Do Adults Have the Skills They Need to Thrive in a Changing World?

SURVEY OF ADULT SKILLS 2023

Content confidential and under embargo until 11am (CET) on 10 December 2024

OECD

Overview

What is the Survey of Adult Skills?

2023 Survey of Adult Skills (Cycle 2)
In brief

160 thousand adults…

representing 673 million 16-65 year-olds in 31 countries and economies

Assessment of literacy, numeracy and adaptive problem solving.

The survey collects a range of other information such as on social and emotional skills, skill use at home and work and adult learning.

The assessment was administered via tablets.

2023 Survey of Adult Skills
Overview

- The **Survey of Adult Skills**, a product of the *OECD Programme for the International Assessment of Adult Skills (PIAAC)*, was designed to measure adults' proficiency in three key information-processing skills
- **Household survey** administered to non-institutionalised adults aged 16-65
  - 1st cycle administered in 39 countries over three rounds between 2011-18
  - 2nd cycle administered in 31 countries in 2022-23
- Computer-assisted data collection in 2023 using **tablets**
  - Background questionnaire in CAPI mode: a trained interviewer asks questions to participants
  - Computer-based cognitive assessment: respondents complete the cognitive assessment
  - It is not possible to complete the assessment on paper
- **Rigorous sampling design** to ensure data are representative

Survey of Adult Skills
Broad objectives

Essential skills regarded as being important for social functioning in the societies of the 21st century

Provide a profile of the skills deemed essential for adults to effectively function in modern societies

Individual and contextual factors that contribute to the development-maintenance-loss of skills

Examine relationship between skills and economic and social outcomes

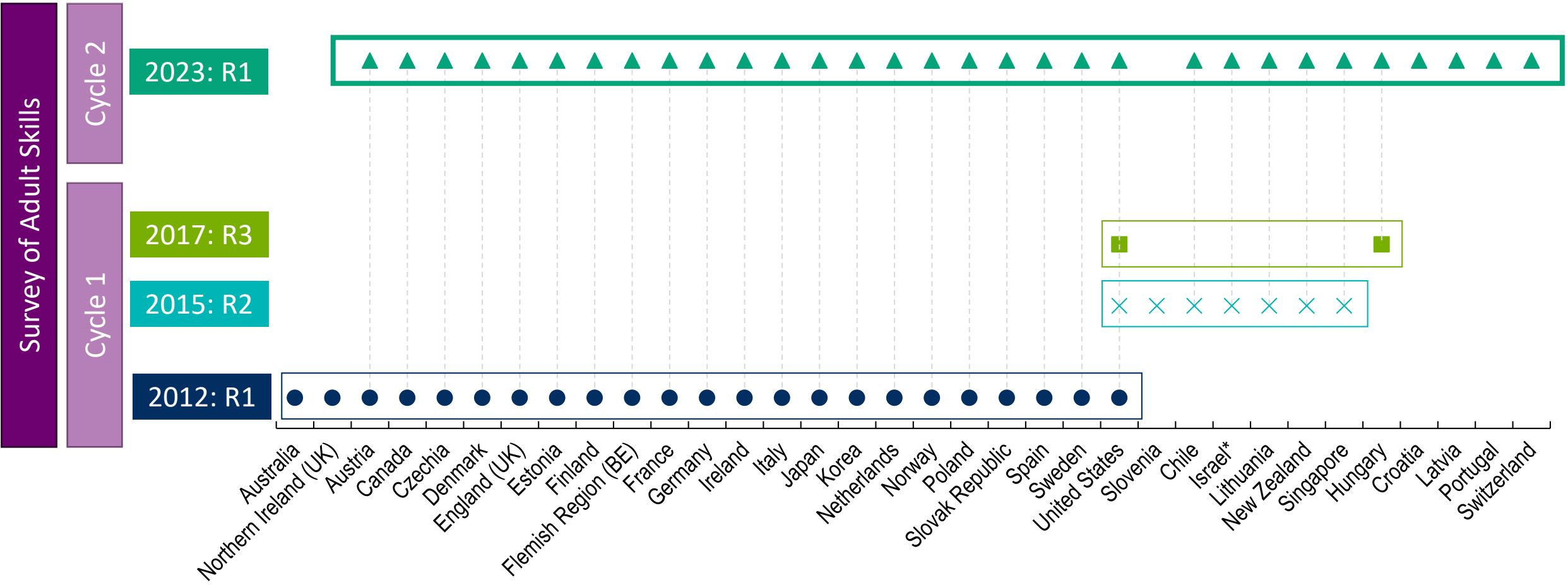
Understand how skills are developed and maintained over the life-cycle

Economic, educational and social outcomes to which these skills contribute

Provide evidence of how skills are used in the workplace

Help policymakers to design more effective skills policies

Survey of Adult Skills
Participation across cycles



***Note regarding Israel:**
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

2023 Survey of Adult Skills
Assessment domains

Literacy

The ability to...

Access, understand, evaluate and reflect on written texts.

In order to: Achieve one's goals, develop one's knowledge and potential and participate in society.

Literacy encompasses a range of skills: Accessing text, understanding and evaluating.

Numeracy

The ability to…

Access, use, reason critically with mathematical content, information and ideas represented in multiple ways.

In order to: Engage in and manage the mathematical demands of a range of situations in adult life.

Adaptive Problem Solving

The ability to…

Achieve one's goals in a dynamic situation, in which a method for solution is not immediately available.

It requires respondents to: engage in cognitive and metacognitive processes to define the problem, search for information, and apply a solution in a variety of information environments and contexts.

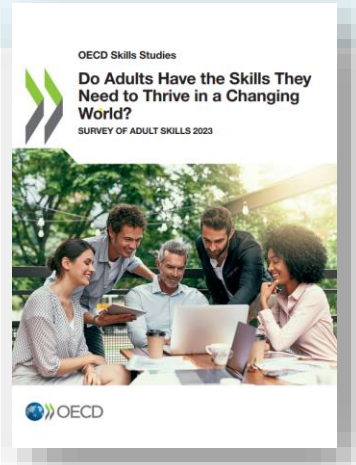
2023 Survey of Adult Skills
Products

… methodology in detail

Technical Report

… understanding and interpreting results

Readers' Companion



Initial results

International Report

Country Notes

… country-specific highlights

Survey of Adult Skills Insights

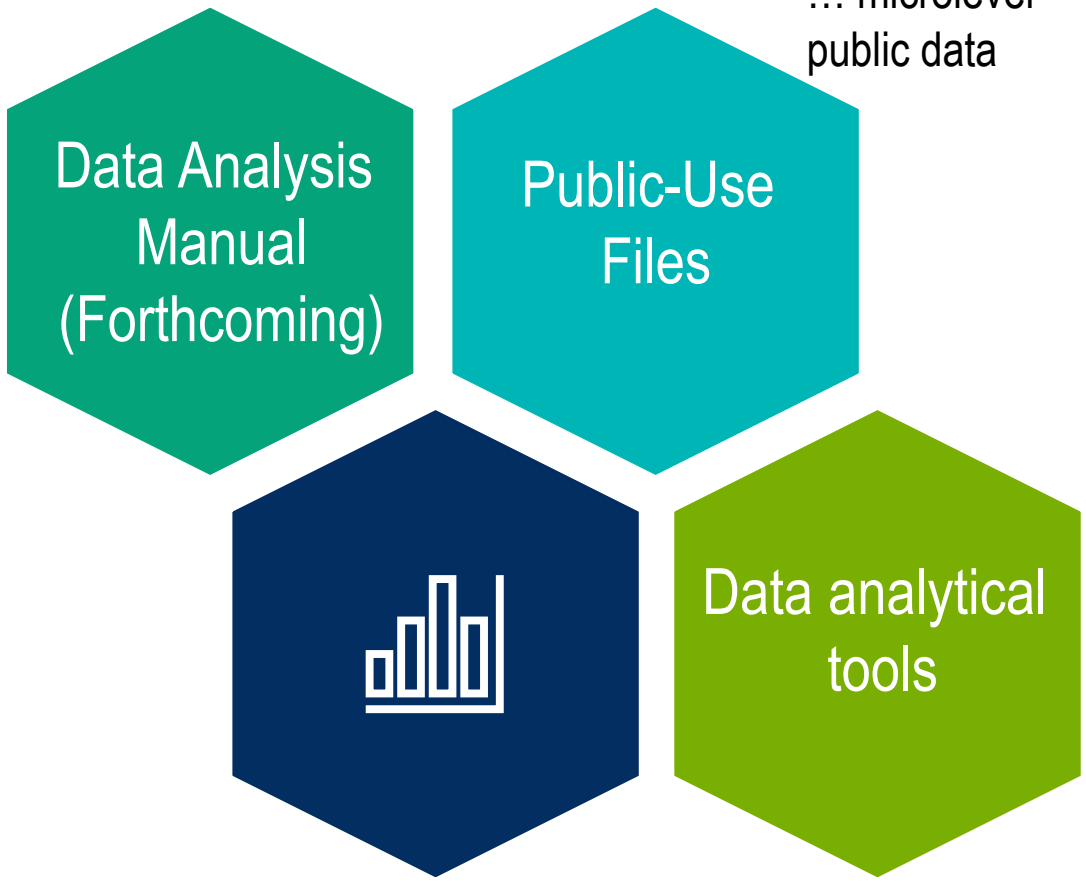
… insights and interpretations for policy makers

Employer Module

… understanding skill gaps in firms

2023 Survey of Adult Skills
Data and analytical support

… a guide to researchers in analysing the data



… microlevel public data

… tools to facilitate the analysis of the data

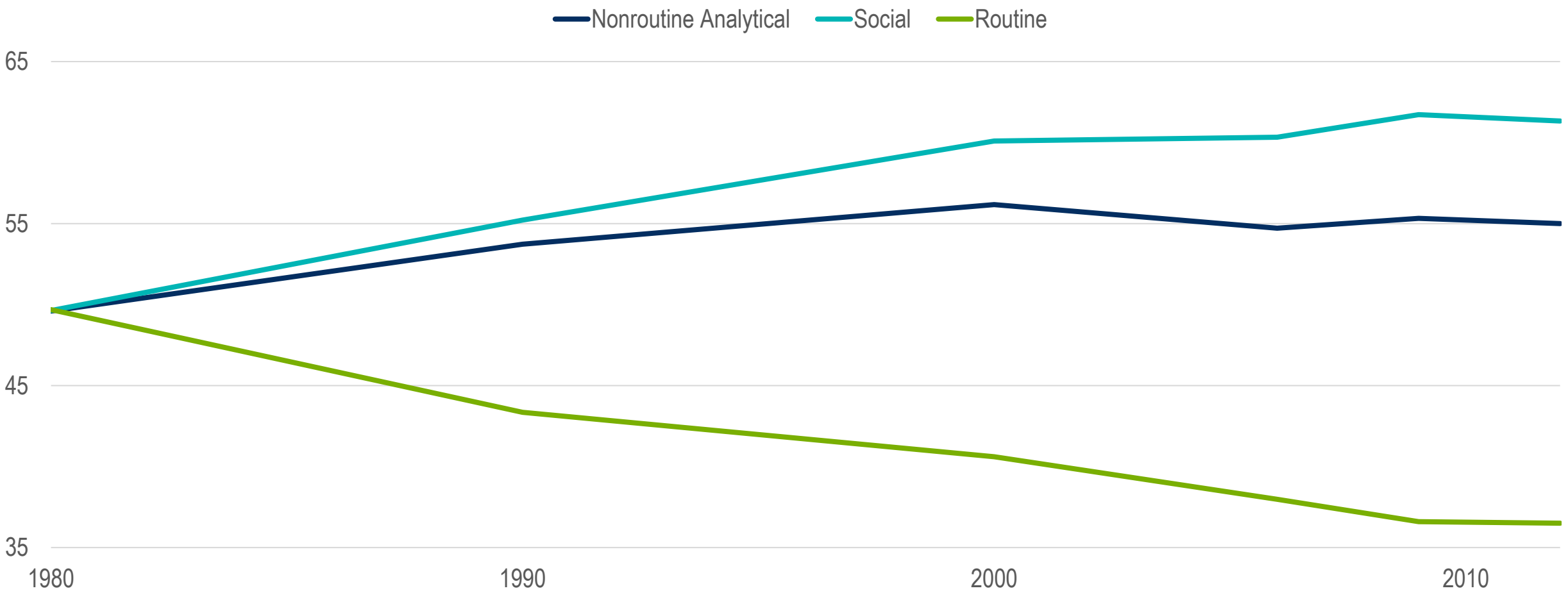
Chapter 1

The relevance of information-processing skills in rapidly changing societies

Demand for routine tasks has continued to decline

Figure 1.1

Evolution of tasks performed by workers in the United States, 1980-2012



Adapted from Figure III "Worker Tasks in the U.S. Economy, 1980-2012" (Update of Figure I by Autor, Levy and Murnane (2003), "The Skill Content of Recent Technological Change: An Empirical Exploration") in Deming (2017) "The Growing Importance of Social Skills in the Labor Market"

AI adoption changes the mix of skills demanded by firms

Figure 1.2

How skill demand evolved in establishments most likely to have adopted AI relative to other establishments

Skill group	Percentage point change
Administration and management; Management of financial, material, or personnel resources	-3.51
Clerical tasks; Customer and personnel service; Sales and marketing	-3.49
Office tools and collaboration software; Computer programming; Other digital skills*	-3.21
Learning; Originality; Quantitative abilities; Reasoning and problem solving	-3.16
Adaptability/resilience; Motivation/commitment; Self-management/rigour; Values	-1.51
Coordination; Judgment and decision making; Persuasion and negotiation; Social perceptiveness	-0.80
Active listening; Communications and media; Reading comprehension; Speaking; Writing	-0.79
Foreign languages	-0.46
Fine arts; History and archaeology; Philosophy and theology	-0.11
Training and Education	0.04
Industry Specific Knowledge	0.06
Law and government; Public safety and security	0.20
Medicine and dentistry; Psychology, therapy, counselling	0.24
Biology; Chemistry; Geography; Physics; Sociology and anthropology	0.25
Auditory and speech abilities; Physical abilities; Psychomotor abilities; Visual abilities	0.26
Engineering, production and technology**	0.57

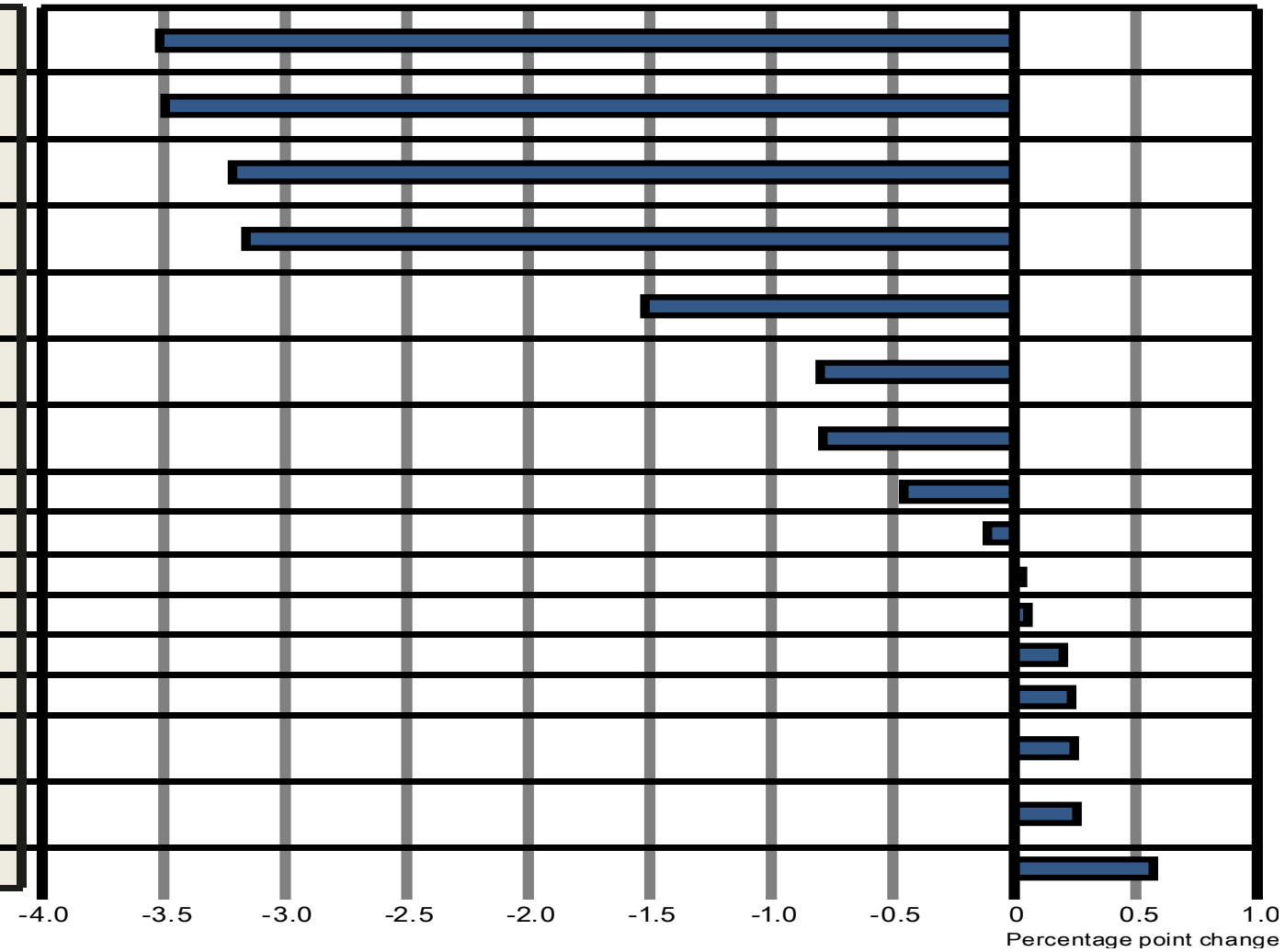
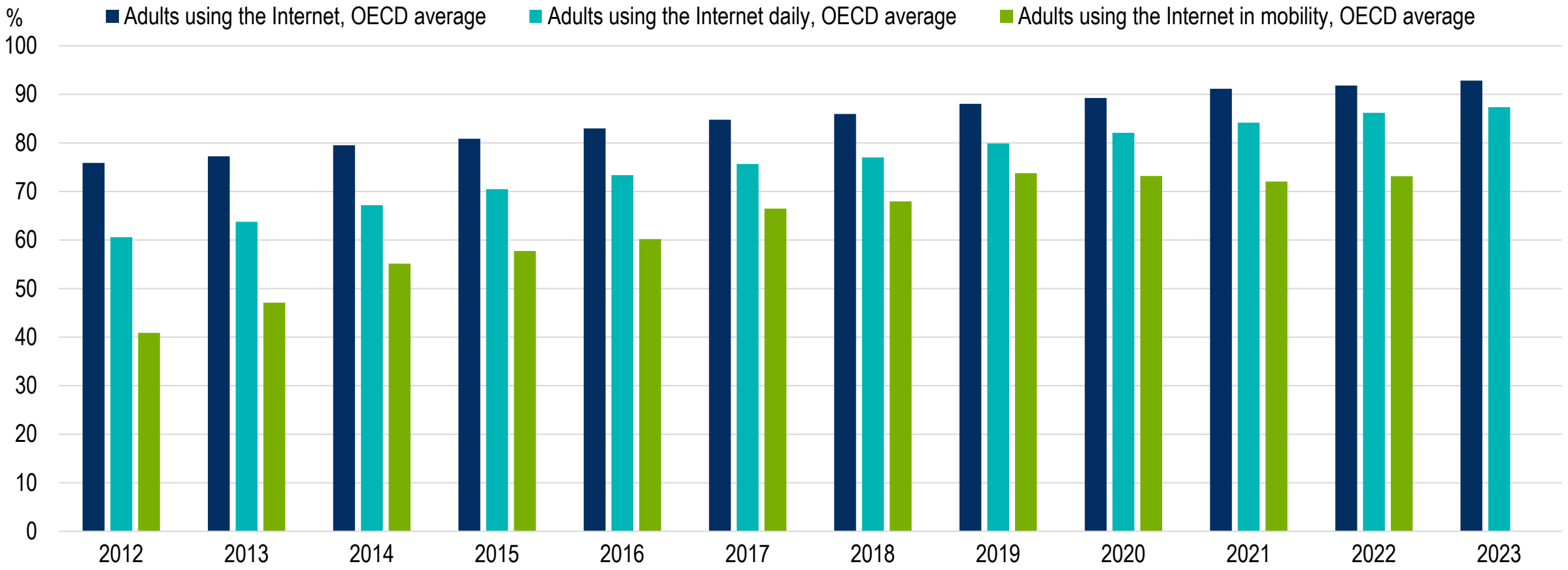


Figure 4.1 in Green (2024), "Artificial intelligence and the changing demand for skills in the labour market"

Diffusion of internet has changed how adults access information

Figure 1.3

Evolution of Internet usage, 2012-23

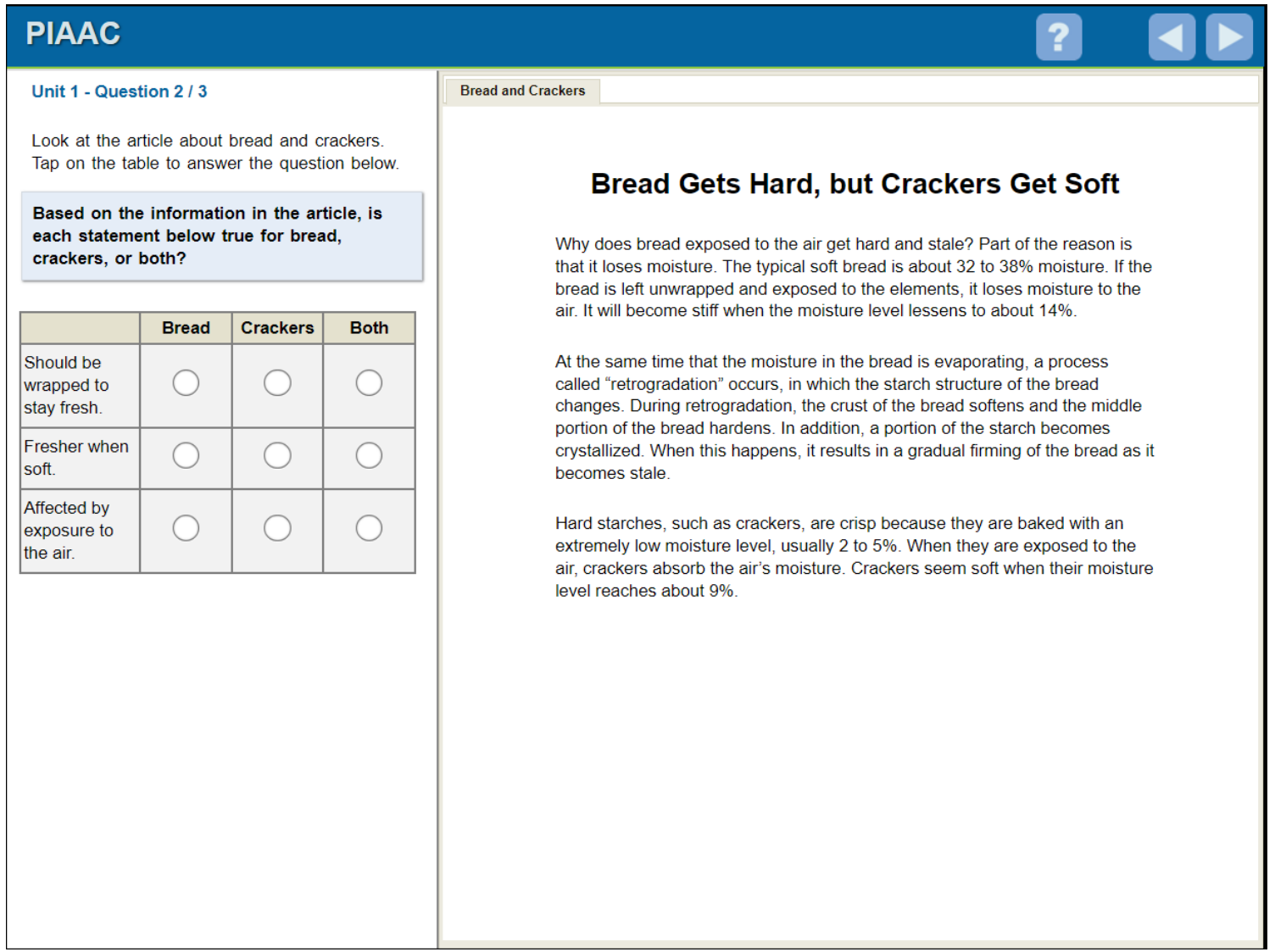


OECD (2024), ICT Access and Usage by Households and Individuals

Literacy item – moderate to high difficulty

Figure 1.4

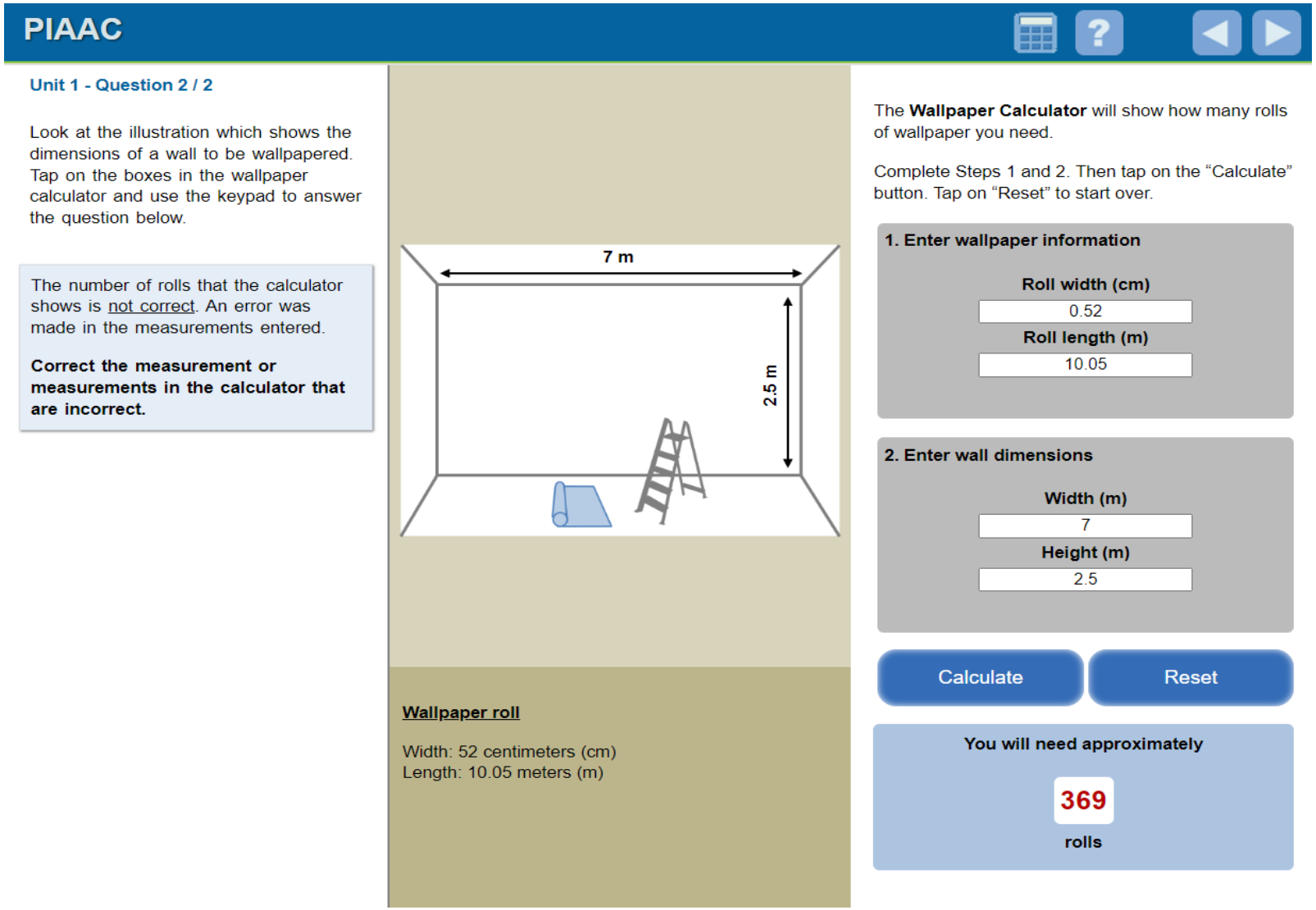
Example literacy item “Bread”



A relatively easy numeracy item (Level 2)

Figure 1.5

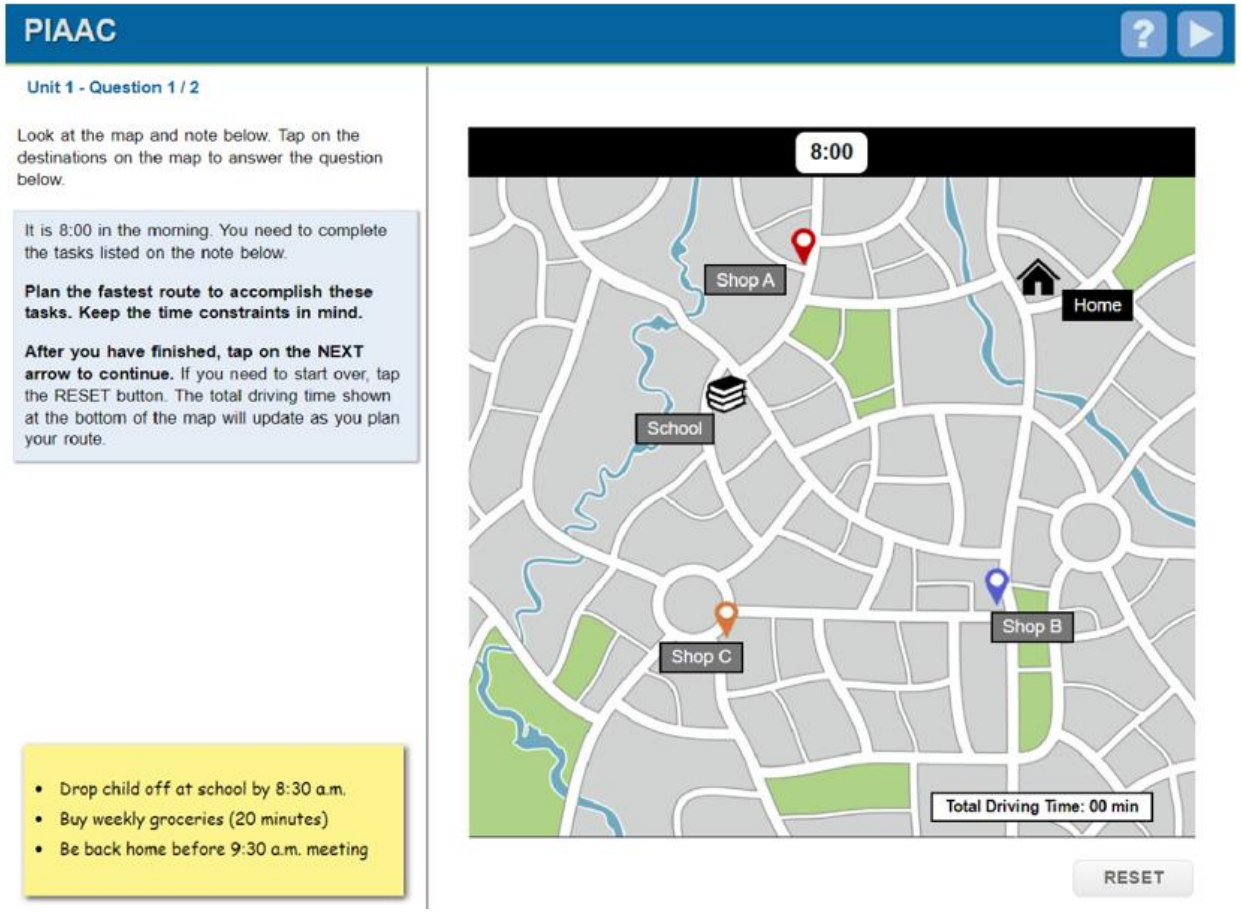
Example numeracy item “Wallpaper”

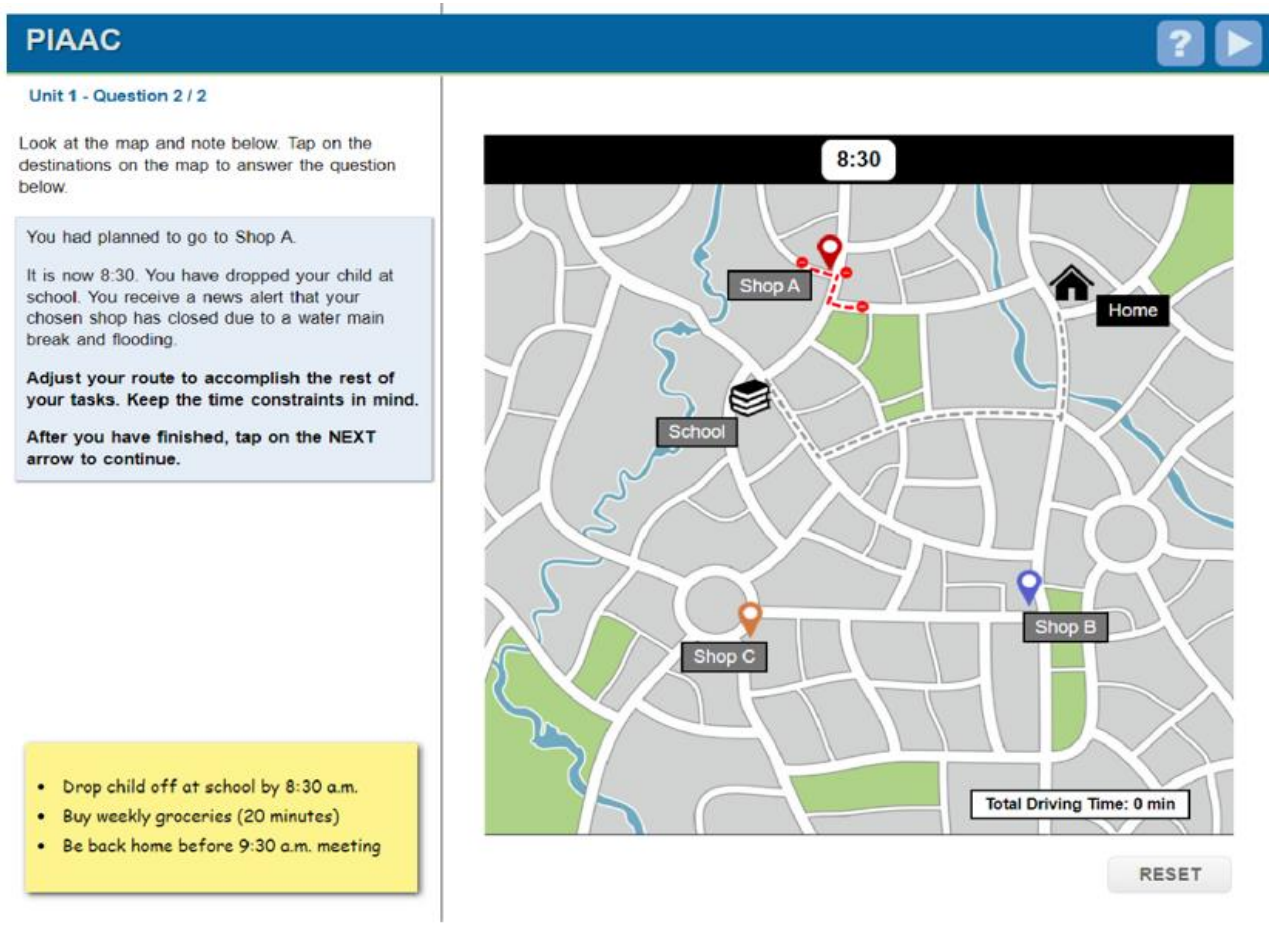


A low/moderate difficulty adaptive problem solving item

Figure 1.6

Example adaptive problem solving item “Best route”

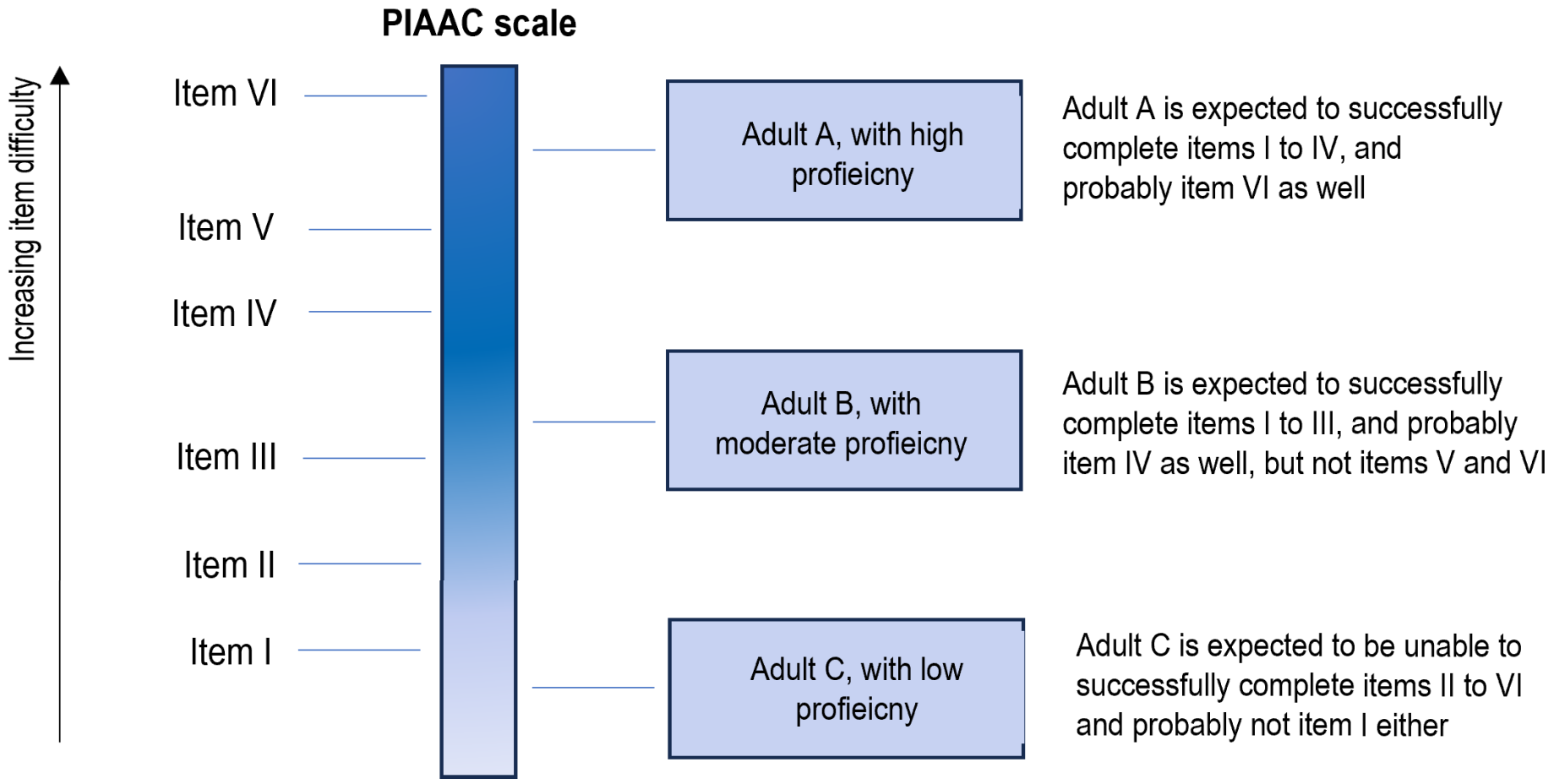




Proficiency scales

Figure 1.7

An illustration of the relationship between the difficulty of assessment items and proficiency of adults on the literacy, numeracy and adaptive problem solving scales



Chapter 2

Literacy, numeracy and adaptive problem solving among adults in 2023

Finland, Japan, the Netherlands, Norway and Sweden are the best-performing countries in all three domains

Table 2.1

Comparison of countries and economies based on average proficiency in literacy

Statistically significantly above the OECD average

Not statistically significantly different from the OECD average

Statistically significantly below the OECD average

Mean score	Comparison country/economy	Countries and economies whose mean score is not statistically significantly different from the comparison country's/economy's score
296	Finland	
289	Japan	
284	Sweden	
281	Norway	Netherlands
279	Netherlands	Norway
276	Estonia	Flemish Region (BE)
275	Flemish Region (BE)	Denmark, Estonia
273	Denmark	Flemish Region (BE), Canada, England (UK)
272	England (UK)	Canada, Denmark
271	Canada	Denmark, England (UK)
266	Switzerland	Germany
266	Germany	Switzerland
263	Ireland	Czechia, New Zealand
260	Czechia	Ireland, New Zealand, United States
260	OECD average	Czechia, New Zealand, United States
260	New Zealand	Czechia, Ireland, United States
258	United States	Czechia, Croatia, New Zealand
255	France	Austria, Croatia, Singapore, Slovak Republic
255	Singapore	Austria, France, Croatia, Slovak Republic
254	Austria	France, Croatia, Singapore, Slovak Republic
254	Croatia	Austria, France, Singapore, Slovak Republic, United States
254	Slovak Republic	Austria, France, Croatia, Singapore
249	Korea	Spain, Hungary, Latvia
248	Hungary	Spain, Italy, Korea, Latvia
248	Latvia	Spain, Hungary, Italy, Korea
247	Spain	Hungary, Italy, Korea, Latvia
245	Italy	Spain, Hungary, Israel, Latvia
244	Israel	Italy
238	Lithuania	Poland*, Portugal
236	Poland*	Lithuania, Portugal
235	Portugal	Lithuania, Poland*
218	Chile	

Finland, Japan, the Netherlands, Norway and Sweden are the best-performing countries in all three domains

Table 2.2

Comparison of countries and economies based on average proficiency in numeracy

Statistically significantly above the OECD average

Not statistically significantly different from the OECD average

Statistically significantly below the OECD average

Mean score	Comparison country/economy	Countries and economies whose mean score is not statistically significantly different from the comparison country's/economy's score
294	Finland	
291	Japan	
285	Sweden	Netherlands, Norway
285	Norway	Netherlands, Sweden
284	Netherlands	Norway, Sweden
281	Estonia	Flemish Region (BE), Denmark
279	Flemish Region (BE)	Denmark, Estonia
279	Denmark	Flemish Region (BE), Estonia
276	Switzerland	Singapore
274	Singapore	Switzerland, Germany
273	Germany	Canada, Singapore
271	Canada	Germany, England (UK)
268	England (UK)	Austria, Canada, Czechia
267	Czechia	Austria, England (UK)
267	Austria	Czechia, England (UK)
263	OECD average	Latvia, Slovak Republic
263	Latvia	Slovak Republic
261	Slovak Republic	Ireland, Latvia
260	Ireland	New Zealand, Slovak Republic
257	France	Croatia, Hungary, New Zealand
256	New Zealand	France, Croatia, Hungary, Ireland, Korea
254	Hungary	France, Croatia, Korea, New Zealand
254	Croatia	France, Hungary, Korea, New Zealand
253	Korea	Croatia, Hungary, New Zealand
250	Spain	United States
249	United States	Spain, Israel, Italy, Lithuania
246	Israel	Italy, Lithuania, United States
246	Lithuania	Israel, Italy, United States
244	Italy	Israel, Lithuania, United States
239	Poland*	Portugal
238	Portugal	Poland*
214	Chile	

Finland, Japan, the Netherlands, Norway and Sweden are the best-performing countries in all three domains

Table 2.2

Comparison of countries and economies based on average proficiency in adaptive problem solving

Statistically significantly above the OECD average

Not statistically significantly different from the OECD average

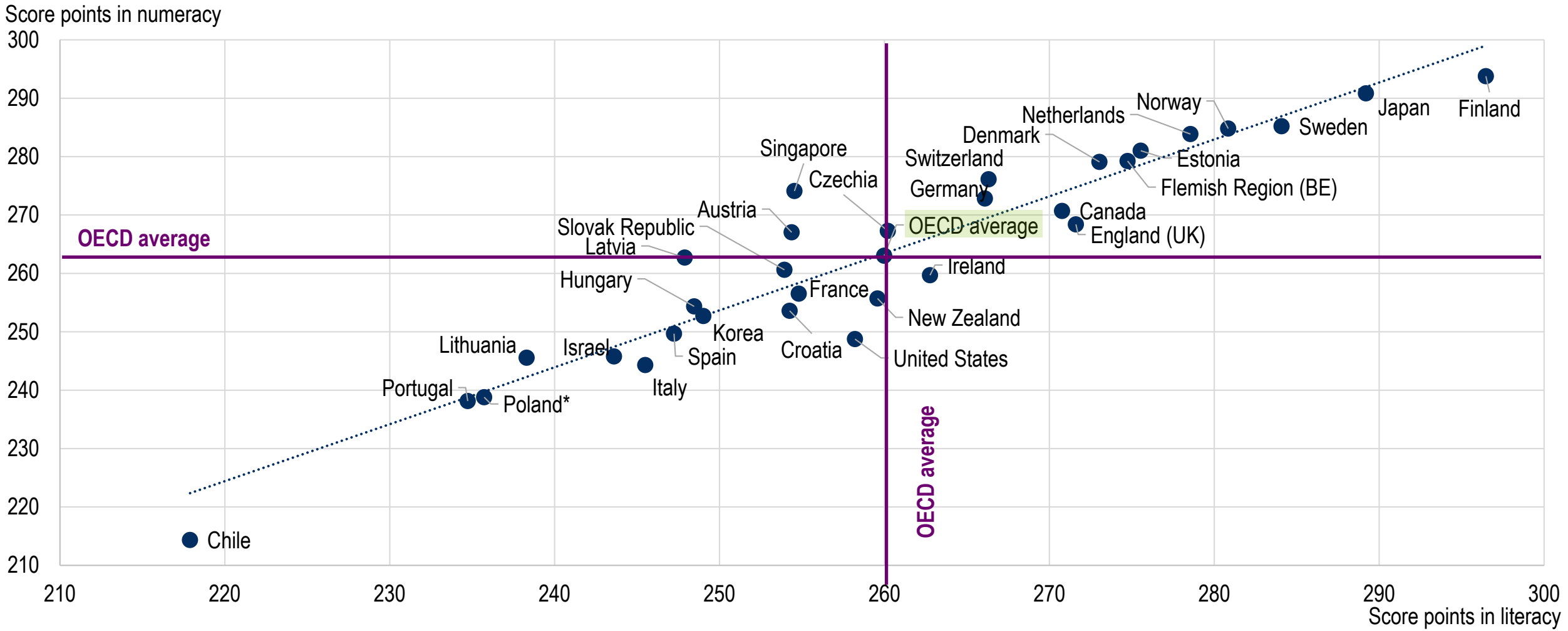
Statistically significantly below the OECD average

Mean score	Comparison country/economy	Countries and economies whose mean score is not statistically significantly different from the comparison country's/economy's score
276	Finland	Japan
276	Japan	Finland
273	Sweden	Norway
271	Norway	Sweden
265	Netherlands	Denmark, Estonia
264	Denmark	Estonia, Netherlands
263	Estonia	Flemish Region (BE), Denmark, Netherlands
262	Flemish Region (BE)	Germany, Estonia
261	Germany	Flemish Region (BE), Canada, England (UK)
259	Canada	Germany, England (UK)
259	England (UK)	Canada, Switzerland, Germany
257	Switzerland	England (UK)
253	Austria	New Zealand, Singapore
252	Singapore	Austria, Czechia, New Zealand
251	OECD average	Czechia, New Zealand, Singapore
250	Czechia	Ireland, New Zealand, Singapore, United States
249	New Zealand	Austria, Czechia, France, Ireland, Singapore, Slovak Republic, United States
249	Ireland	Czechia, France, New Zealand, Slovak Republic, United States
248	France	Ireland, New Zealand, Slovak Republic, United States
247	United States	Czechia, France, Ireland, New Zealand, Slovak Republic
247	Slovak Republic	France, Ireland, Latvia, New Zealand, United States
244	Latvia	Slovak Republic
241	Spain	Hungary
241	Hungary	Spain
238	Korea	Croatia, Israel
236	Israel	Croatia, Korea, Portugal
235	Croatia	Israel, Korea, Portugal
233	Portugal	Croatia, Israel, Italy, Lithuania
231	Italy	Lithuania, Portugal
230	Lithuania	Italy, Portugal
226	Poland*	
218	Chile	

The association between performance in numeracy and literacy is positive

Figure 2.1

Comparison of countries' and economies' average proficiency in literacy and numeracy



On average, across participating OECD countries, nearly one-fifth of adults are considered low performers, scoring at or below Level 1 in all three domains

Figure 2.2

Literacy proficiency among adults

Share of 16-65 year-olds scoring at each proficiency level in literacy

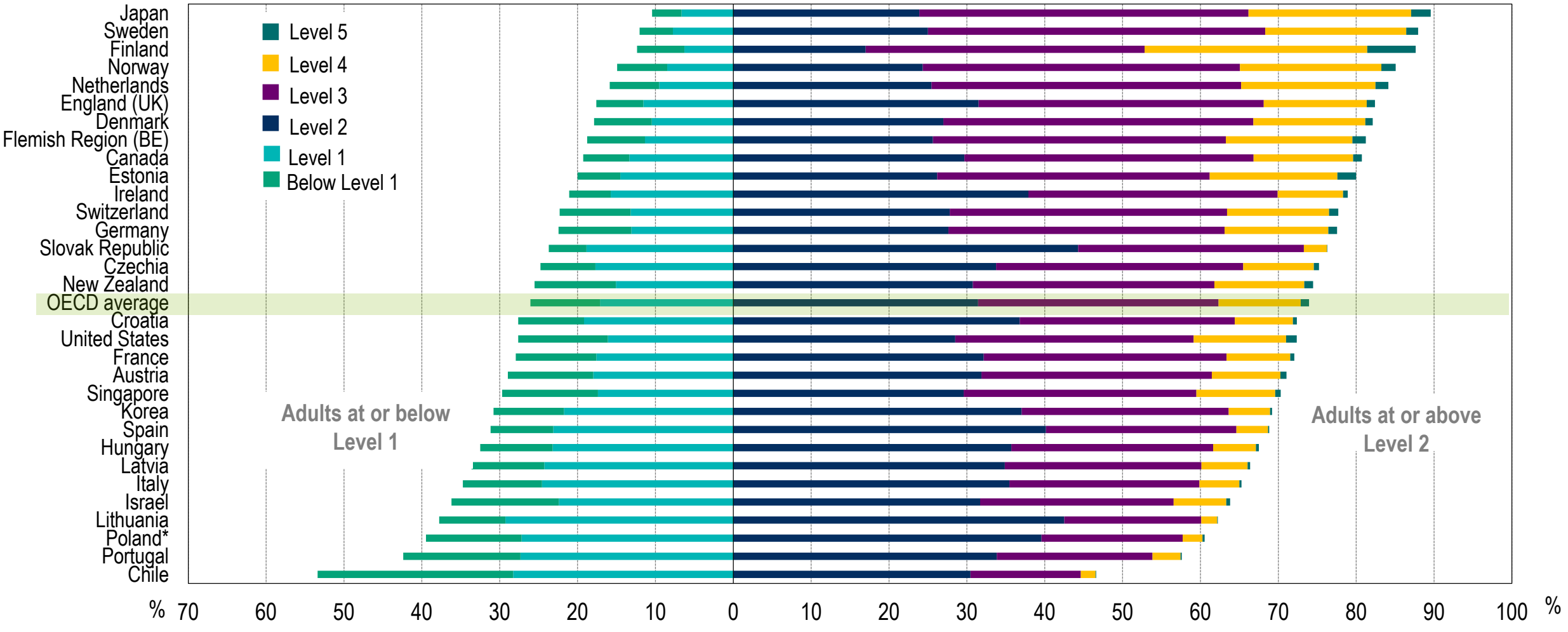


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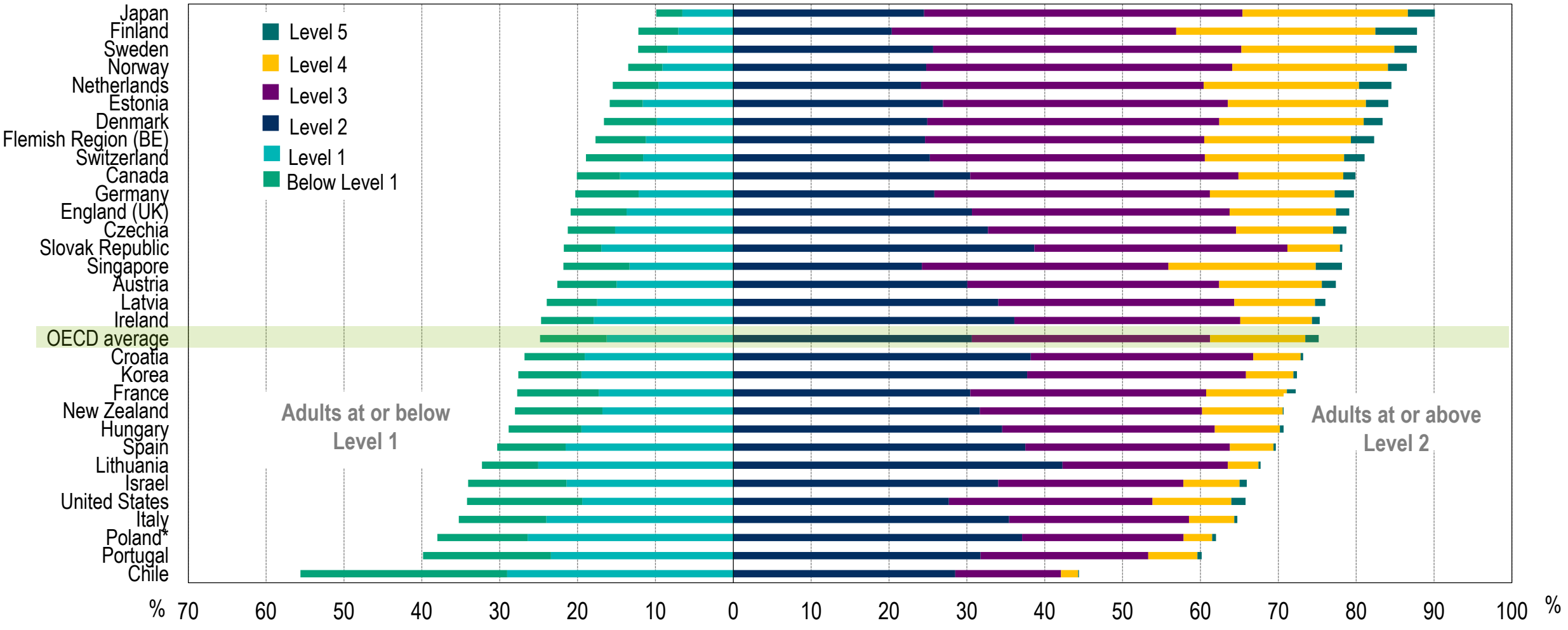
Figure 2.3

