across groups are statistically significant at $p < 0.05$

a) Data include children using centre-based services (e.g. nurseries or day care centres and pre-schools, both public and private), organised family day care, and care services provided by (paid) professional childminders, and exclude those using unpaid informal services provided by relatives, friends or neighbours.

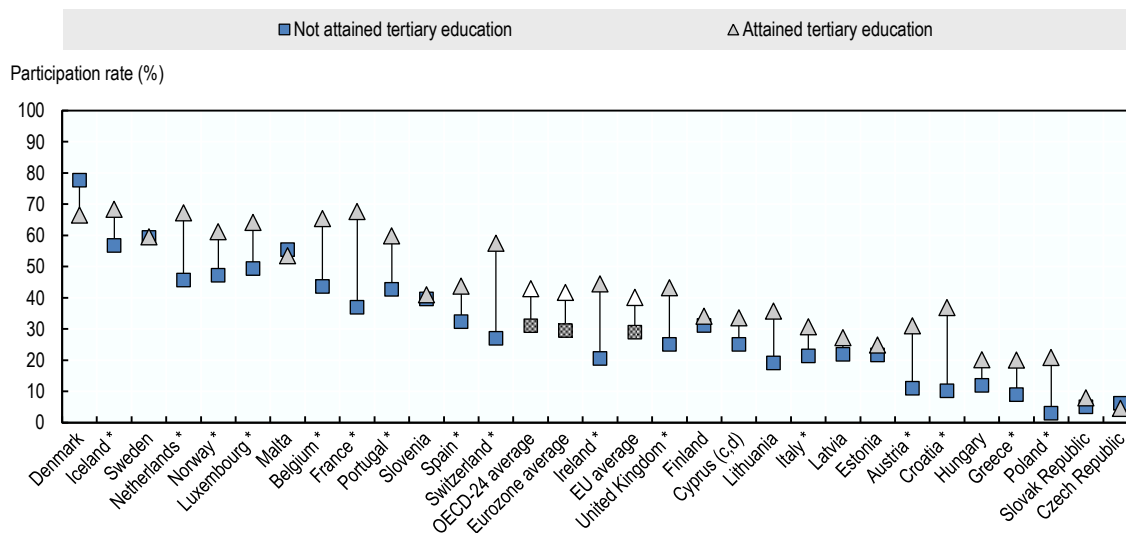
b) Equivalised disposable income tertiles are calculated using the disposable (post-tax-and-transfer) income of the household in which the child lives – equivalised using the square root scale, to account for the effect of family size on the household's standard of living – and are based on the equivalised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

c) See note k) to Chart PF3.2.A

d) See note l) to Chart PF3.2.A

Sources: [For all countries, EU SILC](#)

Chart PF3.2.C. Participation rates for 0-to-2-year-olds in formal childcare and pre-school services^a, by mother's education level^b, 2014



Note: In countries marked with an *, differences in participation rates across groups are statistically significant at $p < 0.05$

a) Data include children using centre-based services (e.g. nurseries or day care centres and pre-schools, both public and private), organised family day care, and care services provided by (paid) professional childminders, and exclude those using unpaid informal services provided by relatives, friends or neighbours.

b) Mother's education level based on whether or not the reported mother of the child has attained tertiary education (highest level of education attained at ISCED 2011 levels 5-8). The education level of the female household head is used if there is no mother in the household, and then of the father (or male household head) if there is no mother or female head in the household.