Numeracy proficiency among adults

Share of 16-65 year-olds scoring at each proficiency level in numeracy

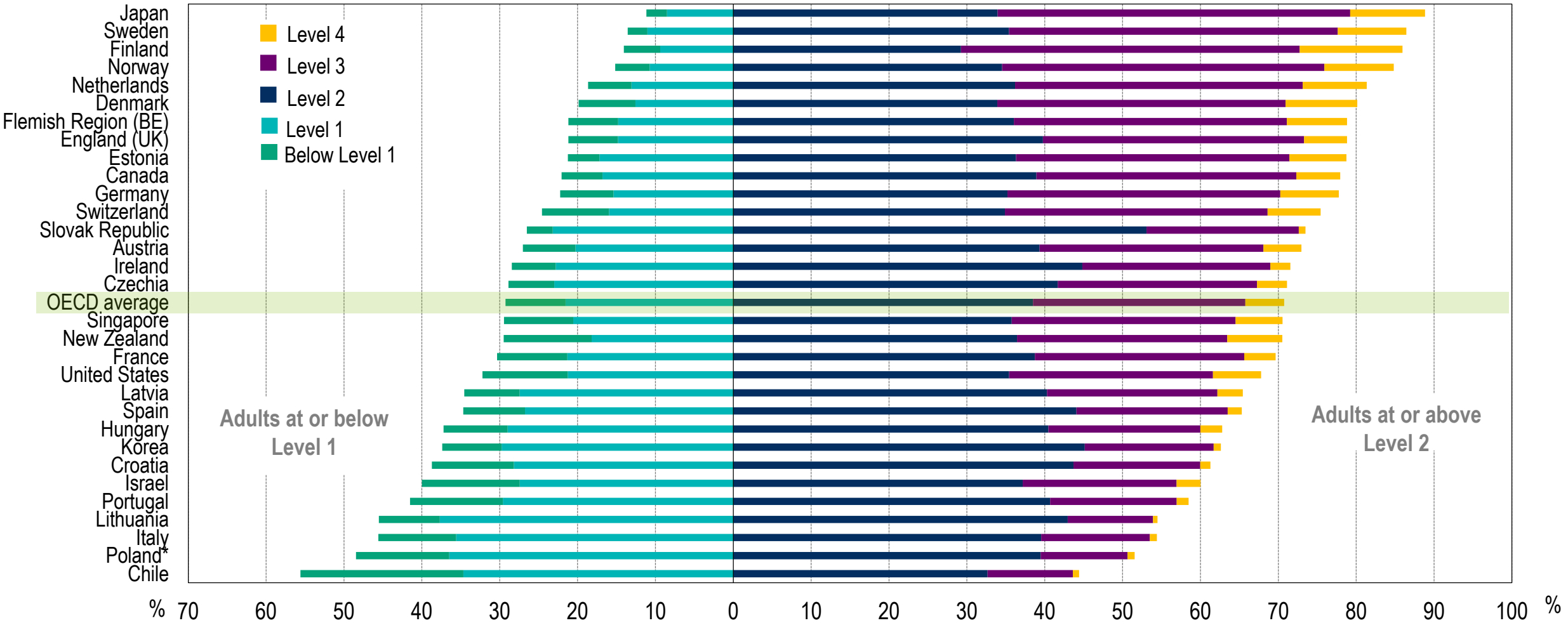


On average, across participating OECD countries, nearly one-fifth of adults are considered low performers, scoring at or below Level 1 in all three domains

Figure 2.4

Proficiency in adaptive problem solving among adults

Share of 16-65 year-olds scoring at each proficiency level in adaptive problem solving

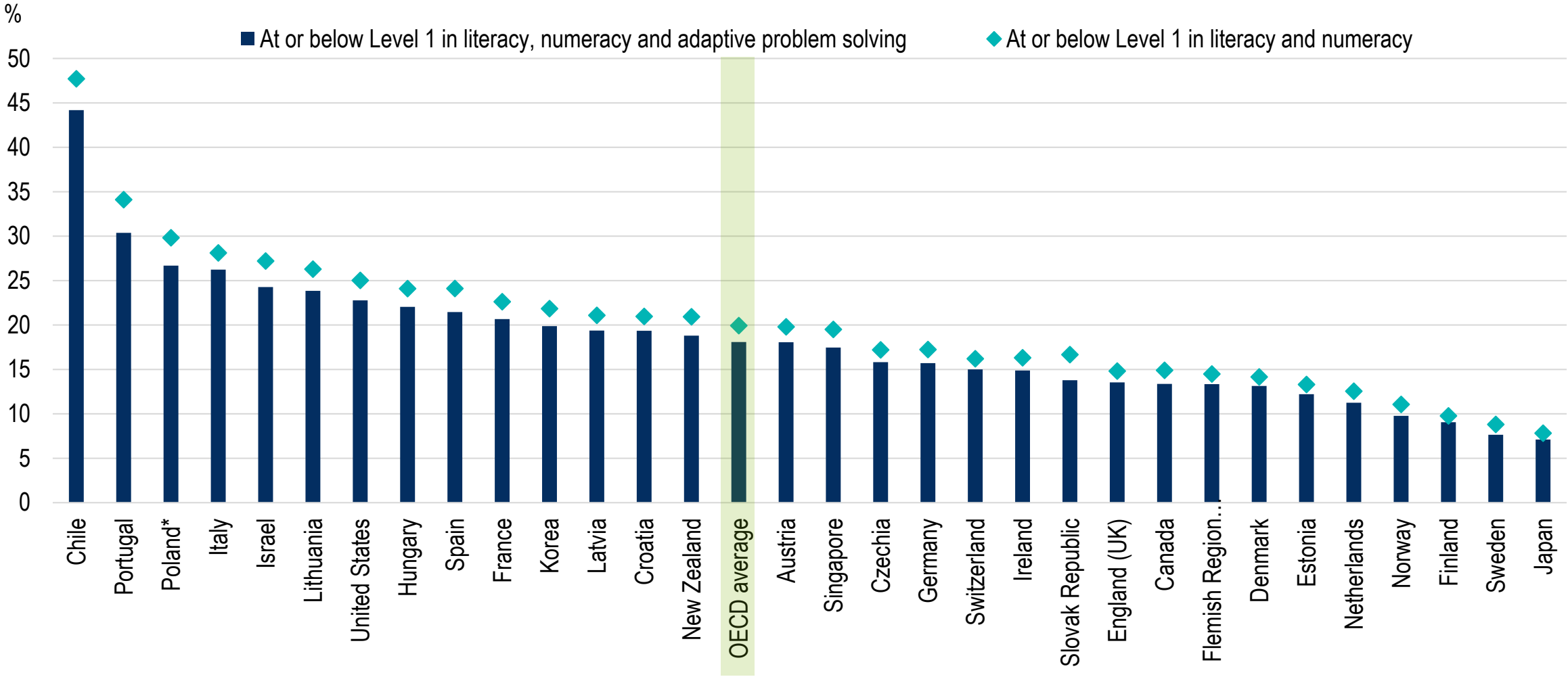


Adults with low proficiency in one domain are also likely to have low proficiency in other domains

Figure 2.5

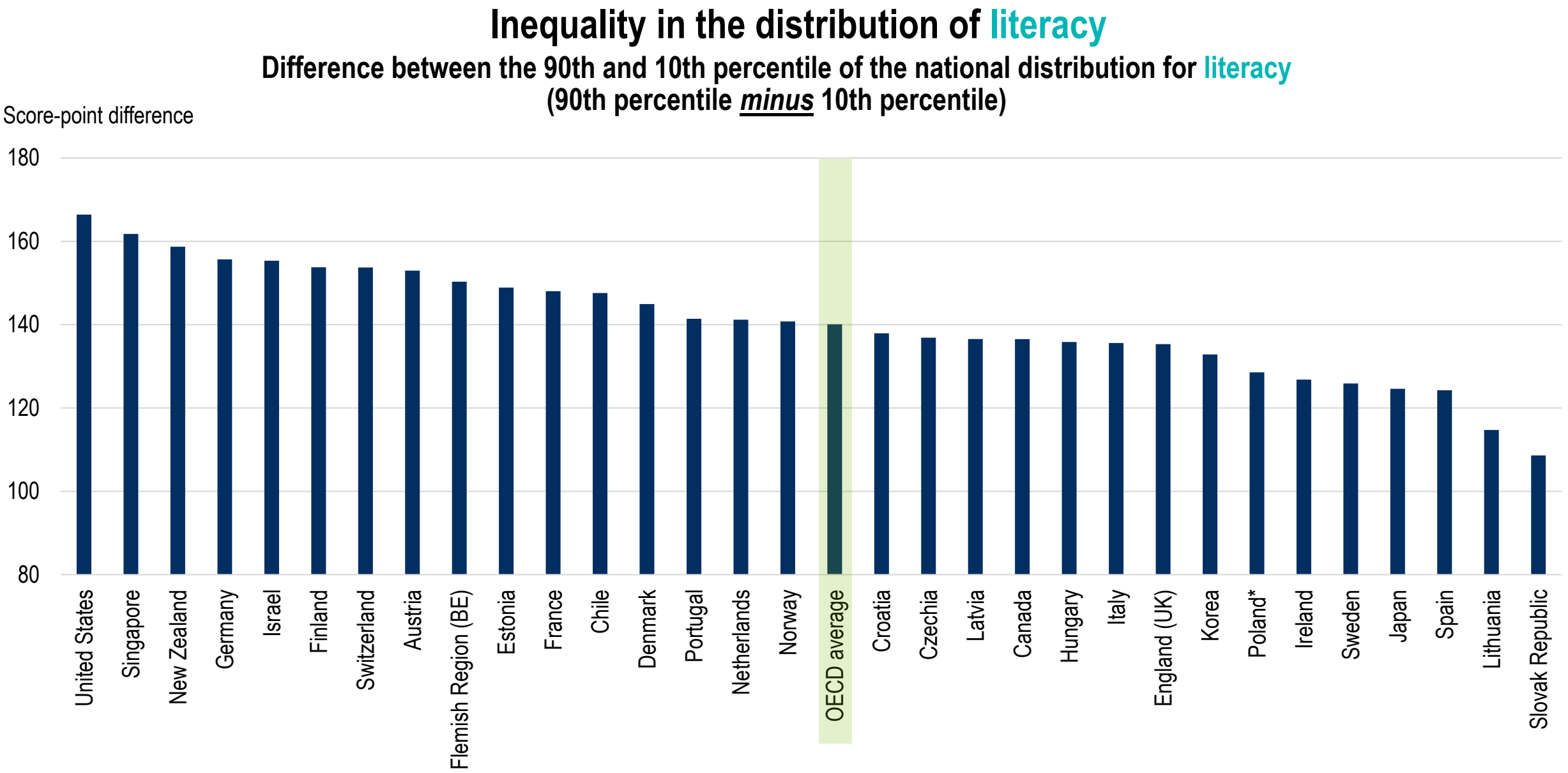
Share of adults who are low performing in more than one domain

16-65 year-olds scoring at or below Level 1 in more than one domain



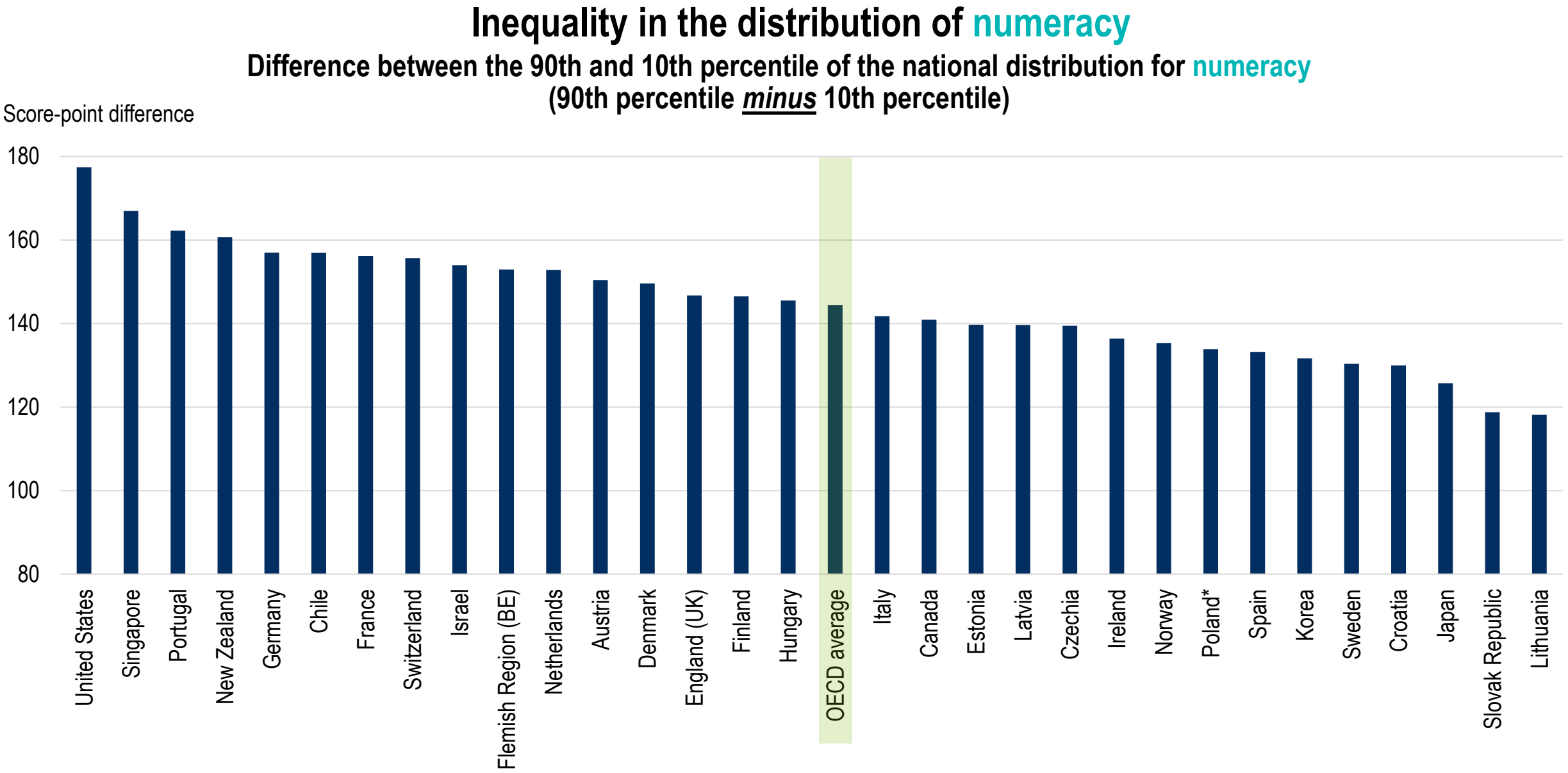
Many countries exhibit a high degree of dispersion in the distribution of literacy proficiency among adults

Figure 2.6 (L)



Many countries exhibit a high degree of dispersion in the distribution of numeracy proficiency among adults

Figure 2.6 (N)

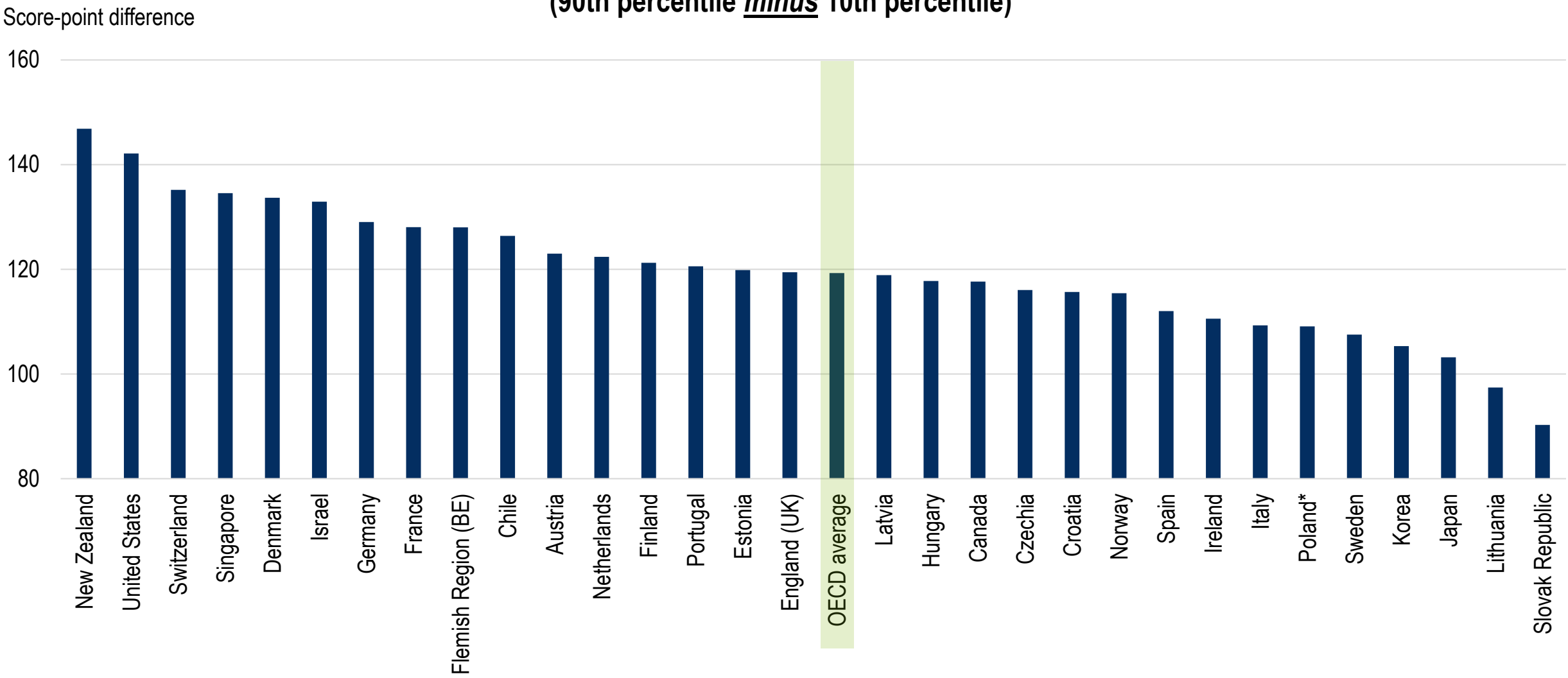


Many countries exhibit a high degree of dispersion in the distribution of proficiency in adaptive problem solving among adults

Figure 2.6 (A)

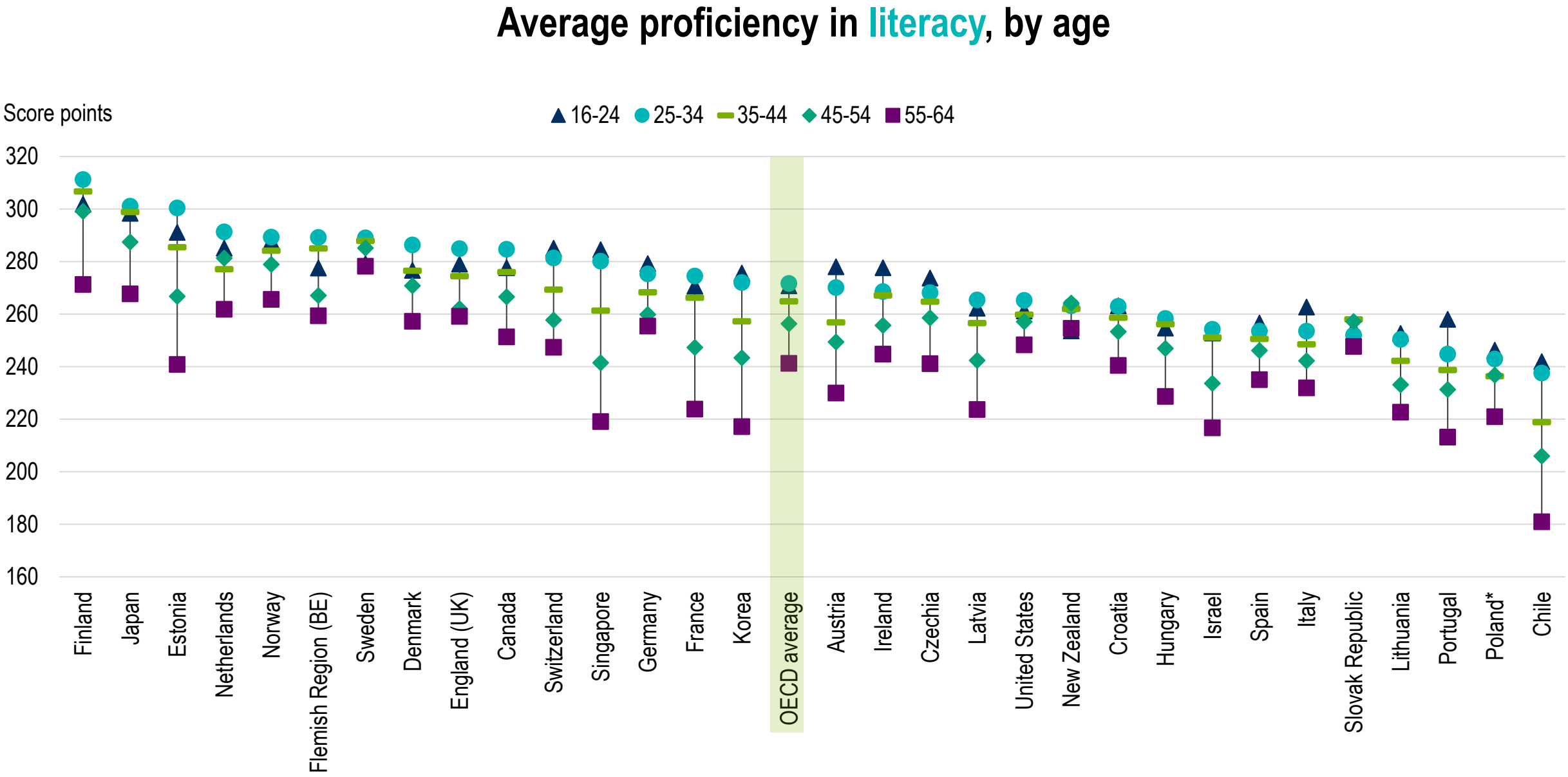
Inequality in the distribution of adaptive problem solving

Difference between the 90th and 10th percentile of the national distribution for adaptive problem solving (90th percentile *minus* 10th percentile)



The highest literacy proficiency is achieved by the youngest age groups

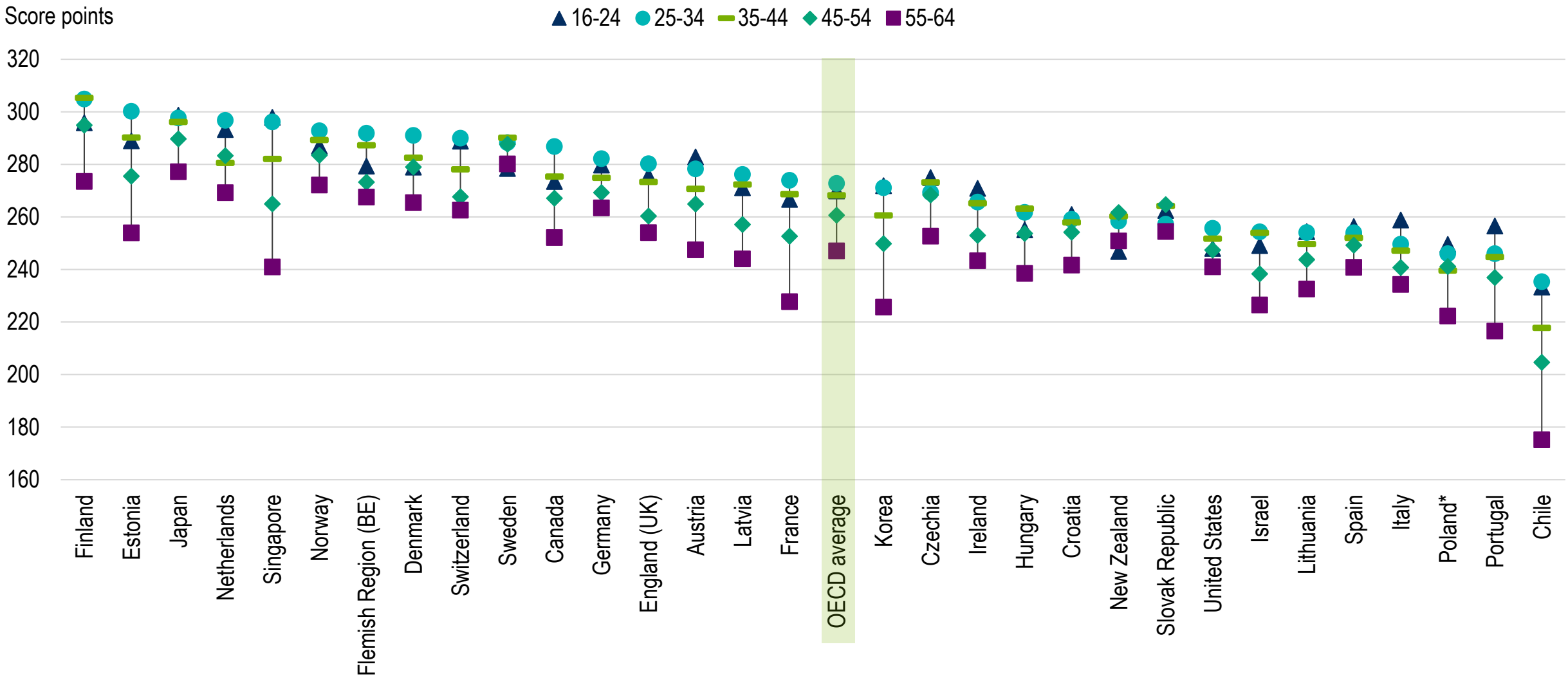
Figure 2.7 (L)



The highest numeracy proficiency is achieved by the youngest age groups

Figure 2.7 (N)

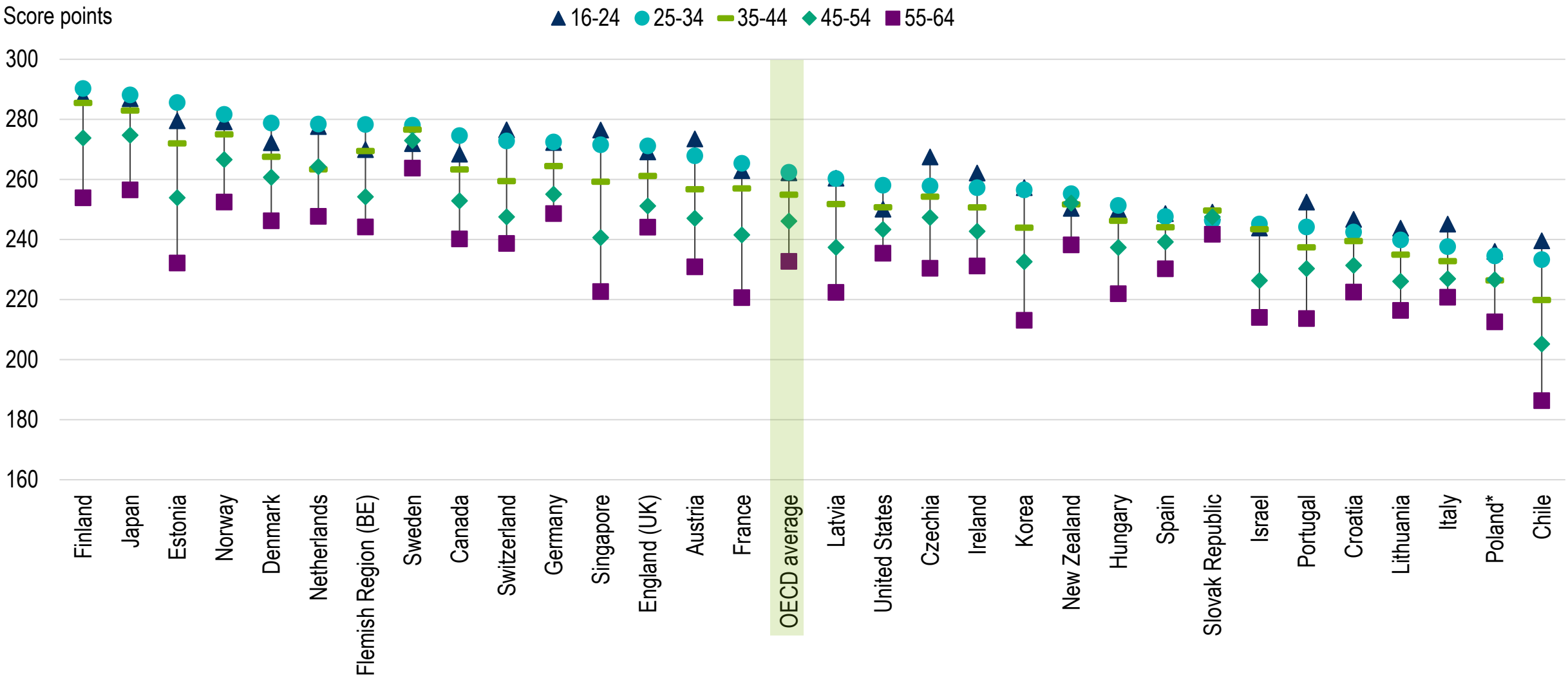
Average proficiency in numeracy, by age



The highest proficiency in adaptive problem solving is achieved by the youngest age groups

Figure 2.7 (A)

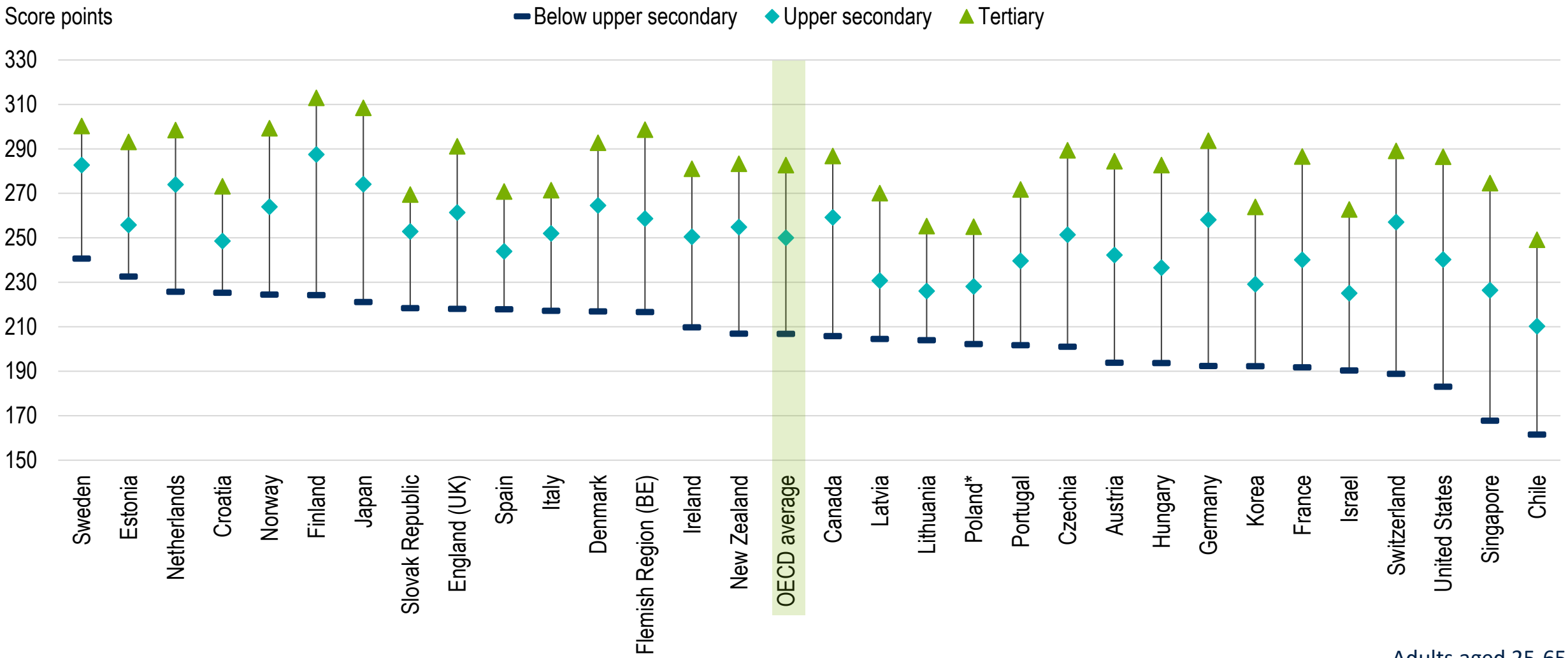
Average proficiency in adaptive problem solving, by age



Higher levels of educational attainment are associated with greater proficiency in literacy

Figure 2.8 (L)

Average proficiency in literacy, by educational attainment

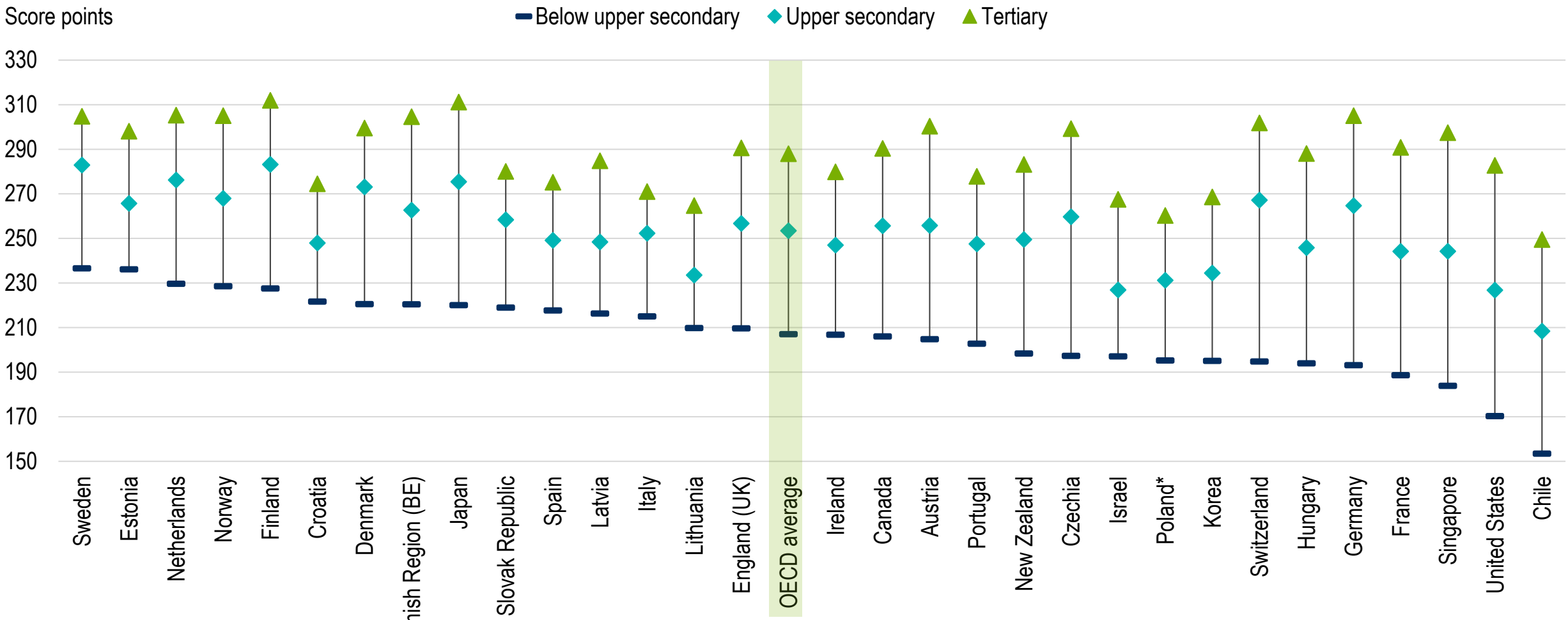


Adults aged 25-65

Higher levels of educational attainment are associated with greater proficiency in numeracy

Figure 2.8 (N)

Average proficiency in numeracy, by educational attainment

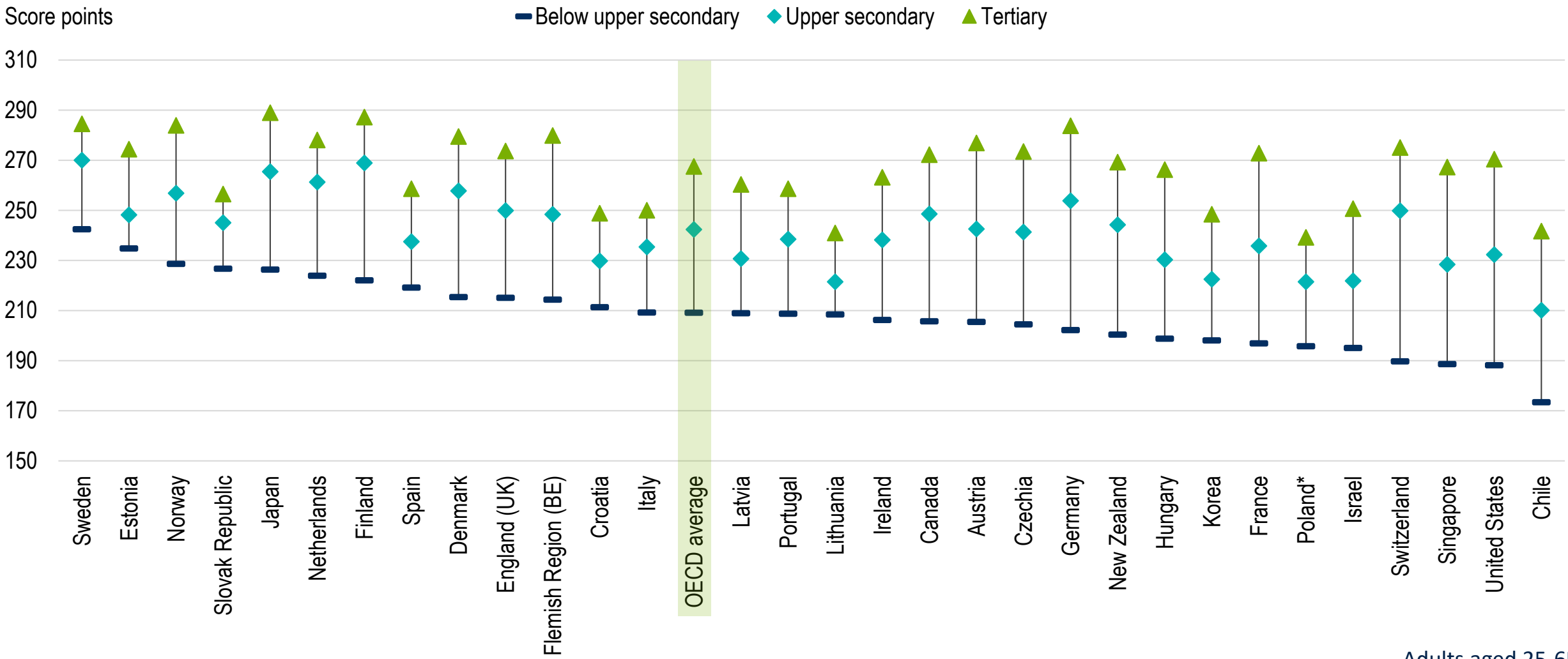


Adults aged 25-65

Higher levels of educational attainment are associated with greater proficiency in adaptive problem solving

Figure 2.8 (A)

Average proficiency in adaptive problem solving, by educational attainment



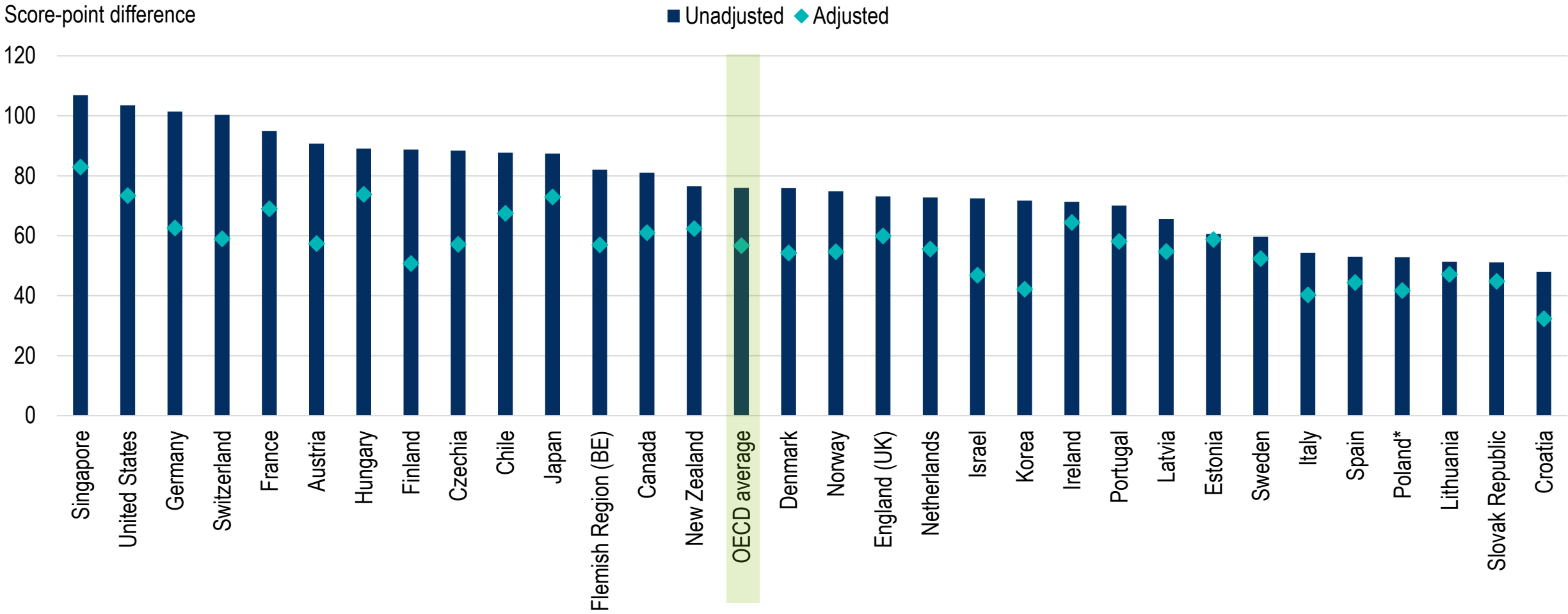
Adults aged 25-65

Differences in literacy proficiency between tertiary and below upper secondary educated varies strongly across countries

Figure 2.9 (L)

Differences in literacy, by educational attainment

Adjusted and unadjusted differences in mean literacy scores between tertiary educated and below upper secondary educated adults (tertiary educated *minus* below upper secondary educated)



Adults aged 25-65

Differences in numeracy proficiency between tertiary and below upper secondary educated varies strongly across countries

Figure 2.9 (N)

Differences in numeracy, by educational attainment

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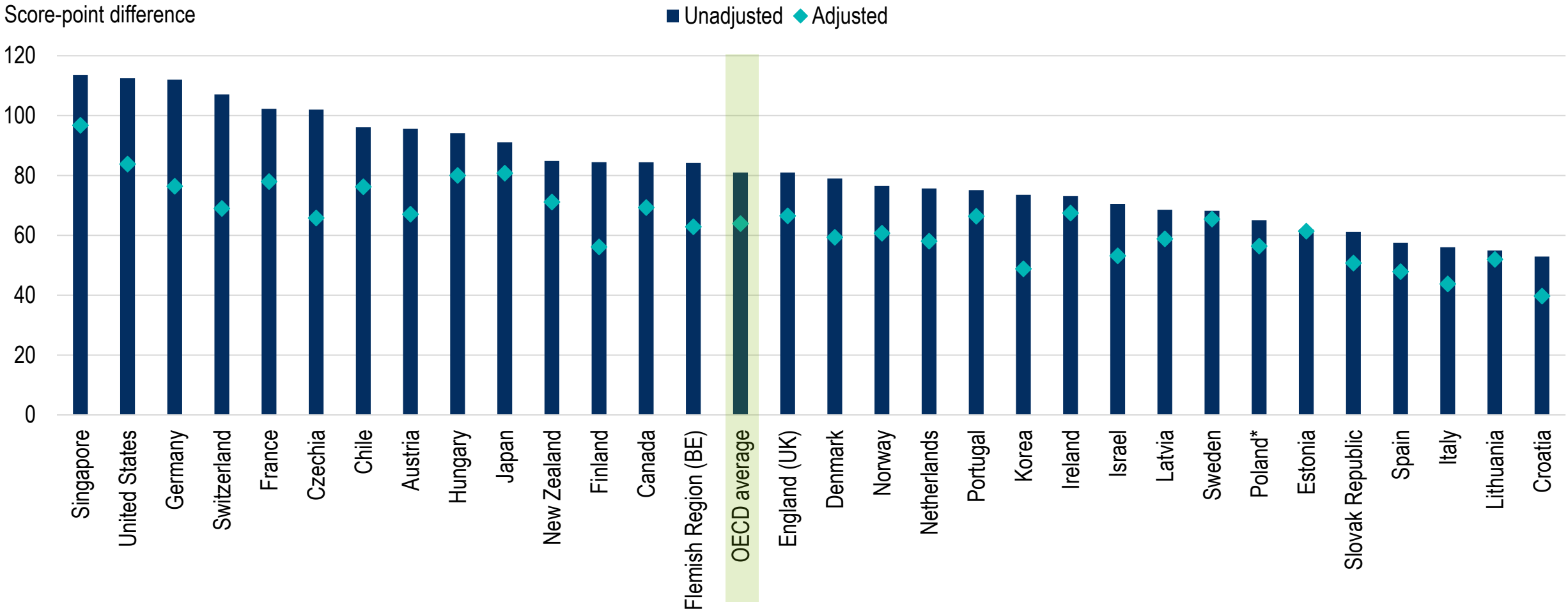
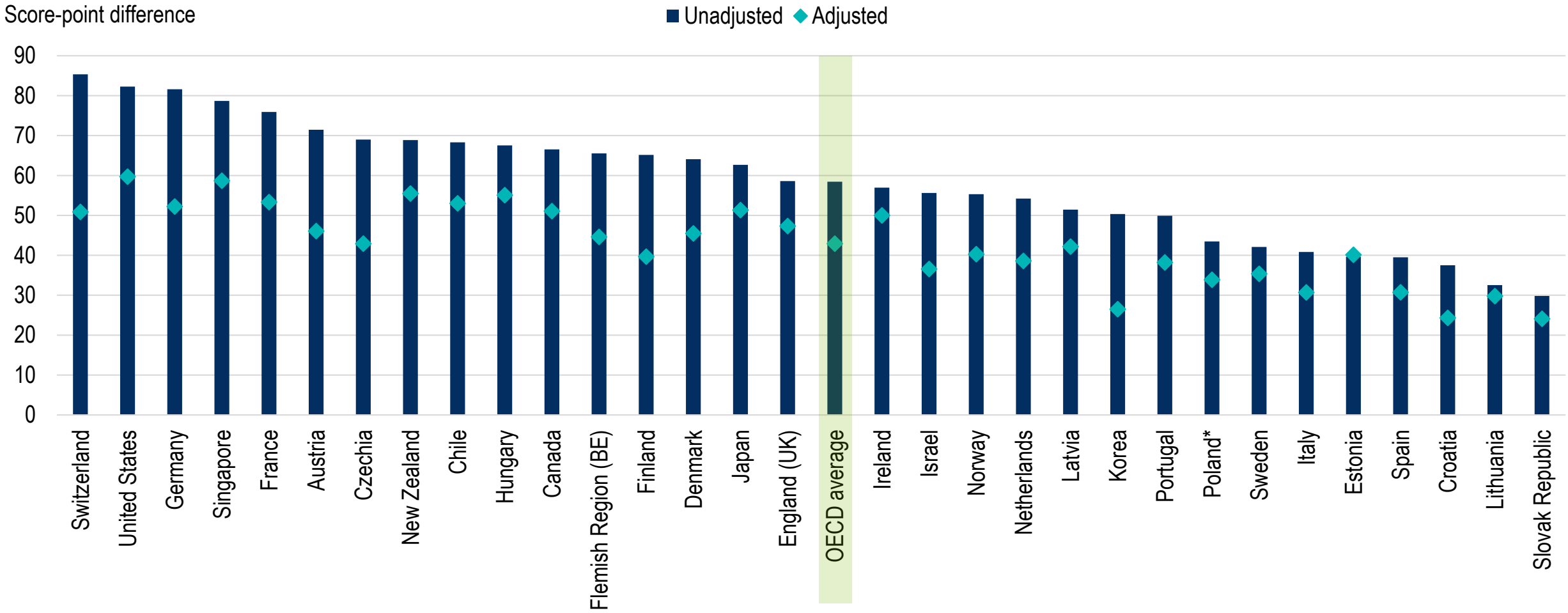


Adults aged 25-65

Differences in proficiency in adaptive problem solving between tertiary and below upper secondary educated varies strongly across countries Figure 2.9 (A)

Differences in adaptive problem solving, by educational attainment

Adjusted and unadjusted differences in mean adaptive problem solving scores between tertiary educated and below upper secondary educated adults (tertiary educated *minus* below upper secondary educated)



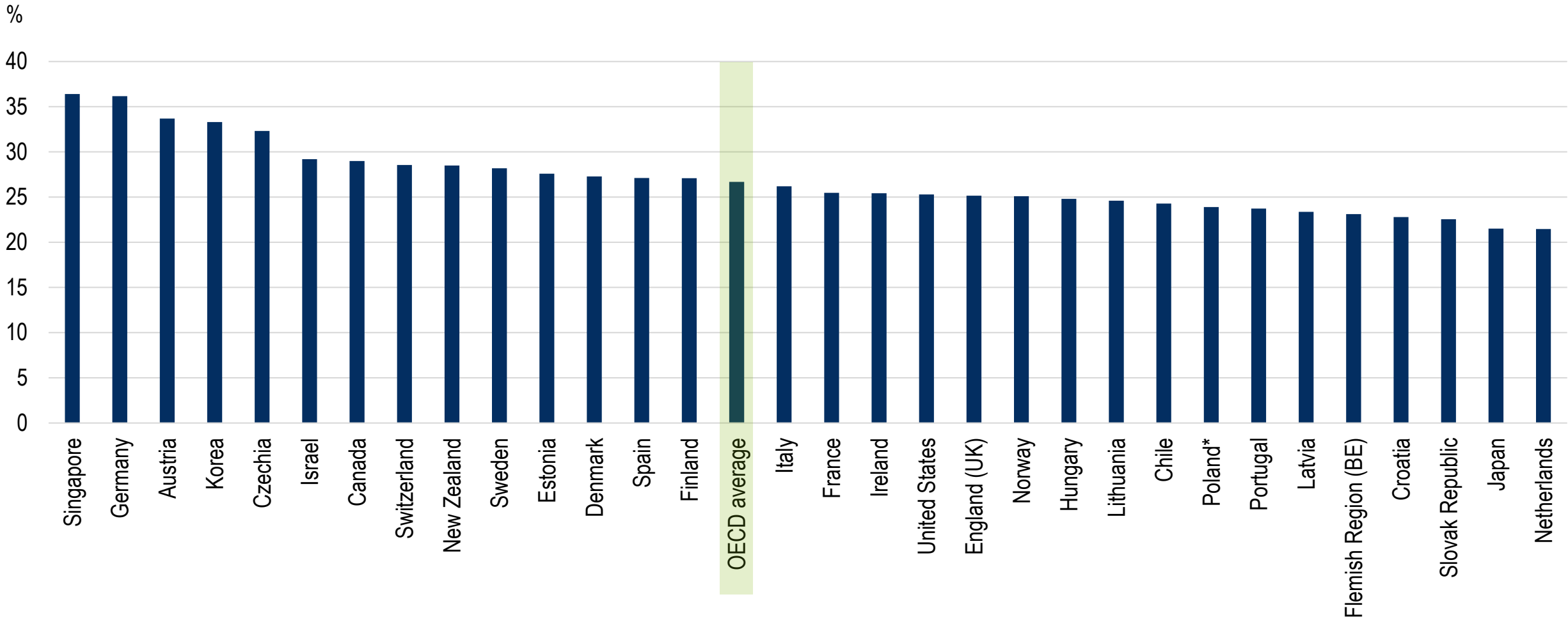
Adults aged 25-65

Around one-fourth of tertiary-educated adults graduated in a science, technology, engineering or mathematics (STEM) field

Figure 2.10

Share of tertiary-educated adults who studied STEM fields

Share of tertiary-educated 25-65 year-olds who obtained their highest qualification in a science, technology, engineering or mathematics (STEM) field

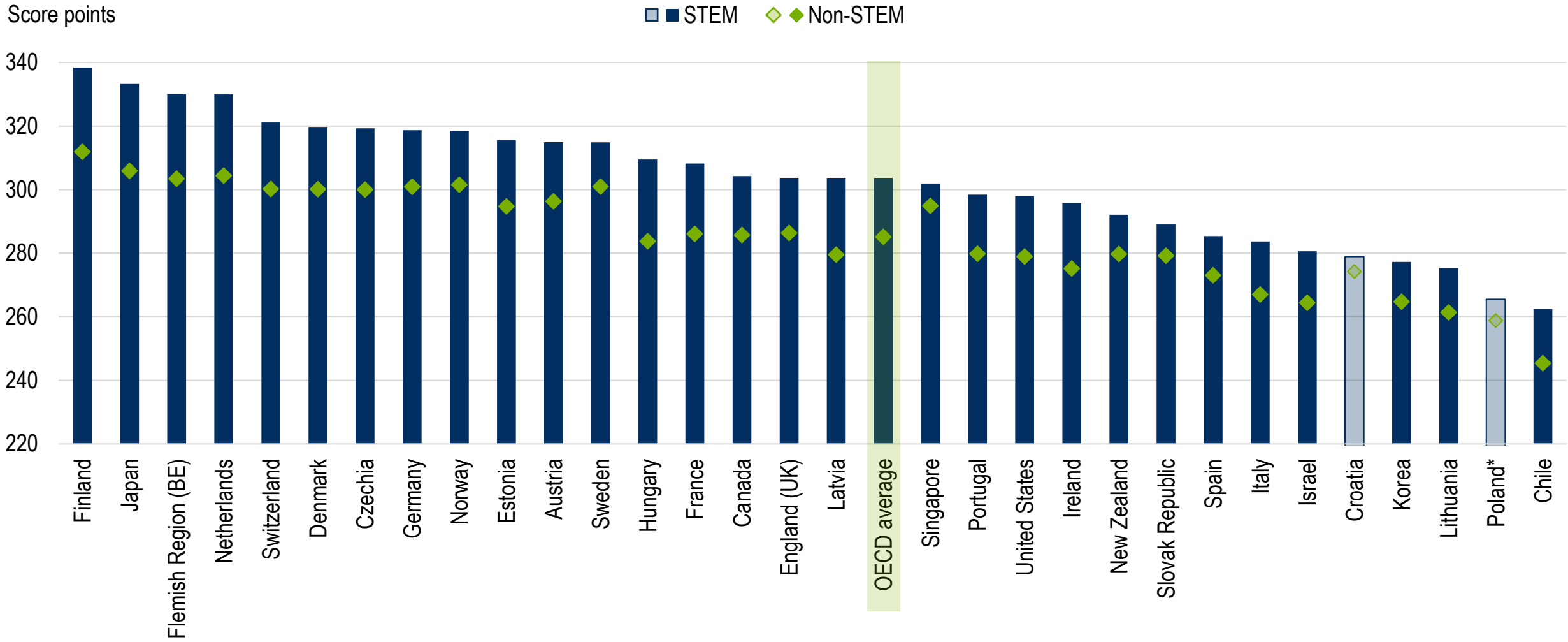


Adults aged 25-65

Among tertiary-educated, graduates in STEM fields score higher in numeracy compared to graduates non-STEM fields

Figure 2.11

Average numeracy proficiency among tertiary-educated adults, by field of study



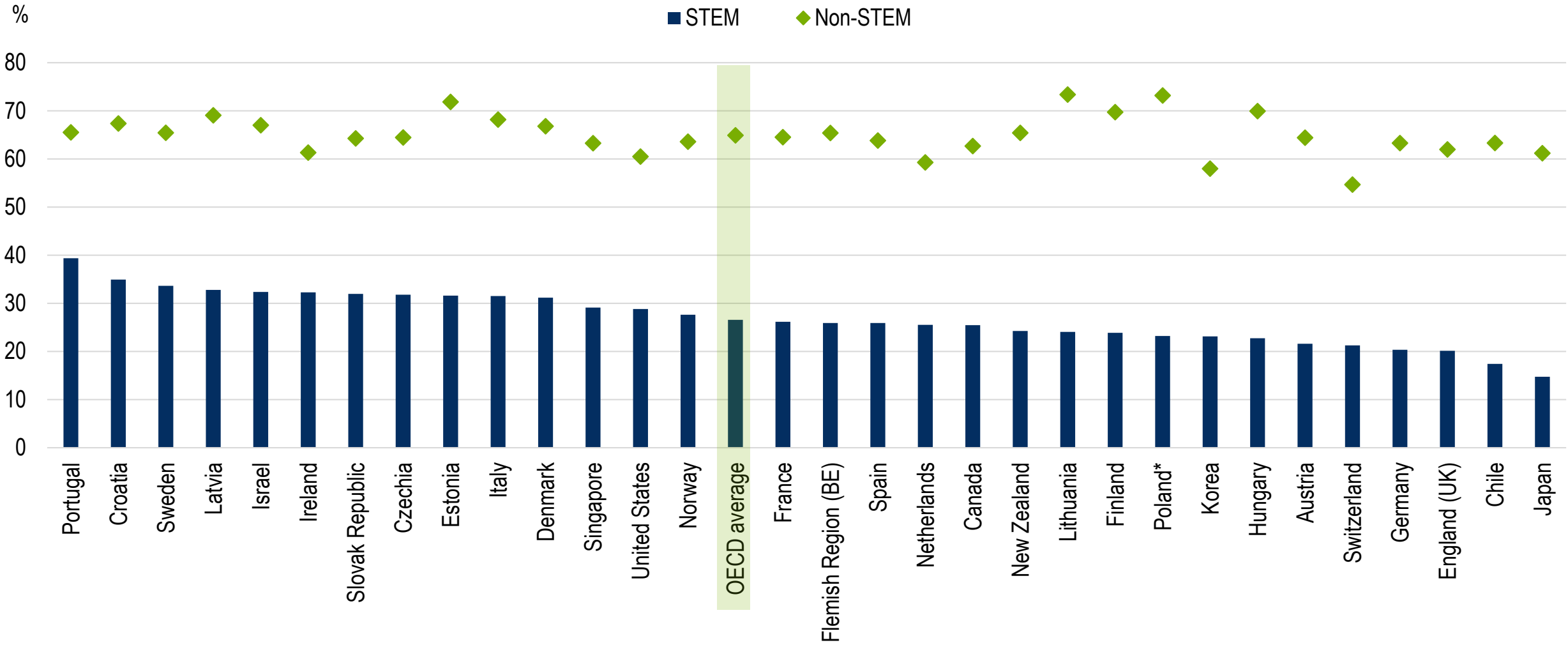
Adults aged 25-65

Women (continue to be) underrepresented in STEM fields

Figure 2.12

Share of women among STEM and non-STEM graduates

Share of tertiary-educated who graduated from each field of study who are women



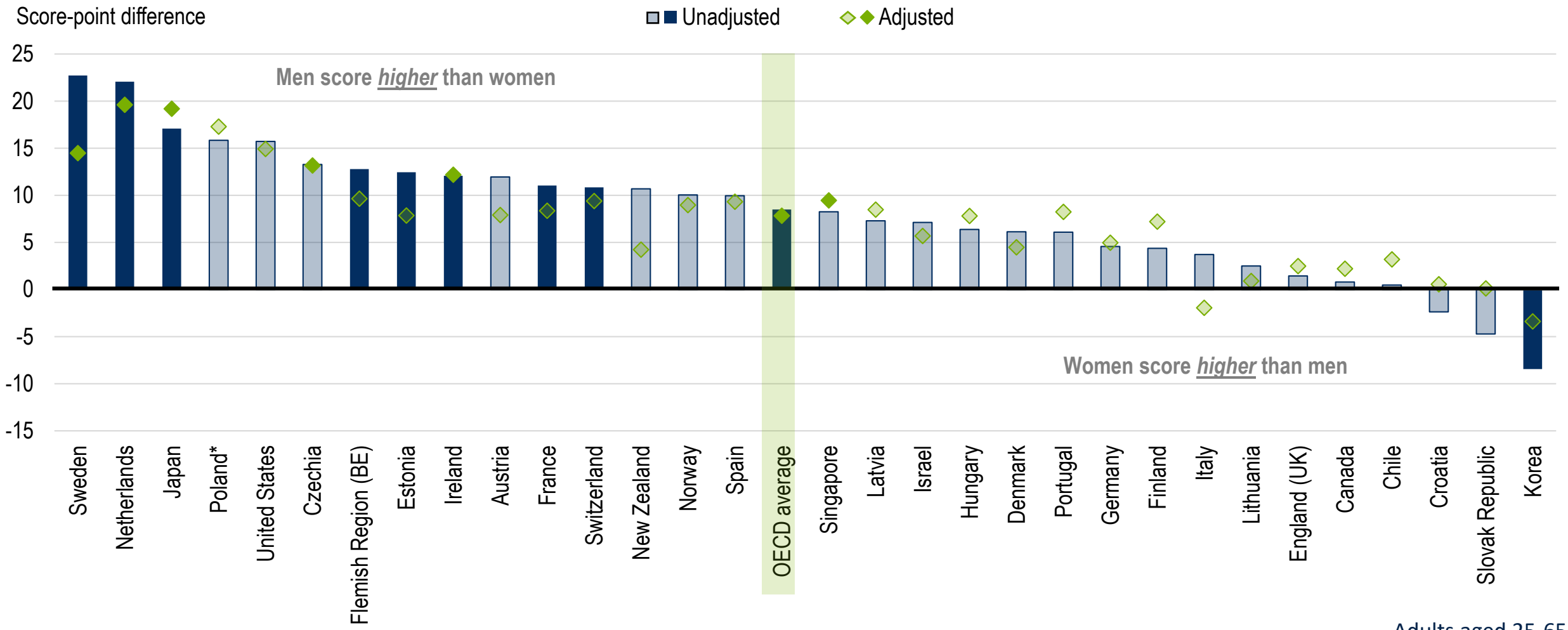
Adults aged 25-65

Among tertiary-educated men and women who graduated in a STEM field, men score significantly higher in numeracy

Figure 2.13

Gender differences in numeracy among STEM graduates

Adjusted and unadjusted differences in average numeracy scores between tertiary-educated men and women who studied STEM fields (men *minus* women)



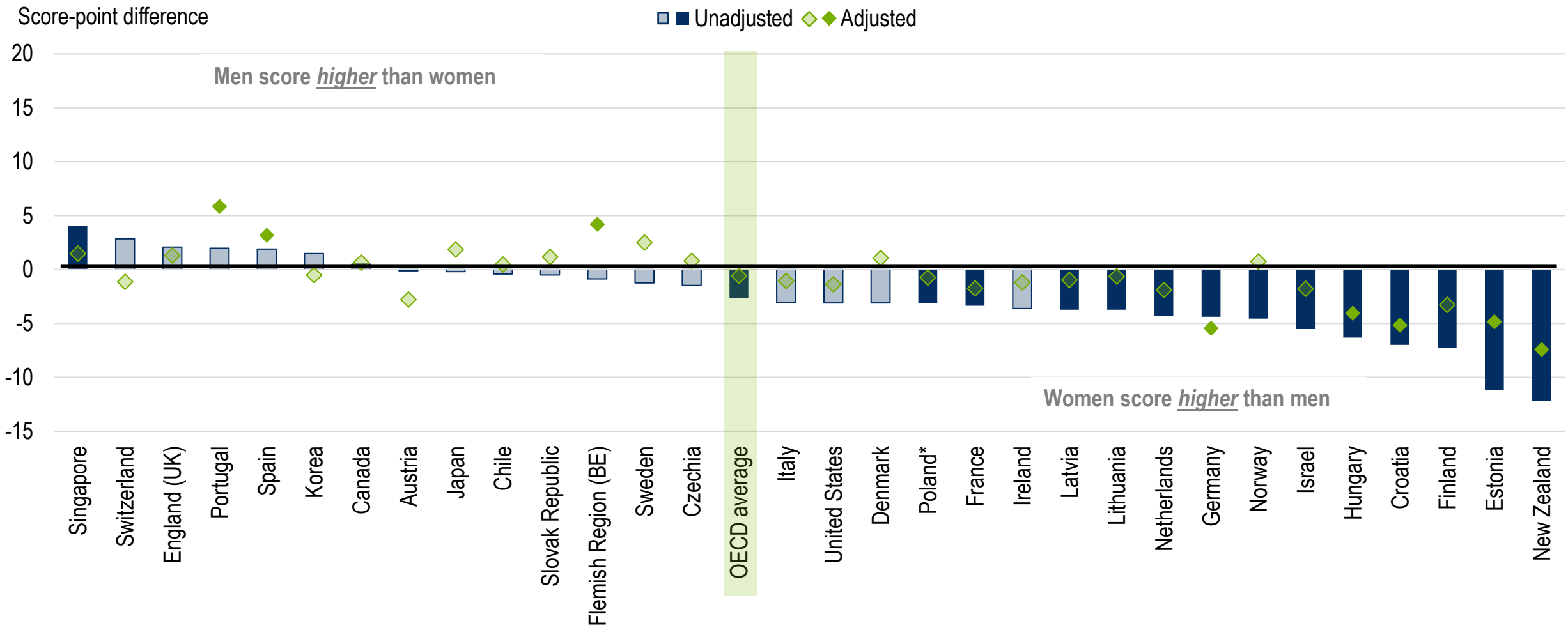
Adults aged 25-65

Gender gaps in literacy proficiency are generally small

Figure 2.14 (L)

Gender differences in literacy

Adjusted and unadjusted differences in average literacy scores between men and women (men *minus* women)

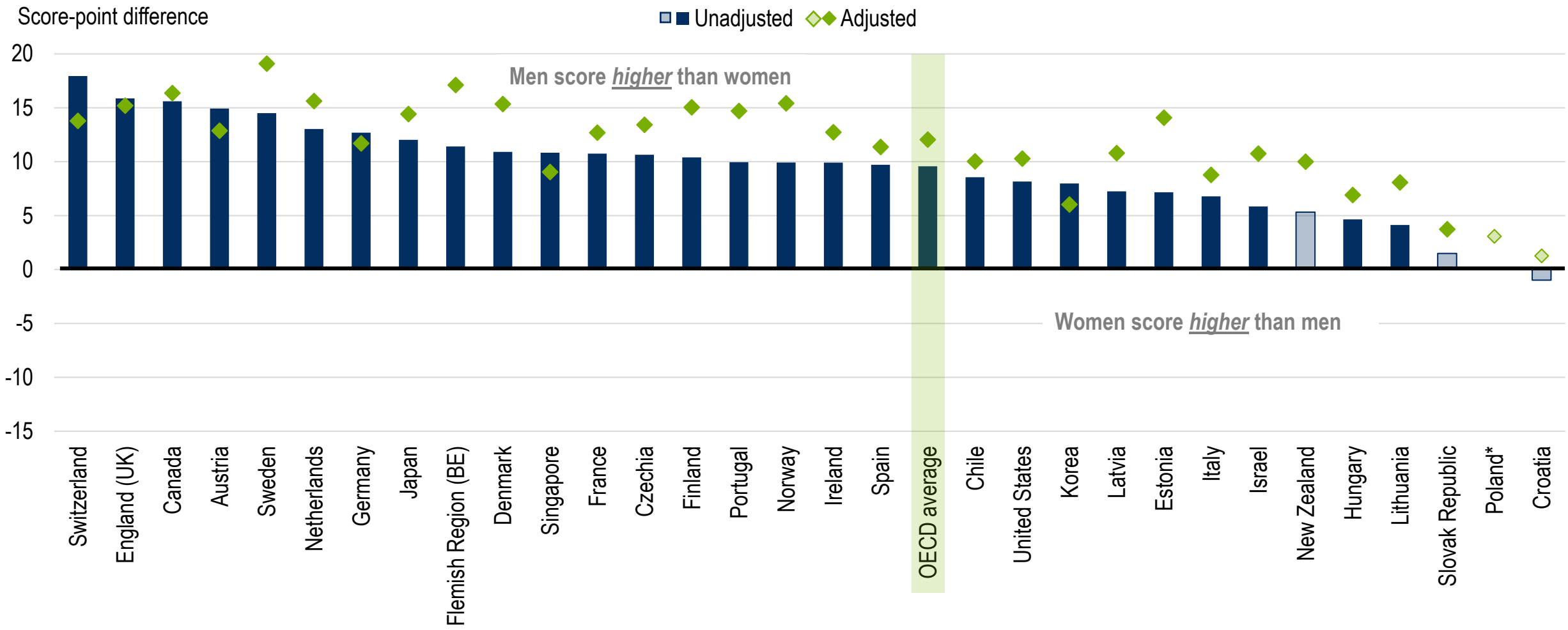


Gender gaps in numeracy persist in most countries in favour of men

Figure 2.14 (N)

Gender differences in numeracy

Adjusted and unadjusted differences in average numeracy scores between men and women (men *minus* women)

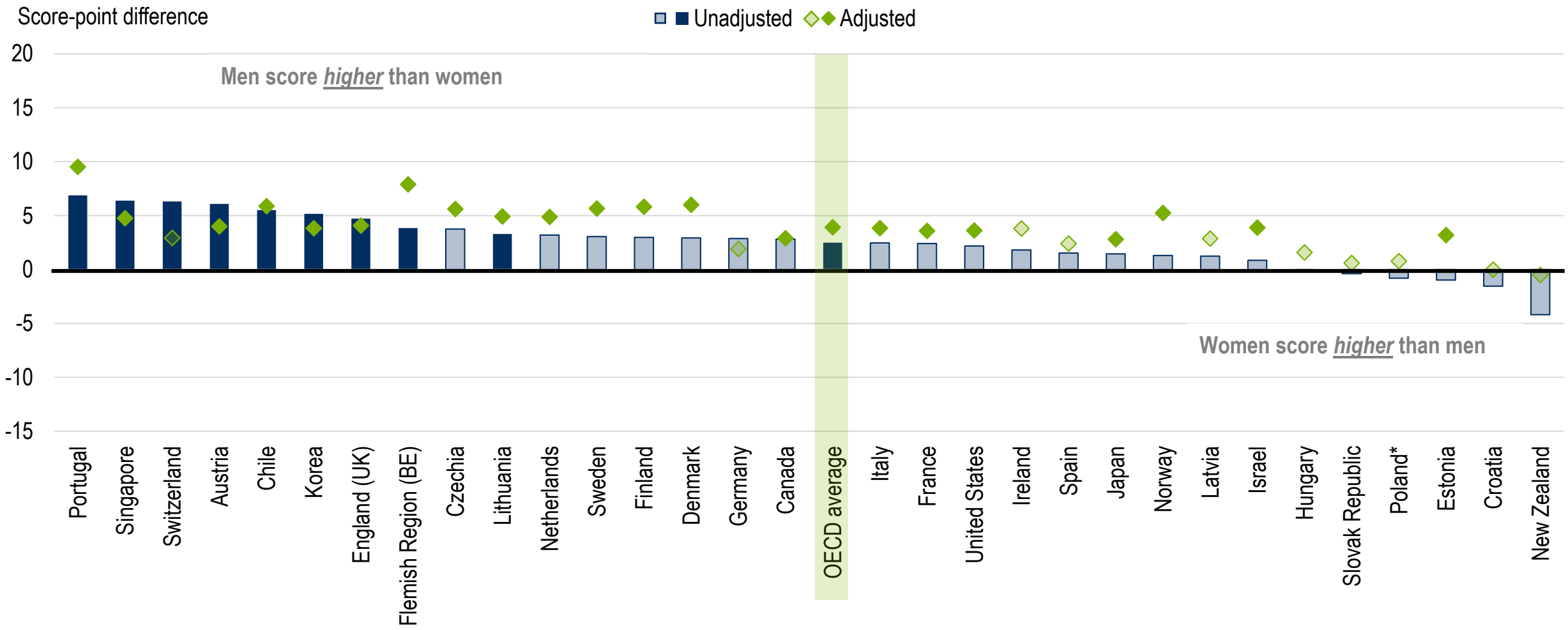


Gender gaps in adaptive problem solving proficiency are generally small

Figure 2.14 (A)

Gender differences in adaptive problem solving

Adjusted and unadjusted differences in average adaptive problem solving scores between men and women (men *minus* women)

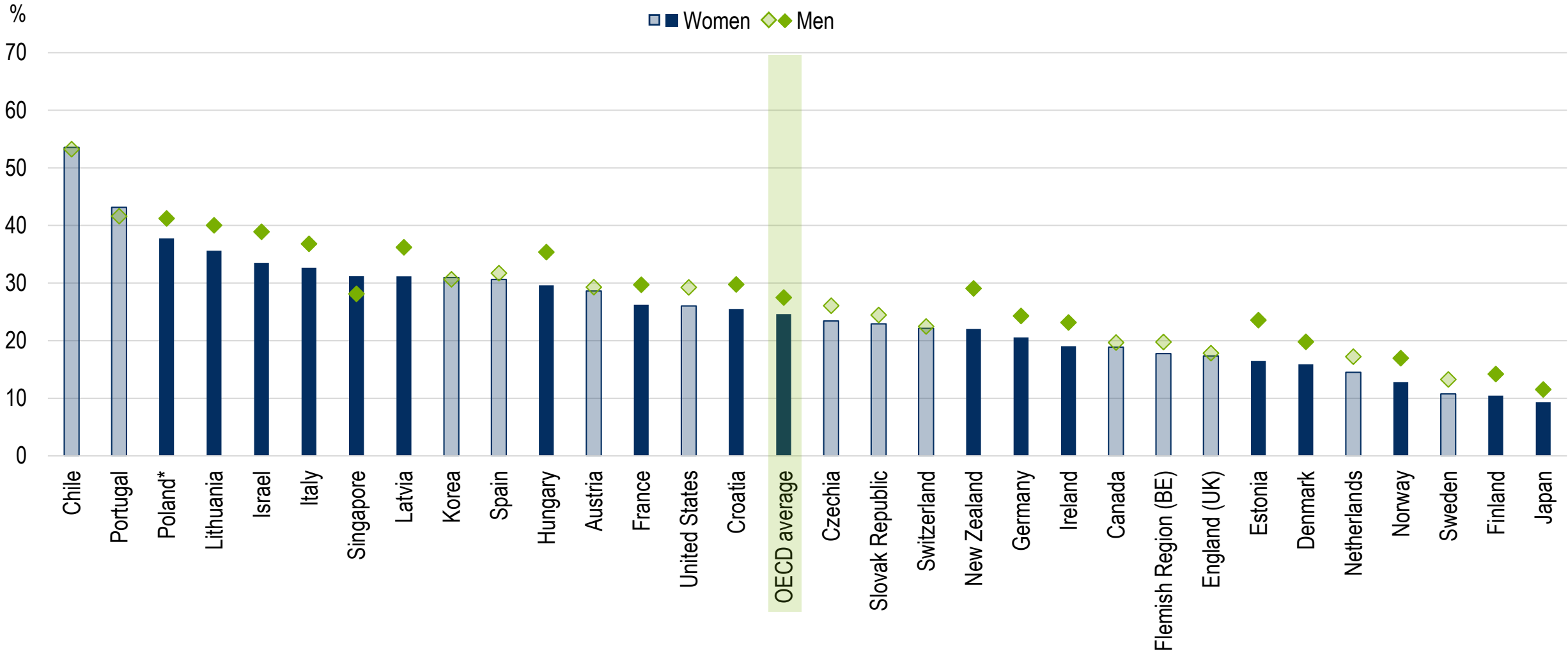


On average, more men than women are low-performing in literacy…

Figure 2.15 (L)

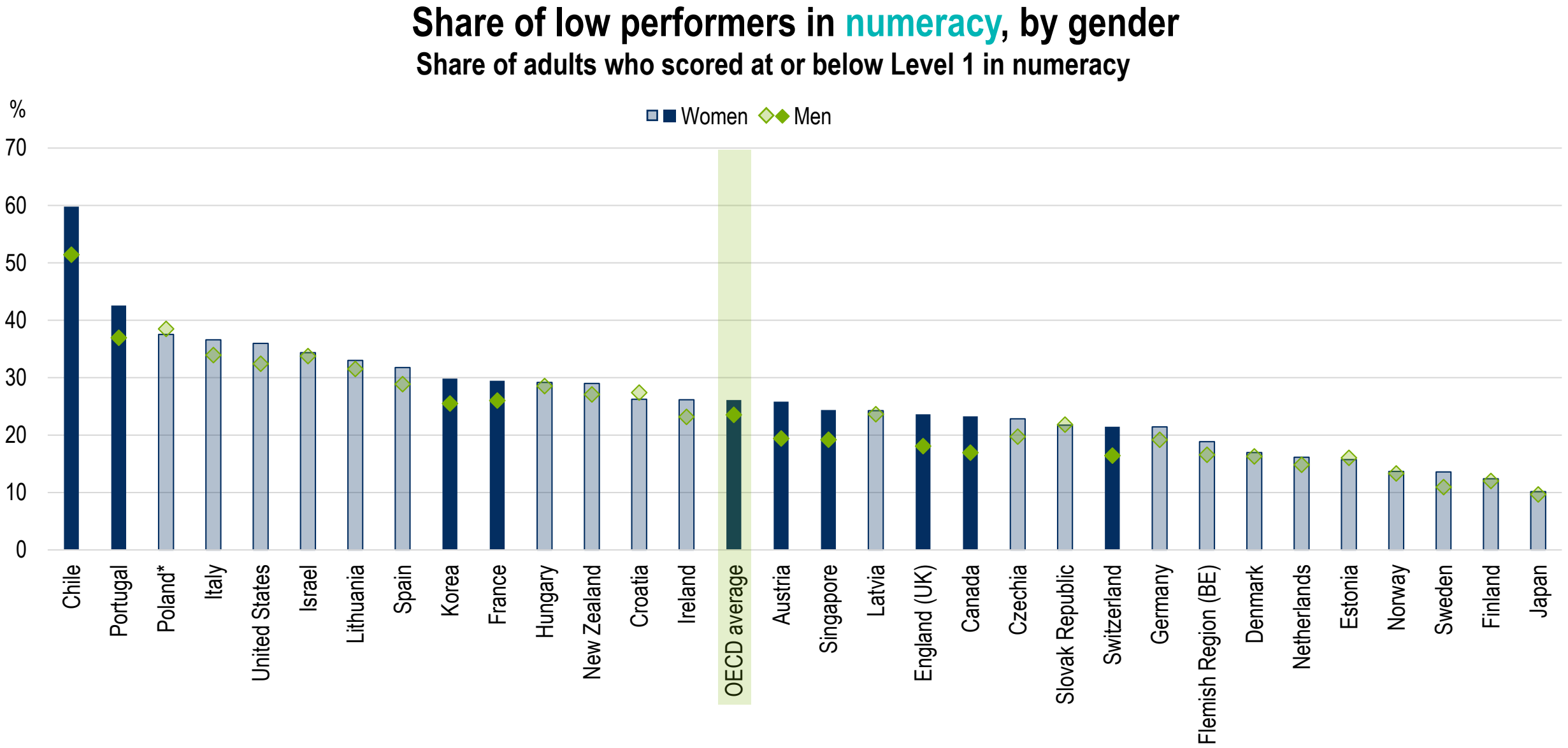
Share of low performers in literacy, by gender

Share of adults who scored at or below Level 1 in literacy



… in contrast, in numeracy, the share of low-performing women is significantly higher.

Figure 2.15 (N)

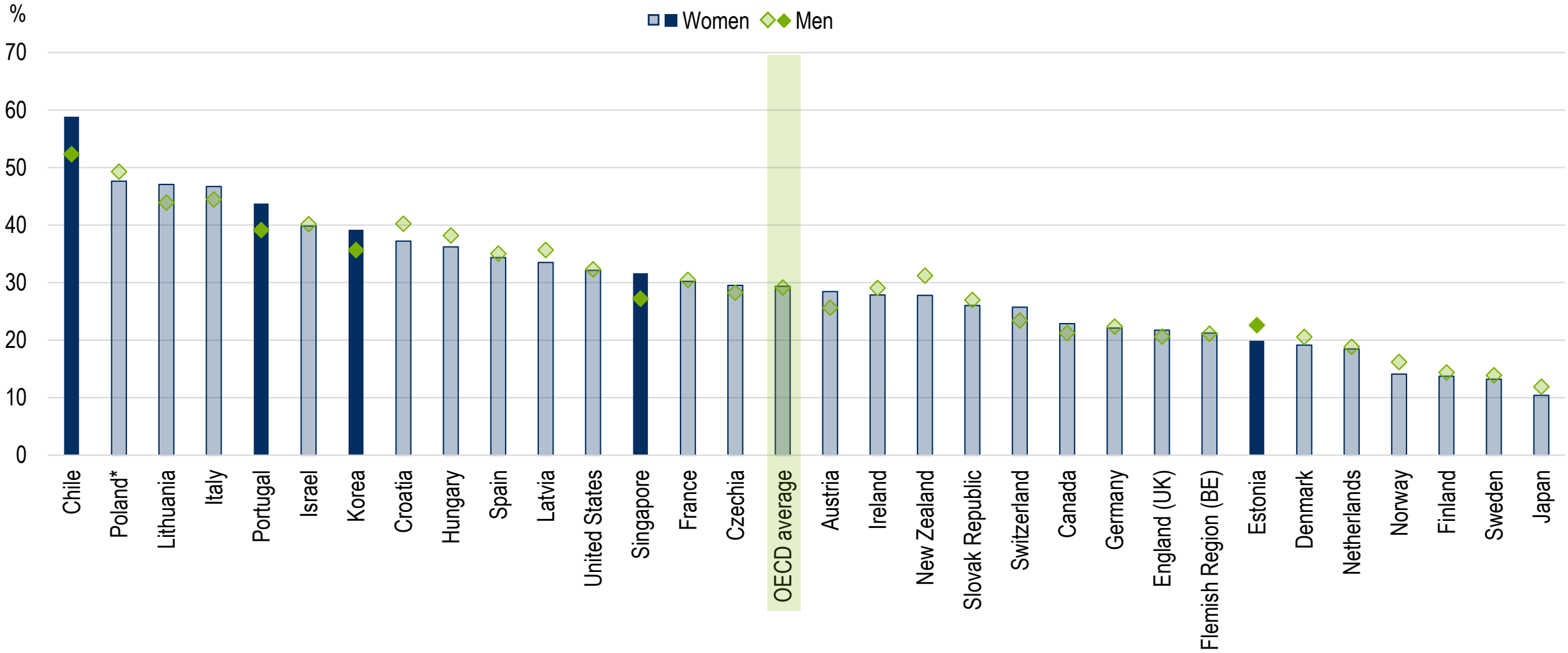


On average, in adaptive problem solving, the share of low-performing men and women is similar

Figure 2.15 (A)

Share of low performers in adaptive problem solving, by gender

Share of adults who scored at or below Level 1 in adaptive problem solving



In most countries, native-born adults score higher in literacy compared to foreign-born adults of foreign-born parents

Figure 2.16 (L)

Average proficiency in literacy, by immigrant background

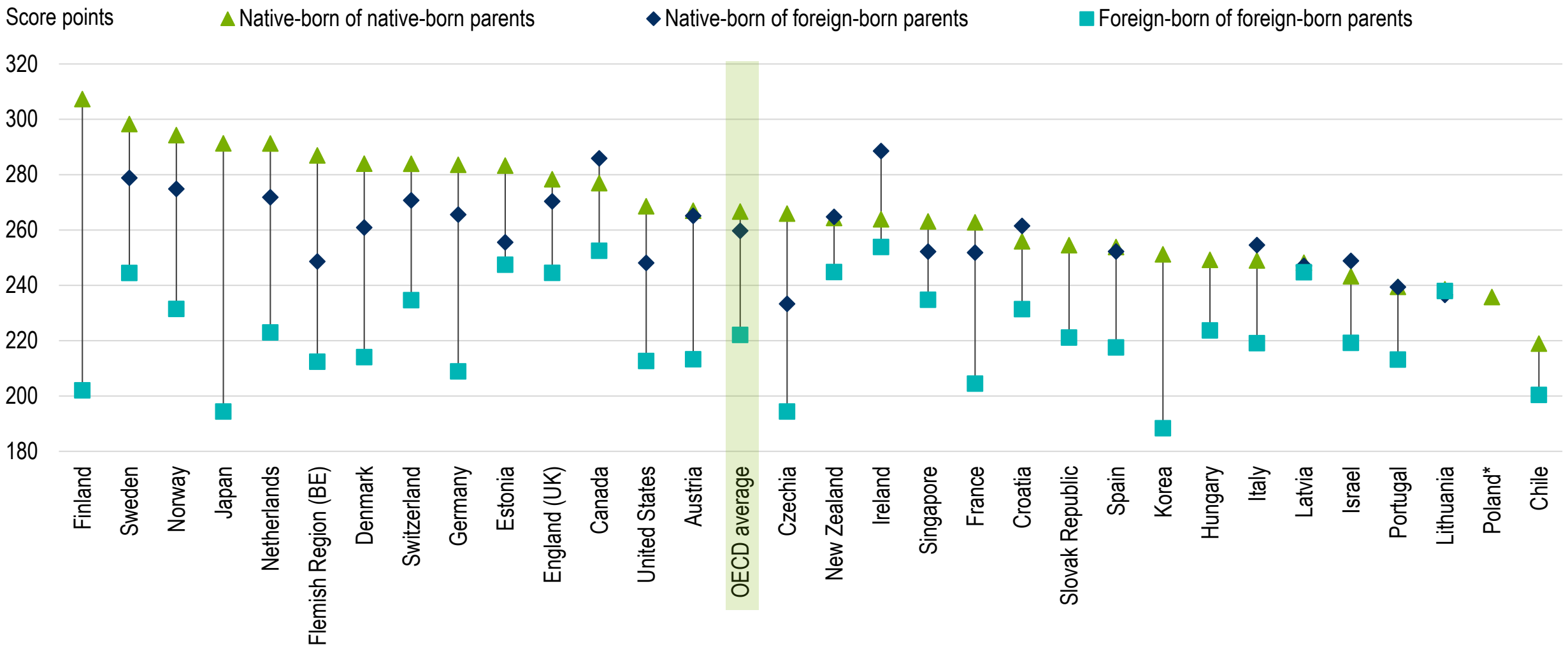


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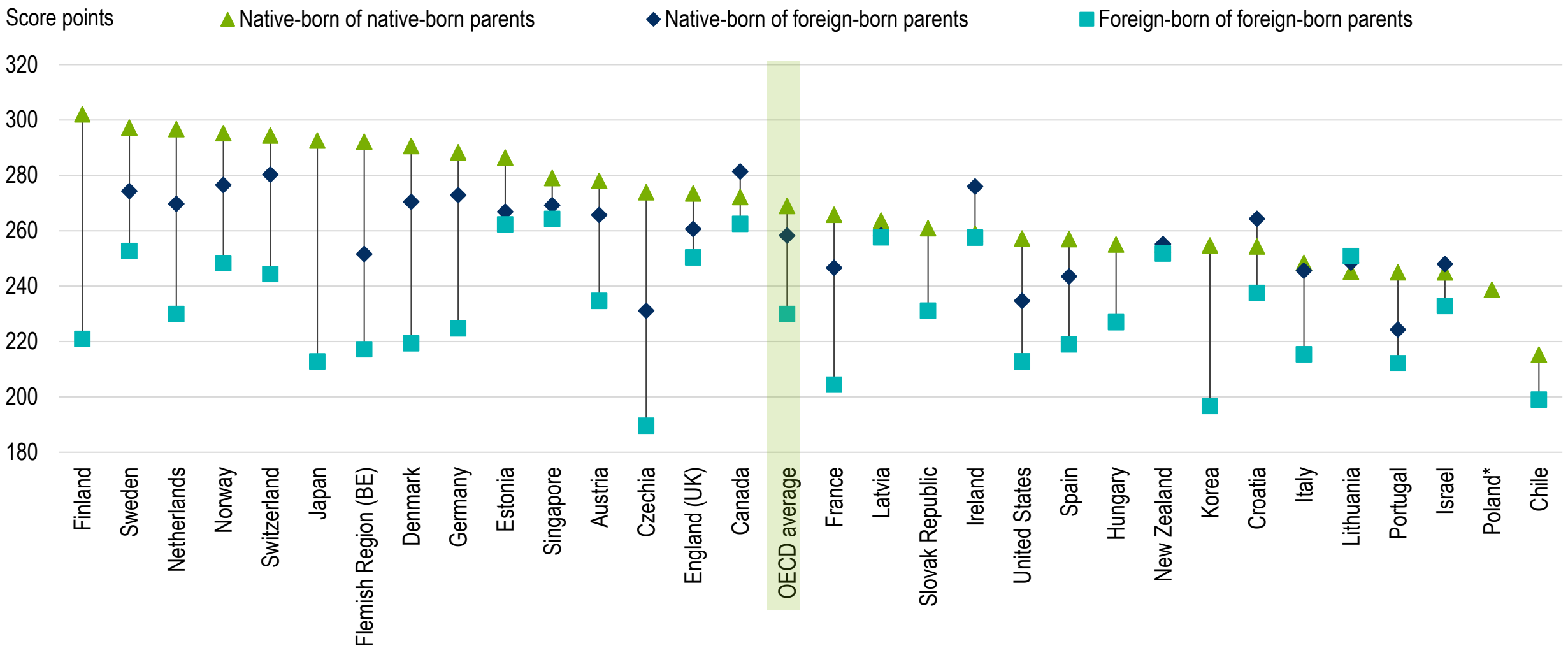
Figure 2.16 (N)

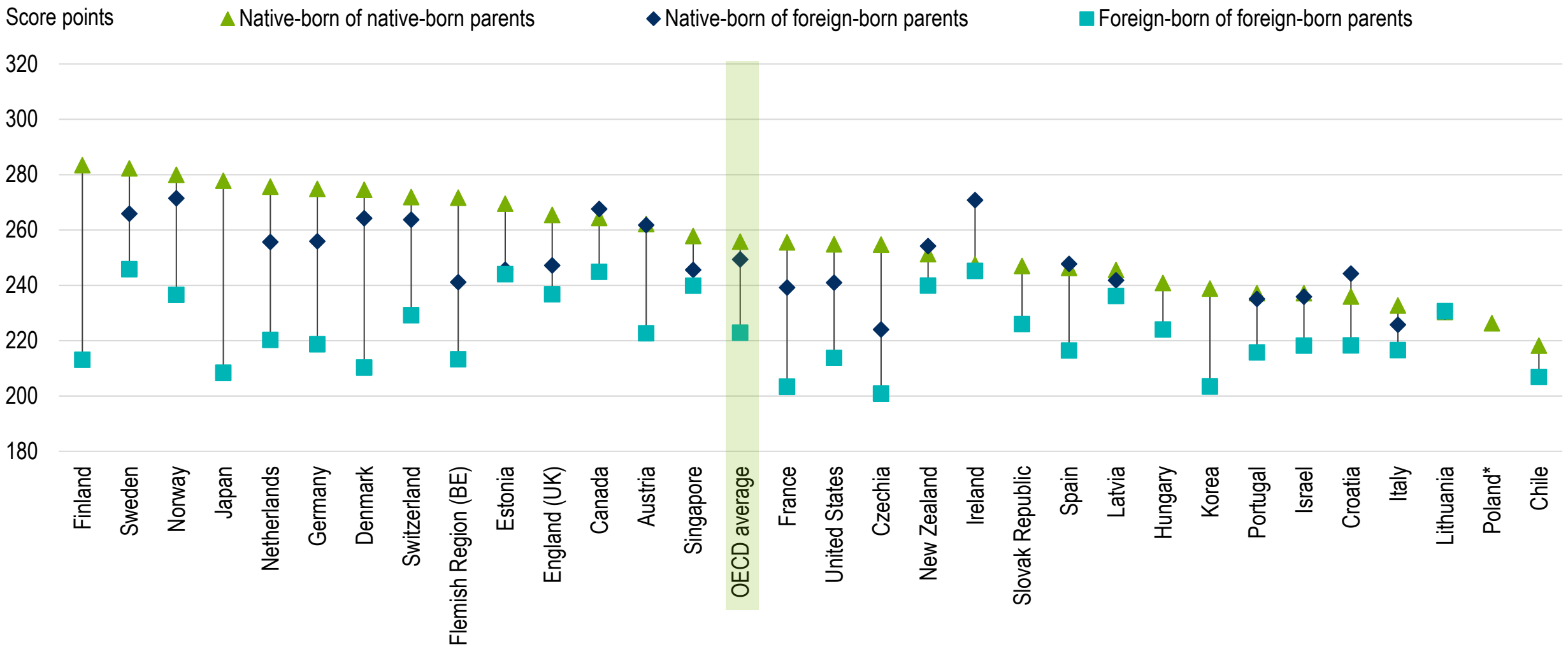
Average proficiency in numeracy, by immigrant background



In most countries, native-born adults score higher in adaptive problem solving compared to foreign-born adults of foreign-born parents

Figure 2.16 (A)

Average proficiency in adaptive problem solving, by immigrant background



Substantial differences in proficiency in literacy are observed between adults with different immigrant backgrounds

Figure 2.17

Differences in literacy proficiency, by immigrant background

Adjusted and unadjusted differences in average literacy between immigrant groups (native-born adults of native-born parents *minus* foreign-born adults of foreign-born parents)

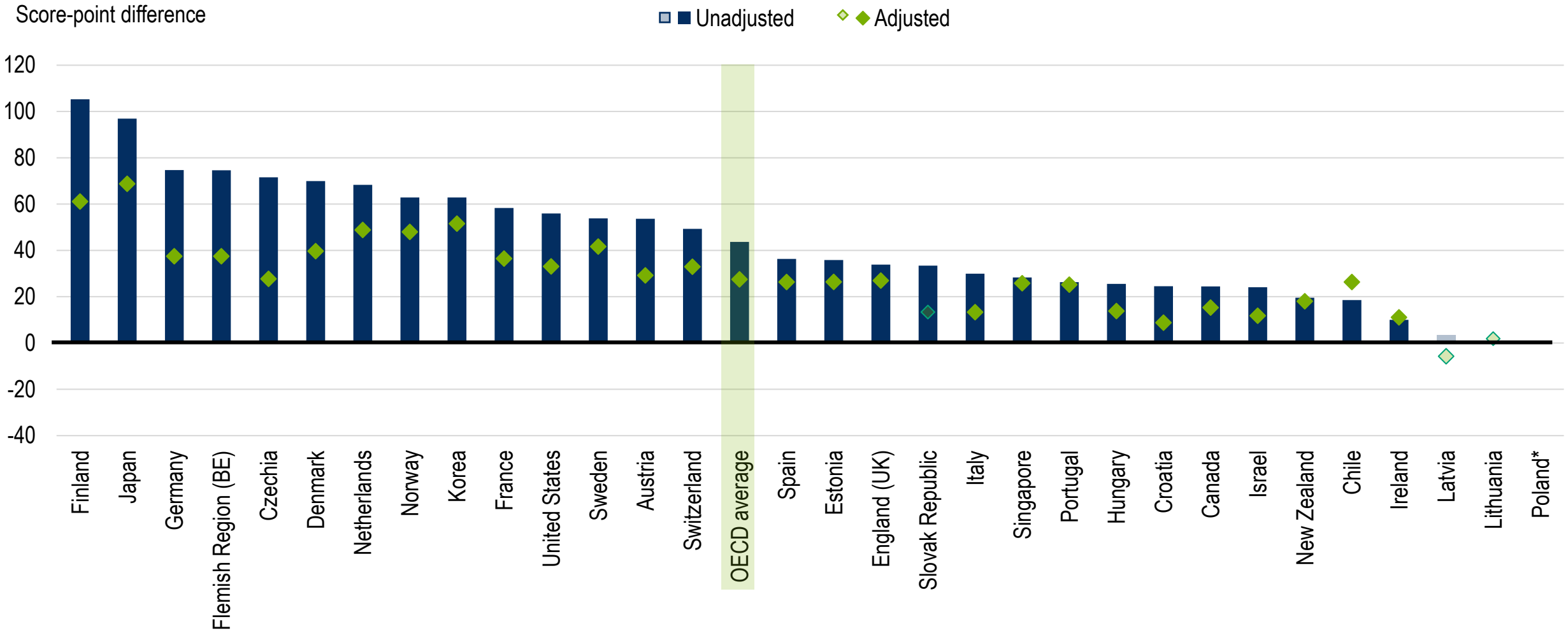


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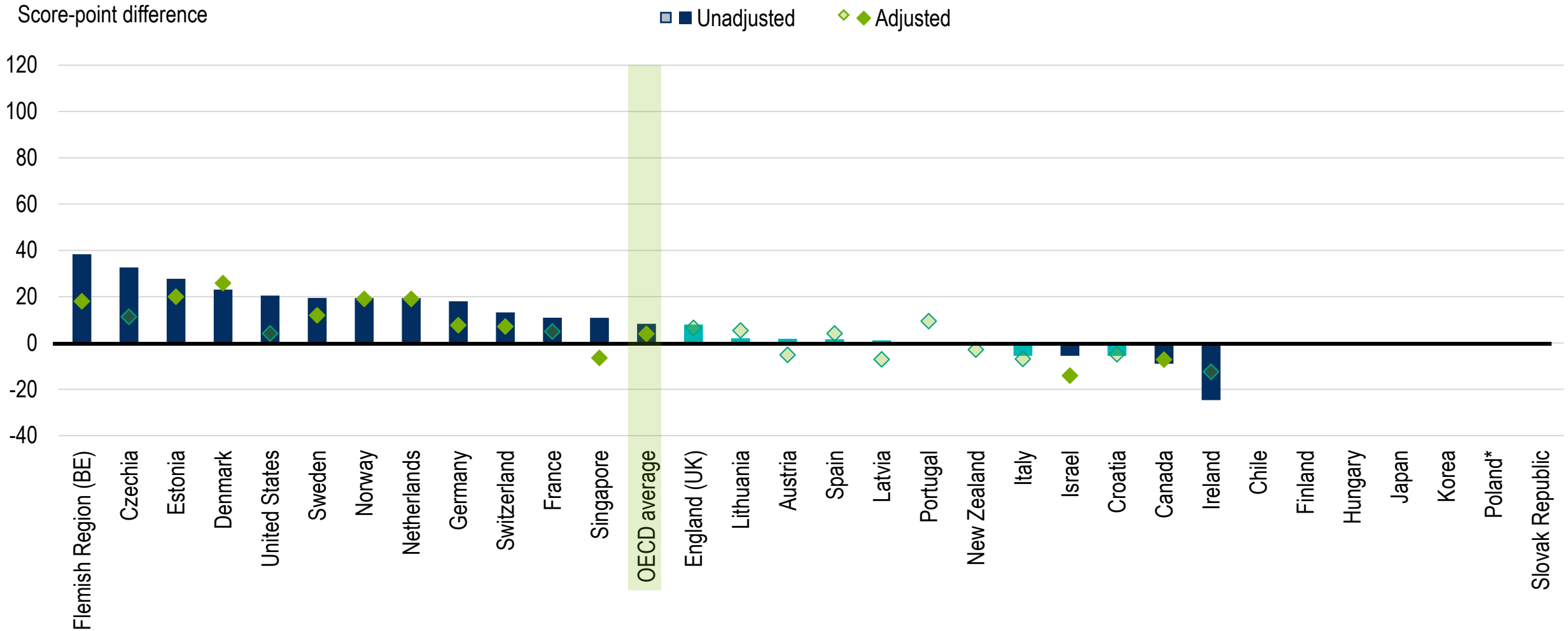
Figure 2.17

Differences in literacy proficiency, by immigrant background

Adjusted and unadjusted differences in average literacy between immigrant groups (native-born adults of native-born parents *minus* native-born adults of foreign-born parents)

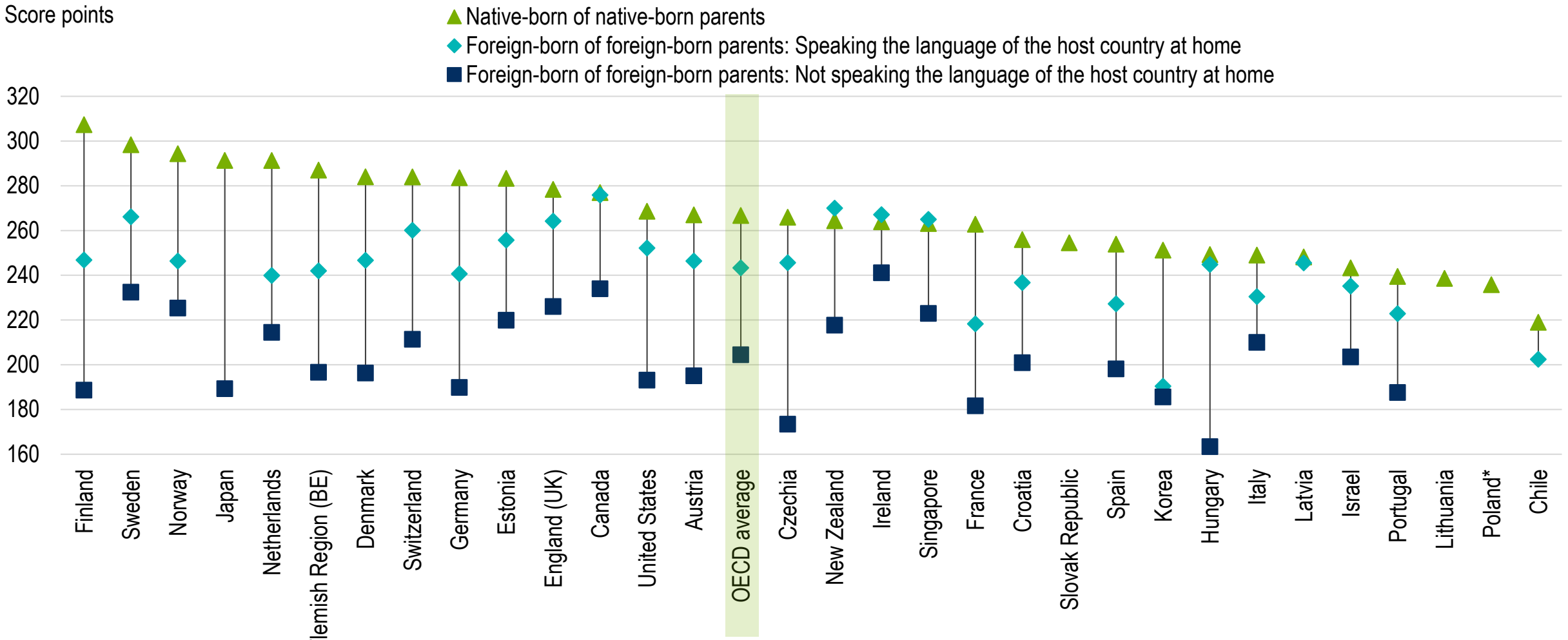


Foreign-born adults who speak the language of the host country at home score higher in literacy

Figure 2.18

Average literacy proficiency, by immigrant status and migration history

Language spoken at home

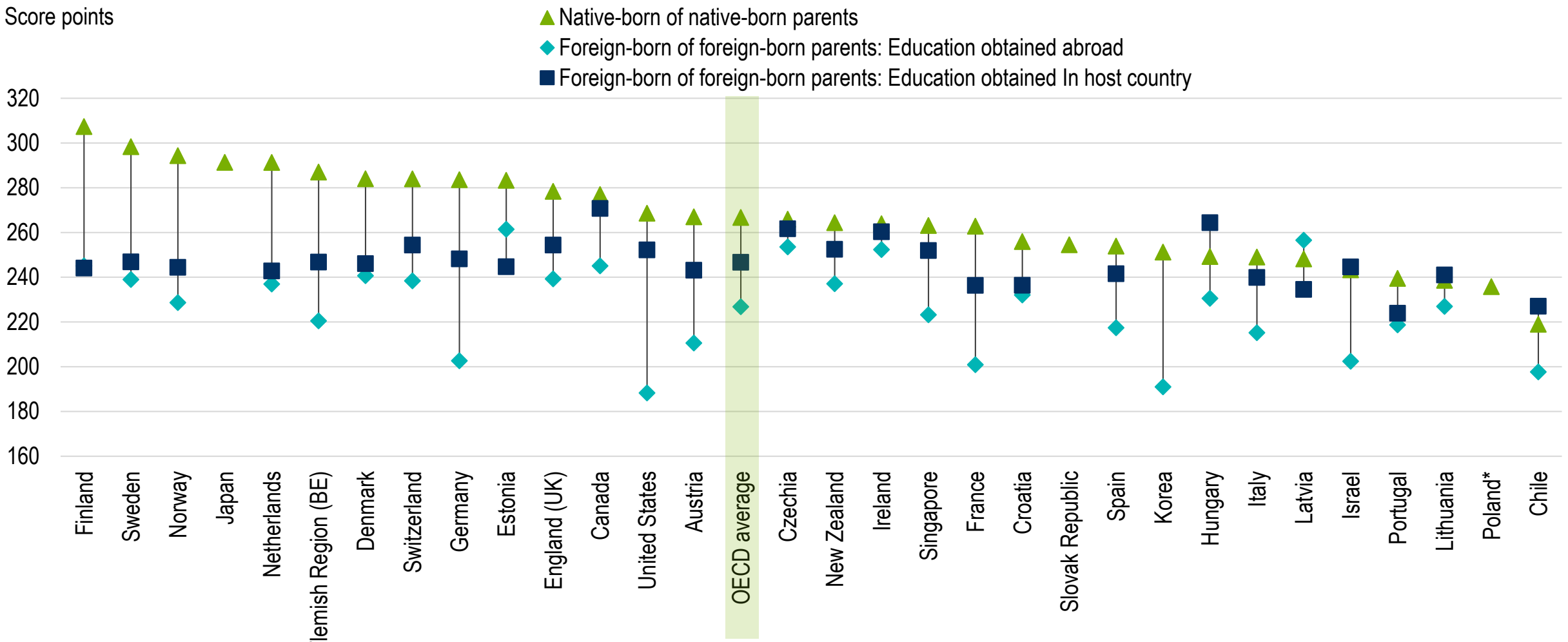


Foreign-born adults who obtained their education in the host country score higher in literacy