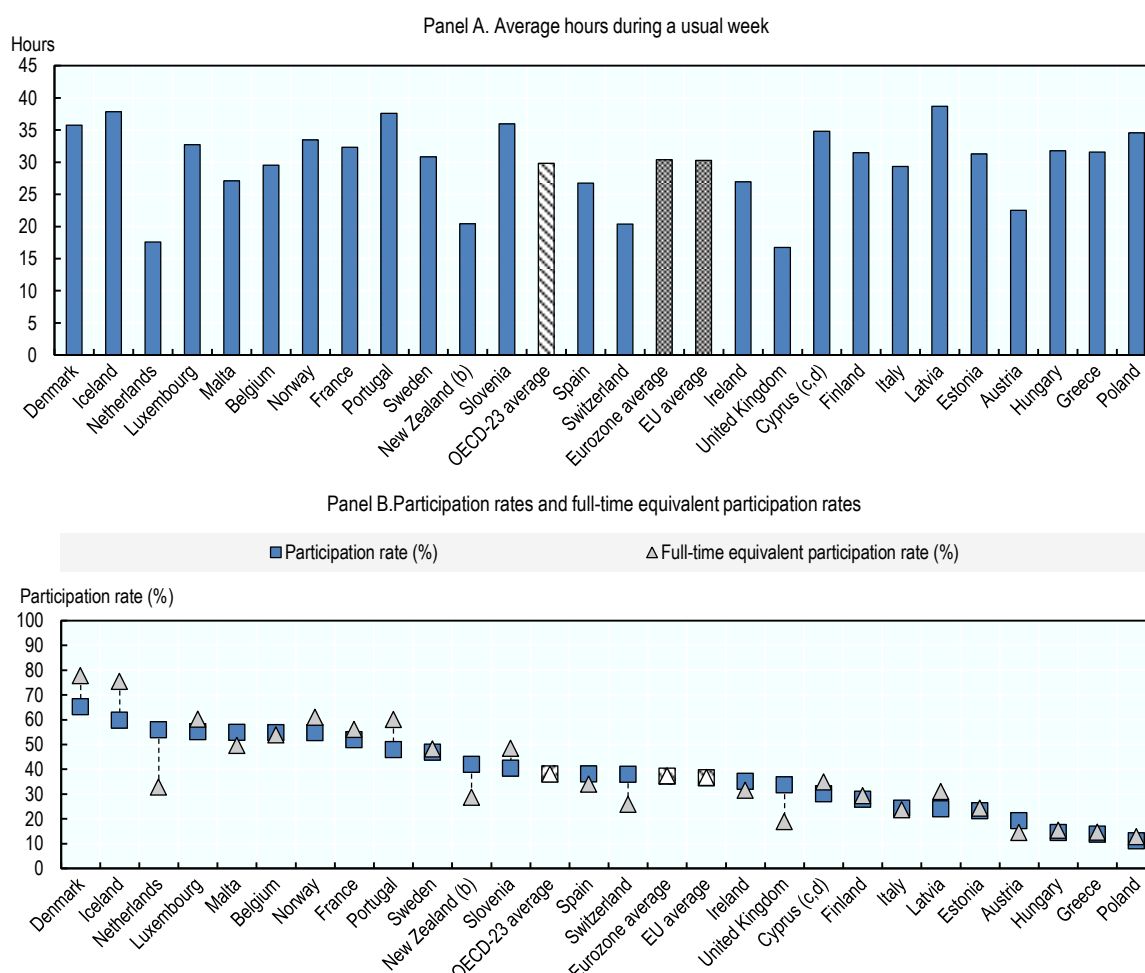
c) See note k) to Chart PF3.2.A

d) See note l) to Chart PF3.2.A

Sources: [For all countries, EU SILC](#)

The average number of hours per week for which children aged 0-to-2 are in formal childcare or pre-school services also differs across countries (Chart PF3.2.D, Panel A). In most OECD countries, those children (aged 0-to-2) that use formal childcare use it for an average of somewhere between 25 and 35 hours during a usual week, with the OECD average just under 30 hours per week. However, in some countries (e.g. Iceland, Latvia and Portugal) average hours approach 40 hours during a usual week. In others, such as the Netherlands and the United Kingdom, 0-to-2-year-olds spend on average only around 17-18 hours in formal care during a usual week. Where very low or very high, variations in average weekly hours can have a considerable effect on the overall intensity of childcare usage, as measured by the full-time equivalent participation rate (Chart PF3.2.D, Panel B). The long average weekly hours in Portugal, for instance, produce a full-time equivalent participation rate of over 60% despite a relatively moderate headcount participation rate of 48%. By contrast, in the Netherlands the relatively short average weekly hours mean that, while the headcount participation rate is relatively high at 55.9%, the full-time equivalent participation rate is below the OECD average at only 32.8%.