Figure 2.18

Average literacy proficiency, by immigrant status and migration history

Country of education

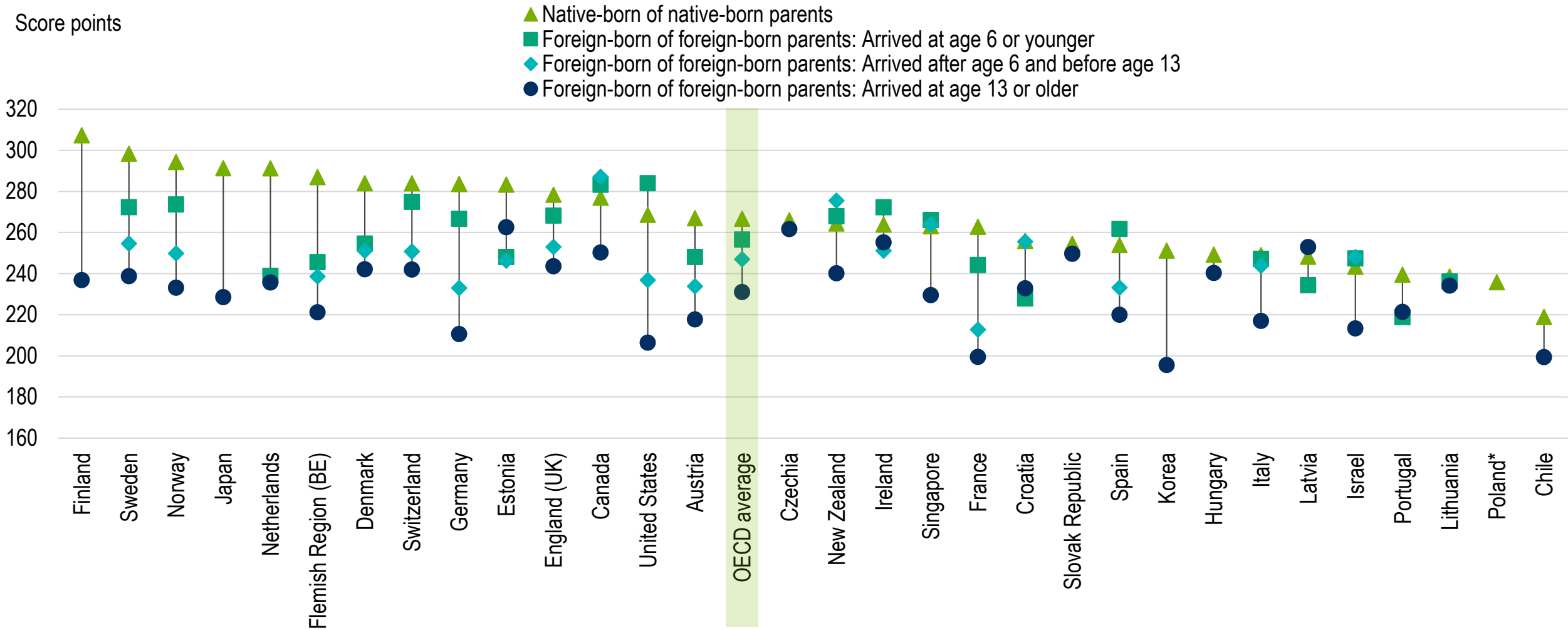


Foreign-born adults who arrived at a younger age in the host country score higher in literacy

Figure 2.18

Average literacy proficiency, by immigrant status and migration history

Age of arrival

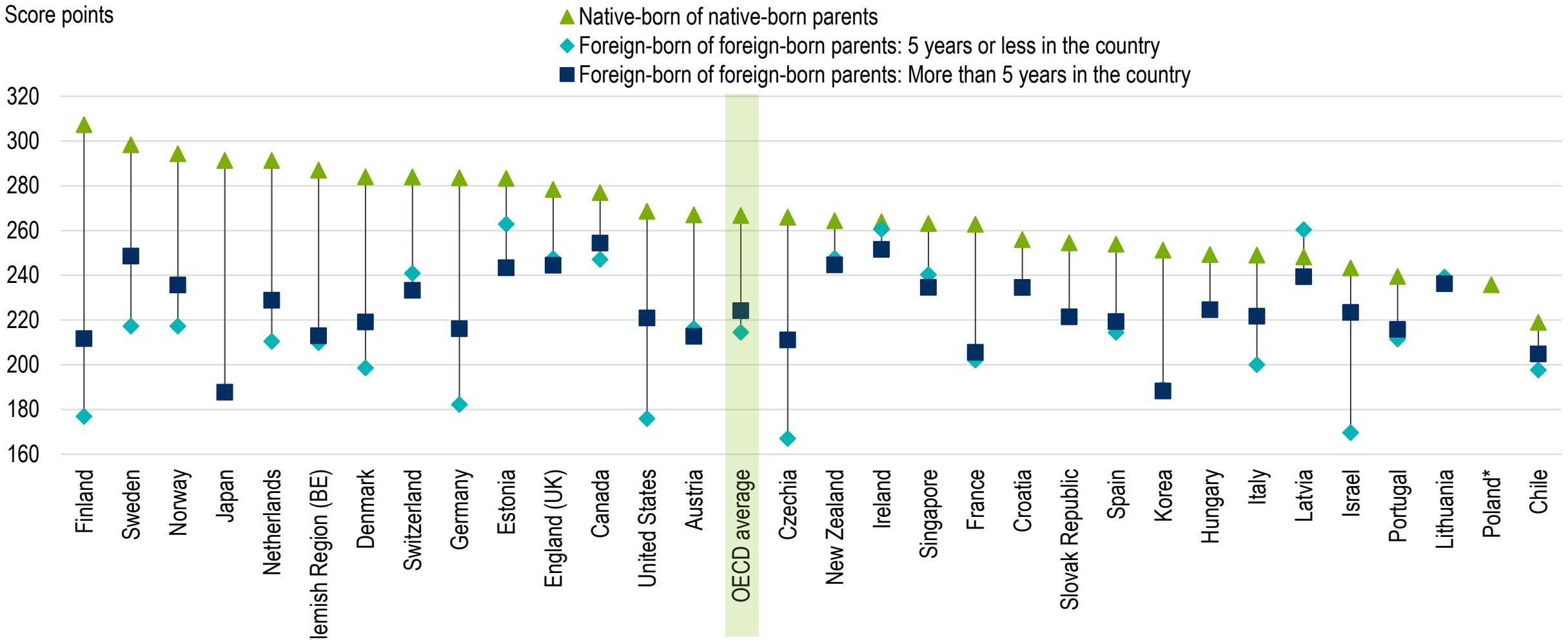


Foreign-born adults who have spent a longer time in the host country score higher in literacy

Figure 2.18

Average literacy proficiency, by immigrant status and migration history

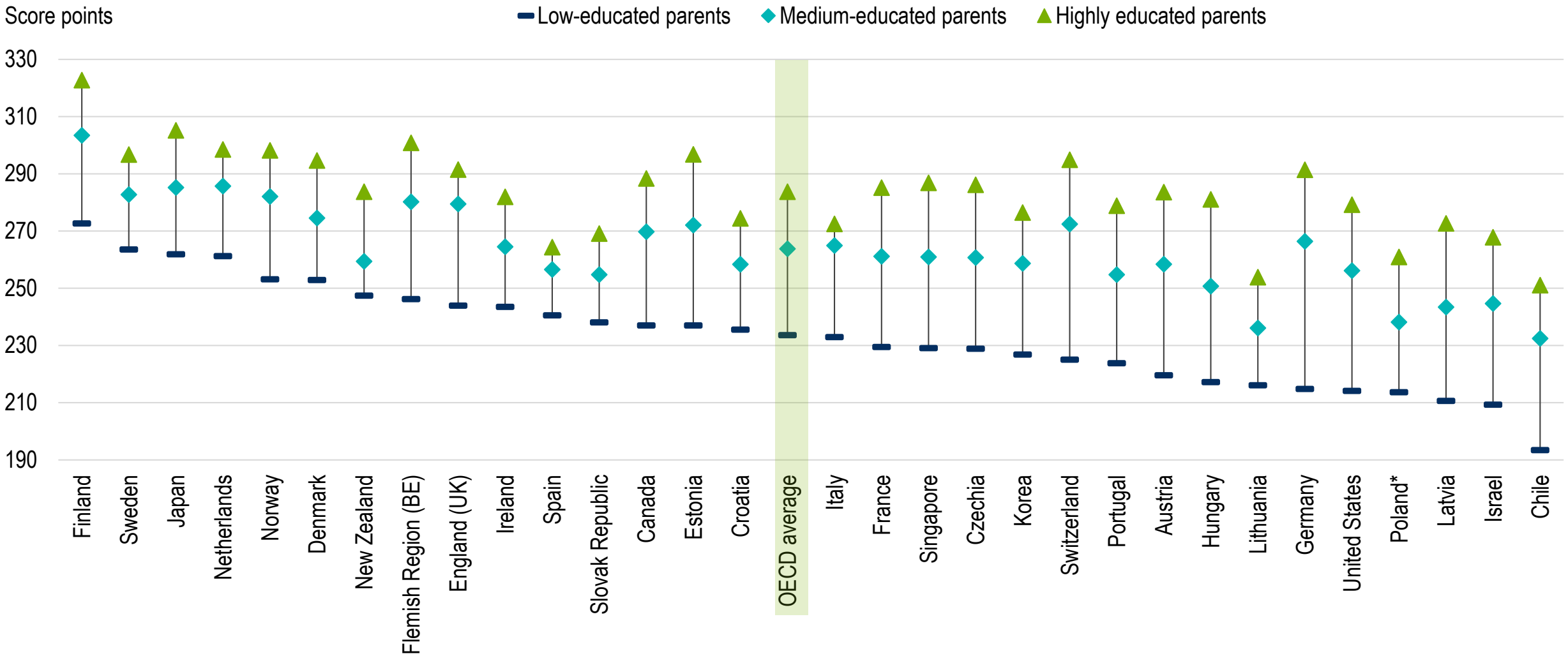
Duration in country



Family strongly affects skills proficiency: Adults who grew up in advantaged socio-economic conditions displayed greater proficiency in literacy

Figure 2.19 (L)

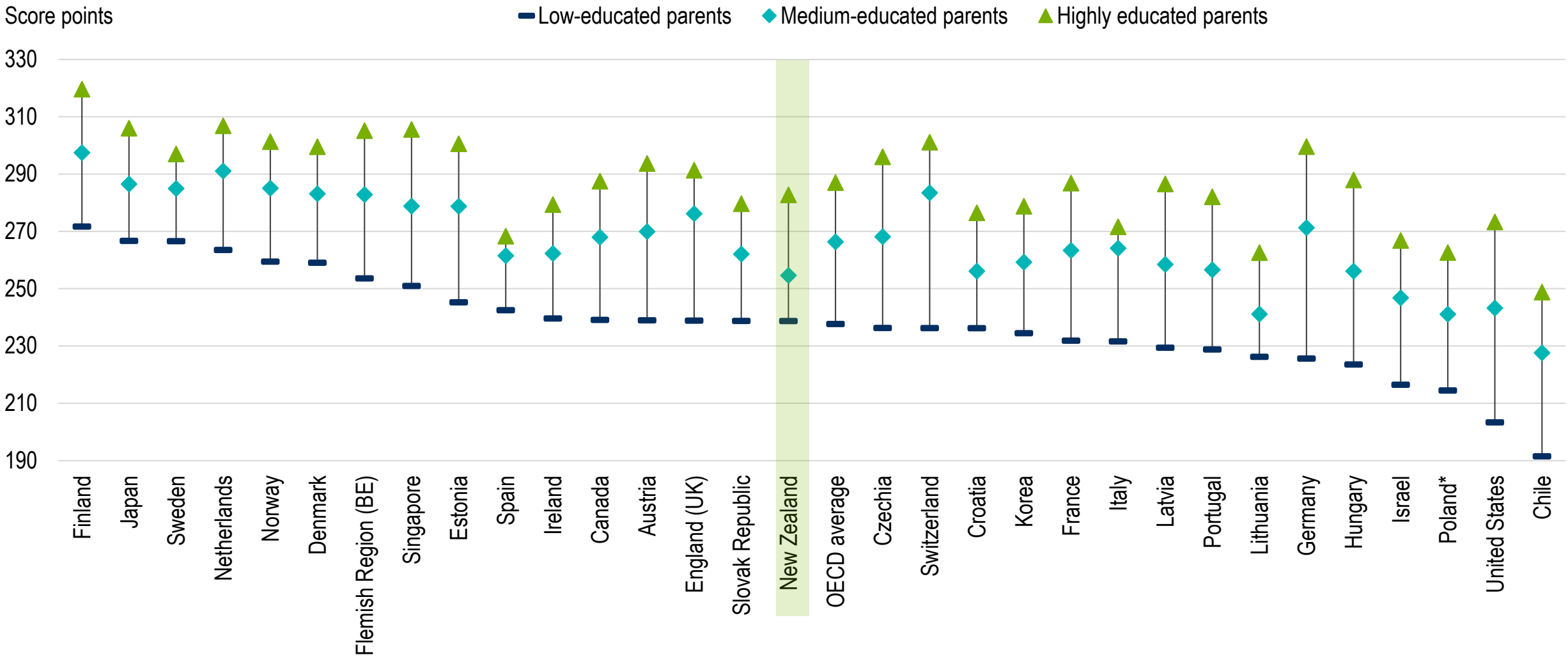
Average proficiency in literacy, by parental education



Family strongly affects skills proficiency: Adults who grew up in advantaged socio-economic conditions displayed greater proficiency in numeracy

Figure 2.19 (N)

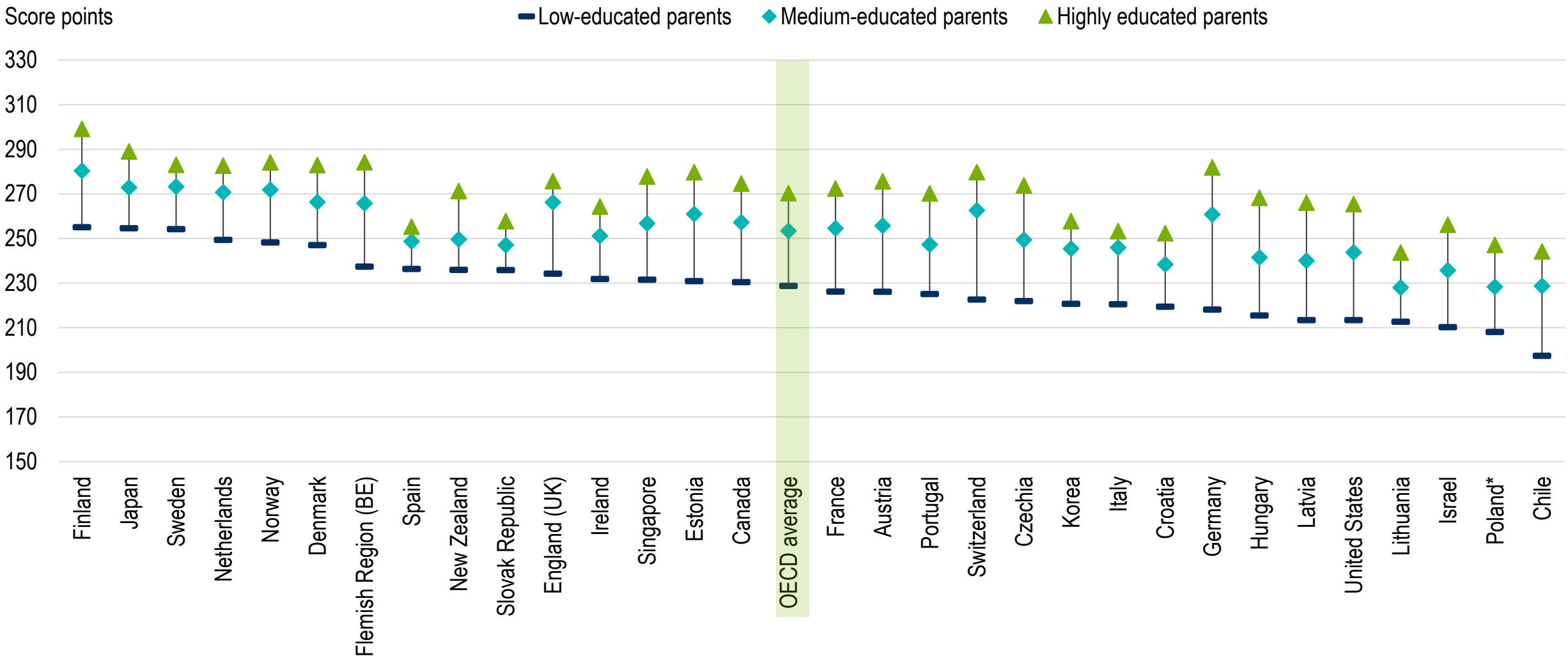
Average proficiency in numeracy, by parental education



Family strongly affects skills proficiency: Adults who grew up in advantaged socio-economic conditions displayed greater proficiency in adaptive problem solving

Figure 2.19 (A)

Average proficiency in adaptive problem solving, by parental education



In nearly all systems, proficiency differences between adults with low- and highly educated parents are large

Figure 2.20 (L)

Differences in literacy, by parental education

Adjusted and unadjusted differences in average literacy scores between adults (highly educated parents *minus* low-educated parents)

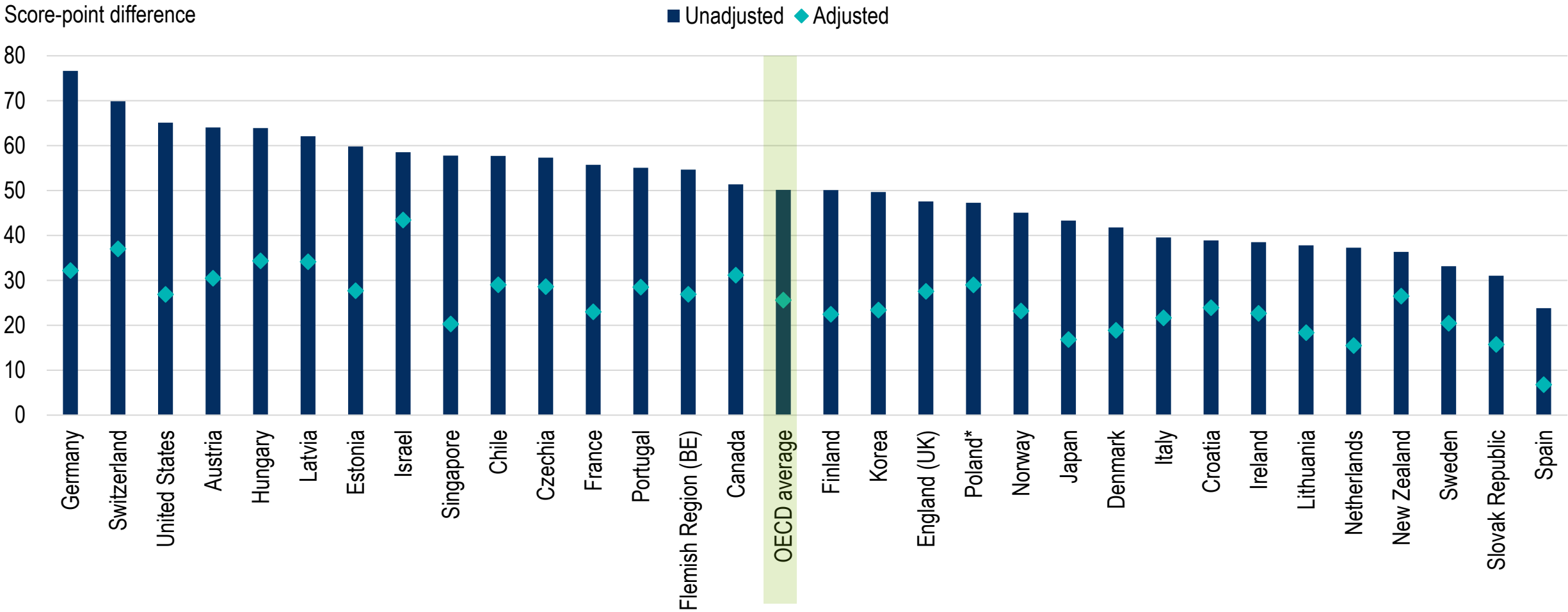


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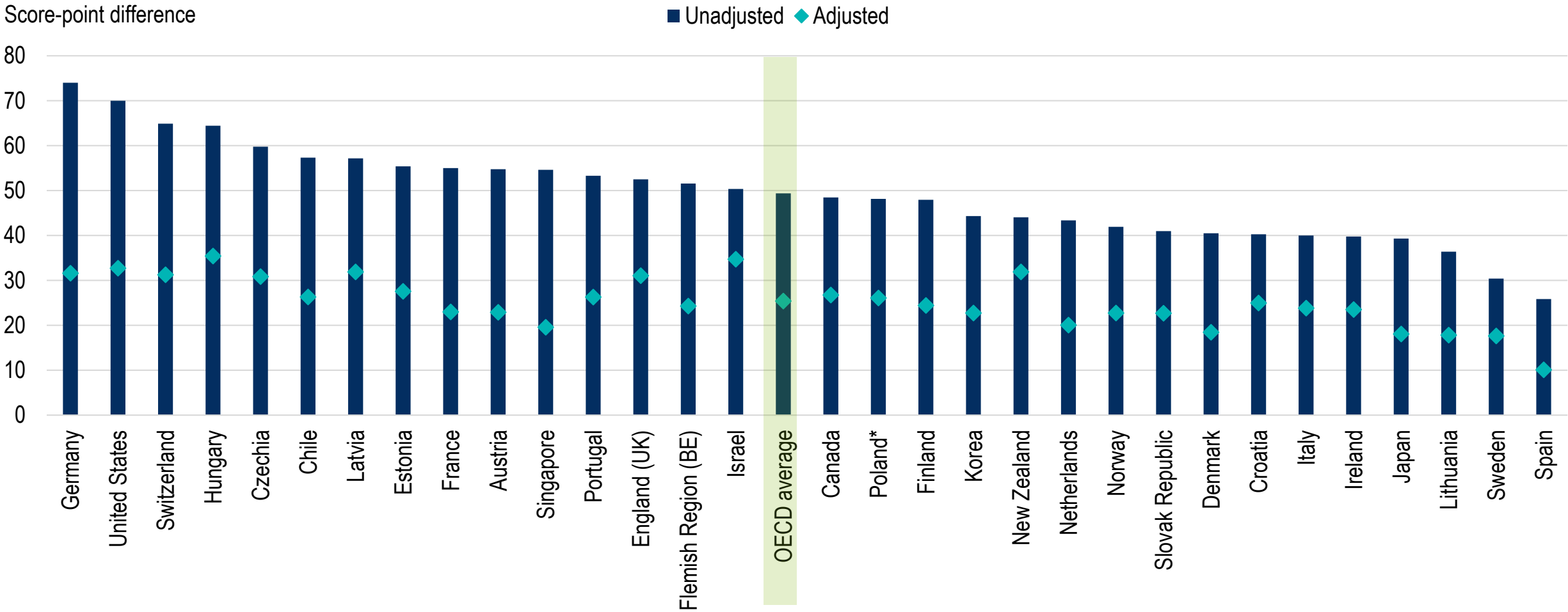
Figure 2.20 (N)

Differences in numeracy, by parental education

Adjusted and unadjusted differences in average numeracy scores between adults (highly educated parents *minus* low-educated parents)

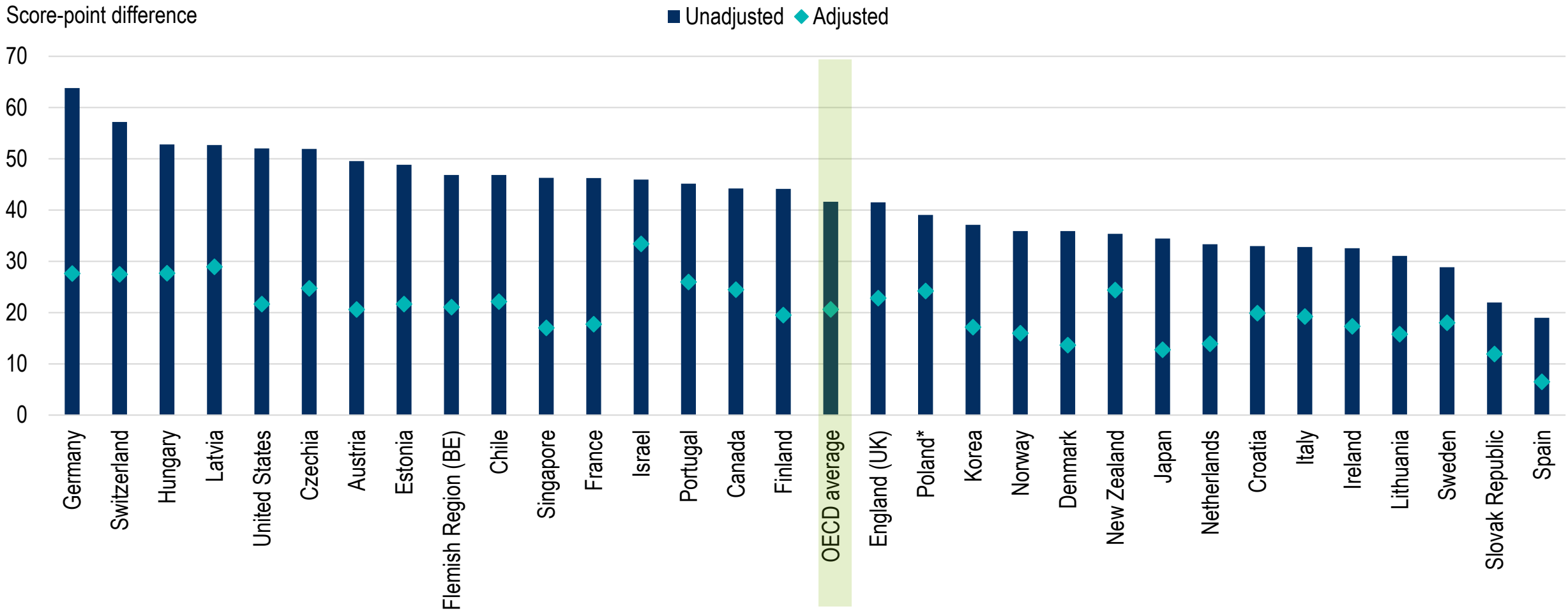


In nearly all systems, proficiency differences between adults with low- and highly educated parents are large

Figure 2.20 (A)

Differences in adaptive problem solving, by parental education

Adjusted and unadjusted differences in average adaptive problem solving scores between adults (highly educated parents *minus* low-educated parents)



Chapter 3

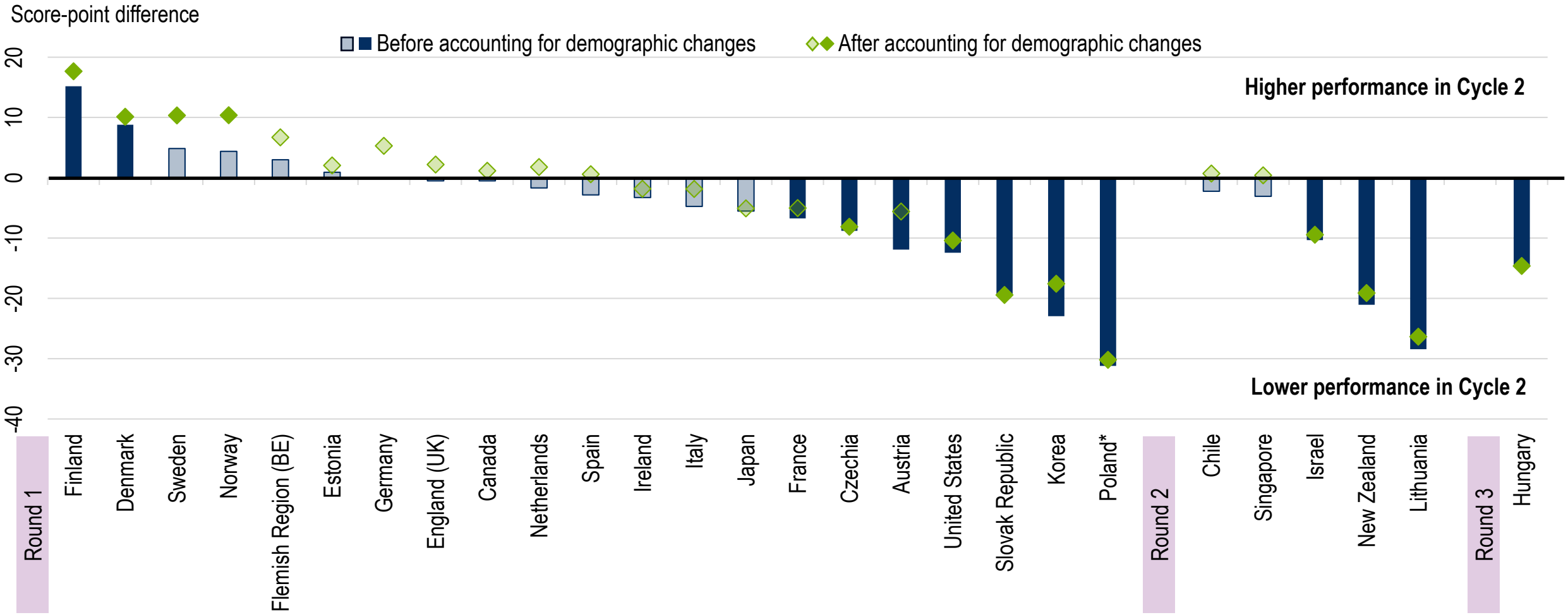
How adults' proficiency in key information-processing skills has changed over the past decade

Average literacy proficiency has stagnated or declined in most countries/economies

Figure 3.1 (L)

Change in average literacy proficiency between cycles, before and after accounting for demographic changes

Difference in mean proficiency scores between cycles, after reweighting Cycle 2 to match Cycle 1's distribution of age, immigrant background and gender (Cycle 2 minus Cycle 1)

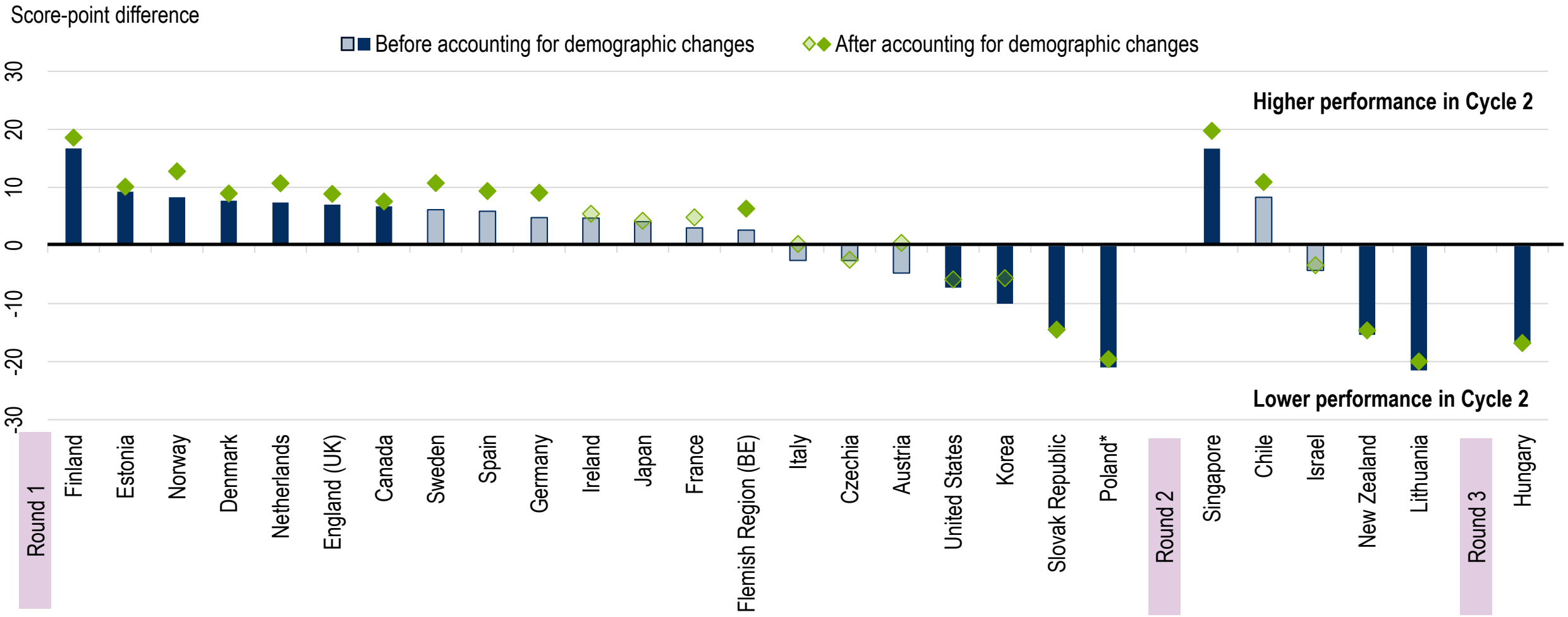


Changes in numeracy proficiency over time have been more favourable

Figure 3.1 (L)

Change in average numeracy proficiency between cycles, before and after accounting for demographic changes

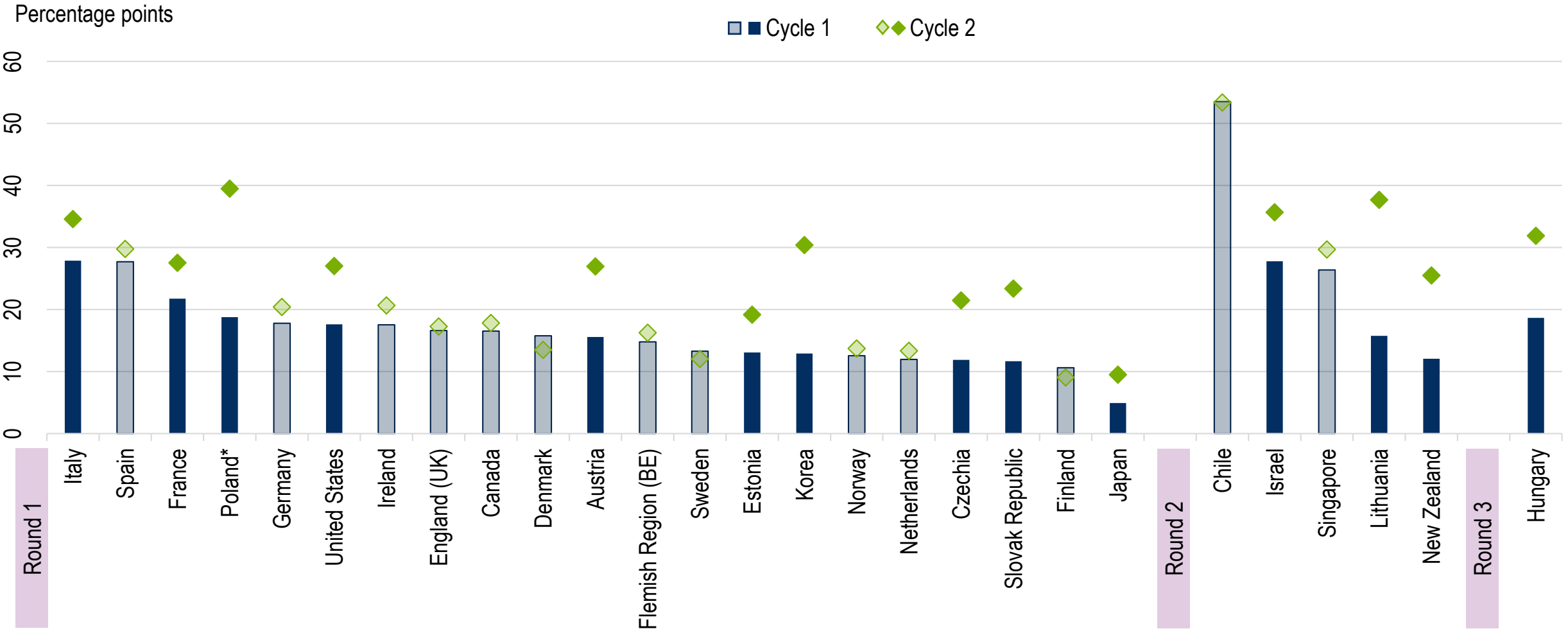
Difference in mean proficiency scores between cycles, after reweighting Cycle 2 to match Cycle 1's distribution of age, immigrant background and gender (Cycle 2 minus Cycle 1)



The share of low performers in literacy increased in half of the participating countries…

Figure 3.2

Share of adults scoring at low proficiency levels (at or below Level 1) in literacy in Cycle 1 and Cycle 2

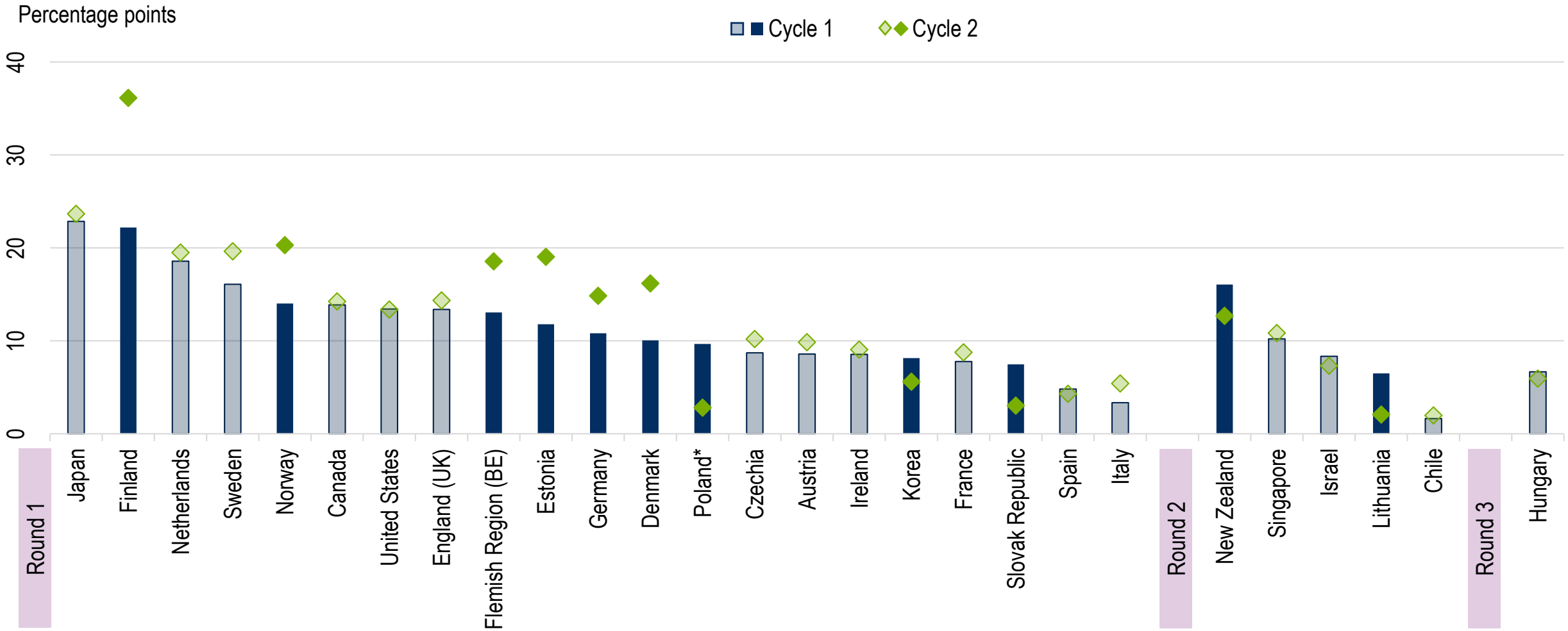


Darker colours indicate a significant change between cycles in the share of low performers

…with the share of high performers remaining unchanged or increasing

Figure 3.2

Share of adults scoring at high proficiency levels (at or above Level 4) in literacy in Cycle 1 and Cycle 2

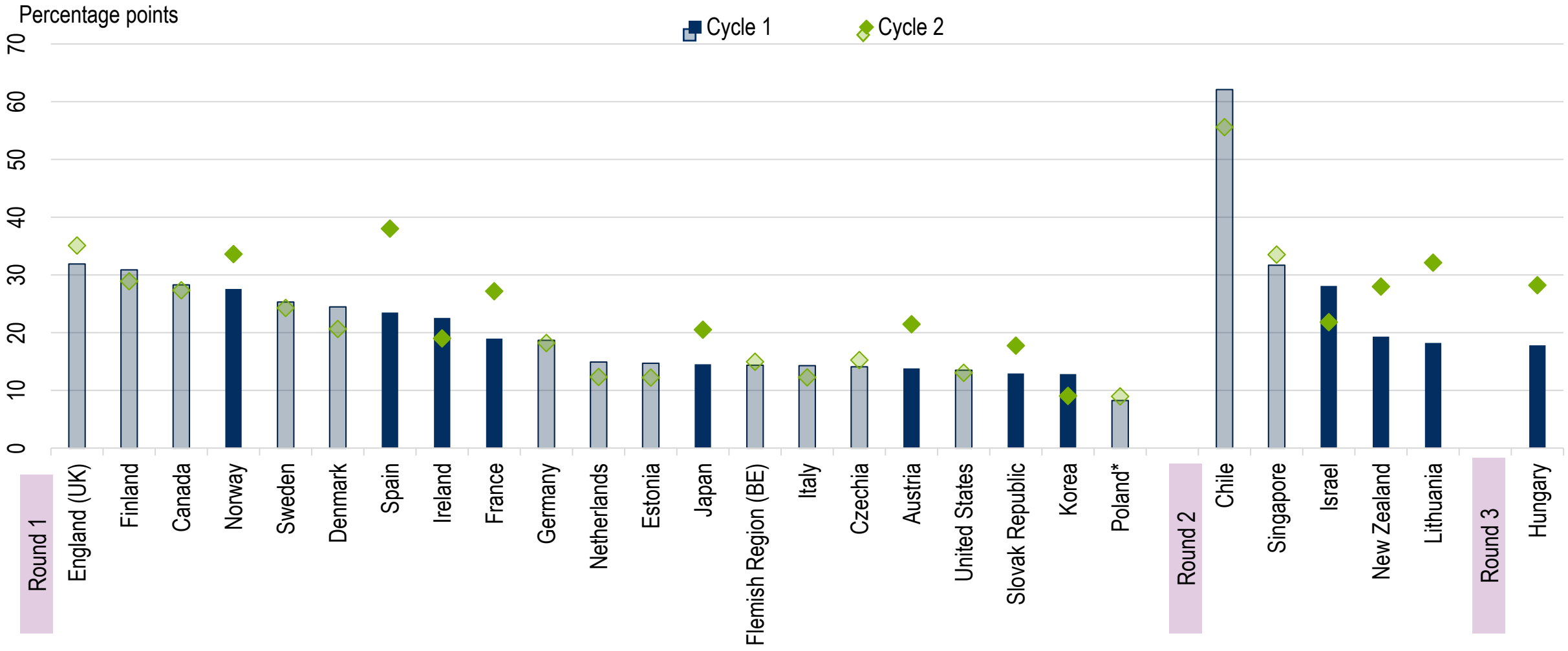


Darker colours indicate a significant change between cycles in the share of high performers

The share of low performers in numeracy increased in one-third of countries…

Figure 3.3

Share of adults scoring at low proficiency levels (at or below Level 1) in numeracy in Cycle 1 and Cycle 2

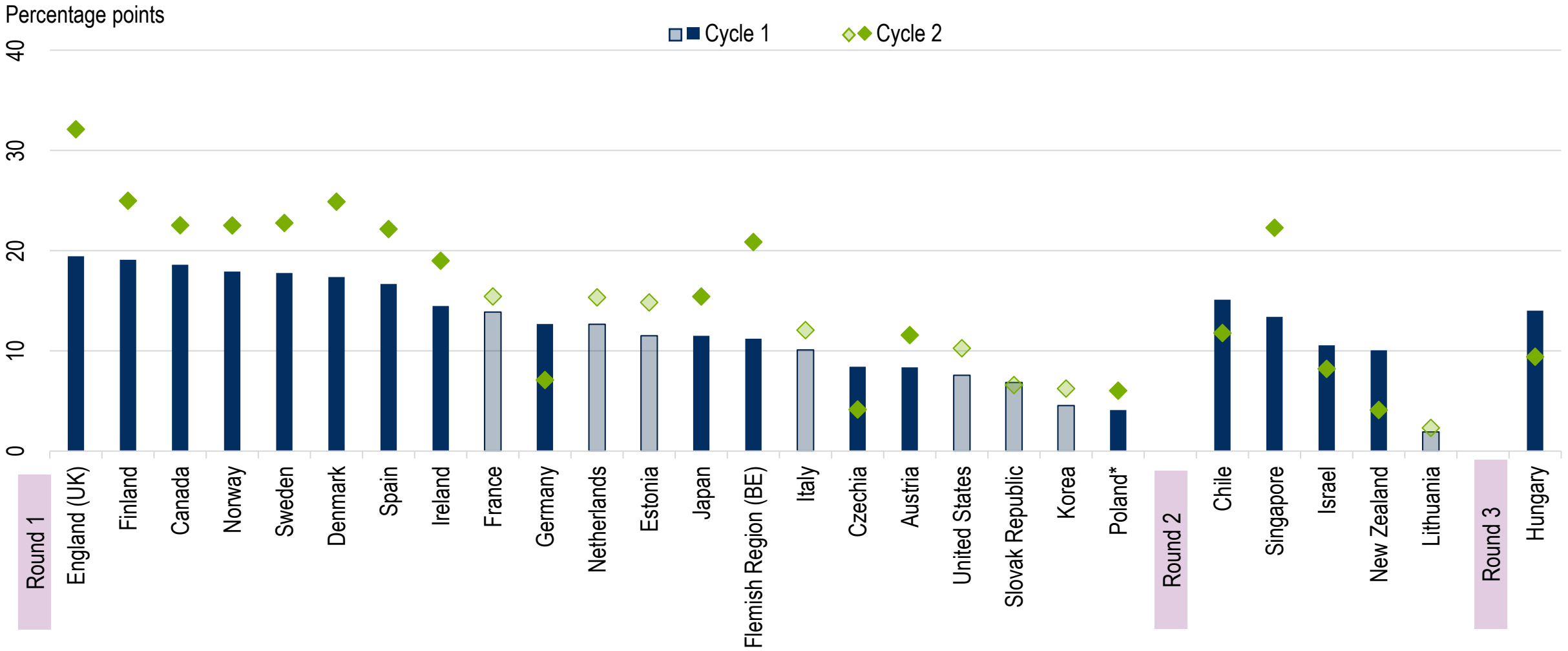


Darker colours indicate a significant change between cycles in the share of low performers

…with the share of high performers remaining unchanged or increasing

Figure 3.3

Share of adults scoring at high proficiency levels (at or above Level 4) in numeracy in Cycle 1 and Cycle 2



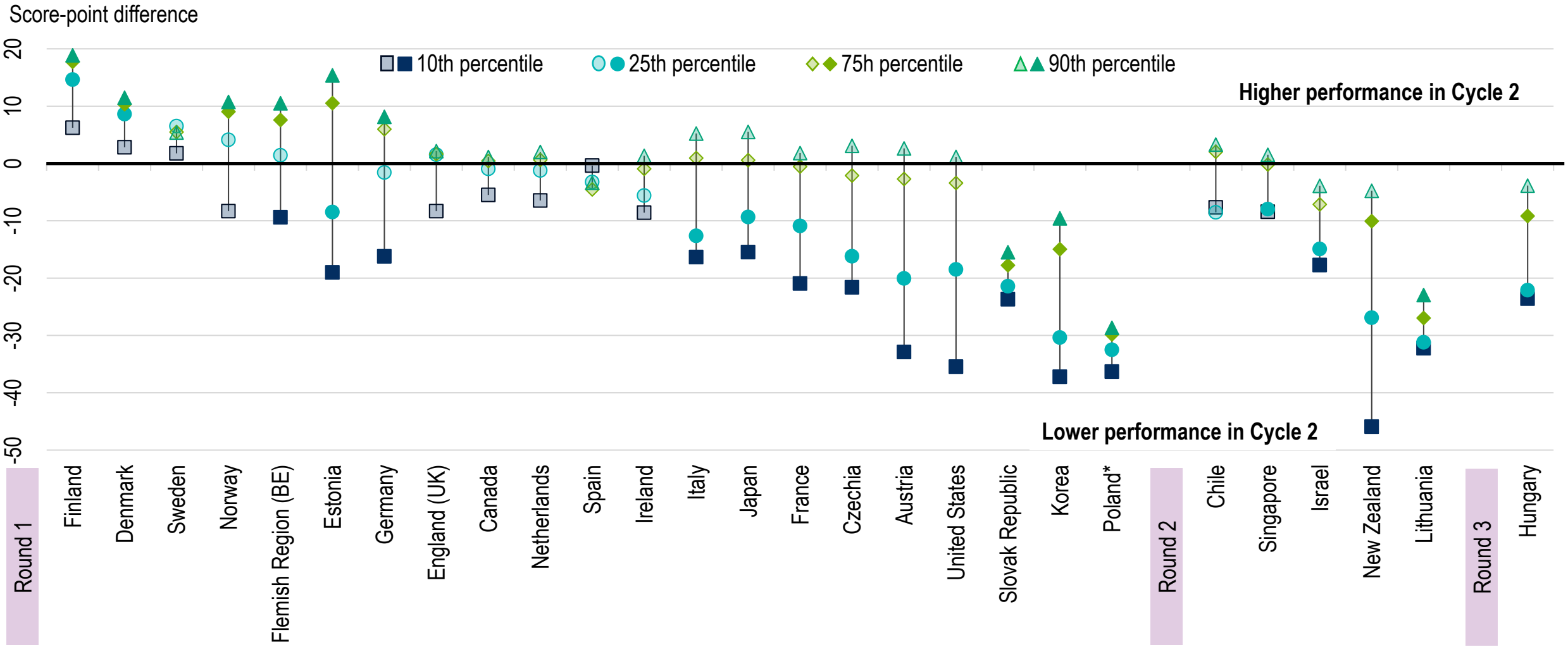
Darker colours indicate a significant change between cycles in the share of high performers

Declines in average literacy proficiency are largely due to falls among the lowest-performing quarter of the population

Figure 3.4 (L)

Change in the distribution of proficiency of literacy between cycles

Differences in proficiency scores between cycles at the 10th, 25th, 75th and 90th percentiles (Cycle 2 minus Cycle 1)

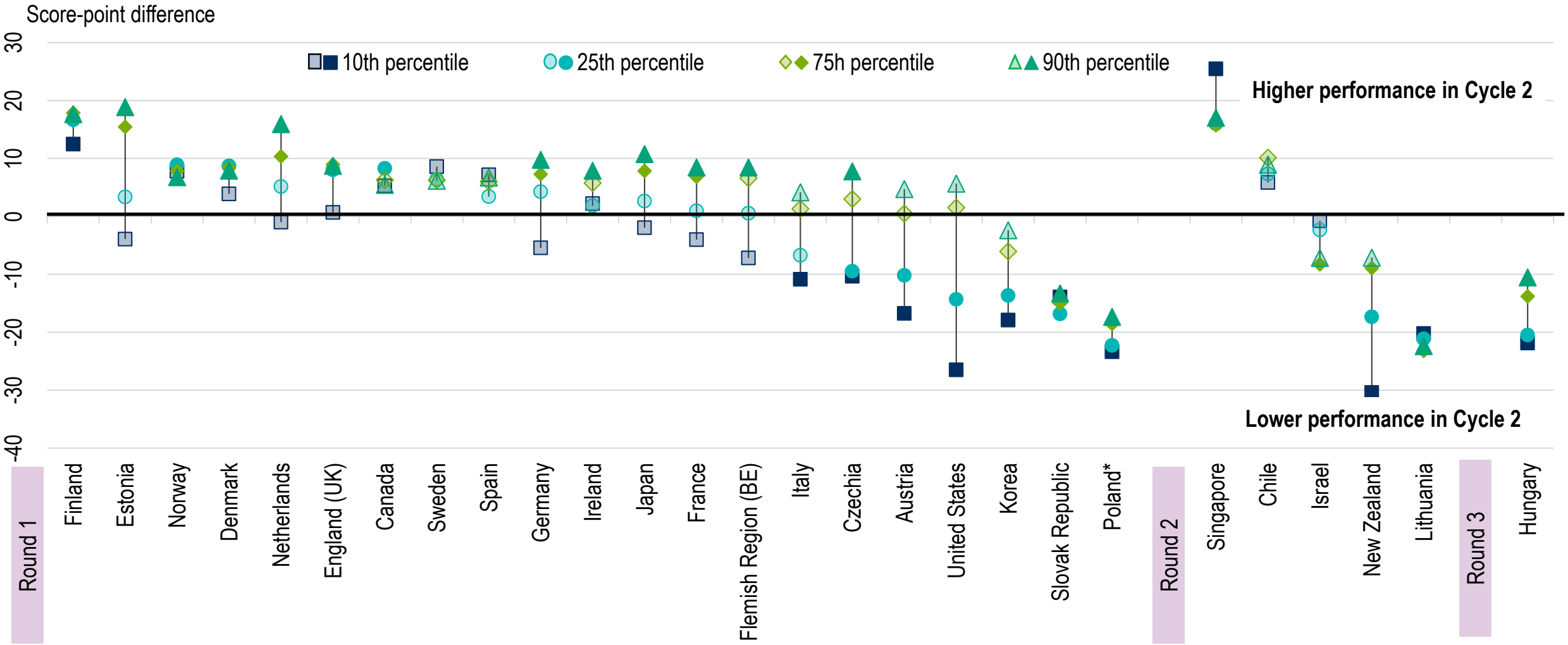


Numeracy proficiency improves more strongly among top performers, and declines especially among the lowest-performing quarter of the population

Figure 3.4 (N)

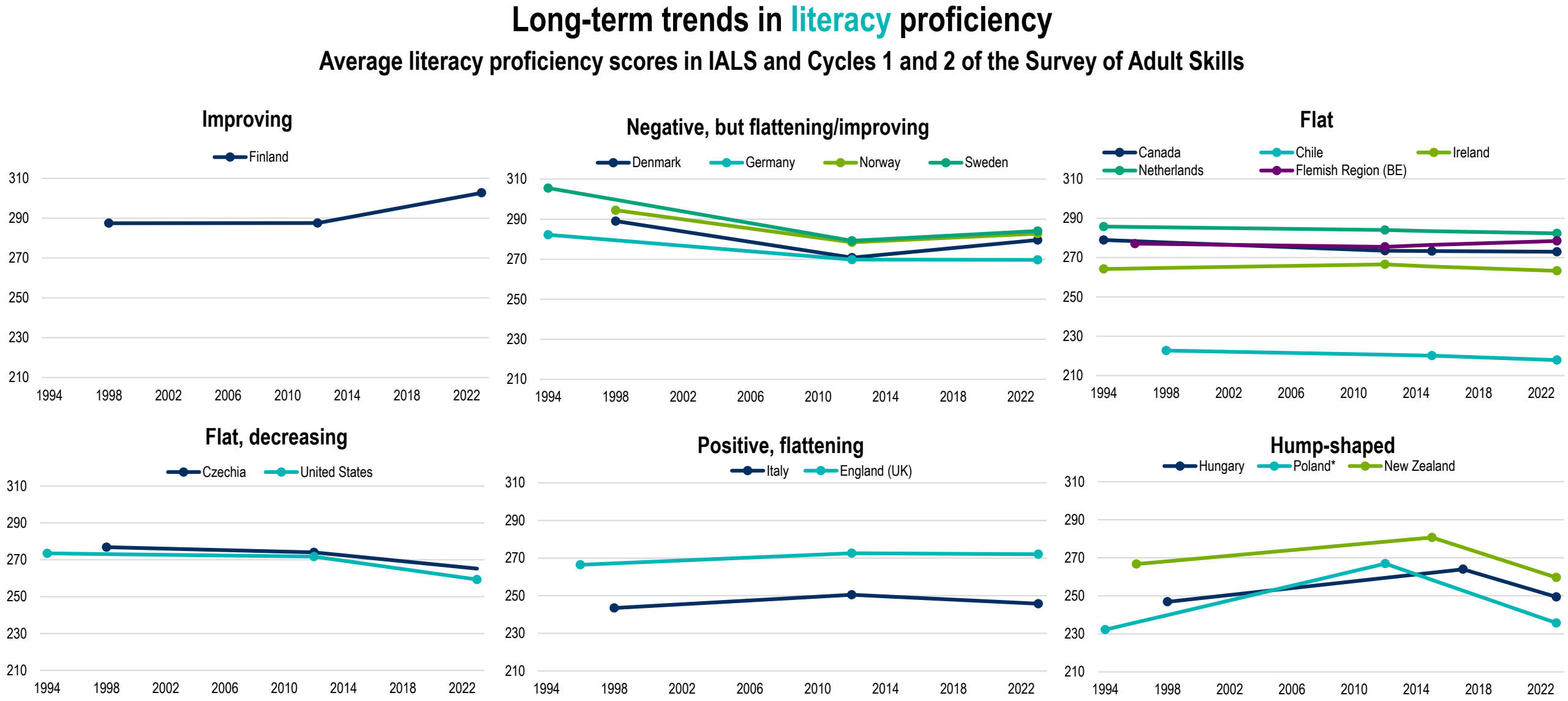
Change in the distribution of proficiency of numeracy between cycles

Differences in proficiency scores between cycles at the 10th, 25th, 75th and 90th percentiles (Cycle 2 minus Cycle 1)



The development of adults' literacy proficiency has been relatively stable over the decades

Figure 3.5

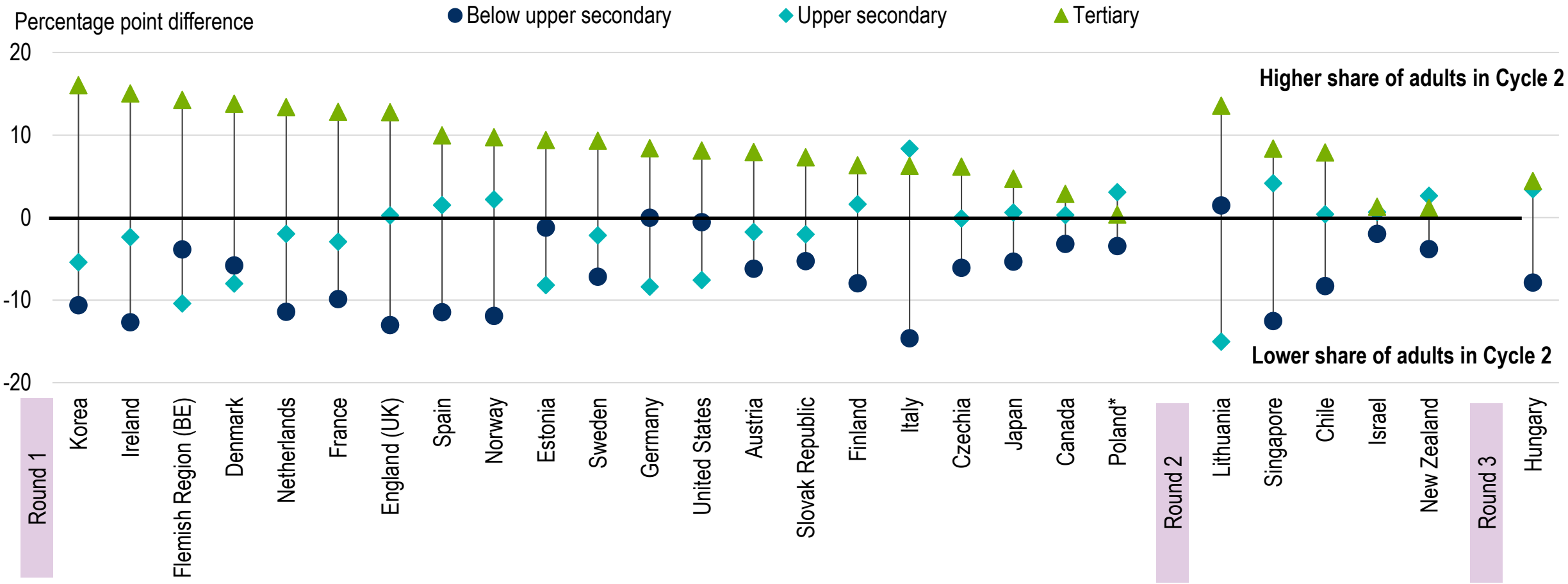


Educational attainment has increased in almost all countries

Figure 3.6

Change in educational attainment of the adult population (25-65 year-olds) between cycles

Difference in the shares of adults with below upper secondary, upper secondary and tertiary education (Cycle 2 minus Cycle 1)

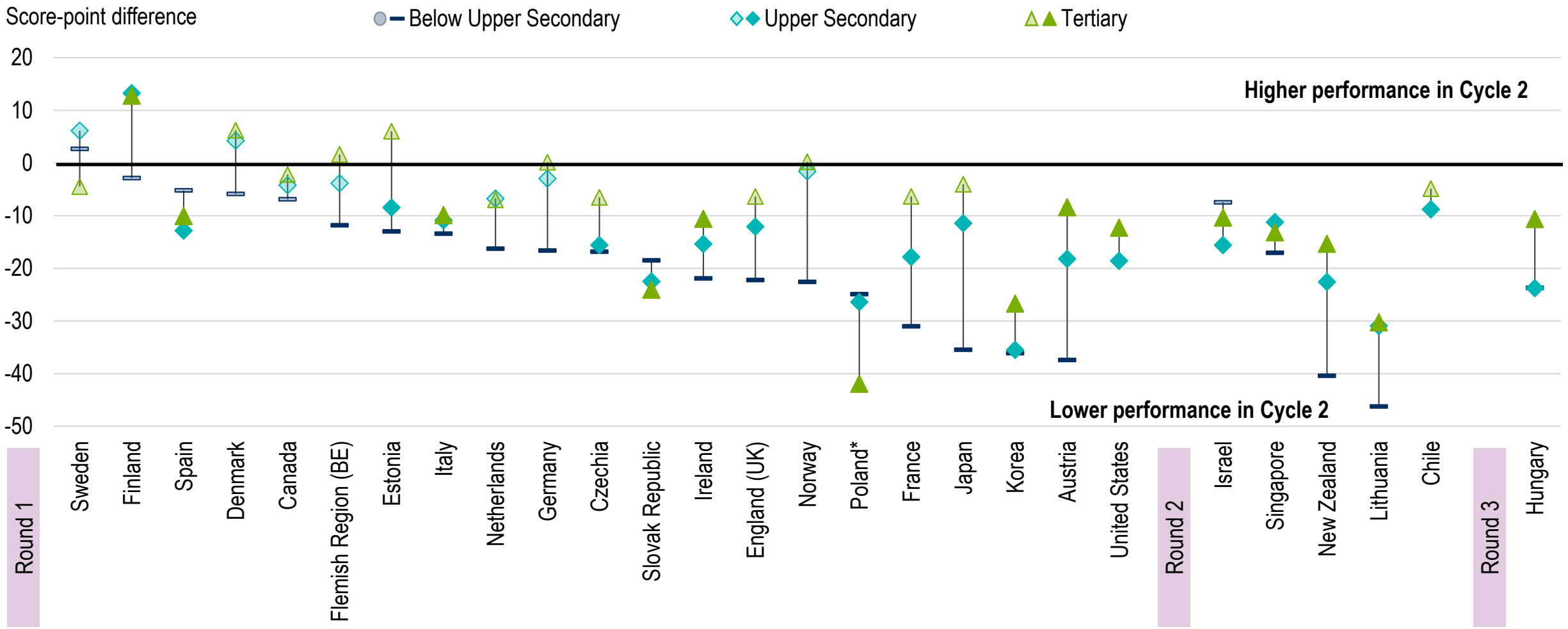


Literacy proficiency has decreased across different education groups, most strongly among the low-educated

Figure 3.7

Change in literacy proficiency between cycles (25-65 year-olds), by educational attainment

Unadjusted difference in mean literacy scores between cycles (Cycle 2 minus Cycle 1)

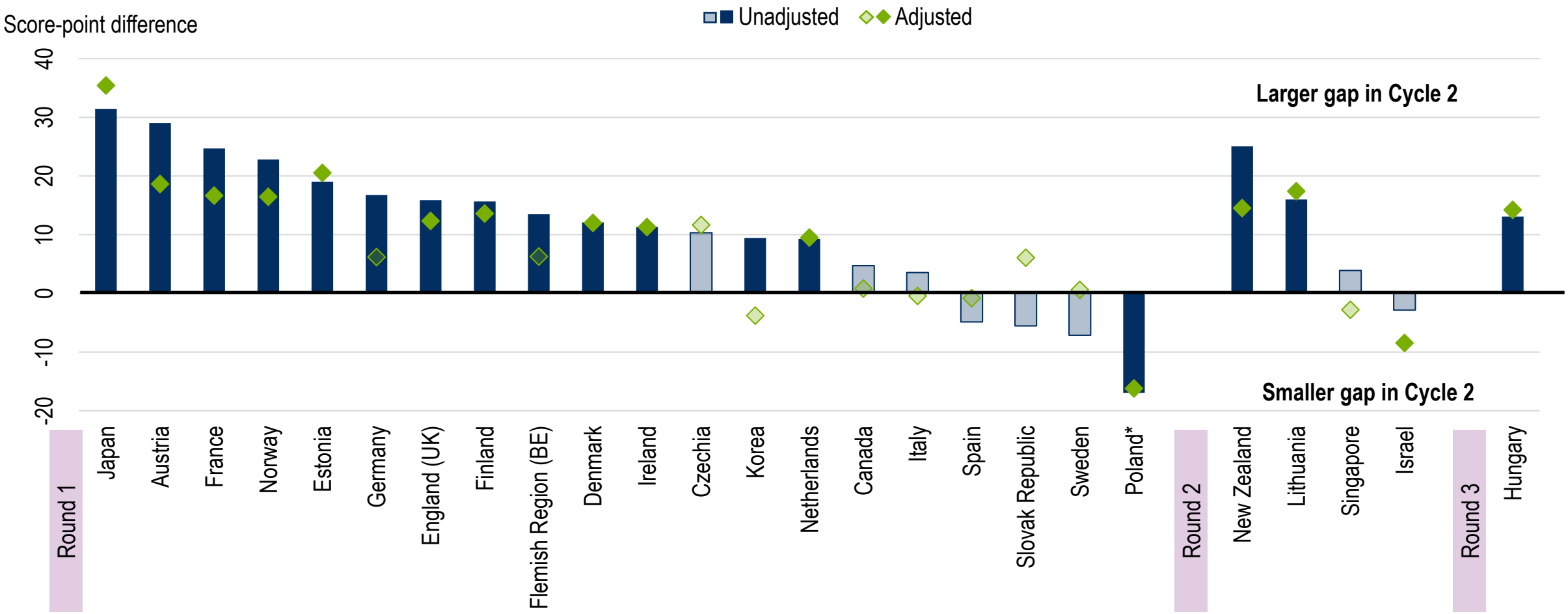


The gap in literacy proficiency between the low- and the highly educated has widened

Figure 3.8

Change in the gap in literacy proficiency between highly and low-educated adults (25-65 year-olds)

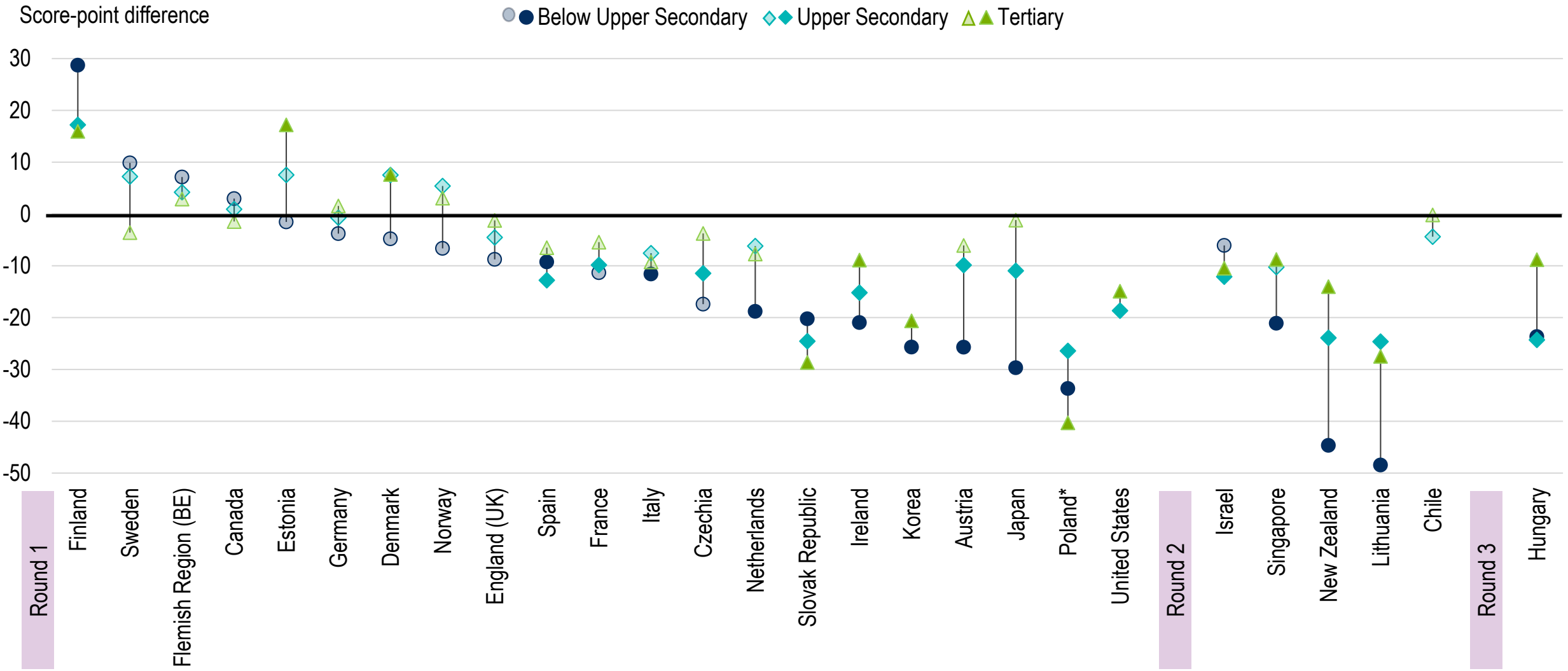
Adjusted and unadjusted change between cycles in the average score difference between adults with tertiary education and adults with below upper secondary education (Cycle 2 minus Cycle 1)



Literacy proficiency has decreased across different education groups, most strongly among the low-educated

Figure 3.9

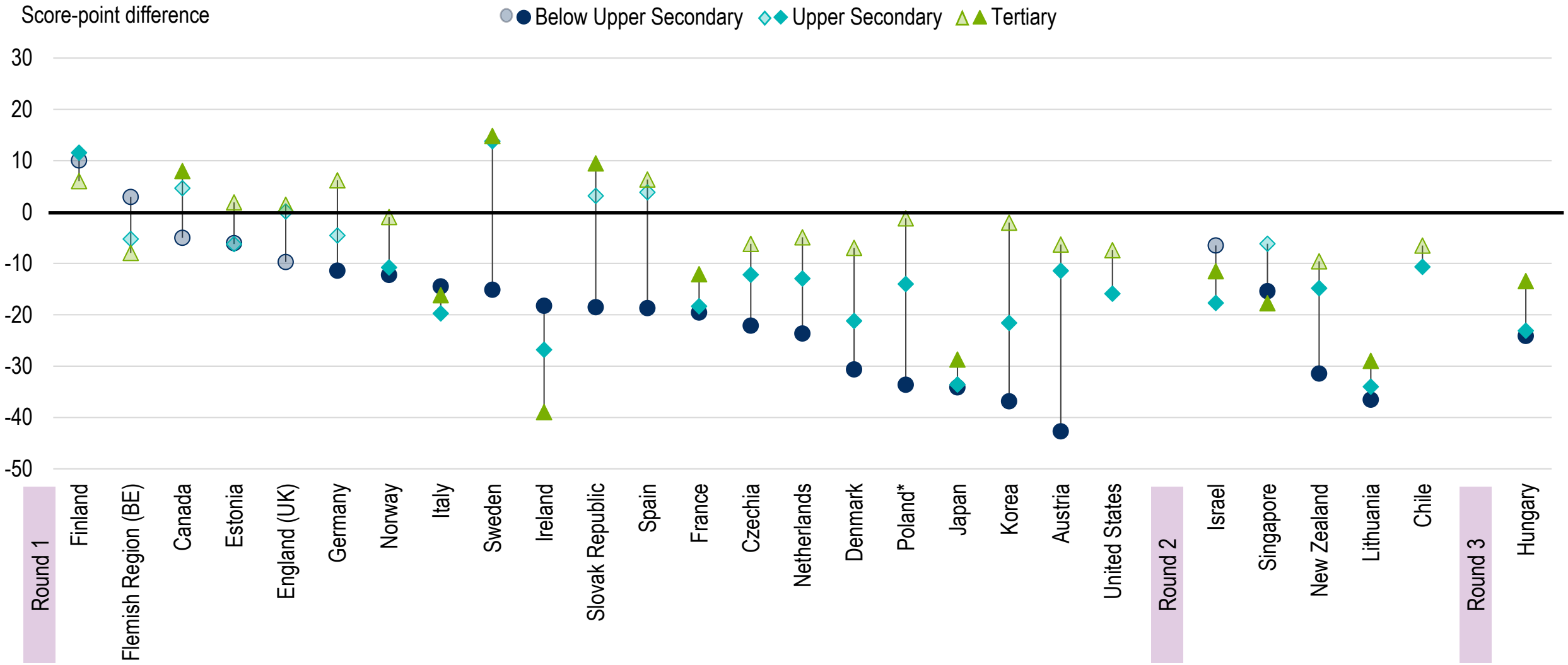
Change in literacy proficiency between cycles for 25-44 year-olds, by educational attainment



Among older adults, literacy declined especially among the low-educated

Figure 3.9

Change in literacy proficiency between cycles for 45-65 year-olds, by educational attainment

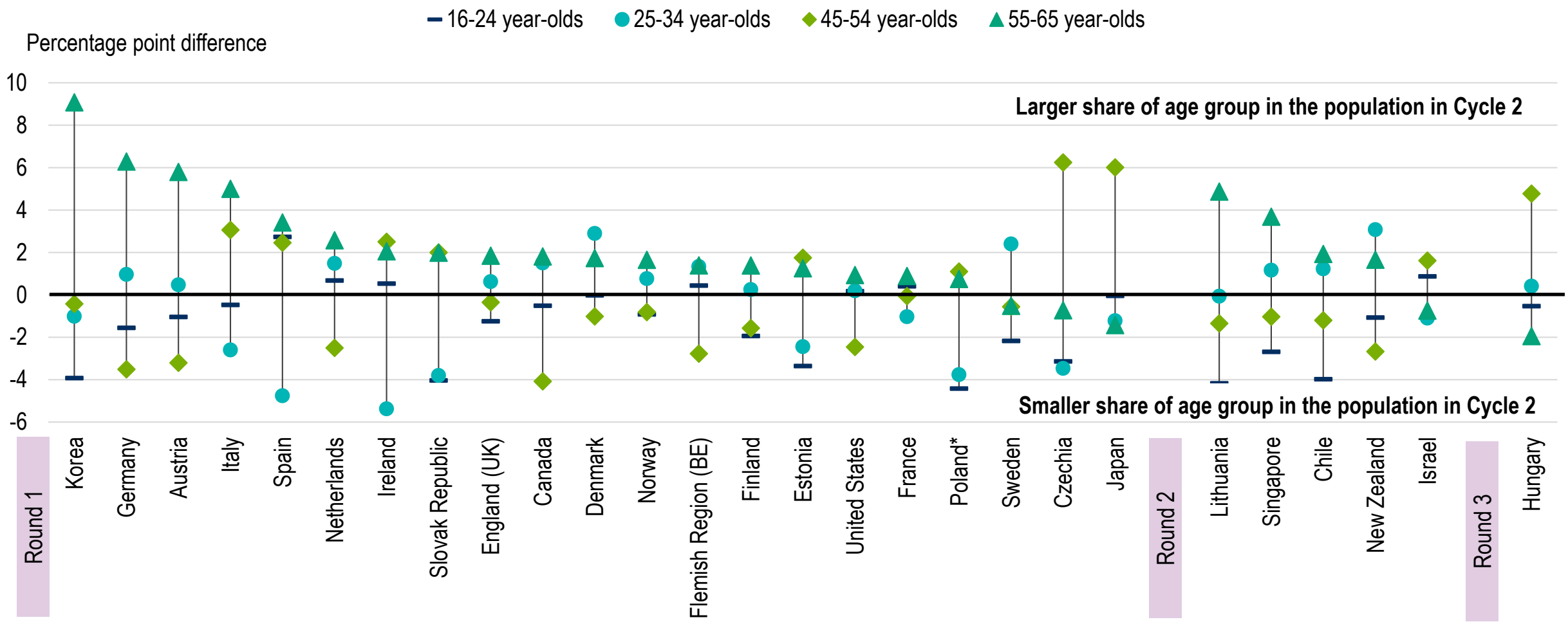


The age composition of the adult population has not changed considerably between cycles

Figure 3.10

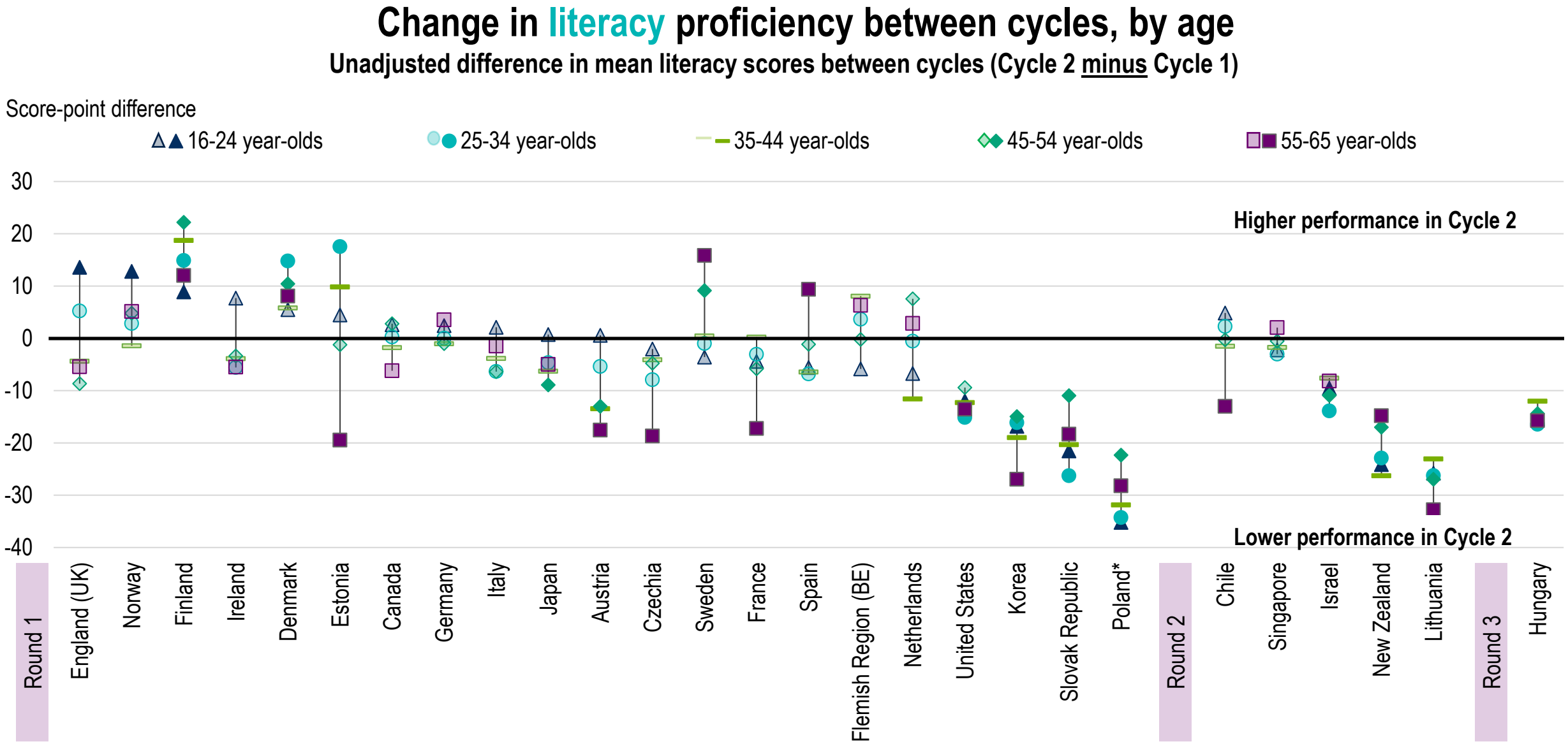
Change in the age composition of the adult population between cycles

Difference in the relative size of 10-year age groups between cycles (Cycle 2 minus Cycle 1)



Declines in literacy observed among different age groups, more often among older adults

Figure 3.11

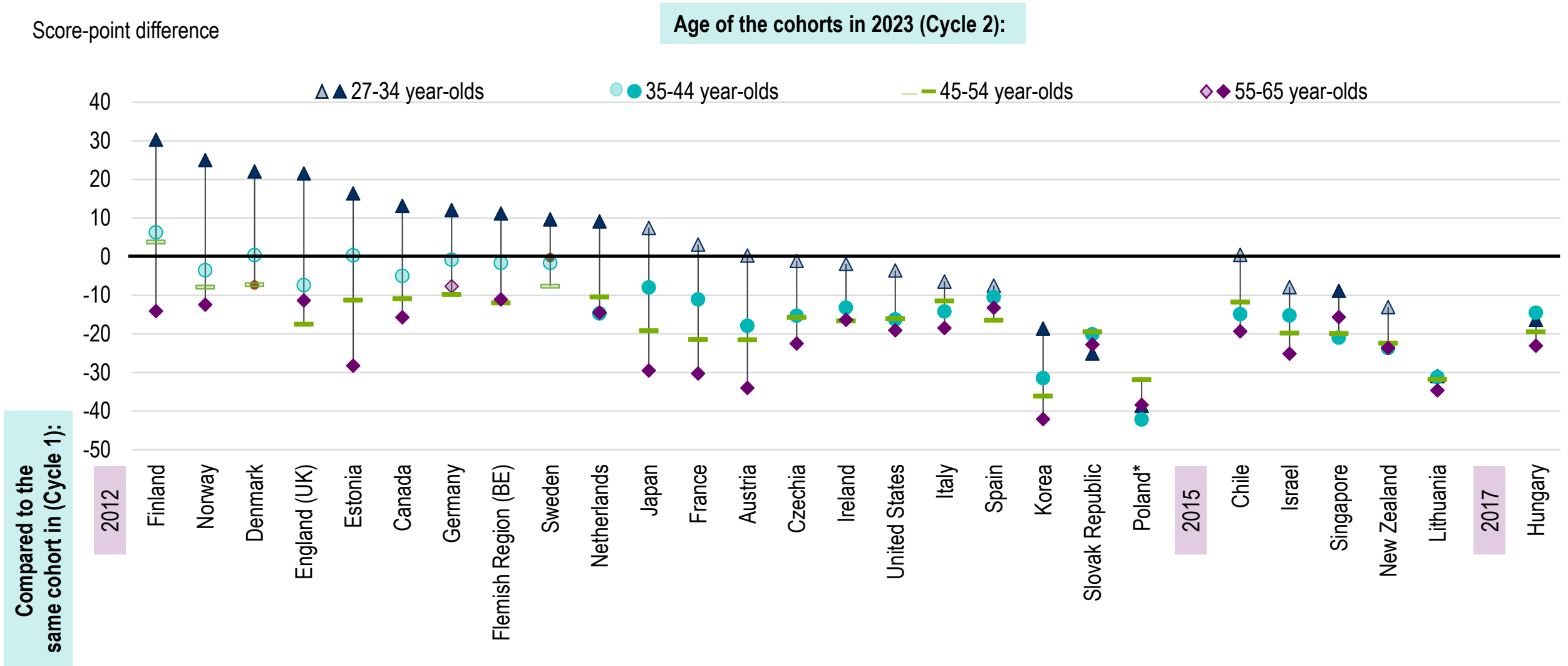


Age-related skills loss even among younger cohorts

Figure 3.12

Effect of ageing on literacy proficiency

Change in literacy proficiency within cohorts between cycles, foreign-born adults who had lived in the country less than 10 years excluded

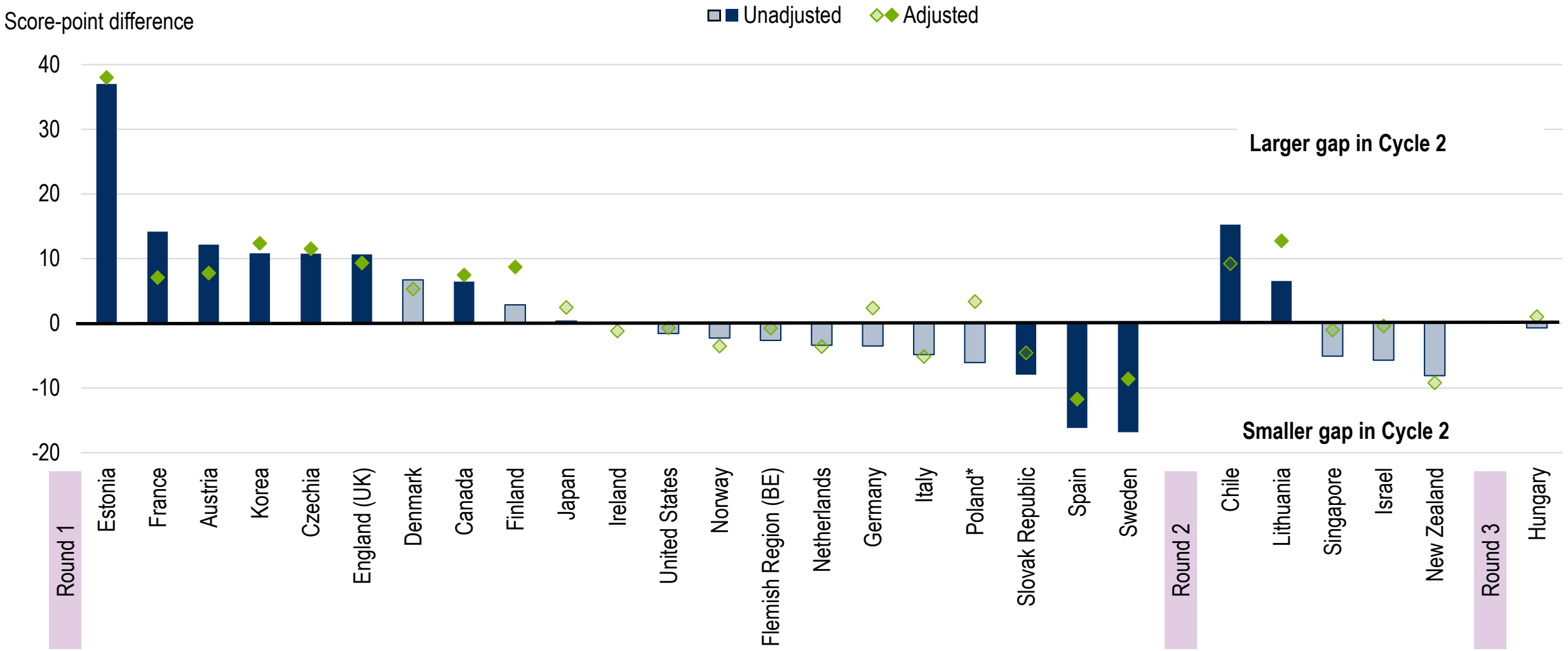


The gap in literacy proficiency between younger and older adults widened in one-third of the participating countries

Figure 3.13

Change in the gap in literacy proficiency between younger and older adults

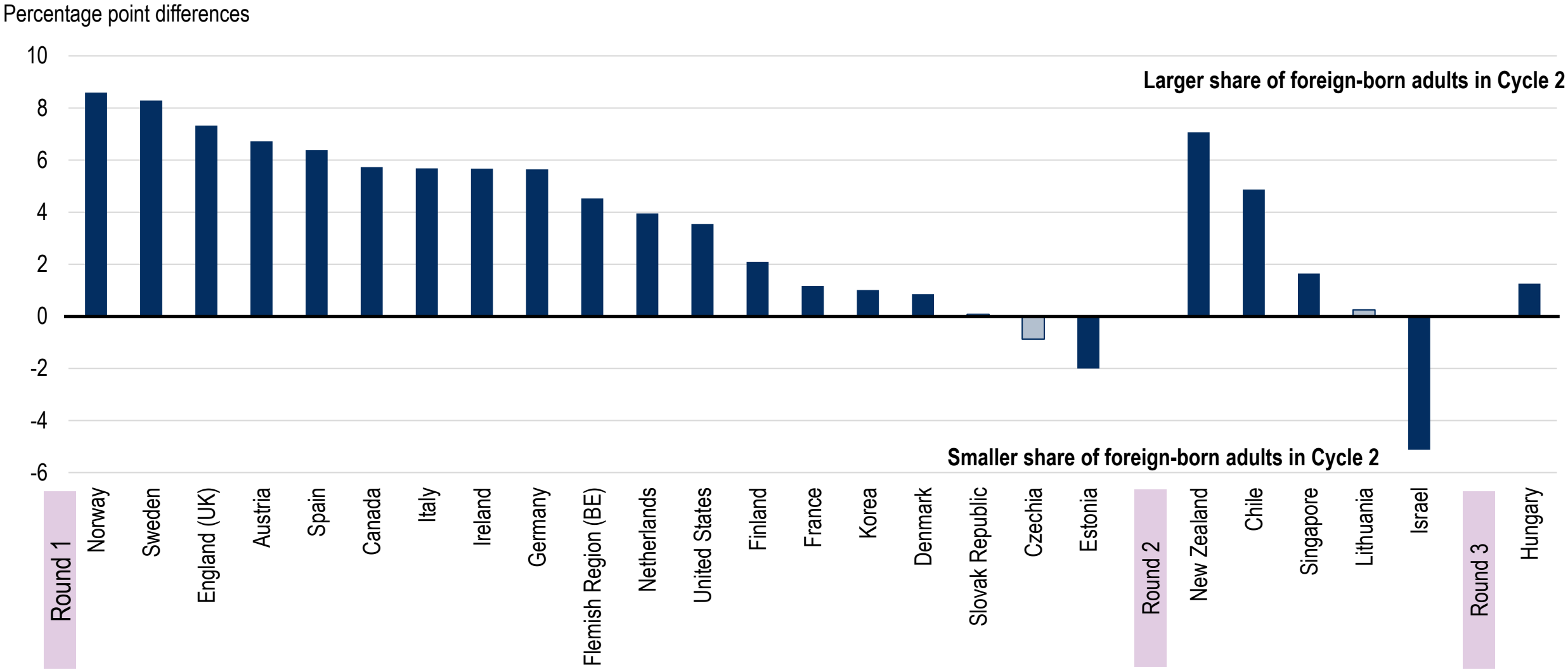
Adjusted and unadjusted changes between cycles in the mean score difference between 25-34 year-olds and 55-65 year-olds (Cycle 2 minus Cycle 1)



The share of immigrants in the adult population has increased since the last survey

Figure 3.14

Change in the share of foreign-born adults in the adult population between cycles

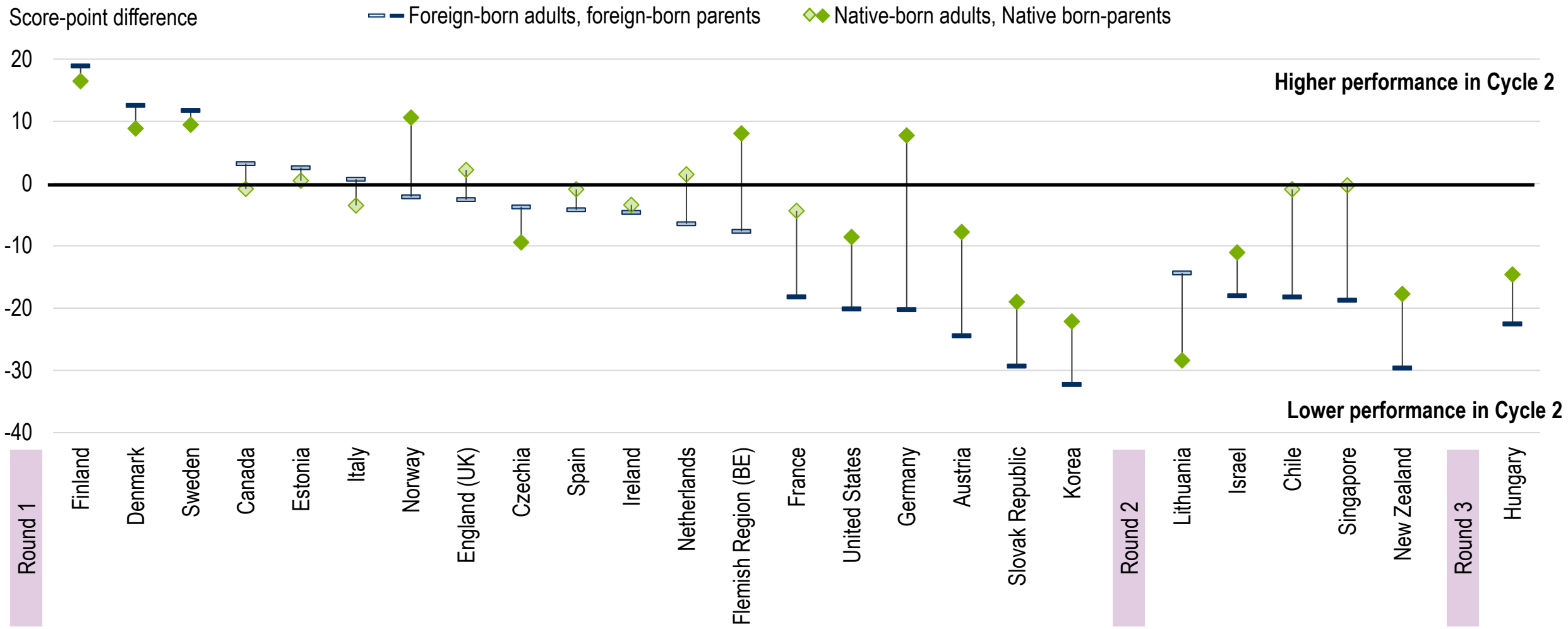


Some countries saw a decline in literacy proficiency among immigrants

Figure 3.15

Change in literacy proficiency between cycles, by immigrant background

Adjusted and unadjusted difference in mean literacy scores between cycles (Cycle 2 minus Cycle 1)

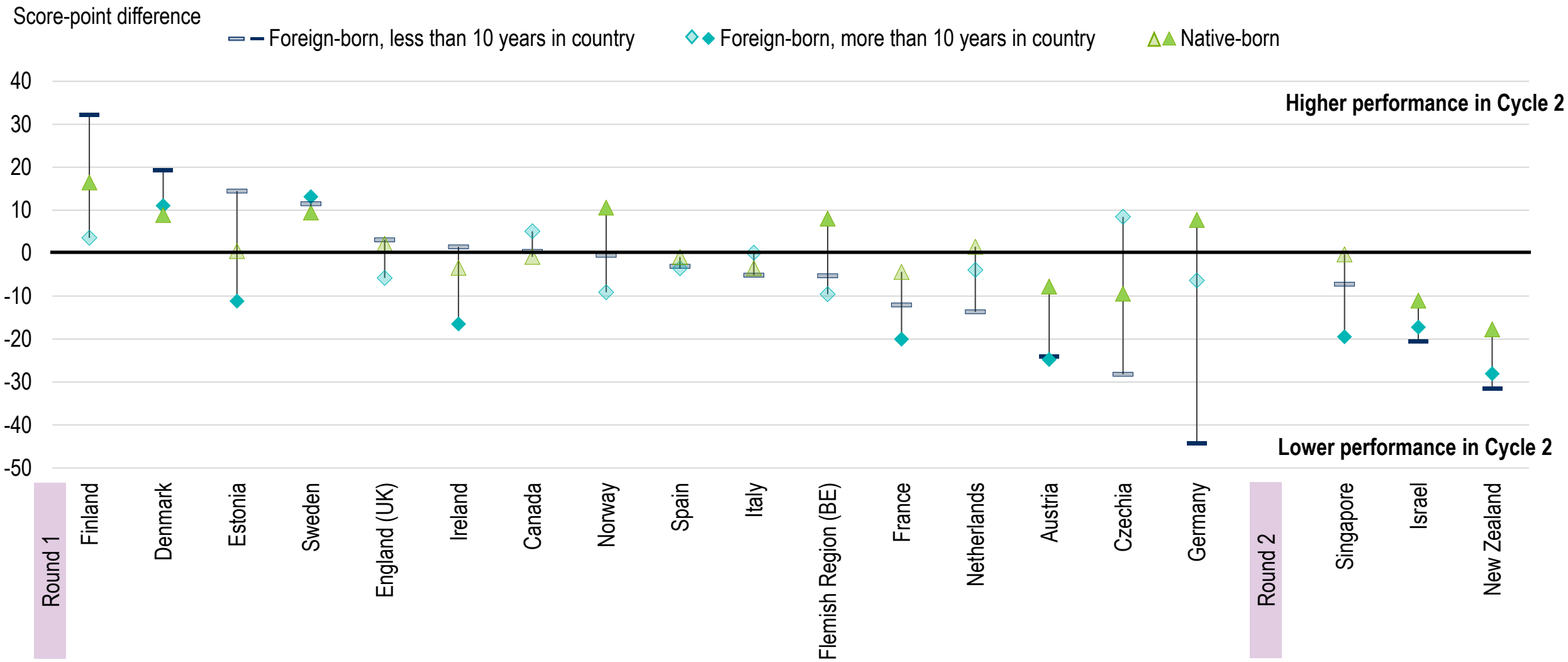


Literacy proficiency evolves differently among recent and long-term migrants

Figure 3.16

Change in literacy proficiency between cycles, by immigrant background and years spent in the country

Difference in mean literacy scores between cycles (Cycle 2 minus Cycle 1)

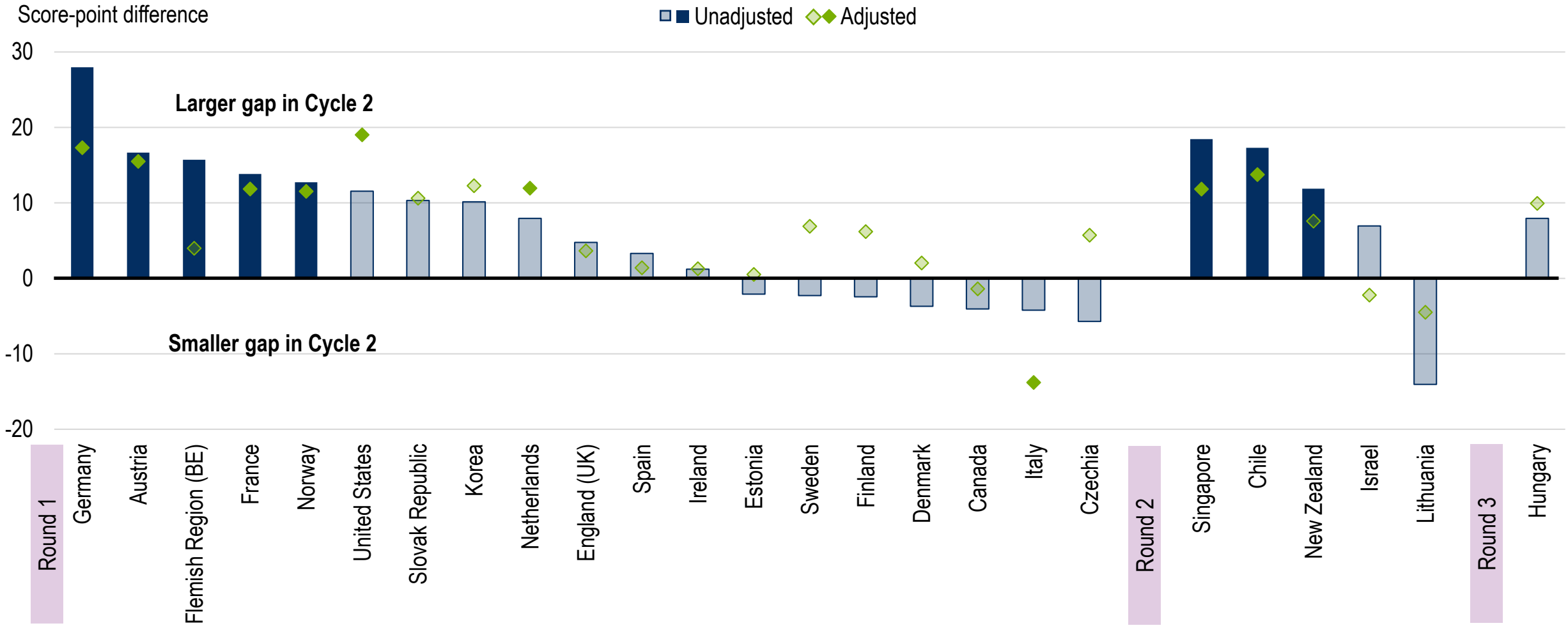


The gap in literacy proficiency between immigrants and non-immigrants has widened in eight countries

Figure 3.17

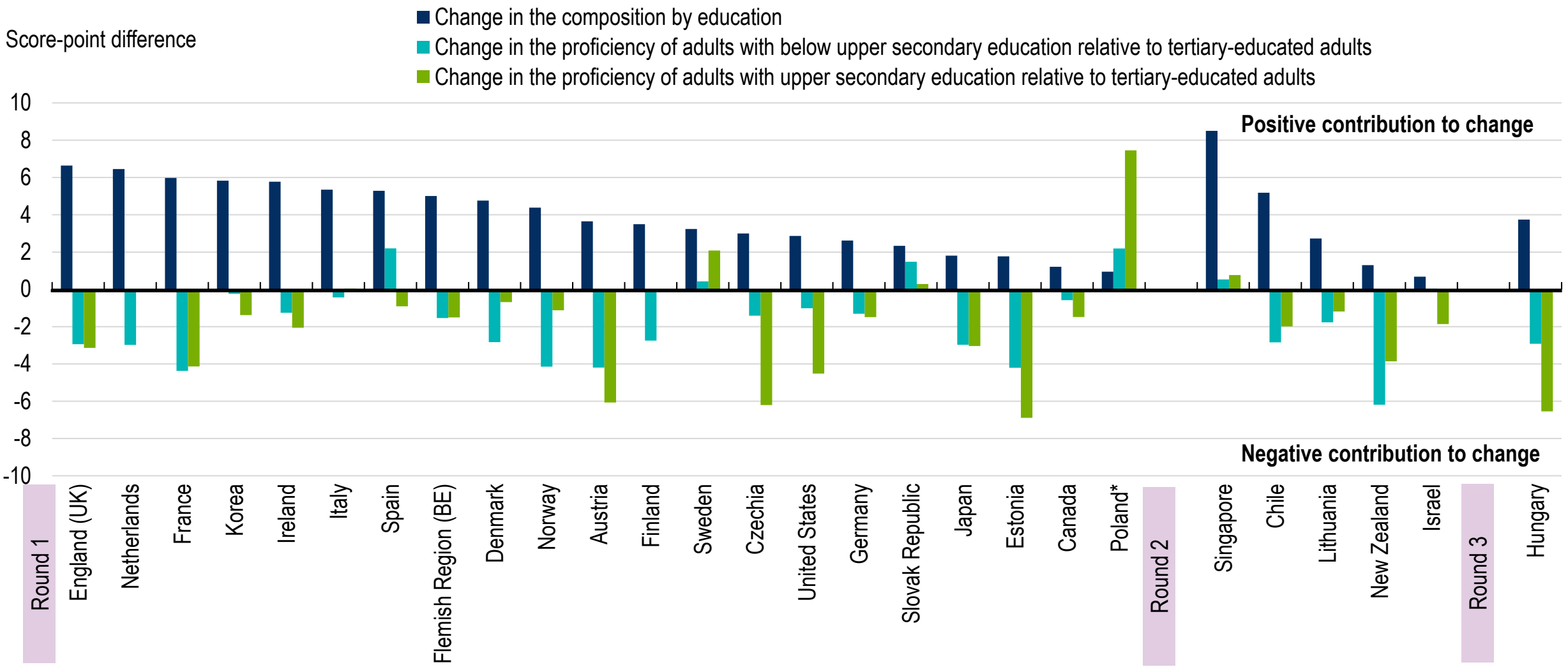
Change in the gap in literacy proficiency between non-immigrants and immigrants

Adjusted and unadjusted change between cycles in the mean score difference between native-born adults with native-born parents and foreign-born adults with foreign-born parents (Cycle 2 minus Cycle 1)



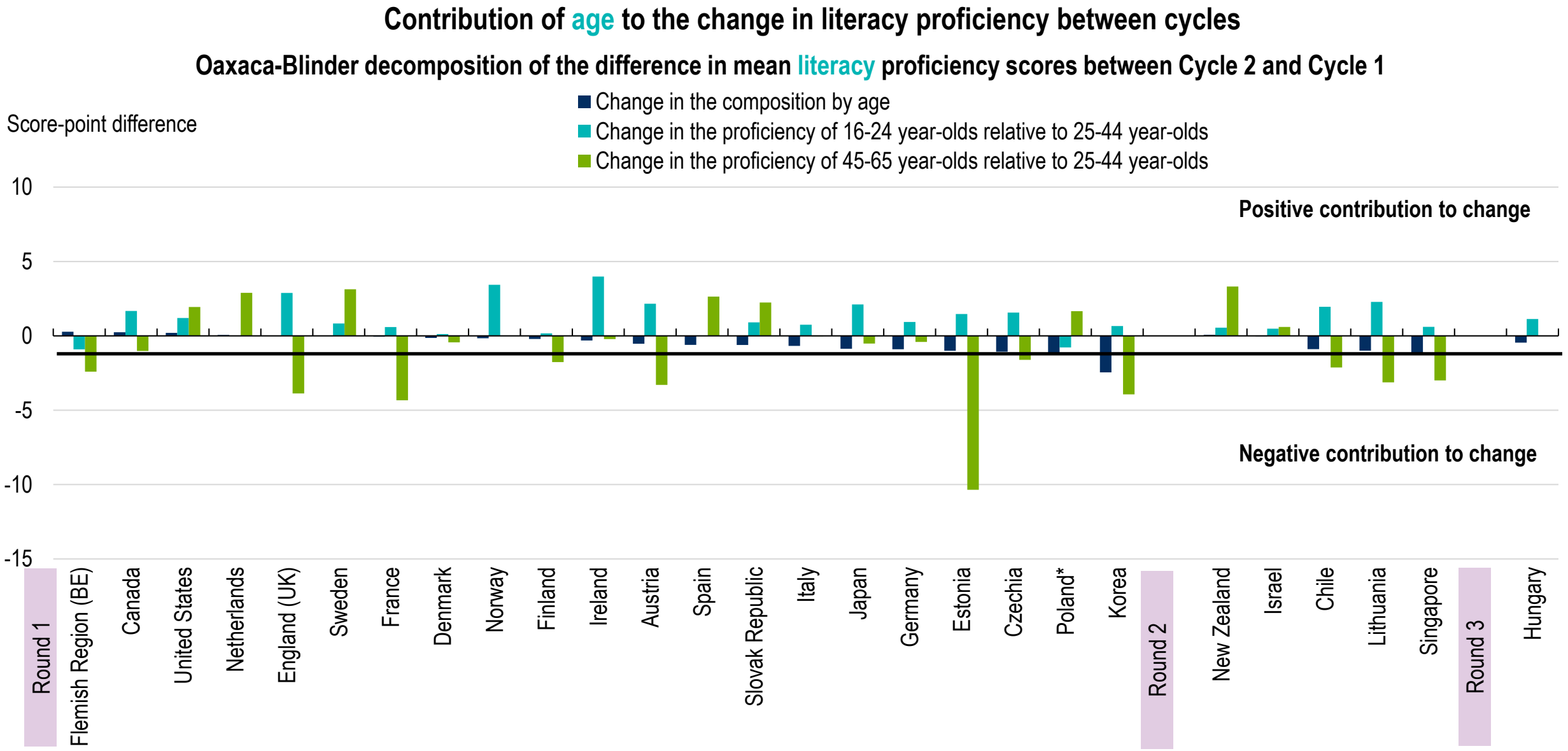
Rising educational attainment boosts average proficiency of the adult population, while skill declines among the low-educated offset it