Chart PF3.2.D. Average hours in formal care during a usual week and full-time equivalent participation rates for 0-to-2-year-olds in formal childcare and pre-school services^a, 2014



a) Data generally include children using centre-based services (e.g. nurseries or day care centres and pre-schools, both public and private), organised family day care, and care services provided by (paid) professional childminders, and exclude those using unpaid informal services provided by relatives, friends or neighbours. Exact definitions do however differ across countries.

b) For New Zealand, data cover children using licensed centre-based (e.g. 'Education and Care' services, Playcentres, Kōhanga Reo, Kindergartens) and home-based services, only. All non-licensed care is excluded regardless of whether it is paid or unpaid. Data on average hours of attendance refer to a mix of the actual hours attended by enrolled children scheduled to attend during a specific reference week and the actual hours of attendance by children who actually attended during a specific reference week.

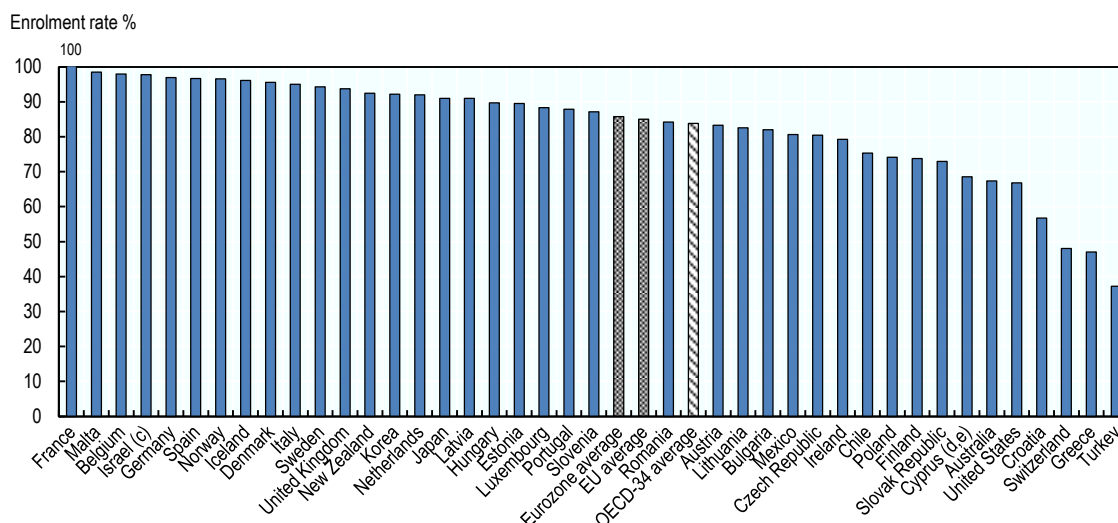
c) See note k) to Chart PF3.2.A

d) see note l) to Chart PF3.2.A

Sources: [For Denmark, Finland, Iceland, Norway and Sweden, NOSOSCO Social Protection in the Nordic Countries \(participation rates only\); For European countries, EU SILC \(unless otherwise stated\); For New Zealand, OECD questionnaire.](#)

Participation rates for children aged 3-to-5 are generally higher than those for 0-to-2-year-olds (Chart PF3.2.E). In the majority of OECD countries over 80% of children aged 3-to-5 are enrolled in pre-primary education or primary school, with the OECD average enrolment rate 83.8%. Again though there is some variation across countries. In Belgium, France and Israel pre-primary education is effectively universal among children aged 3-to-5 with enrolment rates around or above 98%. In contrast, in Greece, Switzerland and Turkey less than half of all 3-to-5-year-olds are enrolled in pre-primary education or primary school services.

Chart PF3.2.E. Enrolment rates for 3-to-5-year-olds in pre-primary education or primary school^a, 2014 or latest available^b



a) Data include children enrolled in pre-primary education (ISCED 2011 level 02) and primary education (ISCED 2011 level 1), only. Potential mismatches between the enrolment data and the coverage of the population data (in terms of geographic coverage and/or the reference dates used) may affect enrolment rates. This can lead to overestimated or underestimated figures (for instance, enrolment rates exceeding 100%) in countries that are net exporters (e.g. Luxembourg) or net importers of students, or where there is a significant increase or decrease over time in any of the variables involved. See the notes to Indicator C2 in OECD Education at a Glance 2016 Annex 3 for more details: <http://www.oecd.org/education/skills-beyond-school/EAG2016-Annex3.pdf>

b) Data for Estonia and Iceland refer to 2013

c) The statistical data for Israel are supplied by and 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.

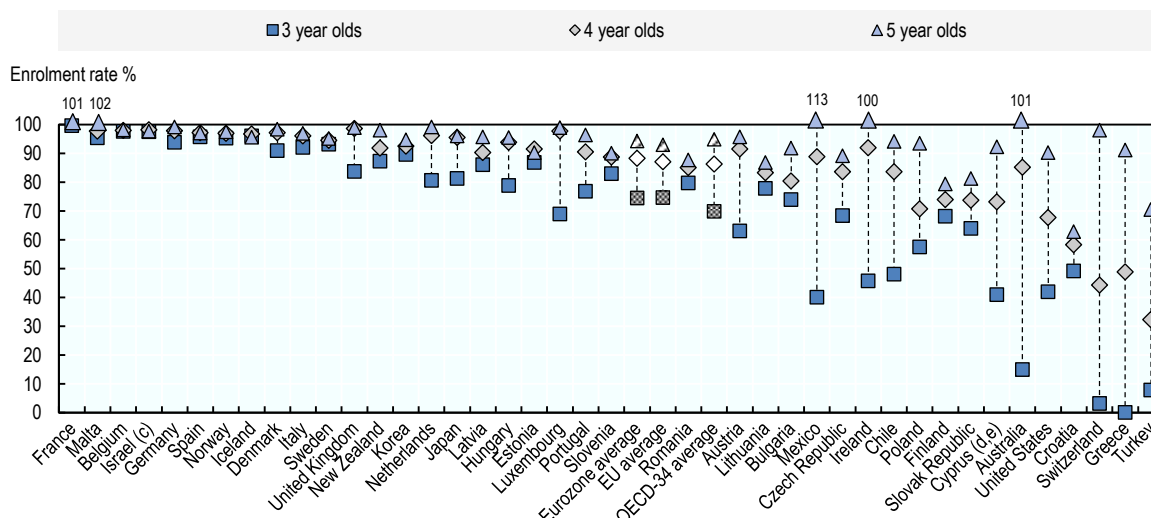
d) See note k) to Chart PF3.2.A

e) See note l) to Chart PF3.2.A

Sources: [for Bulgaria, Croatia, Cyprus, Lithuania, Malta and Romania, Eurostat Education Statistics; for all other countries, OECD Education Database](#)

Participation in pre-primary education or primary school does though often differ across individual years of age (Chart PF3.2.F). In almost all OECD countries enrolment rates for five-year-olds are very high – in all but four OECD countries (the Czech Republic, Finland, the Slovak Republic and Turkey), at least 90% of five-year-olds are enrolled in pre-primary education or primary school. However, enrolment rates are more variable for four-year-olds and particularly for three-year-olds. In some OECD countries participation rates remain high across all three individual years of age – in ten OECD countries (Belgium, Denmark, France, Germany, Iceland, Israel, Italy, Norway, Spain, and Sweden) enrolment rates for three-, four- and five-year-olds are all above 90%. In others, however, participation rates for three-year-olds in particular are far lower than those for their older counterparts. In the United States, for example, less than 42% of three-year-olds are enrolled in pre-primary education, compared to over 90% of five-year-olds. In Ireland, participation rates for three-year-olds are only around 46% despite near universal participation among four- and five-year-olds.