Figure 3.18



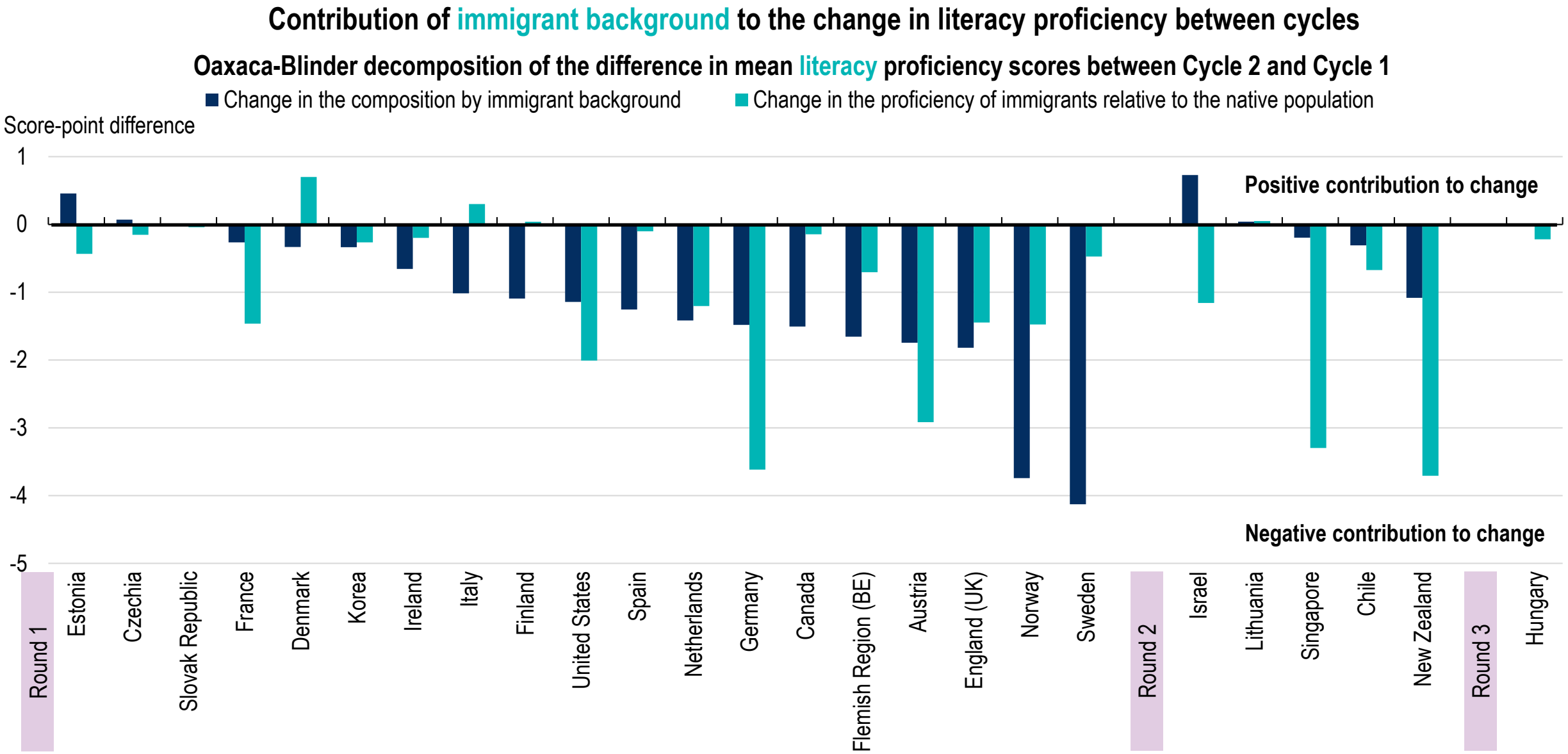
Population ageing is less related to changes in average literacy proficiency

Figure 3.18



Immigration impacts the overall level of skills in a few countries, and this impact is small

Figure 3.18

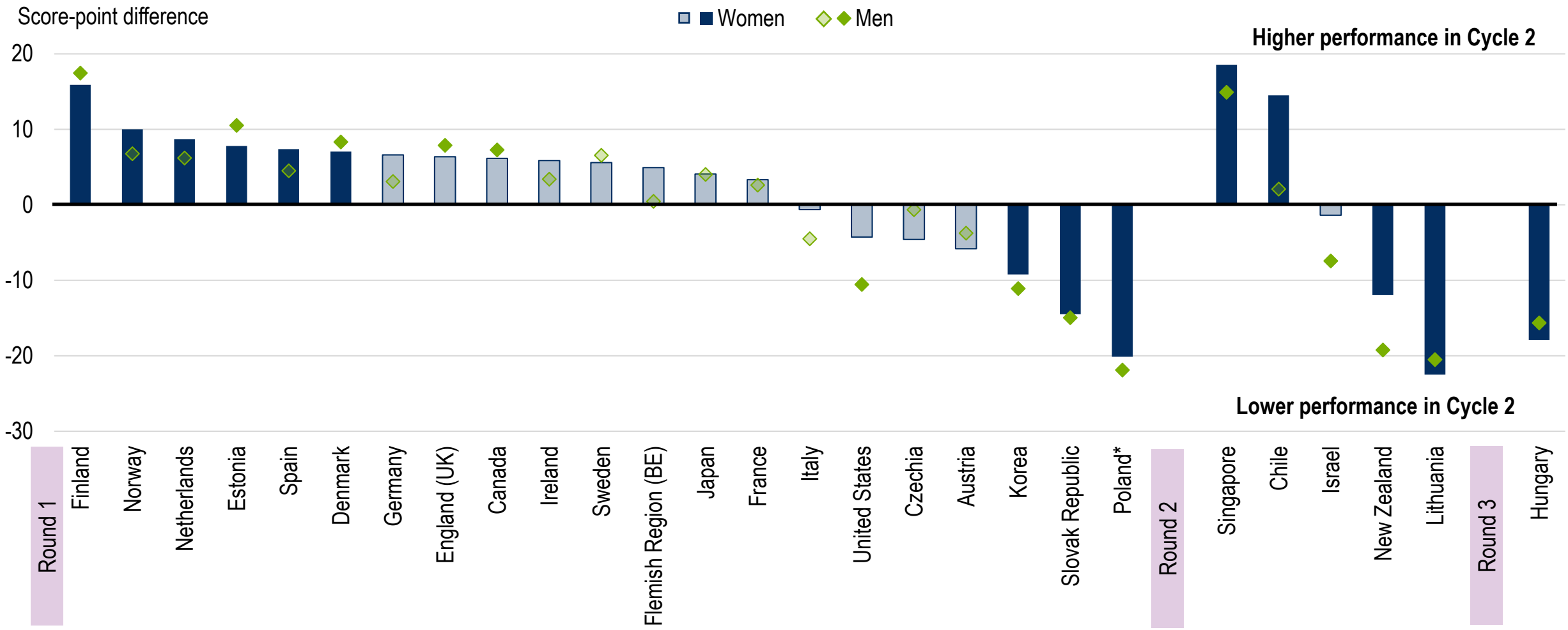


Numeracy proficiency has developed similarly for both genders in most countries

Figure 3.19 (N)

Change in numeracy proficiency between cycles, by gender

Difference in mean literacy and numeracy scores between cycles (Cycle 2 minus Cycle 1)

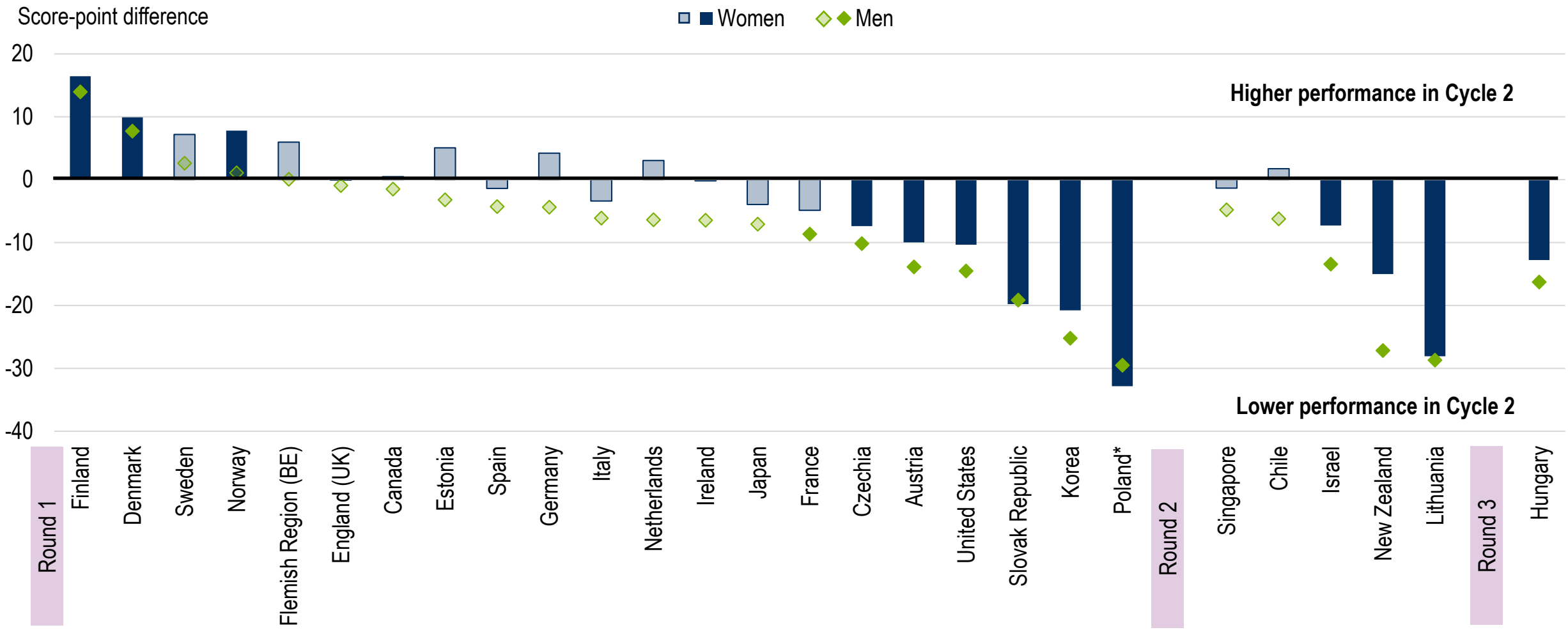


Literacy proficiency has declined more among men than among women

Figure 3.19 (L)

Change in literacy proficiency between cycles, by gender

Difference in mean literacy and numeracy scores between cycles (Cycle 2 minus Cycle 1)

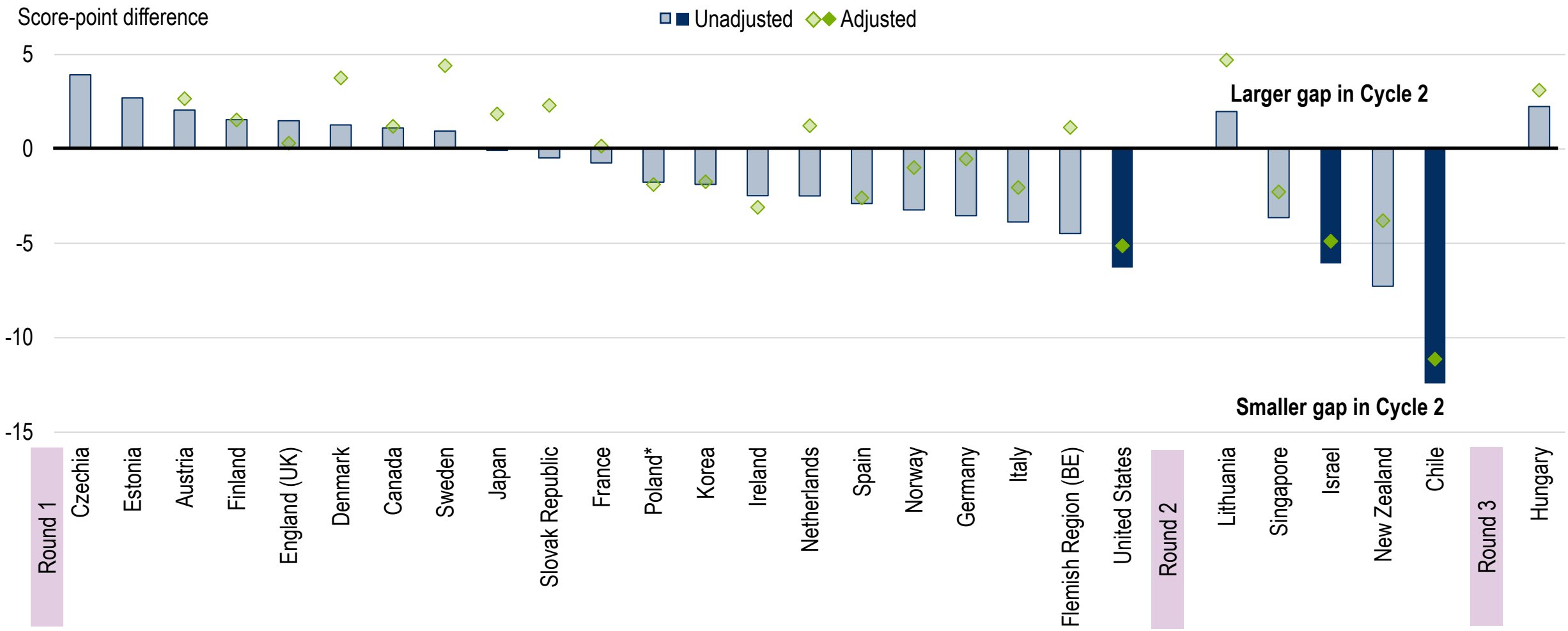


The gender gap in numeracy proficiency narrowed in only three countries

Figure 3.20 (N)

Change in the gaps in numeracy proficiency between men and women

Adjusted and unadjusted change between cycles in the mean score difference between men and women (Cycle 2 minus Cycle 1)

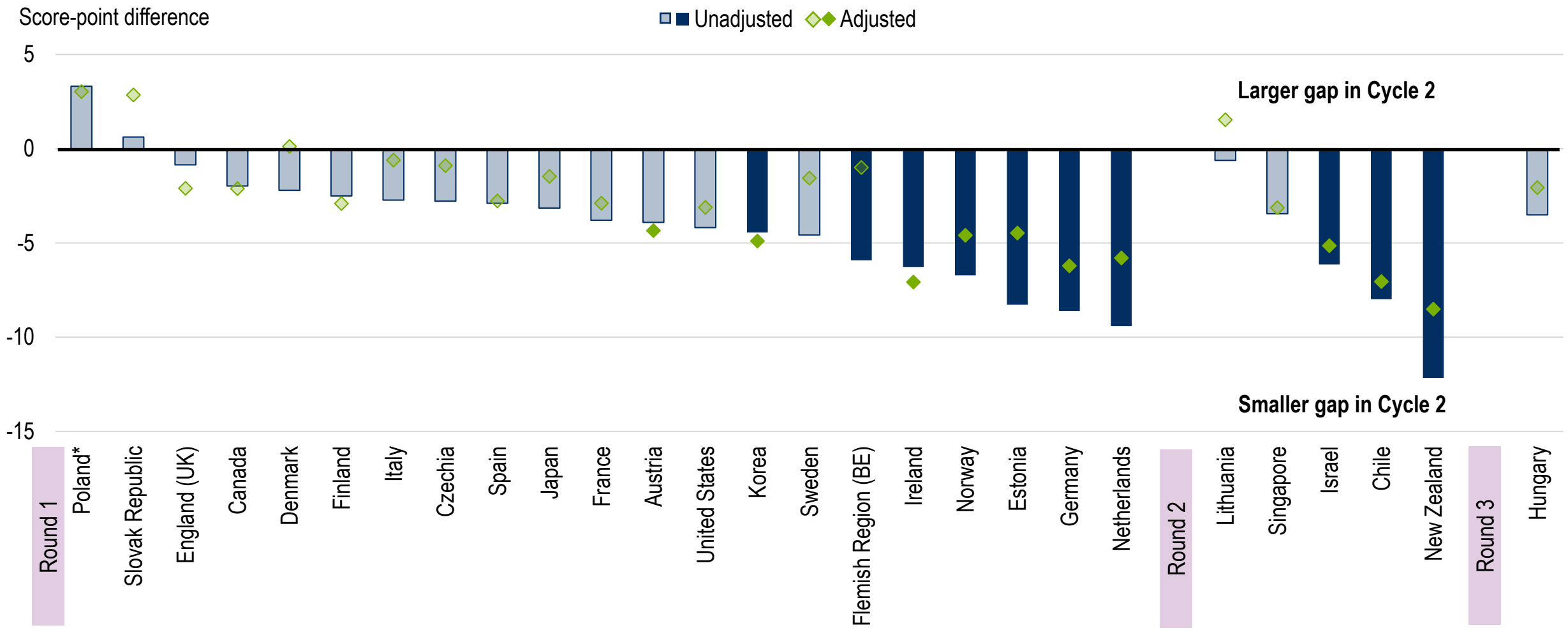


The gender gap in literacy proficiency narrowed in many countries due to declines in proficiency among men

Figure 3.20 (L)

Change in the gaps in literacy proficiency between men and women

Adjusted and unadjusted change between cycles in the mean score difference between men and women (Cycle 2 minus Cycle 1)

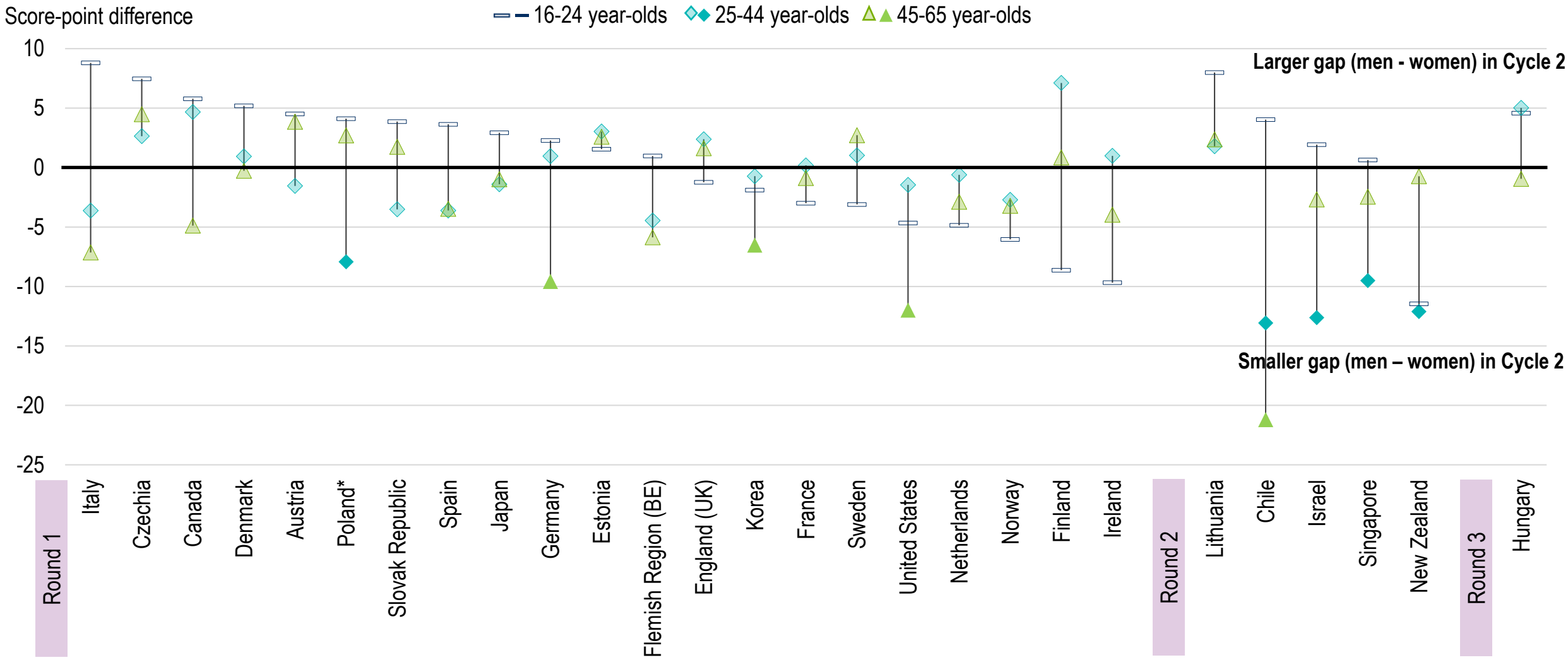


Some countries saw increasing inequalities in skills among the young, others among older adults

Figure 3.21 (N)

Change in the gaps in numeracy proficiency between men and women, by age

Change between cycles in the mean score difference between men and women (Cycle 2 minus Cycle 1)

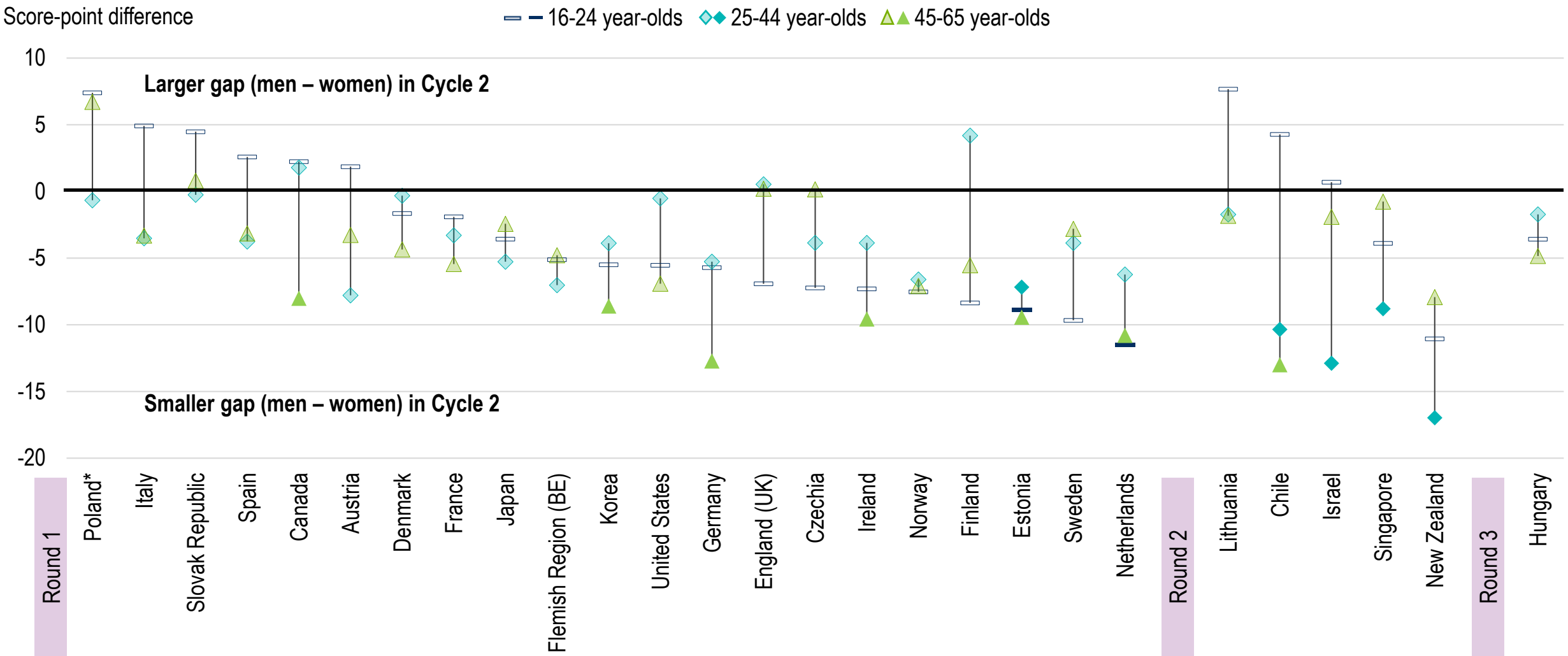


Gender differences in proficiency evolved similarly in different age groups

Figure 3.21 (L)

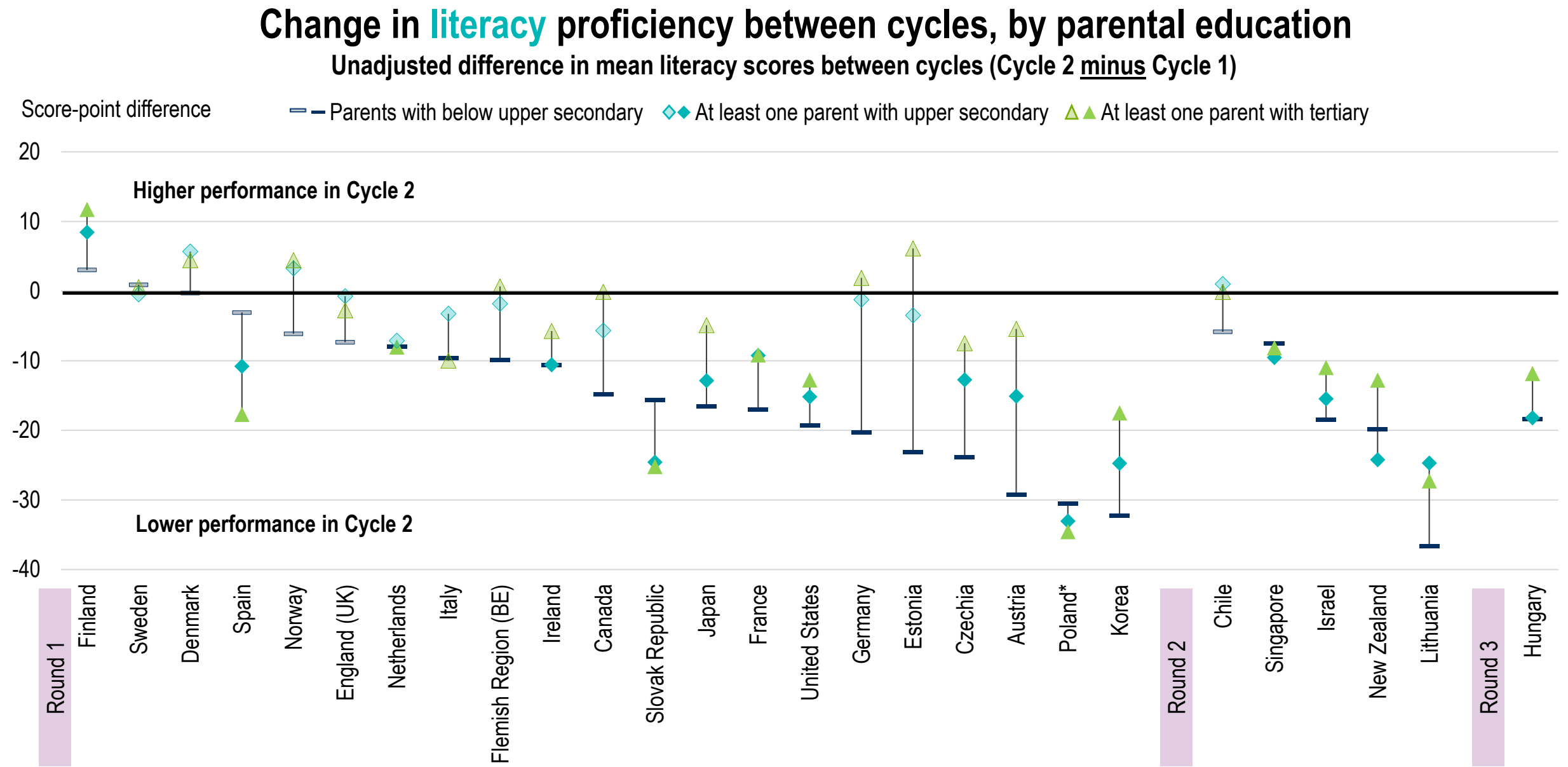
Change in the gaps in literacy proficiency between men and women, by age

Change between cycles in the mean score difference between men and women (Cycle 2 minus Cycle 1)



Stronger declines in literacy proficiency among disadvantaged adults

Figure 3.22

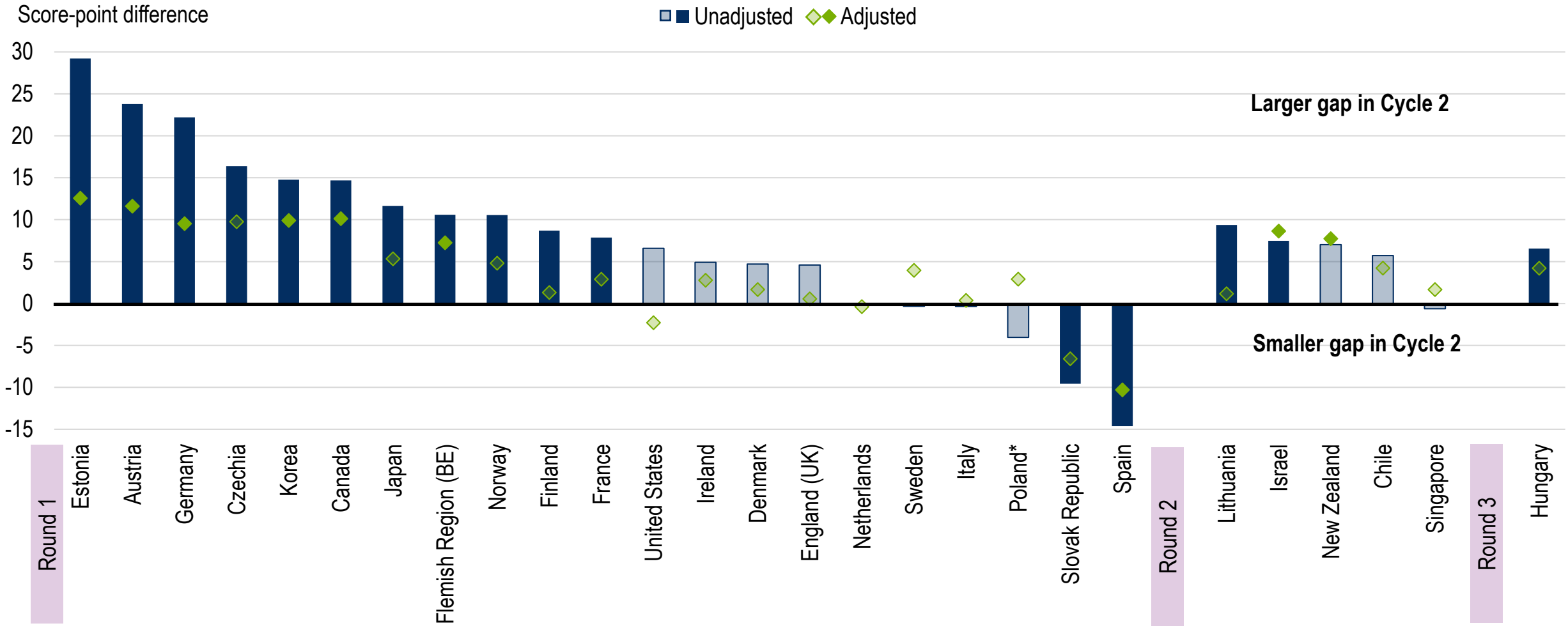


The socio-economic gap in literacy proficiency widened in half of the countries

Figure 3.23

Change in the gap in literacy proficiency between adults with highly educated and low-educated parents

Adjusted and unadjusted change between cycles in the mean score difference between adults with at least one tertiary-educated parent and adults whose parents have below upper secondary education (Cycle 2 minus Cycle 1)

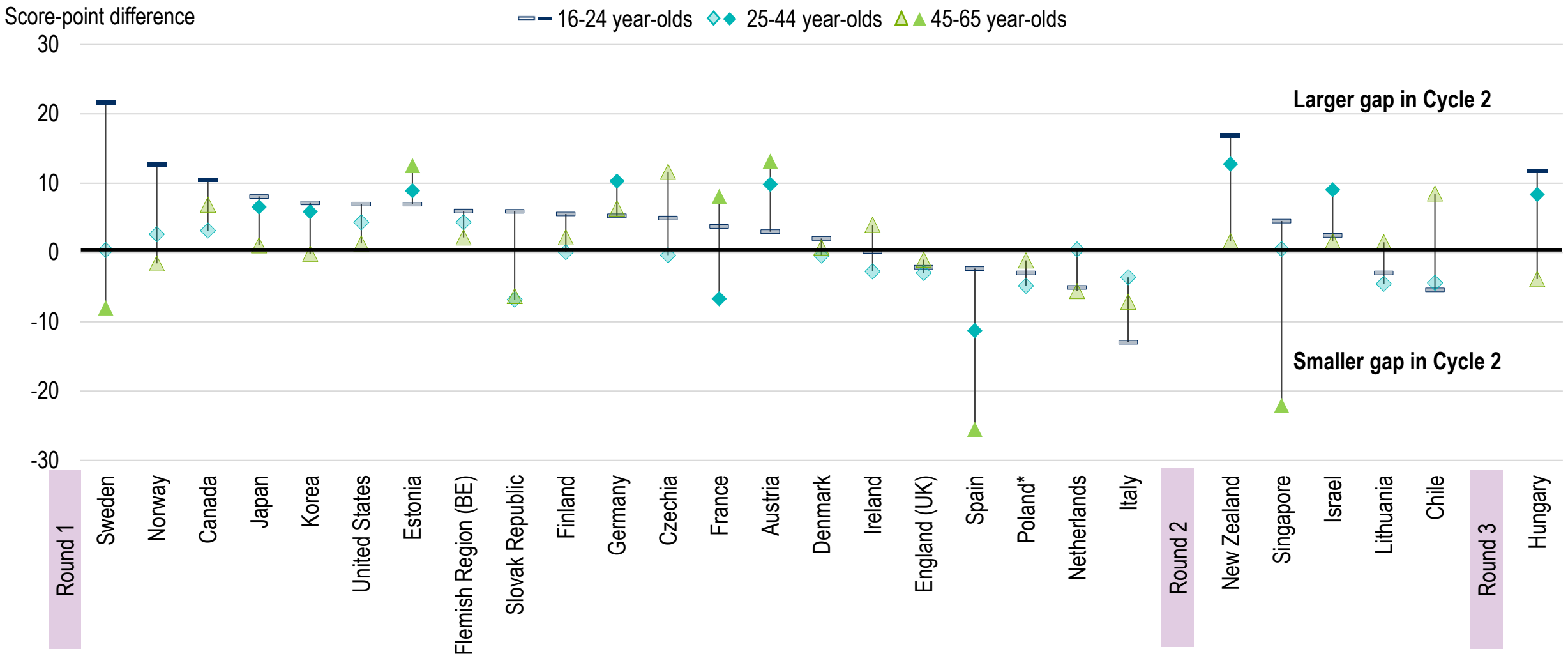


Some countries experienced increasing skill inequalities among the young, while others saw them among older adults

Figure 3.24

Change in the gap in literacy proficiency between adults with highly educated and medium-/low-educated parents, by age

Change between cycles in the mean score difference between adults with at least one tertiary-educated parent and adults with parents with at most an upper secondary education (Cycle 2 minus Cycle 1)



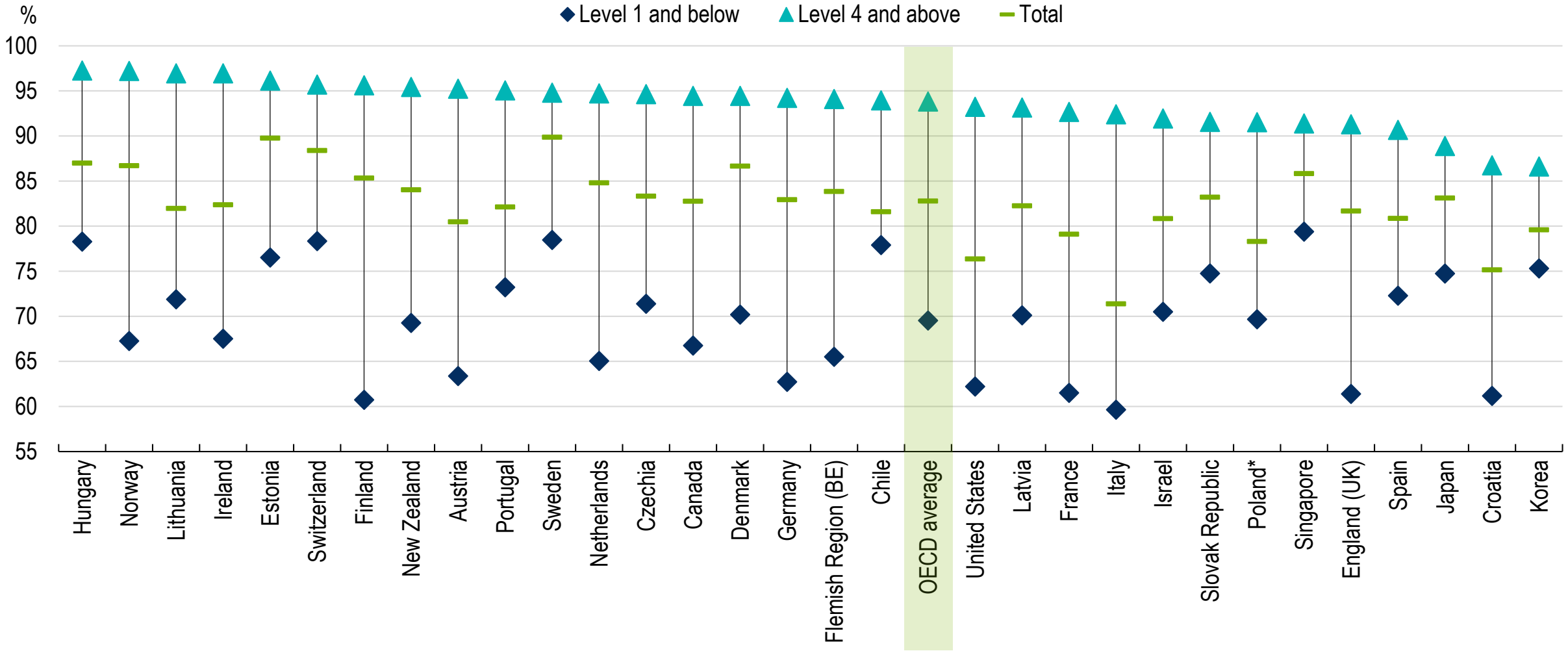
Chapter 4

Outcomes of investment in skills

High-skilled adults are much more active in the labour market

Figure 4.1

Labour force participation rate, by numeracy proficiency level

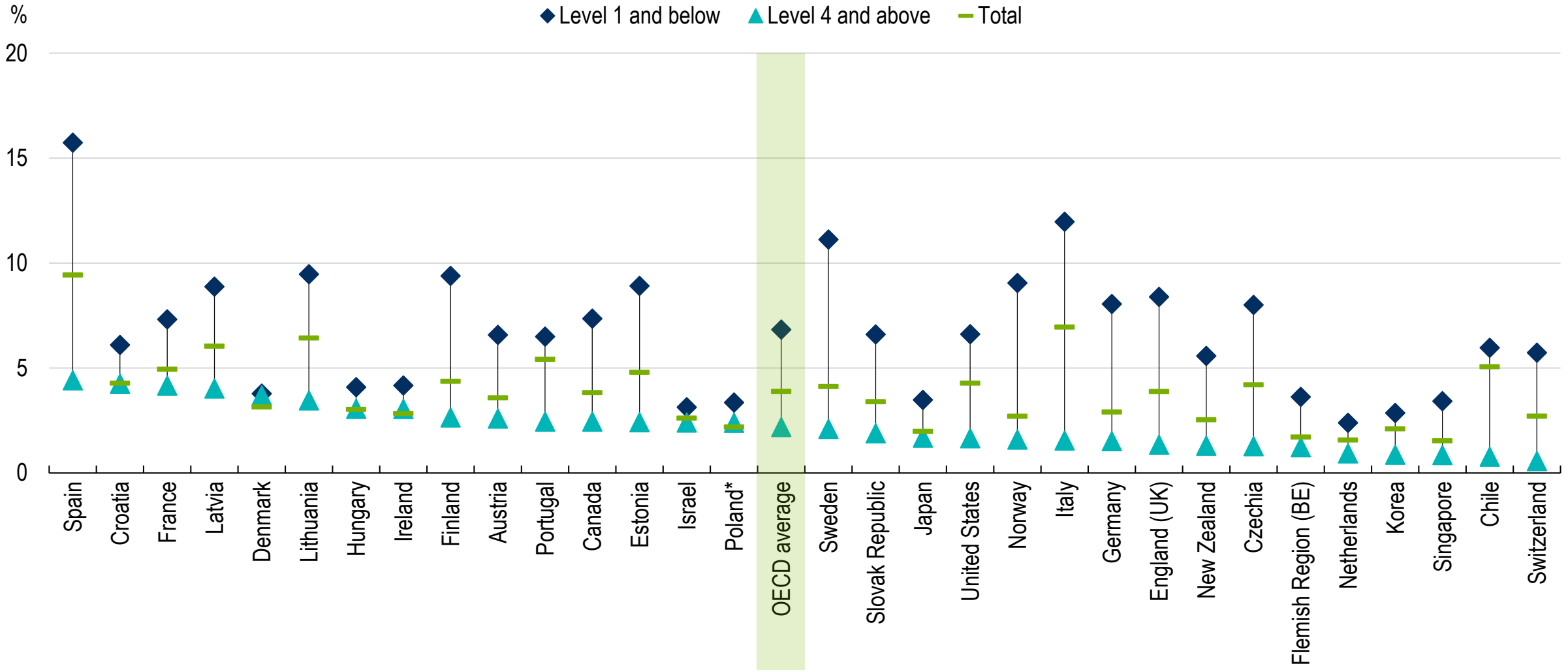


Adults aged 25-65 not in formal education

Low-skilled adults face triple the risk of unemployment on average

Figure 4.1

Unemployment rate, by numeracy proficiency level

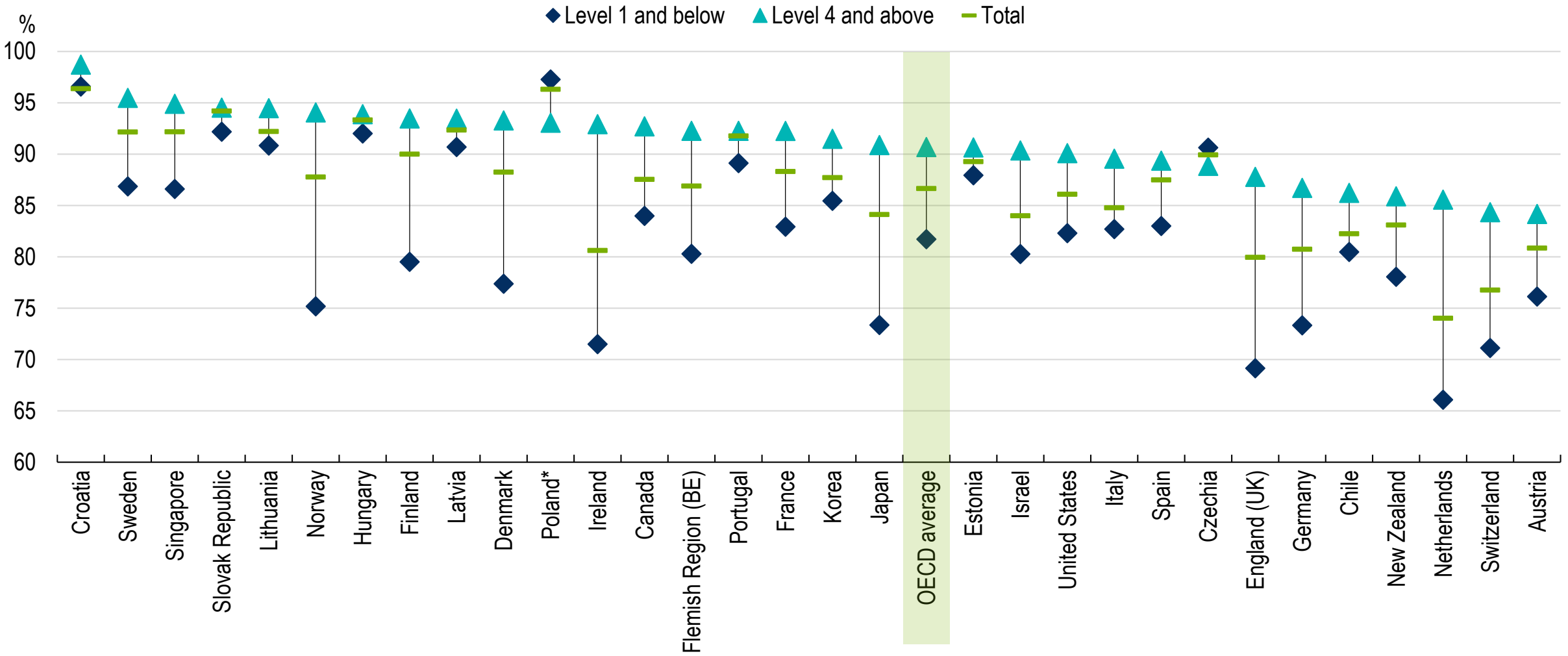


Adults aged 25-65 not in formal education

High-skilled adults are more likely to work full-time nearly everywhere

Figure 4.1

Full-time employment rate, by numeracy proficiency level

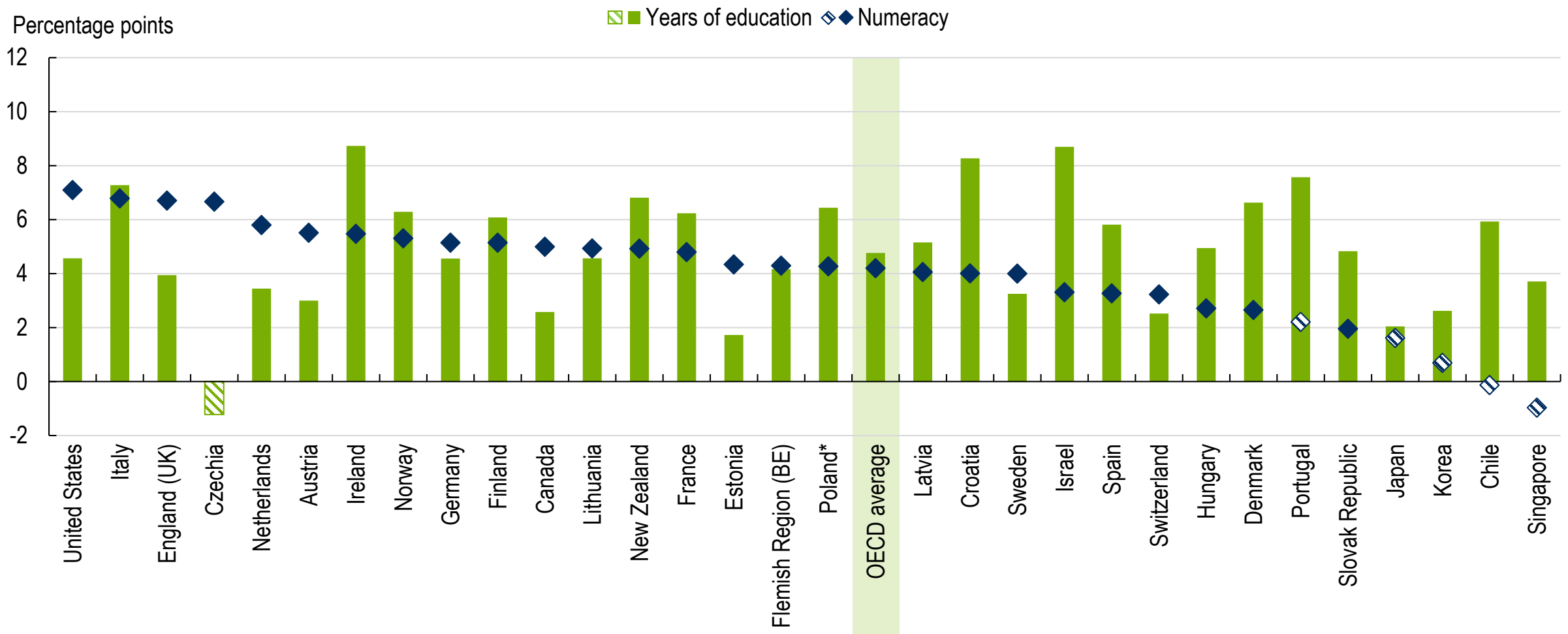


Adults aged 25-65 not in formal education

Higher skills drive labour force participation

Figure 4.2

Effect of one-standard deviation increase on the likelihood of being active in the labour market

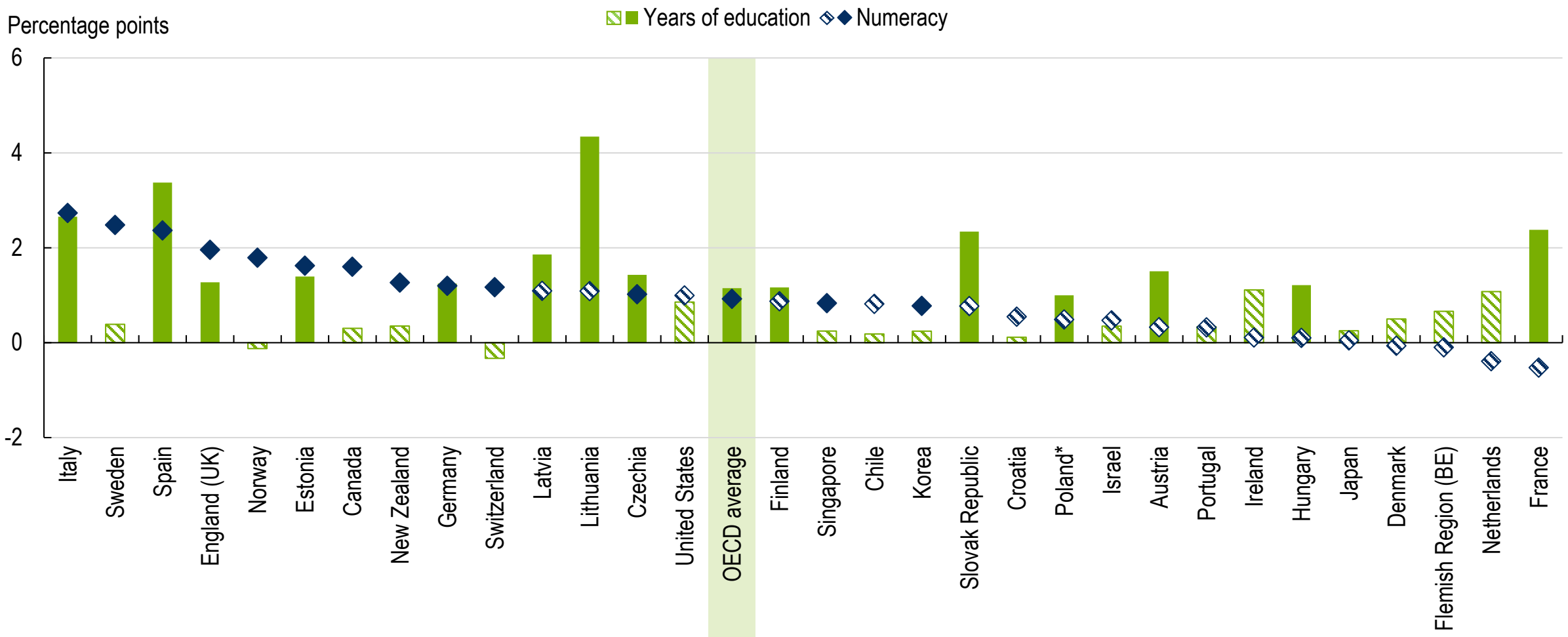


Adults aged 25-65 not in formal education; standard deviations are 58 points for numeracy and 3 years for education

Skills are only weakly associated with the likelihood of being employed

Figure 4.2

Effect of one-standard deviation increase on the likelihood of being employed

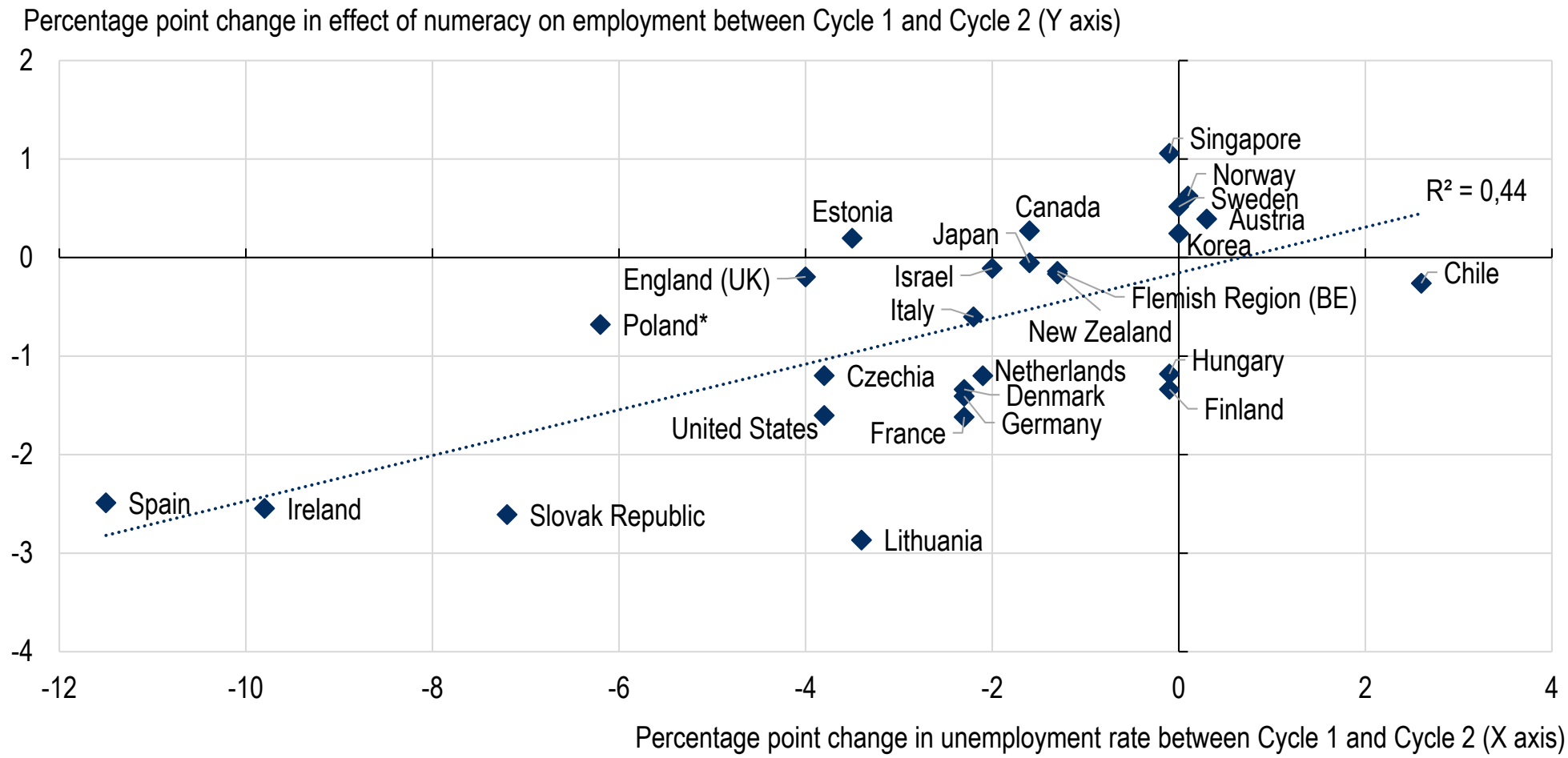


Adults aged 25-65 not in formal education who are active in the labour force; standard deviations are 58 points for numeracy and 3 years for education

Skills matter more for employability when unemployment is high

Figure 4.3

Association between unemployment and effect of numeracy proficiency on employment

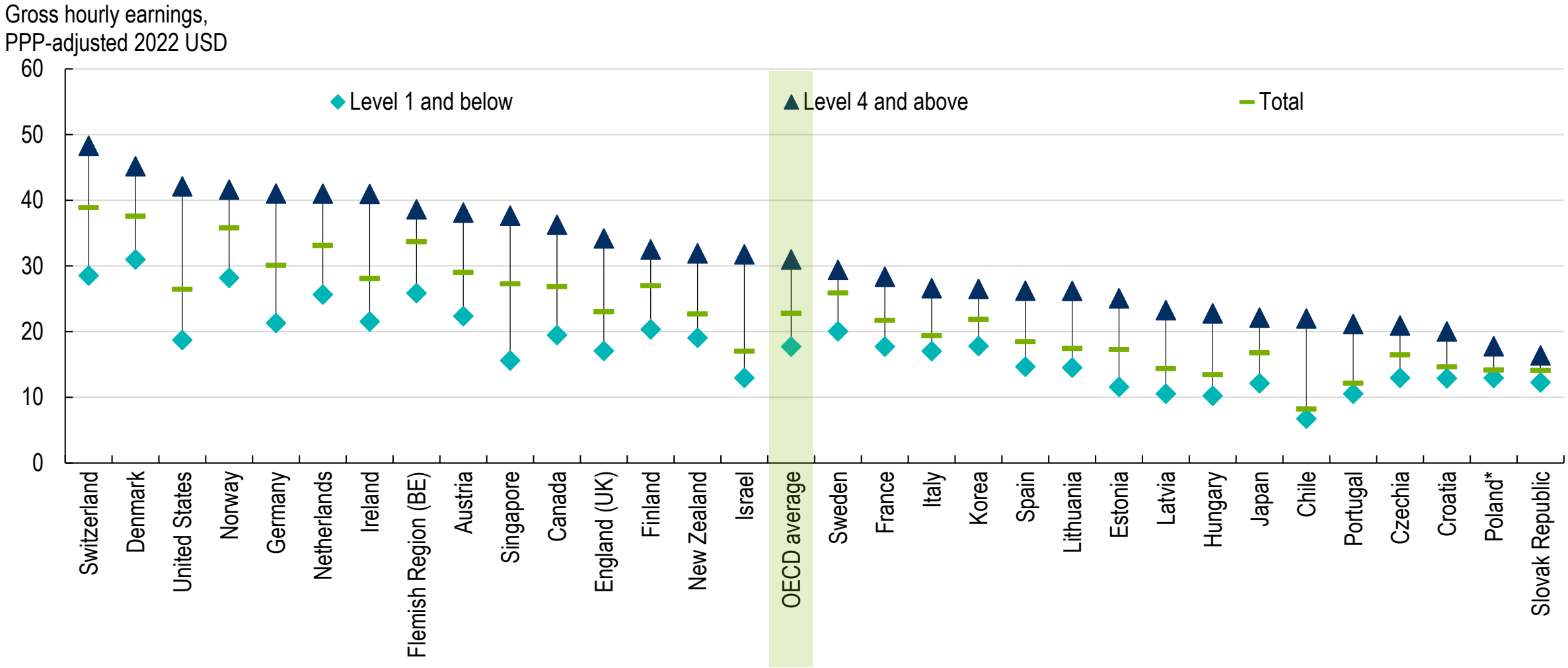


Adults aged 25-65 not in formal education

Those with high skills earn more, though the earnings gap between high and low-skilled adults varies across countries

Figure 4.4

Median wages, by numeracy proficiency level

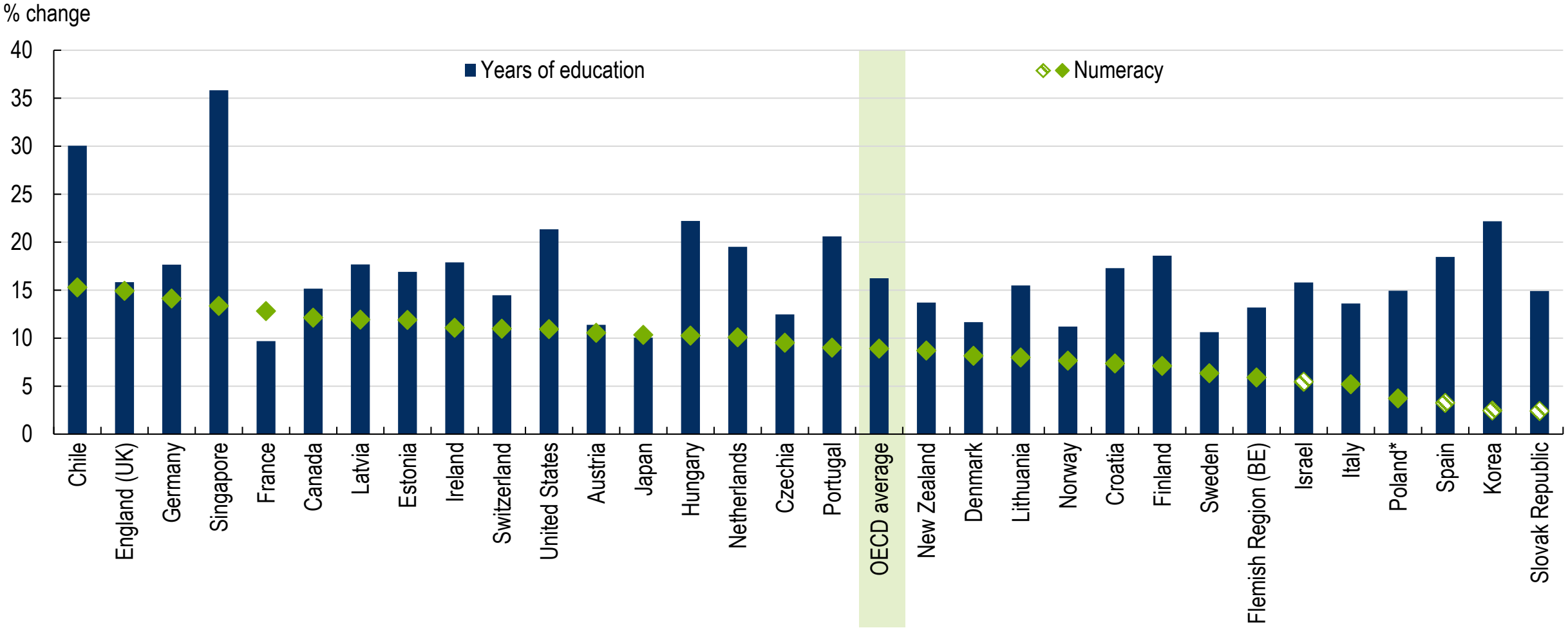


Employed adults aged 25-65 not in formal education

Higher skills drive earnings over and above formal education

Figure 4.5

Effect of a one-standard-deviation increase on hourly wages

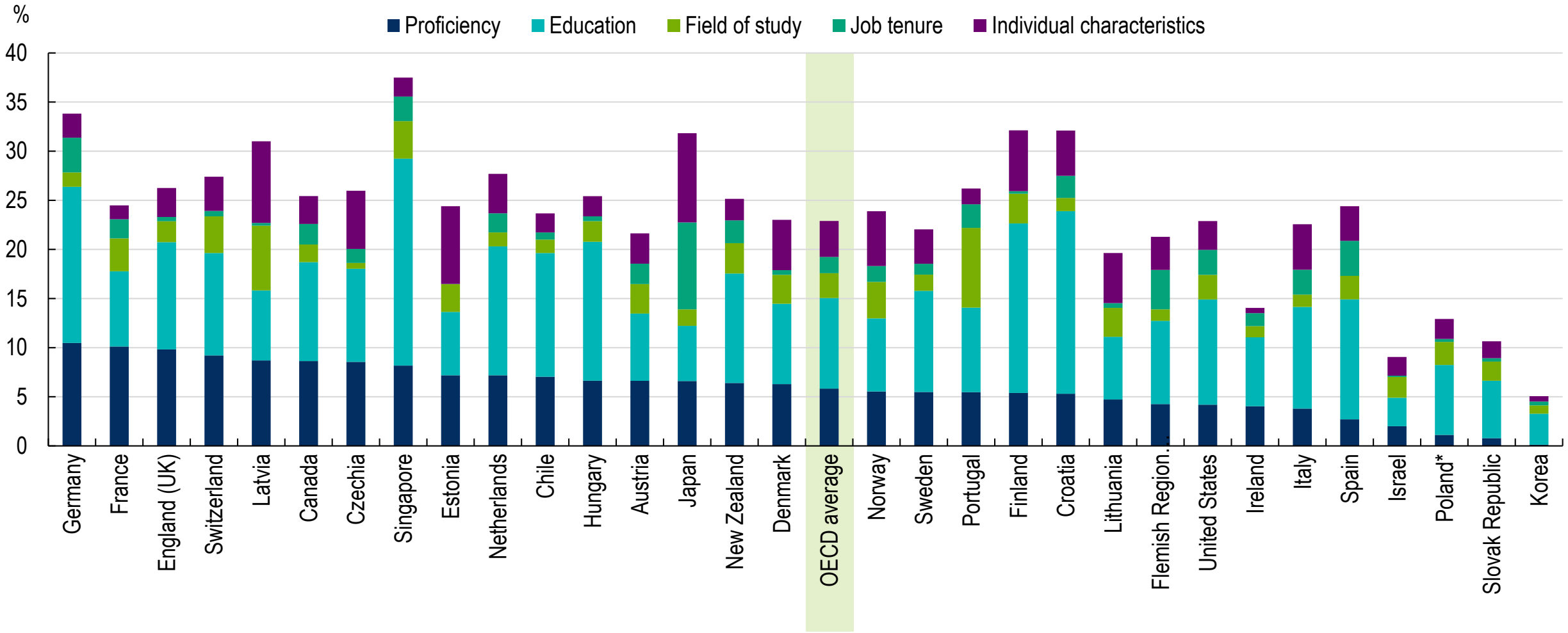


Employed adults aged 25-65 not in formal education

Skills and education explain 15% of wage variation, on average

Figure 4.6

Percentage of variation in wages explained by observable characteristics

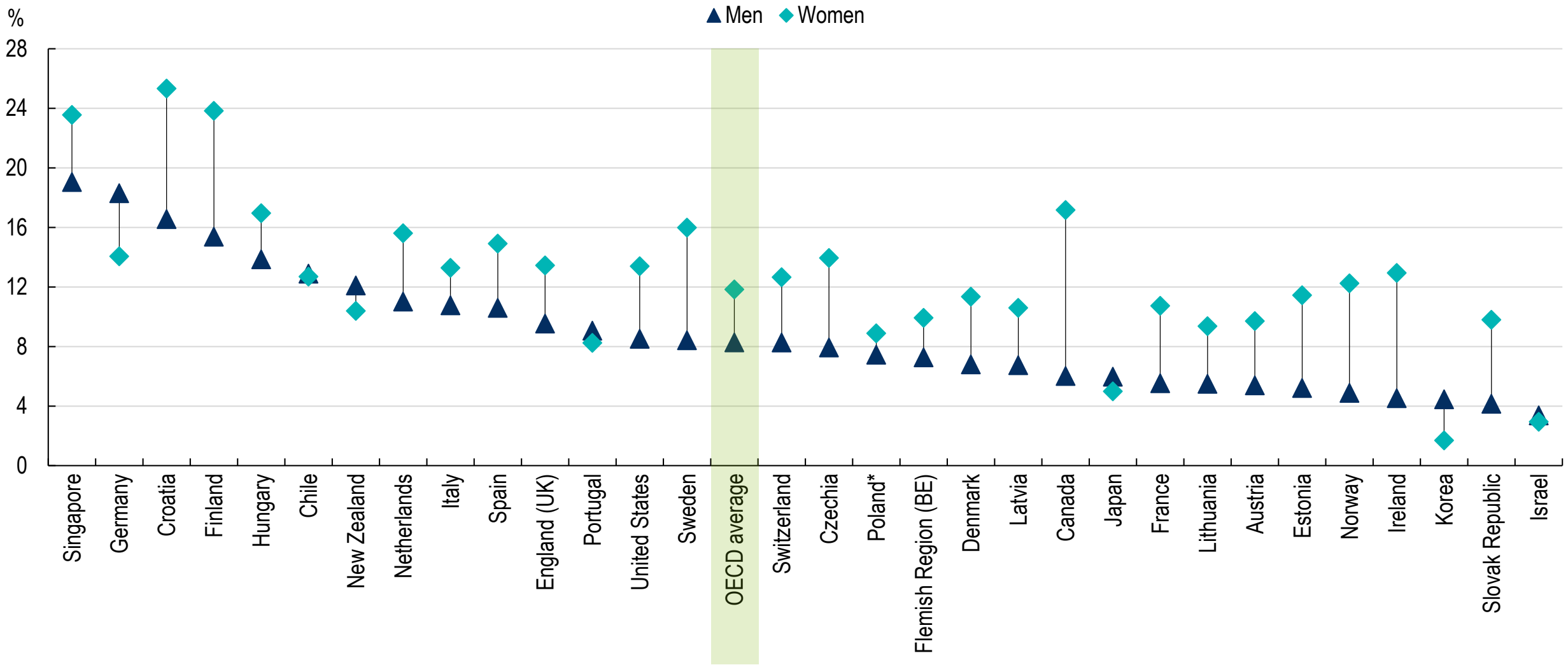


Employed adults aged 25-65 not in formal education

Education explains a greater share of wage variation for women…

Figure 4.7

Percentage of variation in wages explained by education, by gender

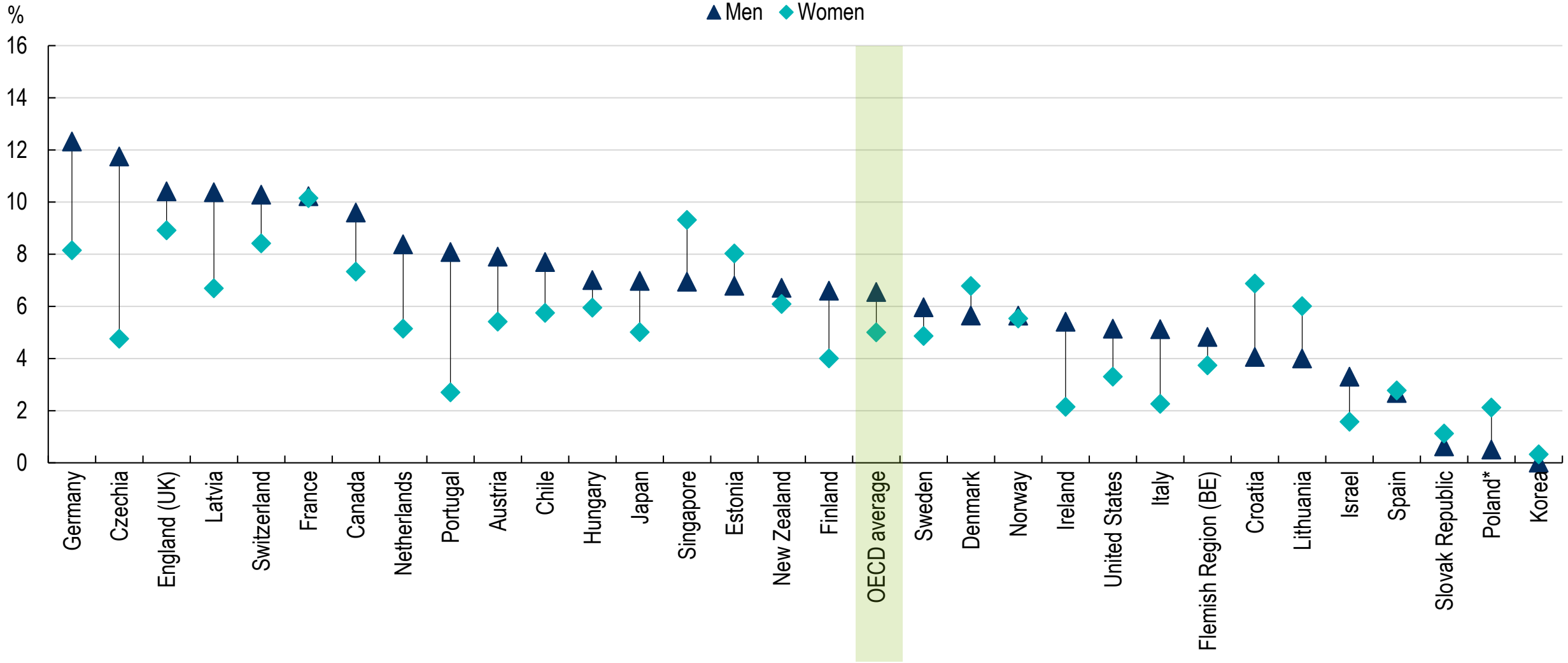


Employed adults aged 25-65 not in formal education

…and skill proficiency explains a greater share of wage variation for men

Figure 4.7

Percentage of variation in wages explained by skills, by gender

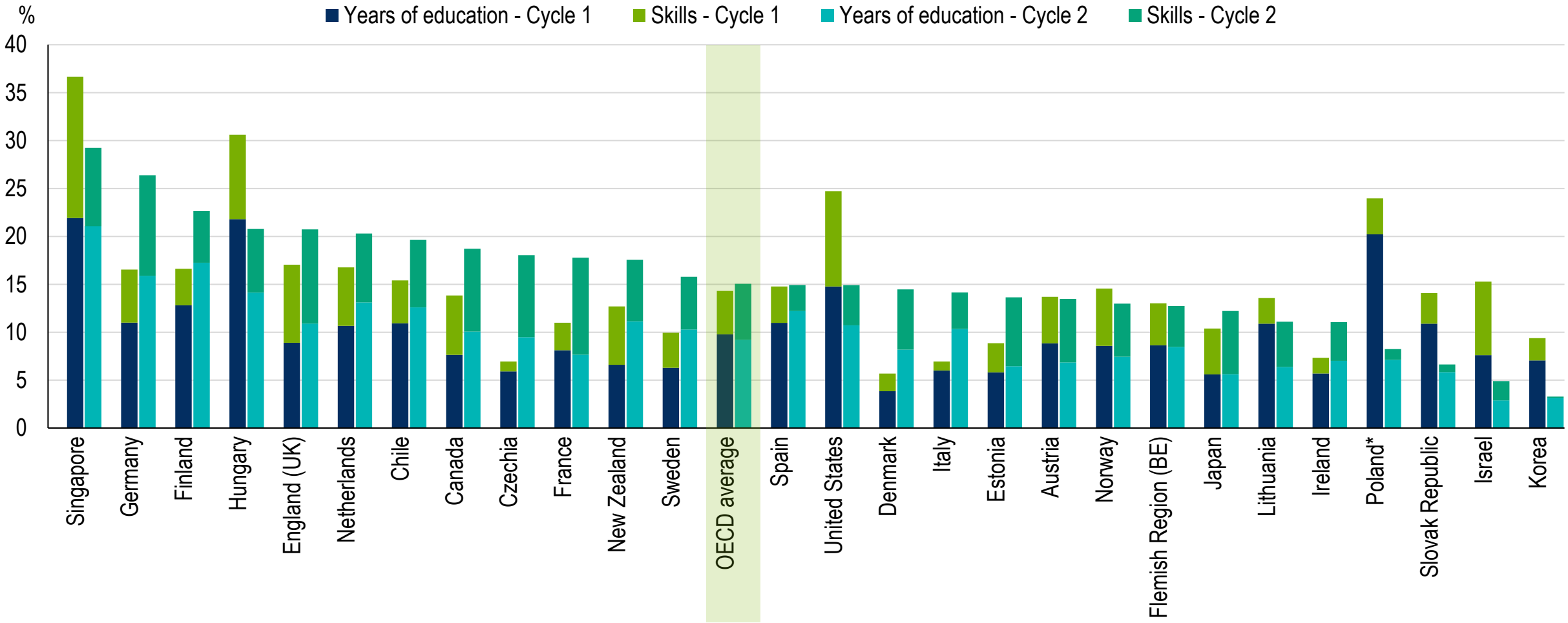


Employed adults aged 25-65 not in formal education

Skills play a growing role in explaining wage variation in some countries

Figure 4.8

Trends in percentage of variation in wages explained by education and skills

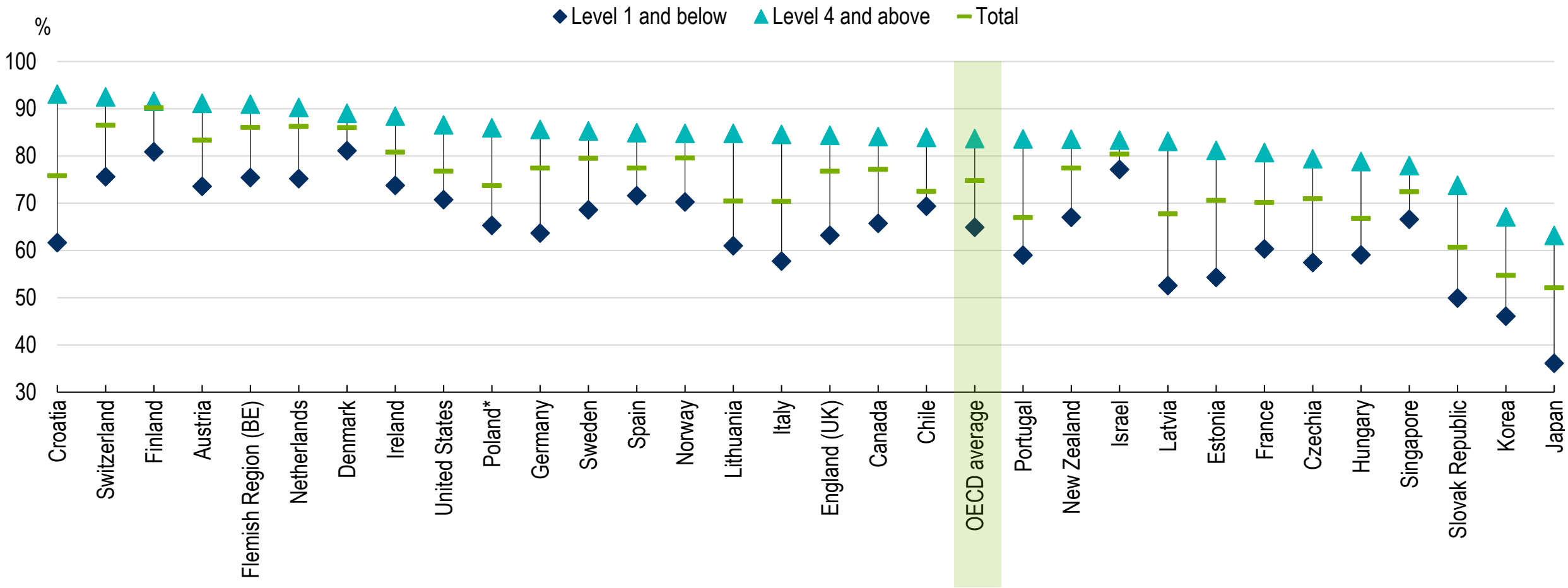


Employed adults aged 25-65 not in formal education

High-skilled individuals enjoy consistently higher rates of life satisfaction

Figure 4.9

Share reporting high life satisfaction, by numeracy proficiency level

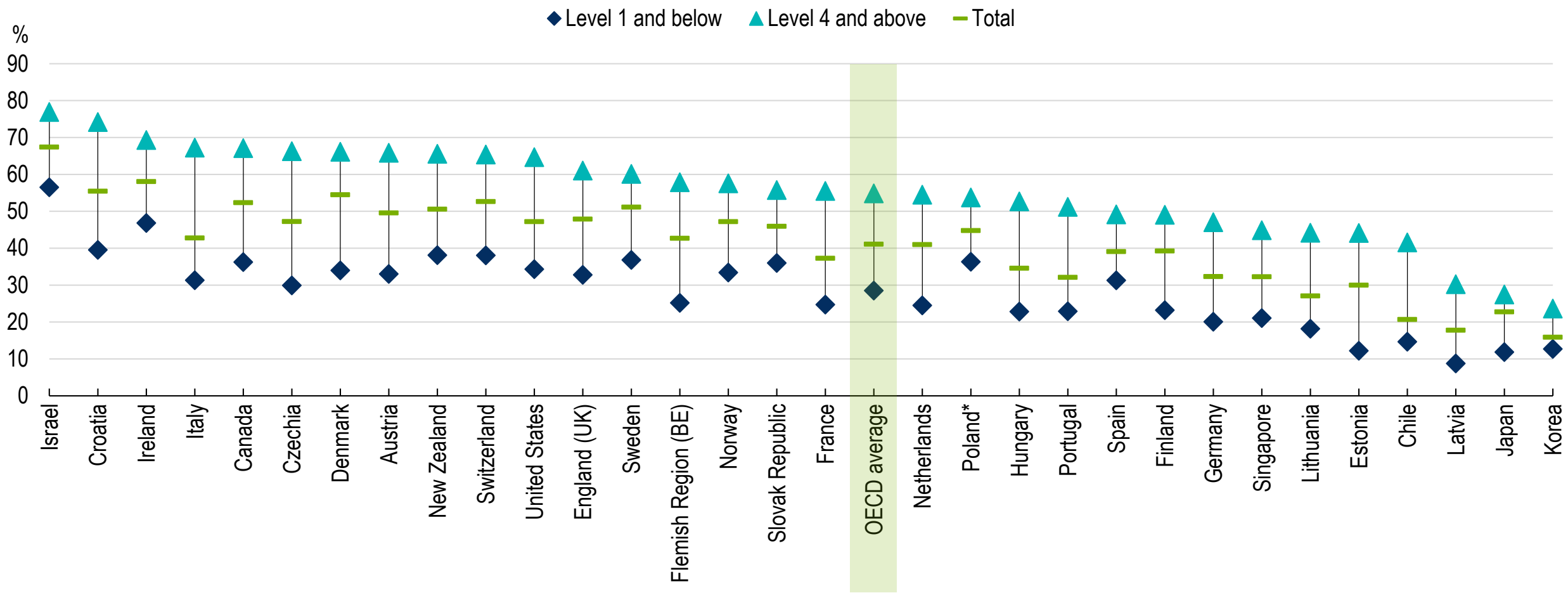


Adults aged 25-65

High-skilled adults report better health, but there are big differences across countries

Figure 4.9

Share reporting very good or excellent health, by numeracy proficiency level

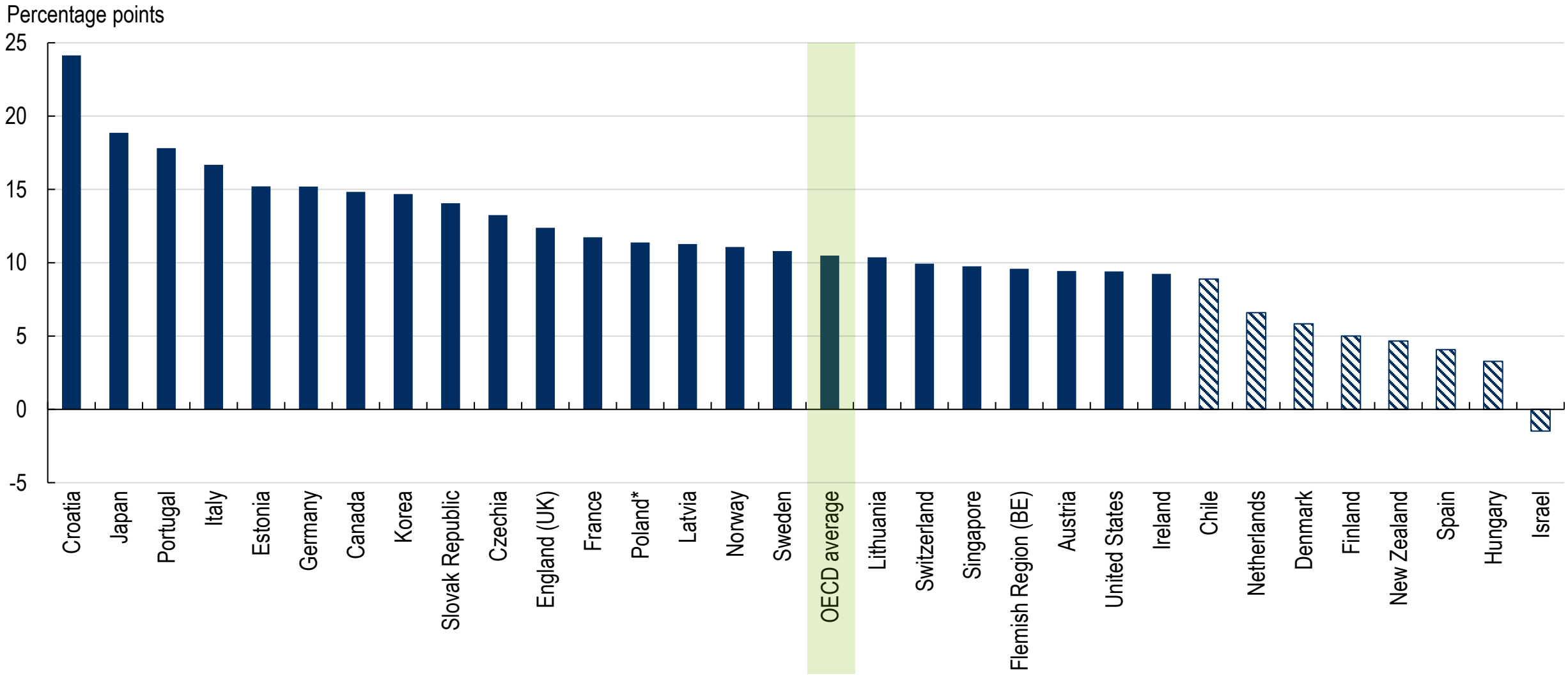


Adults aged 25-65

High skills are linked to a 10% greater likelihood of high life satisfaction

Figure 4.10

Difference in likelihood of reporting high life satisfaction (high minus low proficiency)

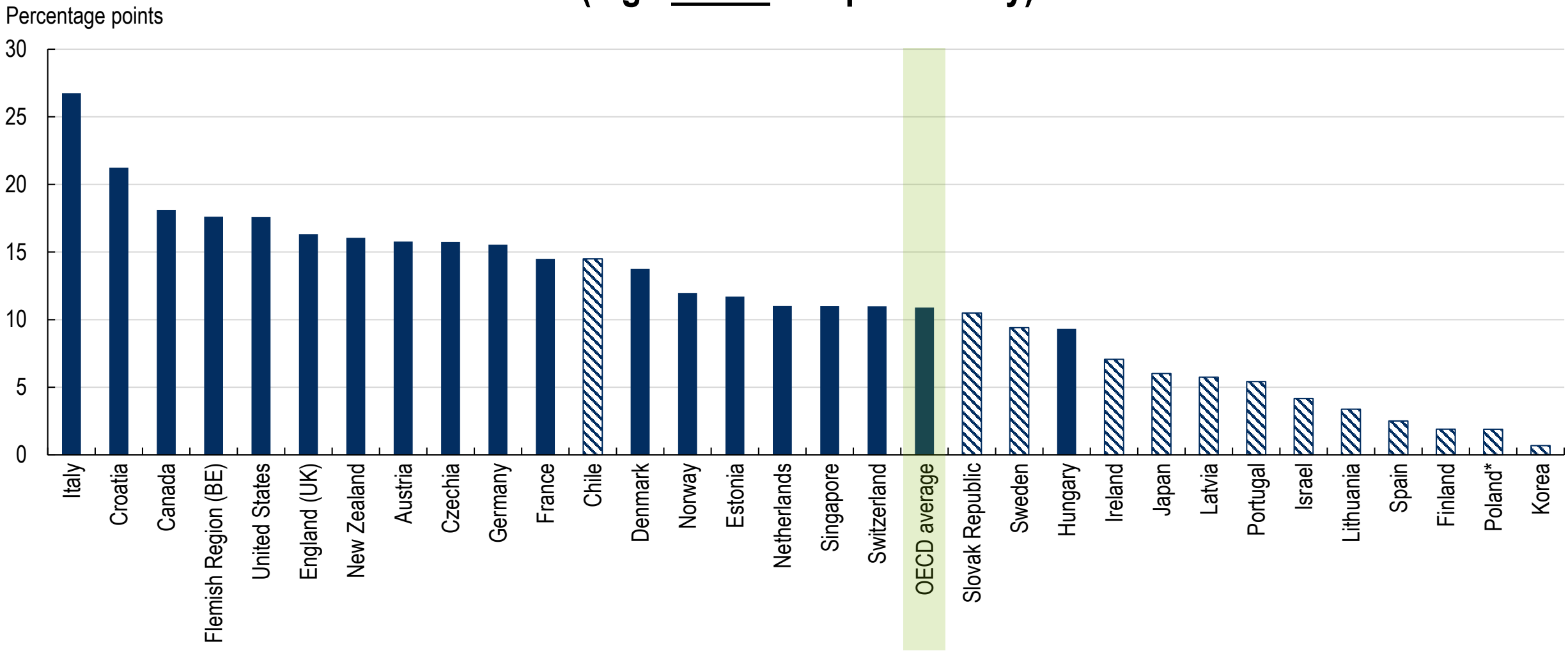


Adults aged 25-65

For some countries, the relationship between skills and self-reported health is strong, even after accounting for individual and family characteristics

Figure 4.10

Difference in likelihood of reporting very good or excellent health (high minus low proficiency)

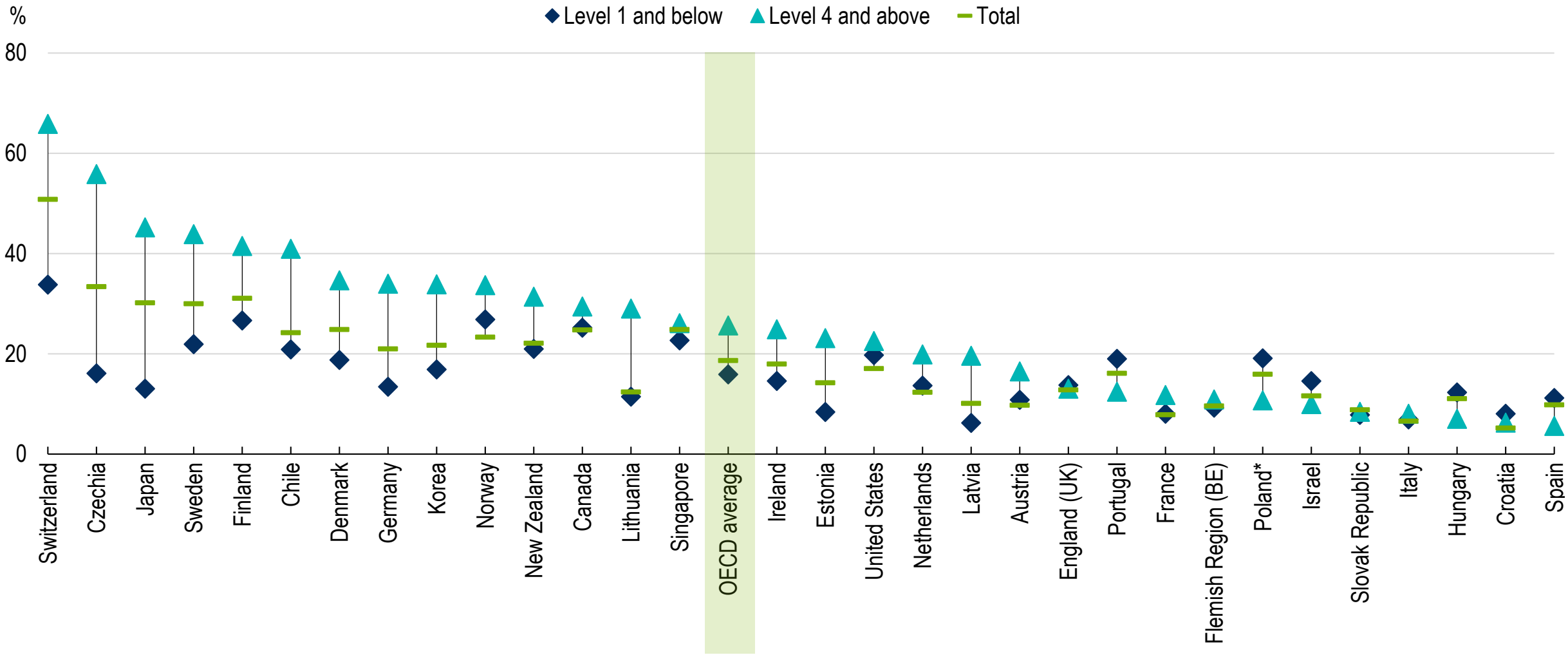


Adults aged 25-65

In some countries those with higher skills feel more able to influence political processes, but not everywhere

Figure 4.11

Share reporting high political efficacy, by numeracy proficiency level

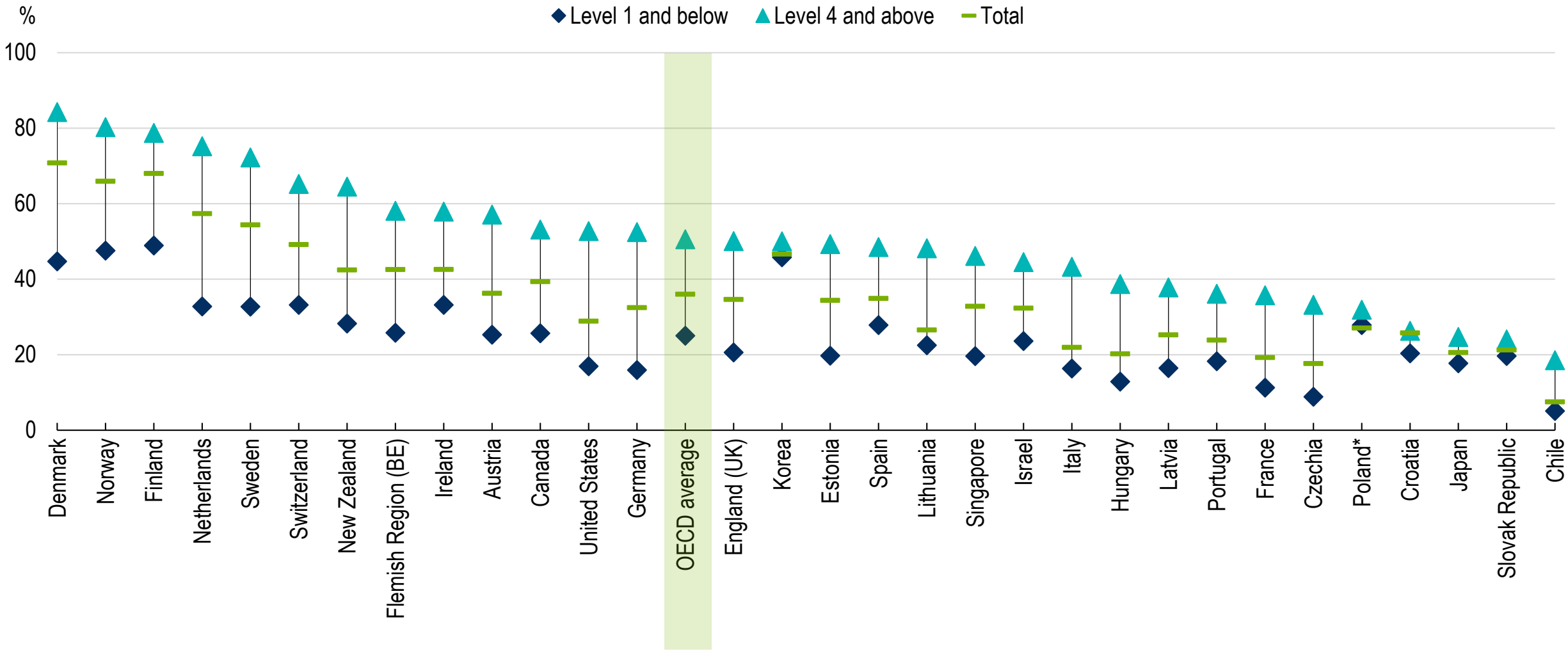


Adults aged 25-65

High-skilled adults typically have higher trust in others

Figure 4.11

Share reporting high levels of trust, by numeracy proficiency level

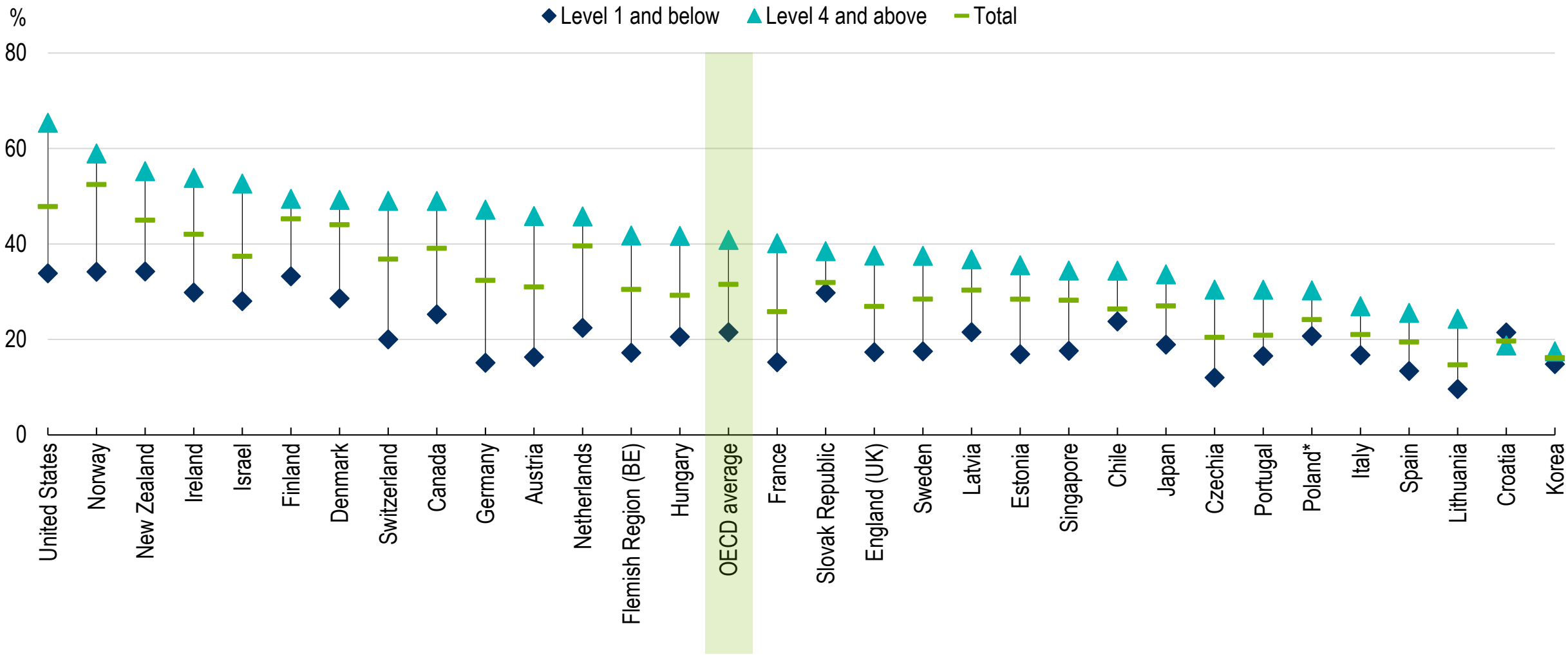


Adults aged 25-65

High-skilled adults volunteer at greater rates

Figure 4.11

Share of adults who volunteered at least once in past year, by numeracy proficiency level

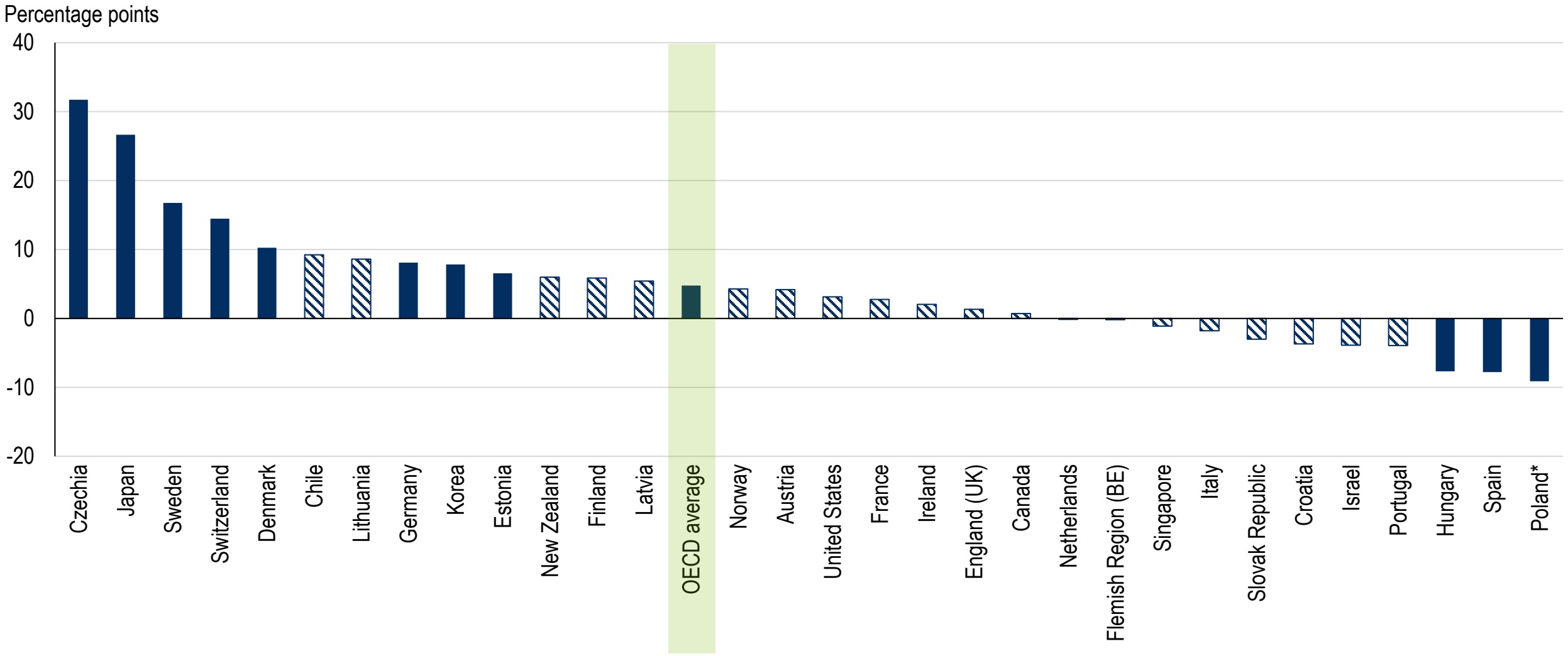


Adults aged 25-65

Skills can be positively or negatively associated with political efficacy

Figure 4.12

Difference in likelihood of reporting high political efficacy (high minus low proficiency)

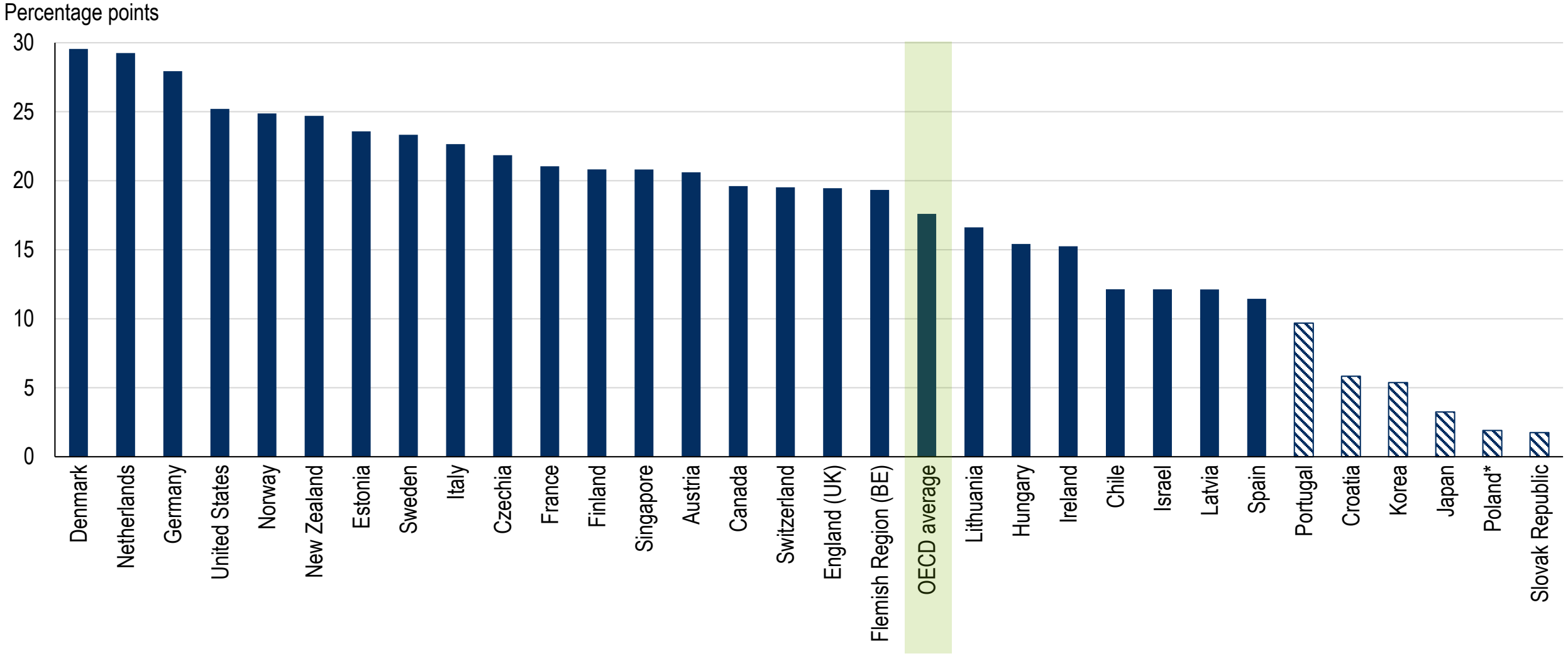


Adults aged 25-65

Trust is more clearly associated with skills than political efficacy

Figure 4.12

Difference in likelihood of reporting high levels of trust (high minus low proficiency)