Chart PF3.2.F. **Enrolment rates for 3-, 4- and 5-year-olds in pre-primary education or primary school^a, 2014 or latest available^b**



Note: See the associated [.xls](#) on the OECD Family Database webpage for the exact values

a) Data include children enrolled in pre-primary education (ISCED 2011 level 02) and primary education (ISCED 2011 level 1), only. Potential mismatches between the enrolment data and the coverage of the population data (in terms of geographic coverage and/or the reference dates used) may affect enrolment rates. This can lead to overestimated or underestimated figures (for instance, enrolment rates exceeding 100%) in countries that are net exporters (e.g. Luxembourg) or net importers of students, or where there is a significant increase or decrease over time in any of the variables involved. See the notes to Indicator C2 in OECD Education at a Glance 2016 Annex 3 for more details: <http://www.oecd.org/education/skills-beyond-school/EAG2016-Annex3.pdf>

b) Data for Estonia and Iceland refer to 2013

c) The statistical data for Israel are supplied by and 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.

d) See note k) to Chart PF3.2.A

e) See note l) to Chart PF3.2.A

f) Unweighted average for the 32 OECD countries with data available by individual years of age

Sources: for [Bulgaria, Croatia, Cyprus, Lithuania, Malta and Romania](#), Eurostat Education Statistics; for all other countries, OECD Education Database

Comparability and data issues

Data on the participation of children aged 0-to-2 in formal childcare and pre-school services are taken from a variety of sources. For example, data for Australia, Korea, and the United States come from their respective national statistical authorities, and data for Denmark, Finland, Iceland, Norway and Sweden come from the Nordic Social Statistical Committee (NOSOSCO). Data for all EU countries (plus Switzerland) other than Germany and the Nordic countries come from the European Union Statistics on Income and Living Conditions (EU SILC) survey, while data for the remaining countries (Chile, Germany, Japan and New Zealand) come from national correspondents.

The use of different sources and types of source for different countries may affect cross-national comparisons. First, the definitions used when collecting data vary slightly across countries. For example, for the United States data include all children cared for by a non-relative regardless of whether or not they are a 'professional' childminder and whether or not the care is paid or unpaid. This means that, unlike most other countries, data for the United States may include any children that are cared for informally by friends and neighbours. Second, while some sources (for example, those for the Nordic countries) use administrative data and therefore count the actual numbers of children that use childcare facilities, others (such as the data for Australia and the United States, and all countries based on EU SILC) are based on surveys and may as a result be affected by sample size and sample selection issues. Because of these concerns, the data on participation rates among 0-to-2 year olds should be used with caution.

Data on the use of pre-primary and primary education among 3-to-5 year olds come in all cases from the joint UNESCO-OECD-EUROSTAT (UOE) data collection programme, and are based on

administrative data and head counts of the actual number of students participating in educational programmes. There should be few major issues with the cross-national comparability of data in this area. The UOE data collection manual gives detailed instructions to national correspondents on the mapping of educational programmes, although on occasion differences in classifications may still exist. However, it should be noted that potential mismatches between the data on enrolments and the underlying population data can lead to overestimated or underestimated figures (for instance, enrolment rates exceeding 100%). This is particularly likely to be the case in countries that are net exporters (e.g. Luxembourg) or net importers of students, and where there is a significant increase or decrease in either enrolment or the relevant population over time. For more details and notes for specific countries, see the notes for Indicator C.2 provided in OECD (2016) *Education at a Glance 2016 Annex 3* (<http://www.oecd.org/education/skills-beyond-school/EAG2016-Annex3.pdf>).

Sources and further reading: OECD (2011) *Doing Better for Families*; OECD (2009) *Doing Better for Children*; *OECD Babies and Bosses* (various issues); NOSOSCO, *Social Protection in Nordic countries* (various issues); *OECD, Education at a Glance 2016*; *OECD Starting Strong* (4 issues and various country notes).