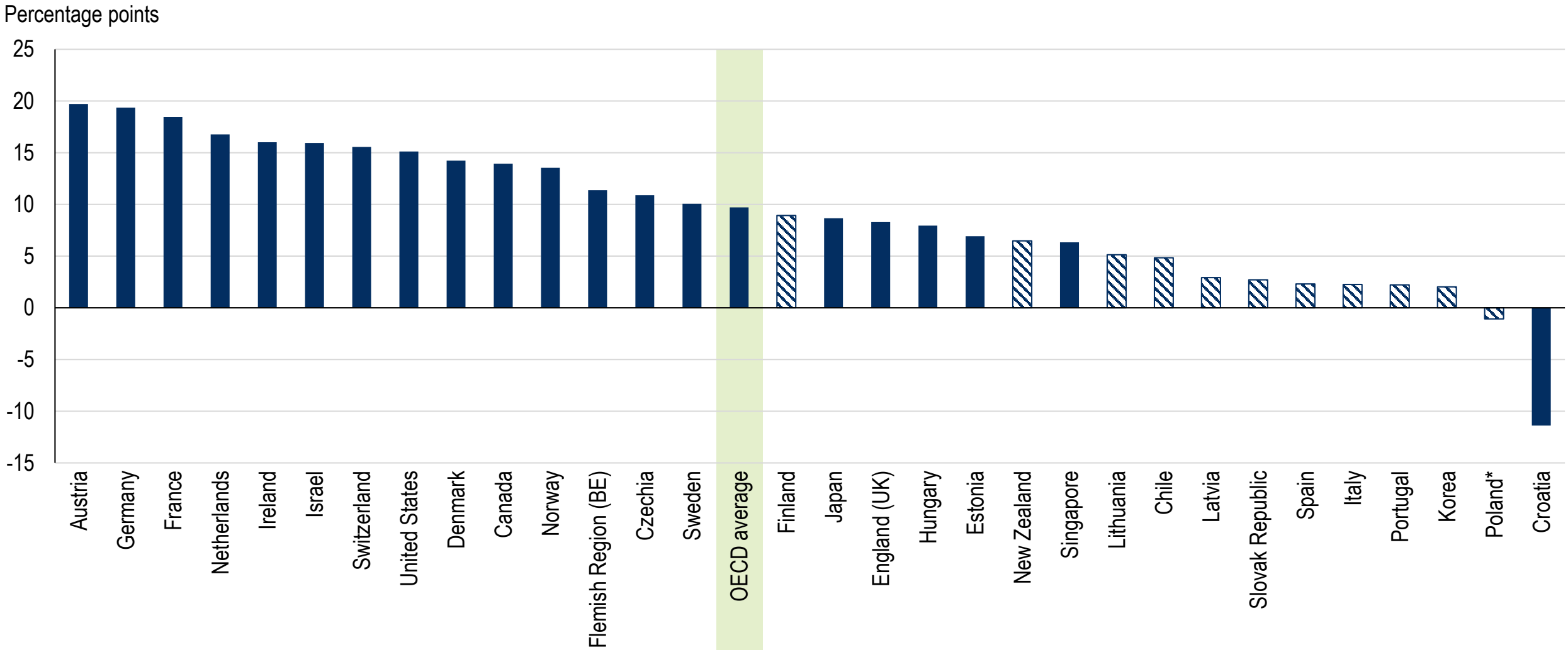


Adults aged 25-65

In most cases, there is a positive association between volunteering and skills

Figure 4.12

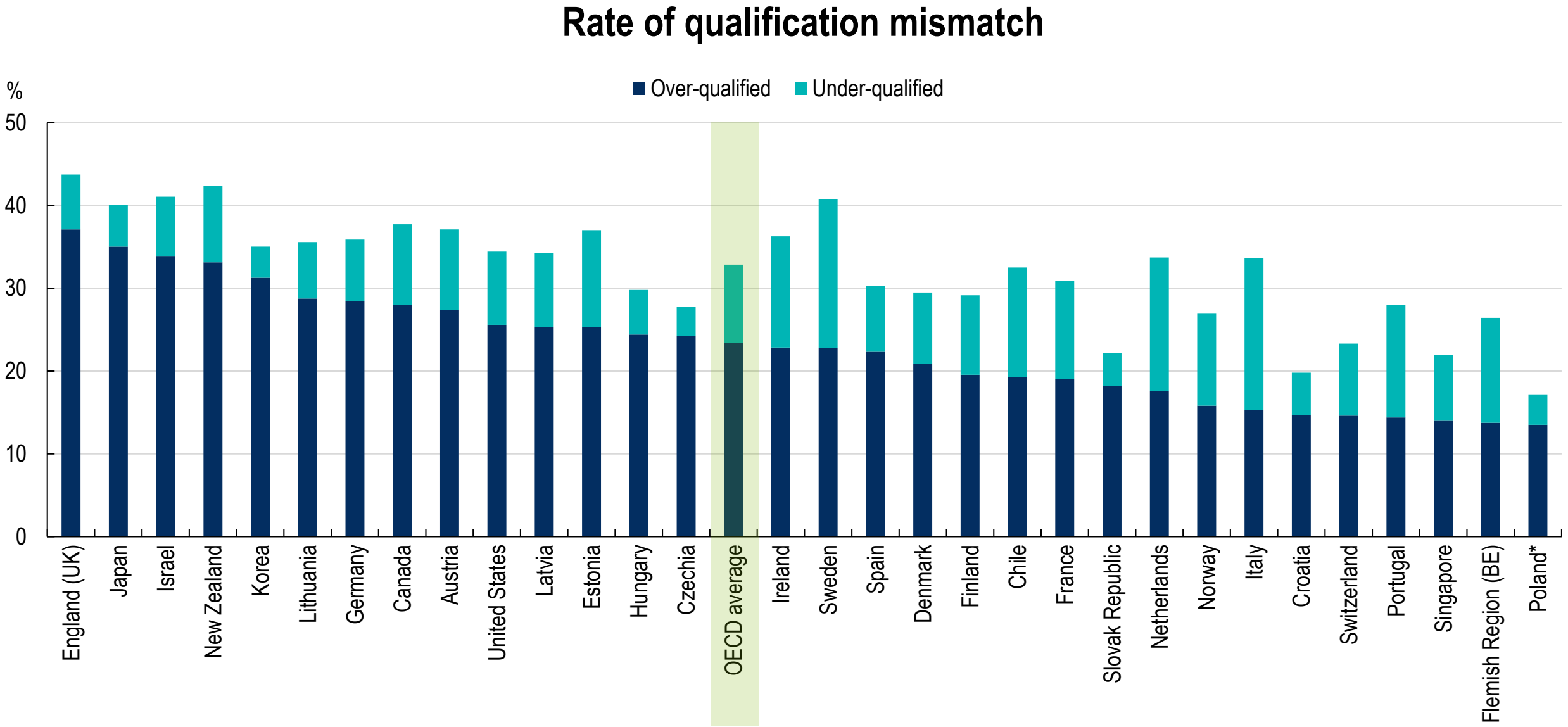
Difference in likelihood of volunteering during past year (high minus low proficiency)



Adults aged 25-65

More workers are over-qualified for their job than are under-qualified

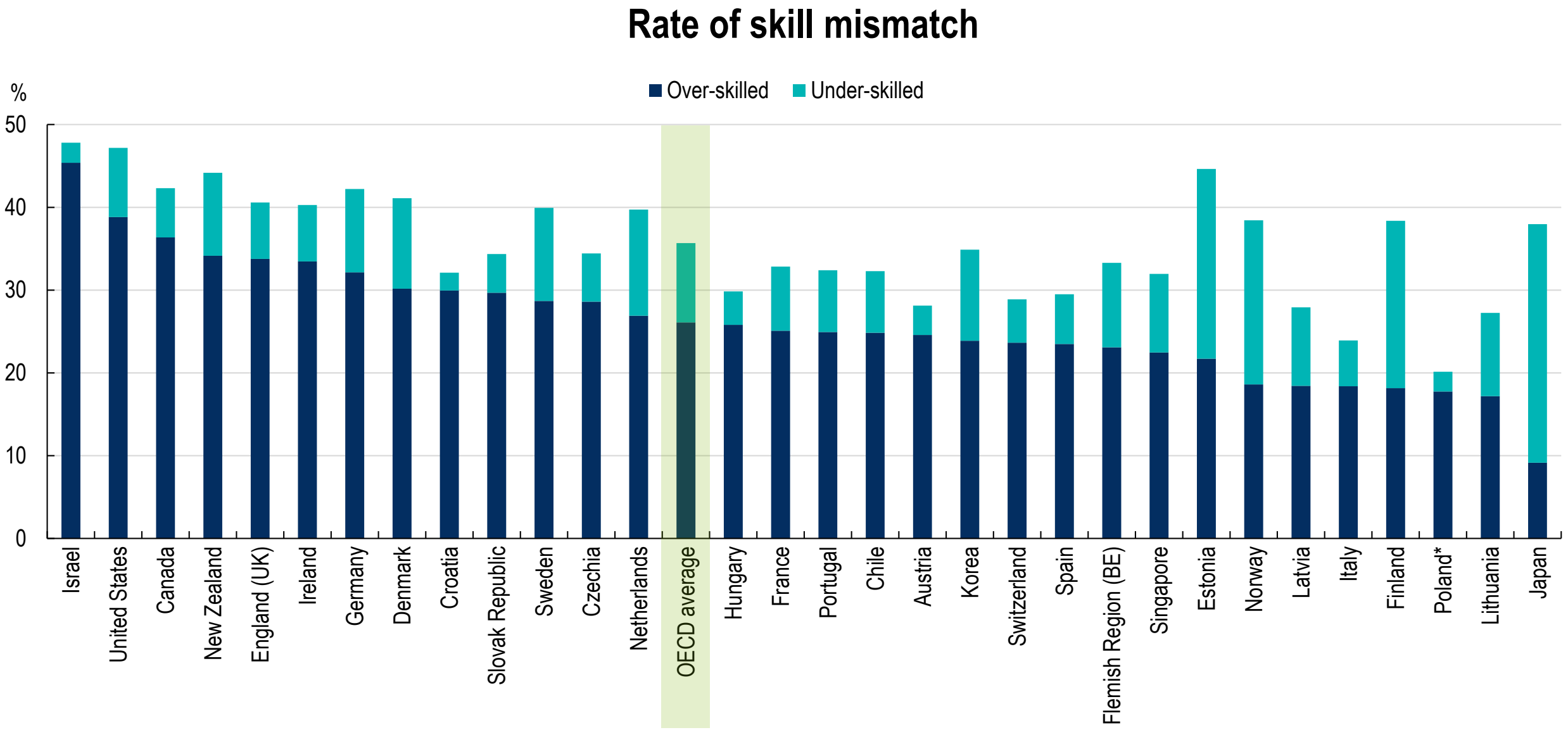
Figure 4.13



Employed adults aged 25-65 who are not self-employed

One-quarter of workers believe their skills are too high for their job

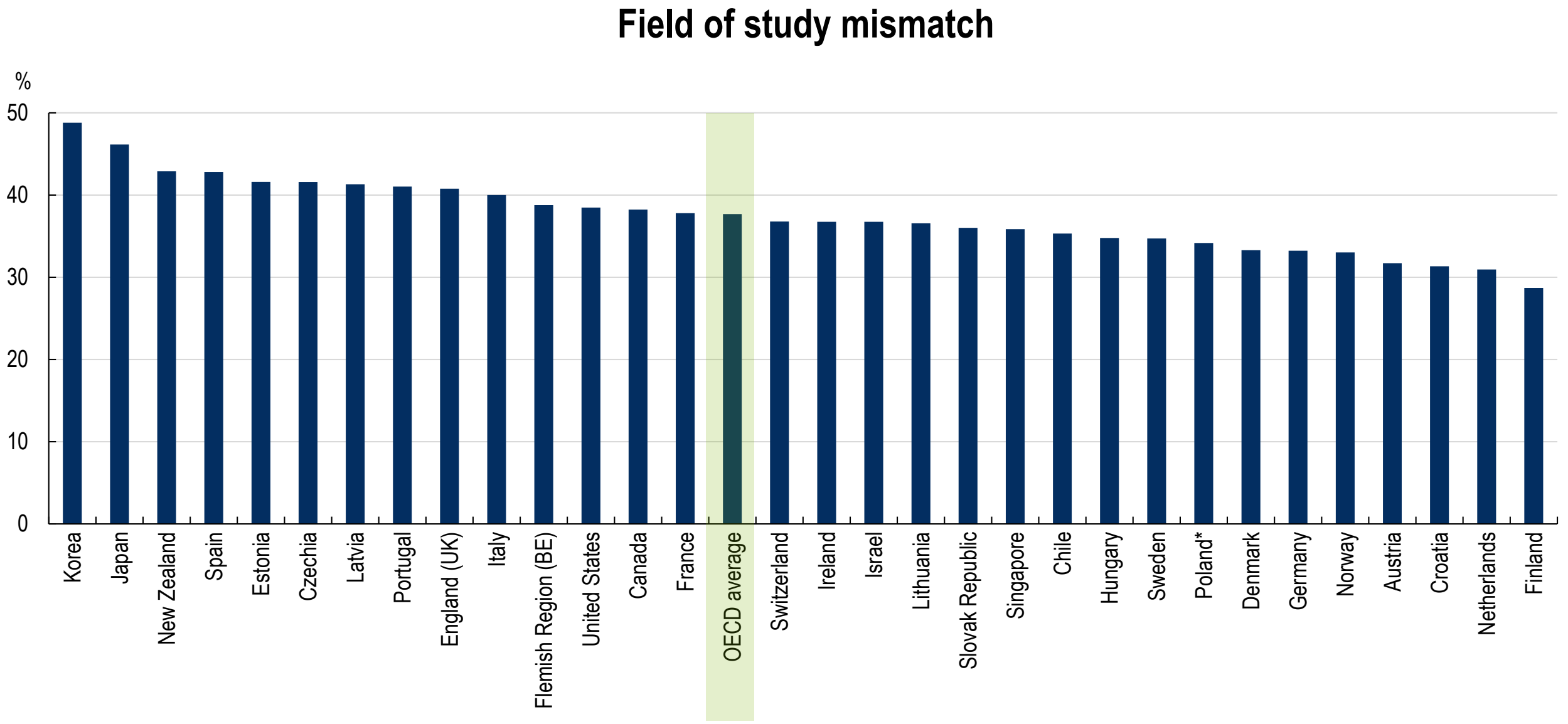
Figure 4.13



Employed adults aged 25-65 who are not self-employed

Over one-third of workers studied in a field that doesn't match their job

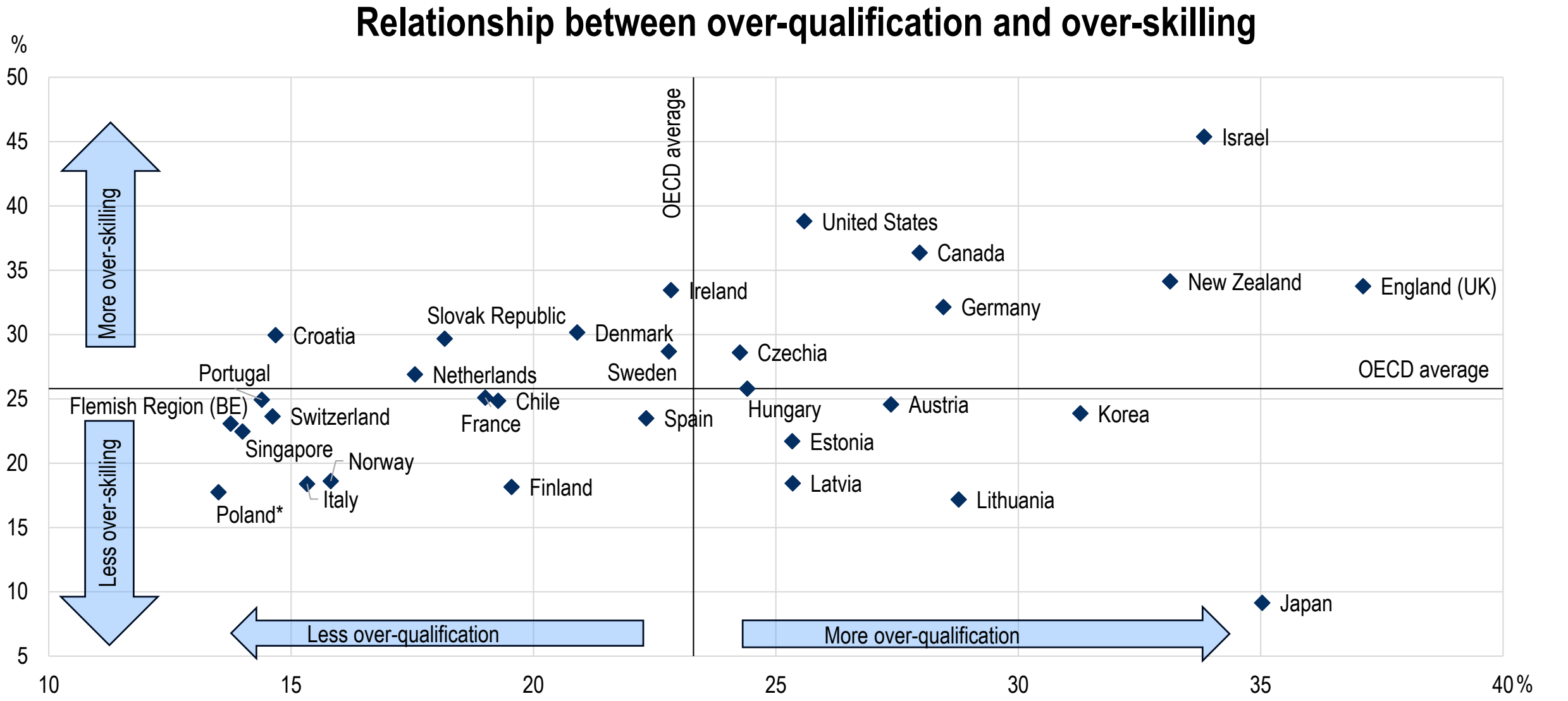
Figure 4.13



Employed adults aged 25-65 who are not self-employed

Countries that have more over-qualification tend to have more over-skilling

Figure 4.14



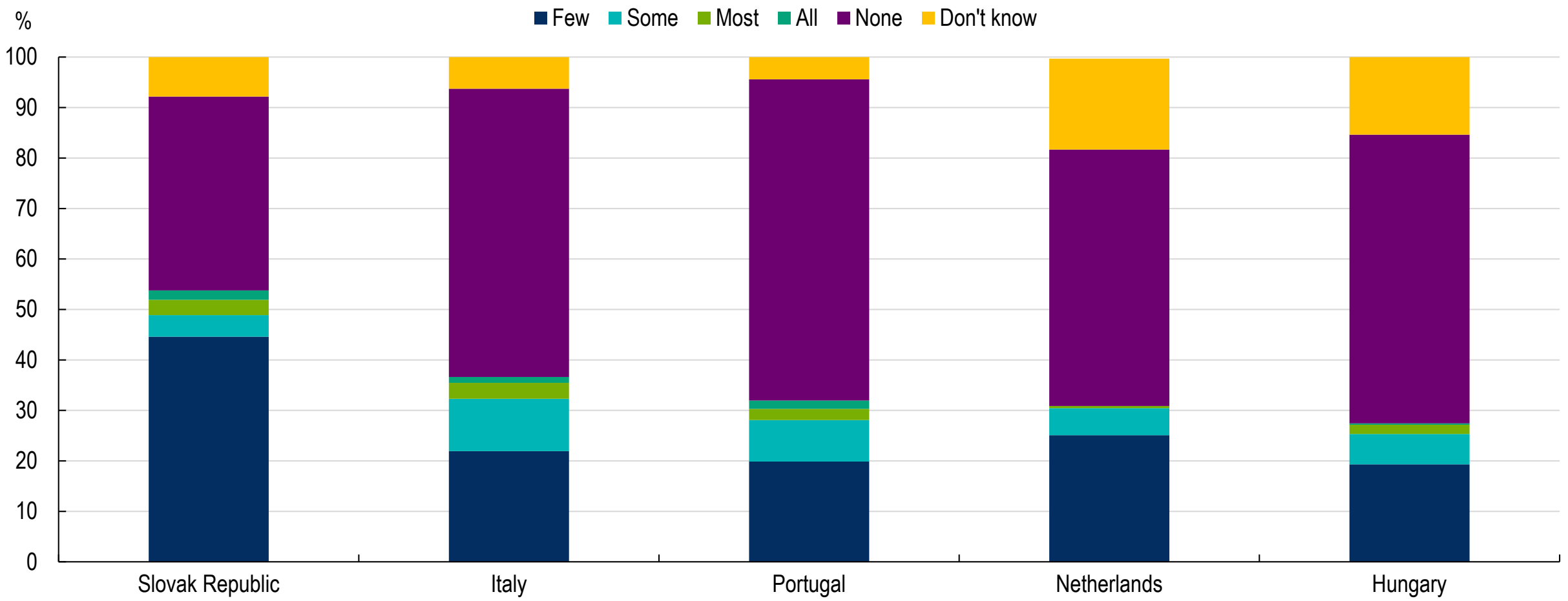
Employed adults aged 25-65 who are not self-employed

Between 27% and 54% of firms report that at least a few of their employees lack the necessary skills to perform their job

Figure 4.15

Extent of skill gaps in countries participating in the PIAAC Employer Module

Share of all firms reporting skill gap by intensity, by country

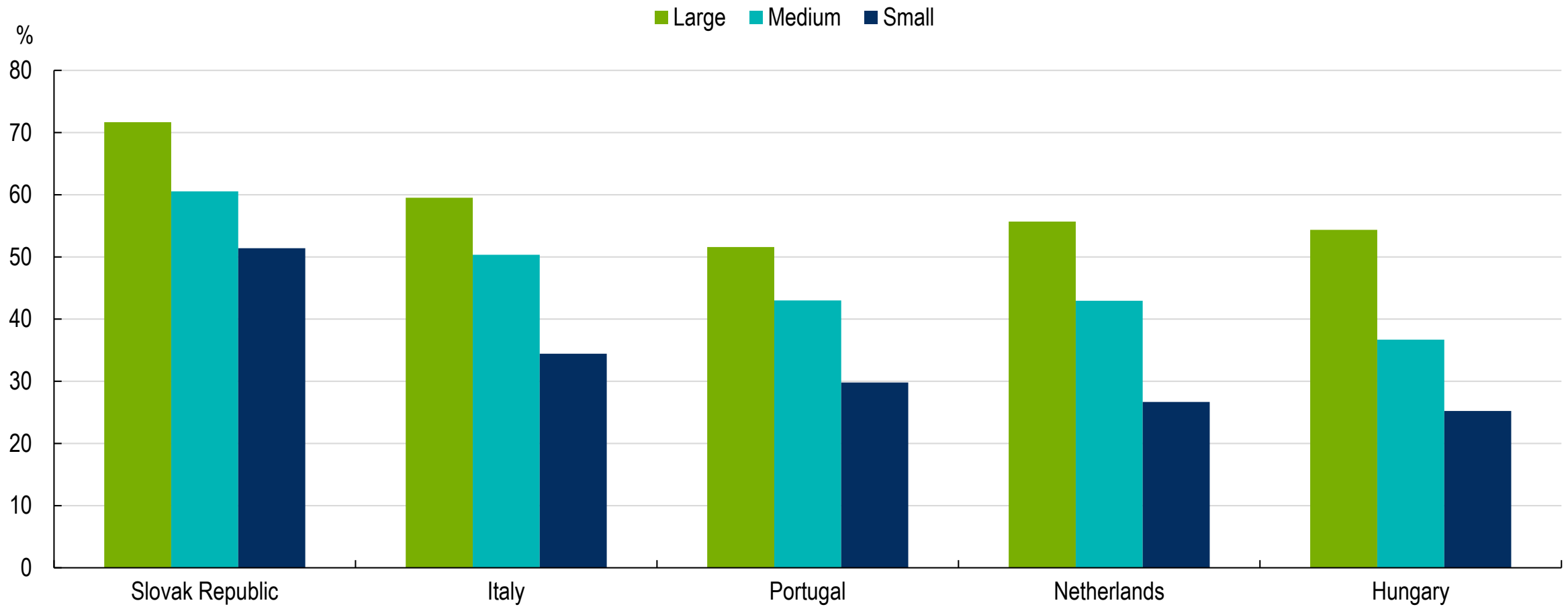


PIAAC Employer Module (2022)

Larger firms are more likely to have skill gaps than smaller firms

… in countries participating in the PIAAC Employer Module

Share of firms in each size group reporting some degree of skill gap, by country (%)

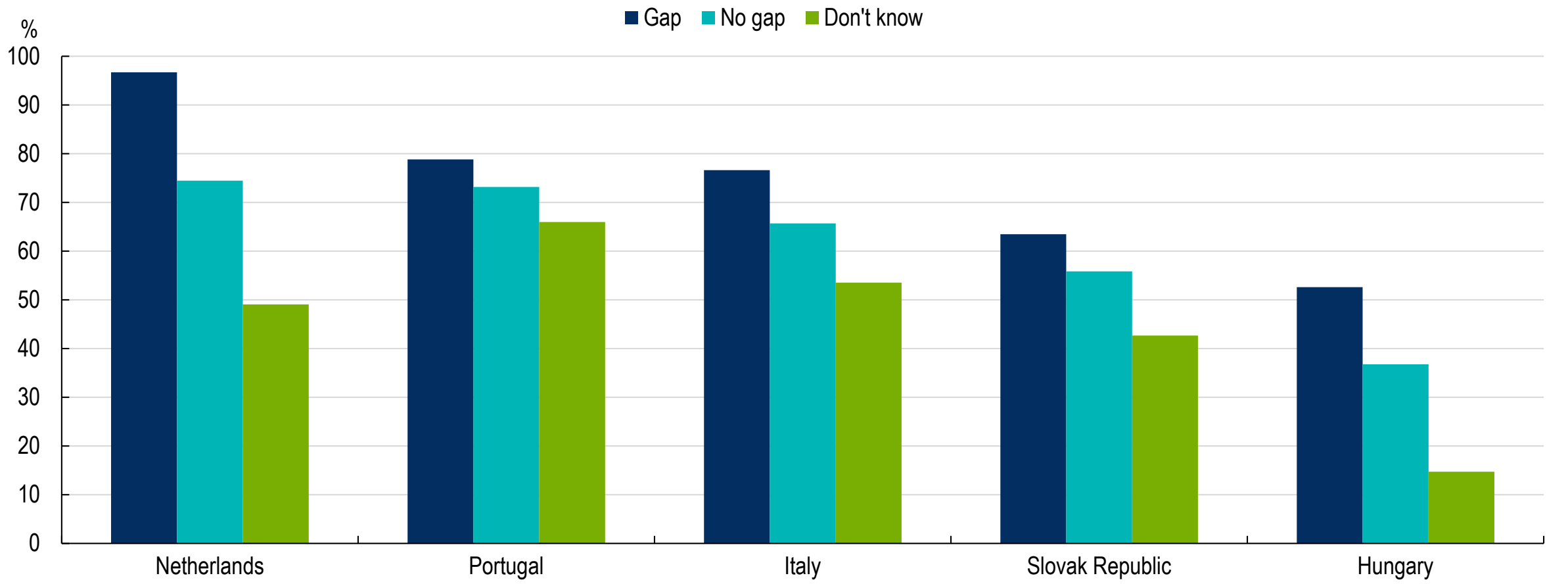


PIAAC Employer Module (2022)

Firms with skill gaps are more likely to offer training to their workers

… in countries participating in the PIAAC Employer Module

Share of firms offering training, by experience of skill gaps and country (%)

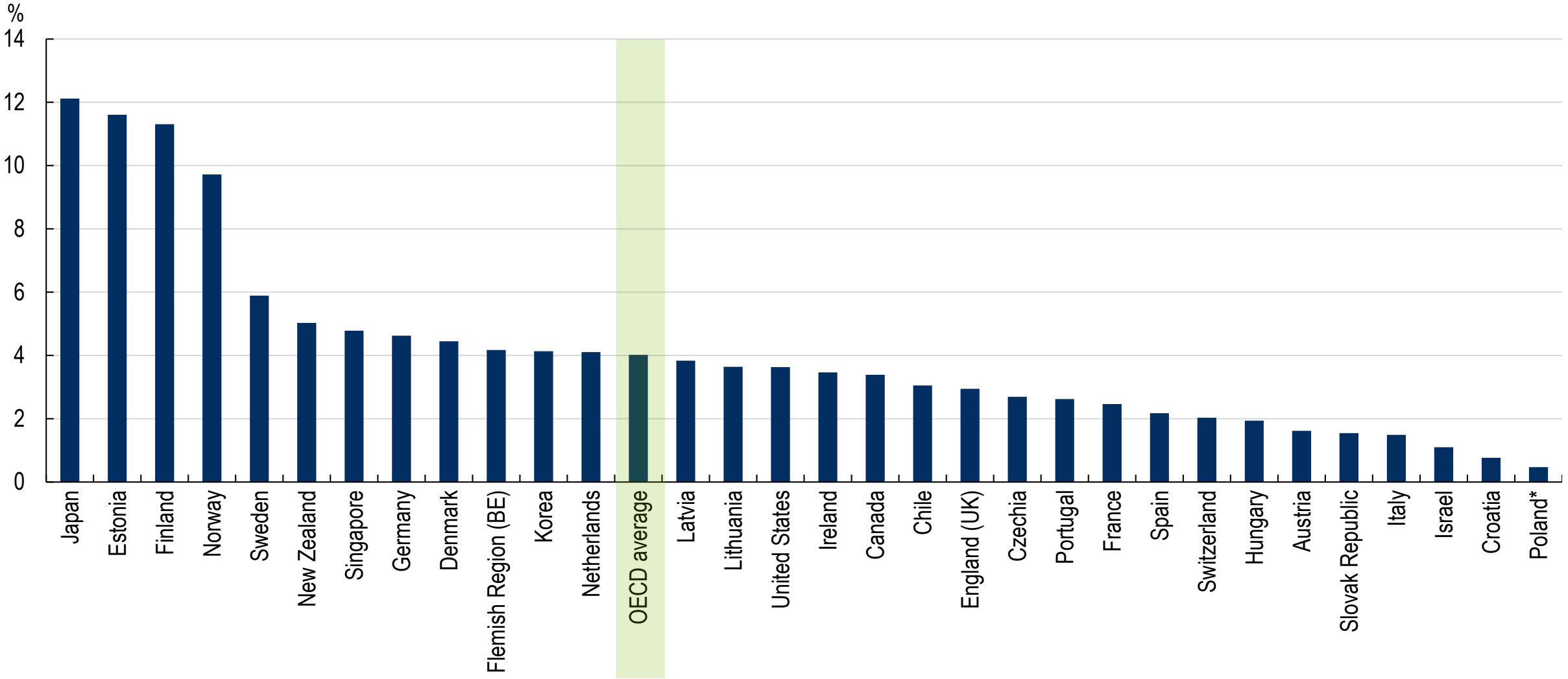


PIAAC Employer Module (2022)

Lack of digital skills is one of the biggest concerns of workers

Figure 4.16

Share of workers with inadequate computer and software skills (self-reported)

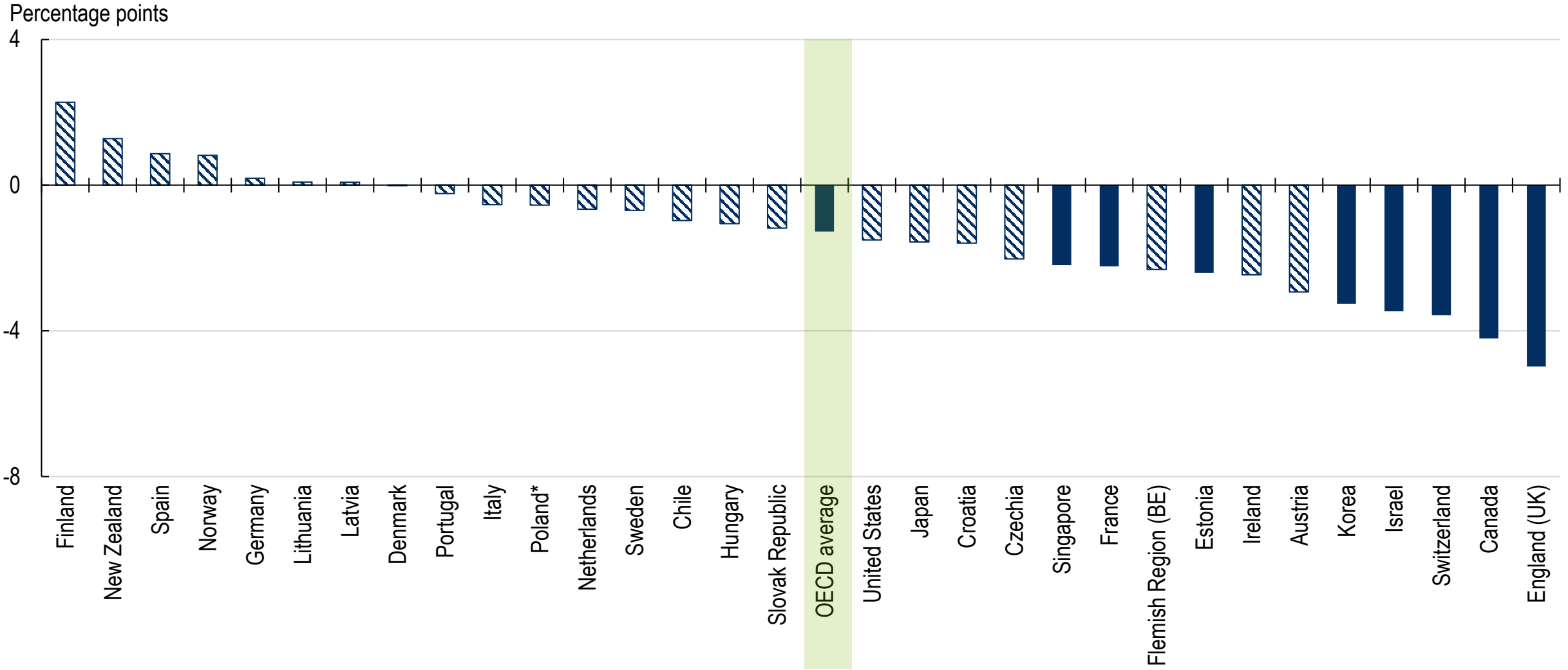


Employed adults aged 25-65 who are not self-employed

Higher skills reduce the chance of a worker being over-qualified

Figure 4.17

Effect of one-standard deviation increase in numeracy on the likelihood of being over-qualified

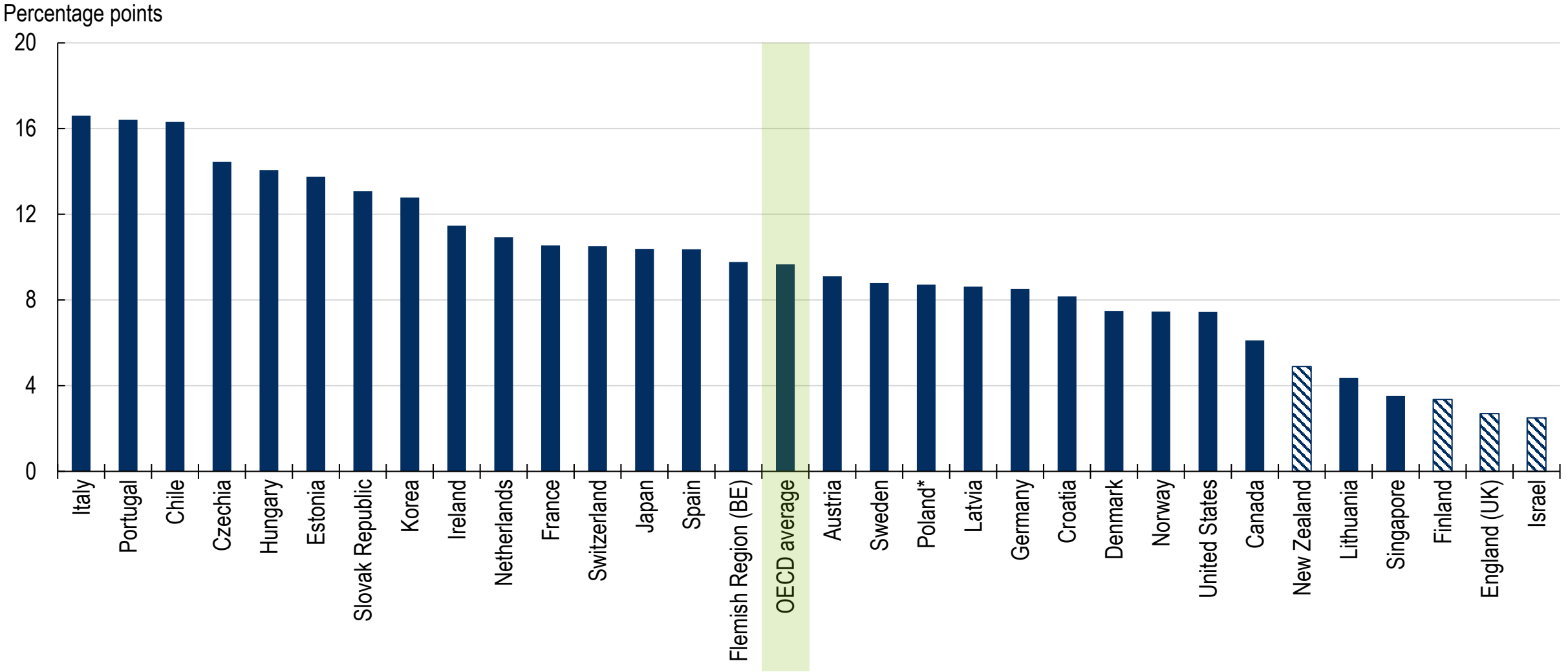


Employed adults aged 25-65 who are not self-employed

Education is linked to higher rates of over-qualification

Figure 4.17

Effect of one-standard deviation increase in education on the likelihood of being over-qualified

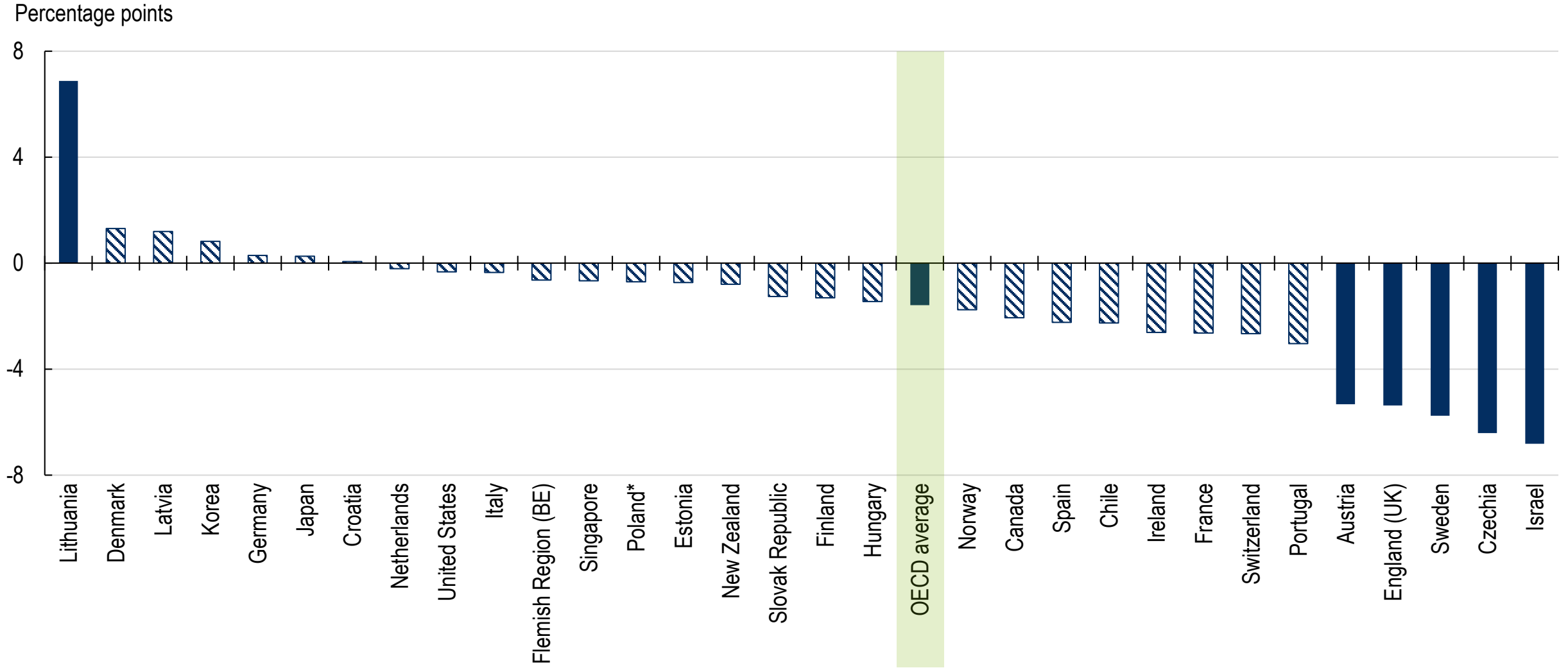


Employed adults aged 25-65 who are not self-employed

Older workers tend to be less over-qualified than younger workers

Figure 4.17

Difference in likelihood of being over-qualified (45-65 compared to 25–44-year-olds)

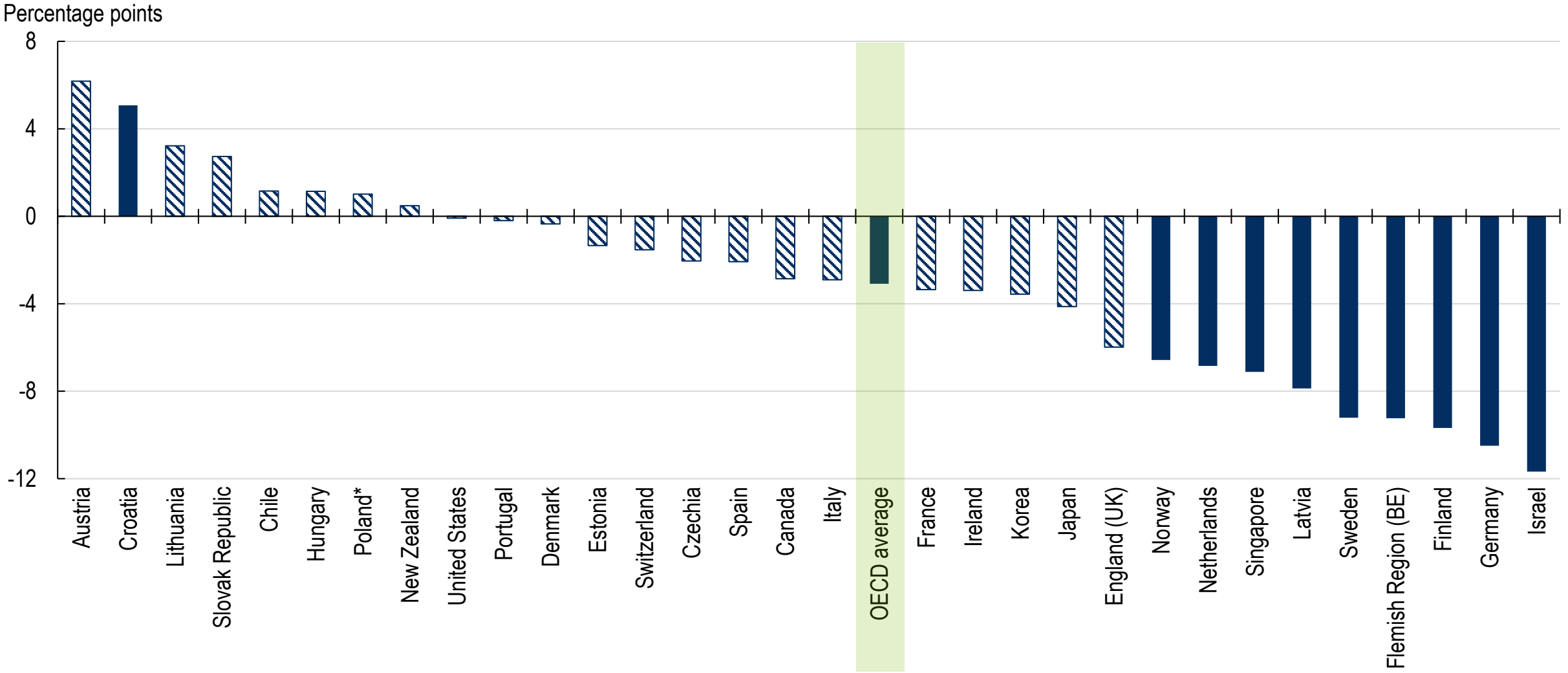


Employed adults aged 25-65 who are not self-employed

Partnered women are less likely to be over-qualified than single men

Figure 4.17

Difference in likelihood of being over-qualified (partnered women compared to single men)

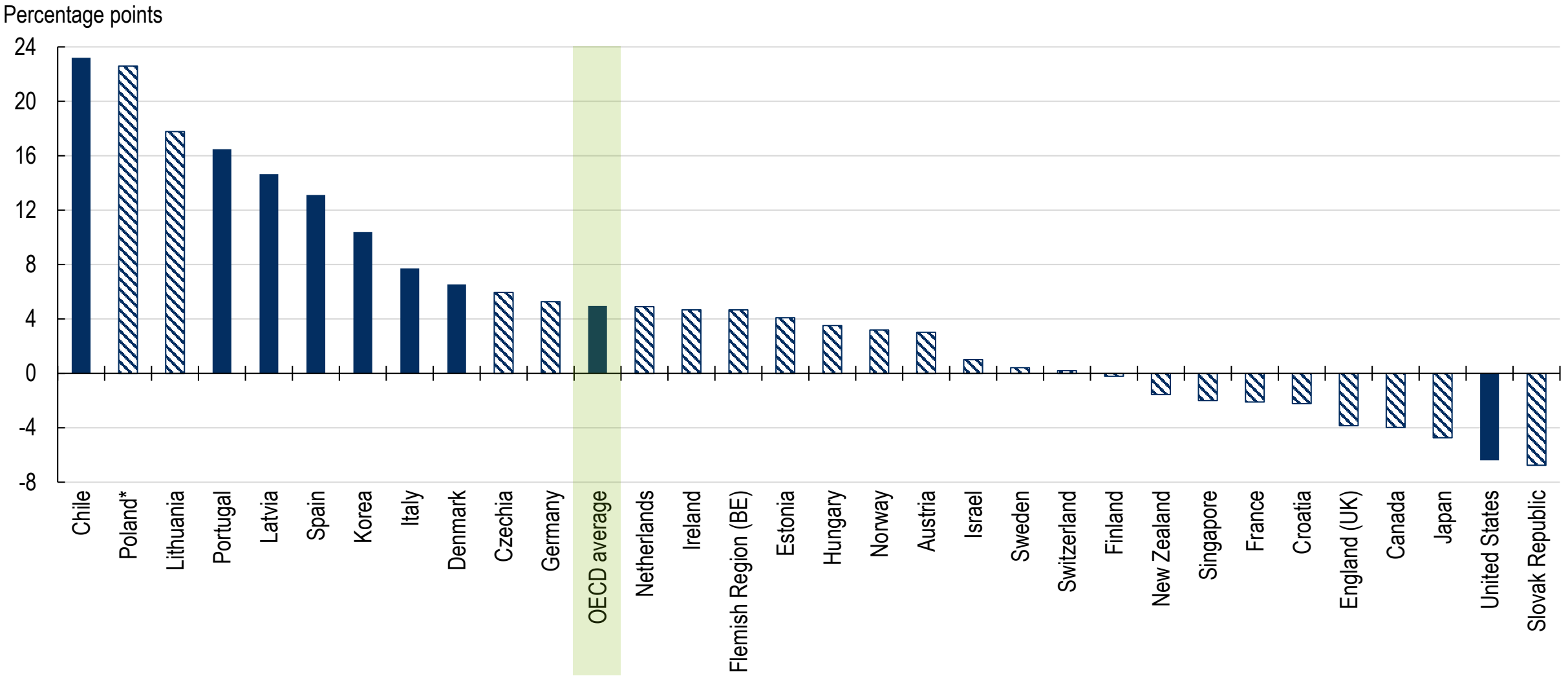


Employed adults aged 25-65 who are not self-employed

Foreign-born workers are 5 percentage points more likely to be over-qualified than native-born workers

Figure 4.17

Difference in likelihood of being over-qualified (foreign-born compared to native-born)

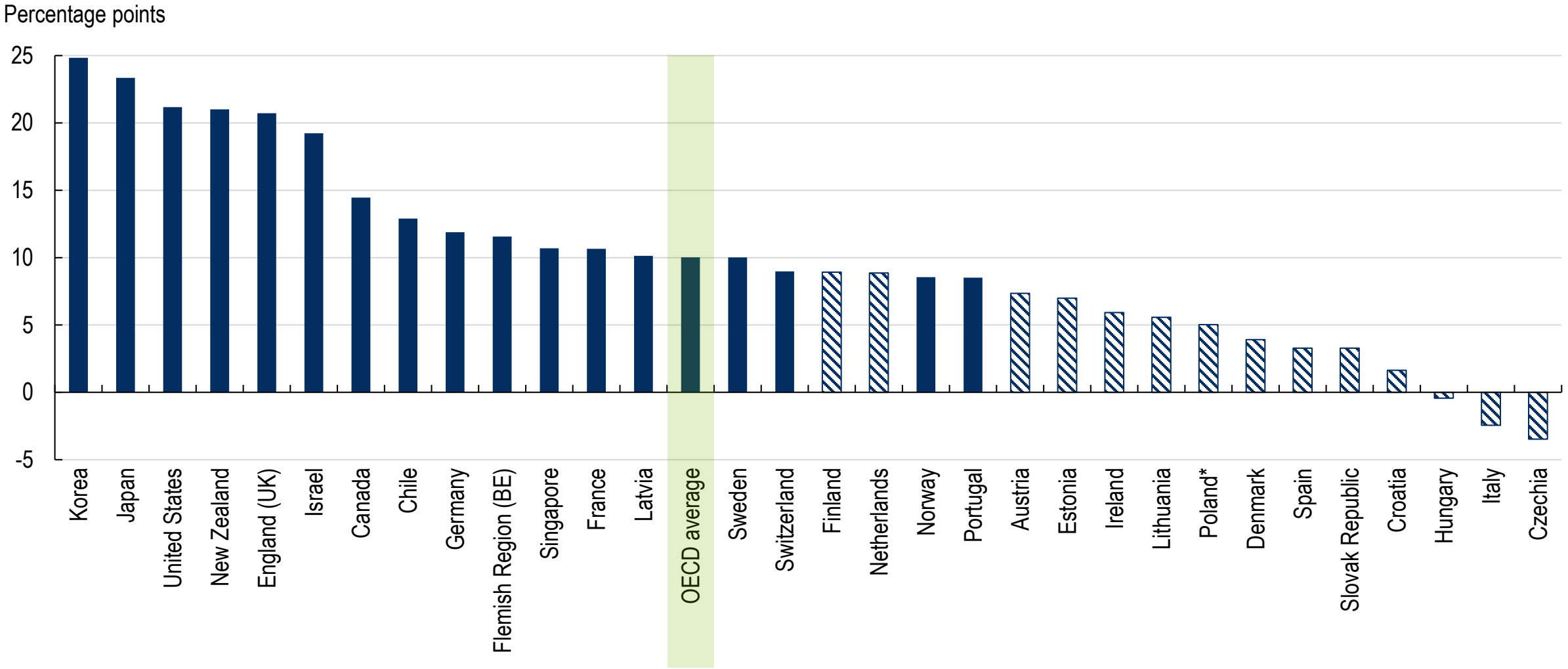


Employed adults aged 25-65 who are not self-employed, foreign-born to foreign-born parents and native-born to native-born parents

Workers in small firms are 10 percentage points more likely to be over-qualified than workers in very large enterprises

Figure 4.18

Difference in likelihood of being over-qualified (small compared to very large enterprises)

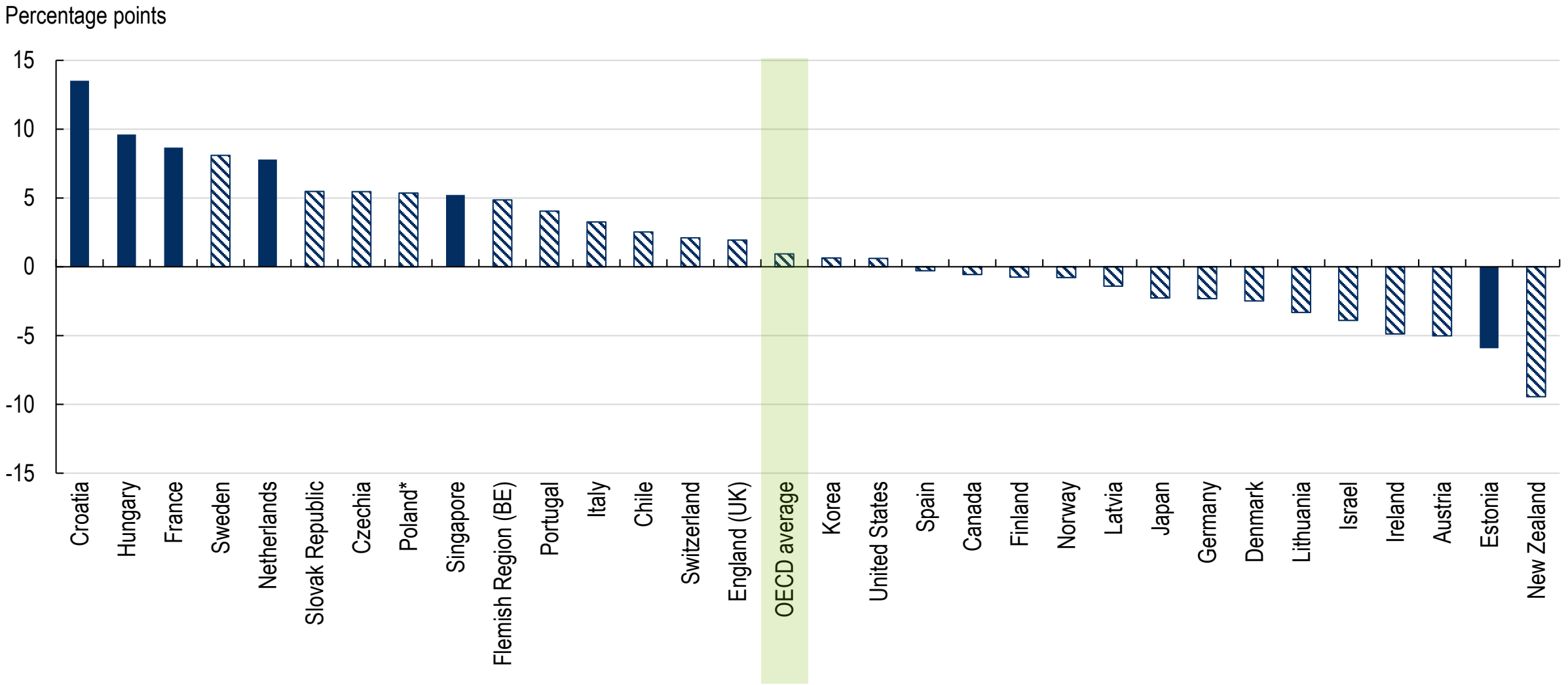


Employed adults aged 25-65 who are not self-employed; small firms are defined as those with 1-10 employees and large firms those with 1000+ employees

Contract type is not significantly associated with over-qualification

Figure 4.18

Difference in likelihood of being over-qualified (fixed-term compared to indefinite contract)

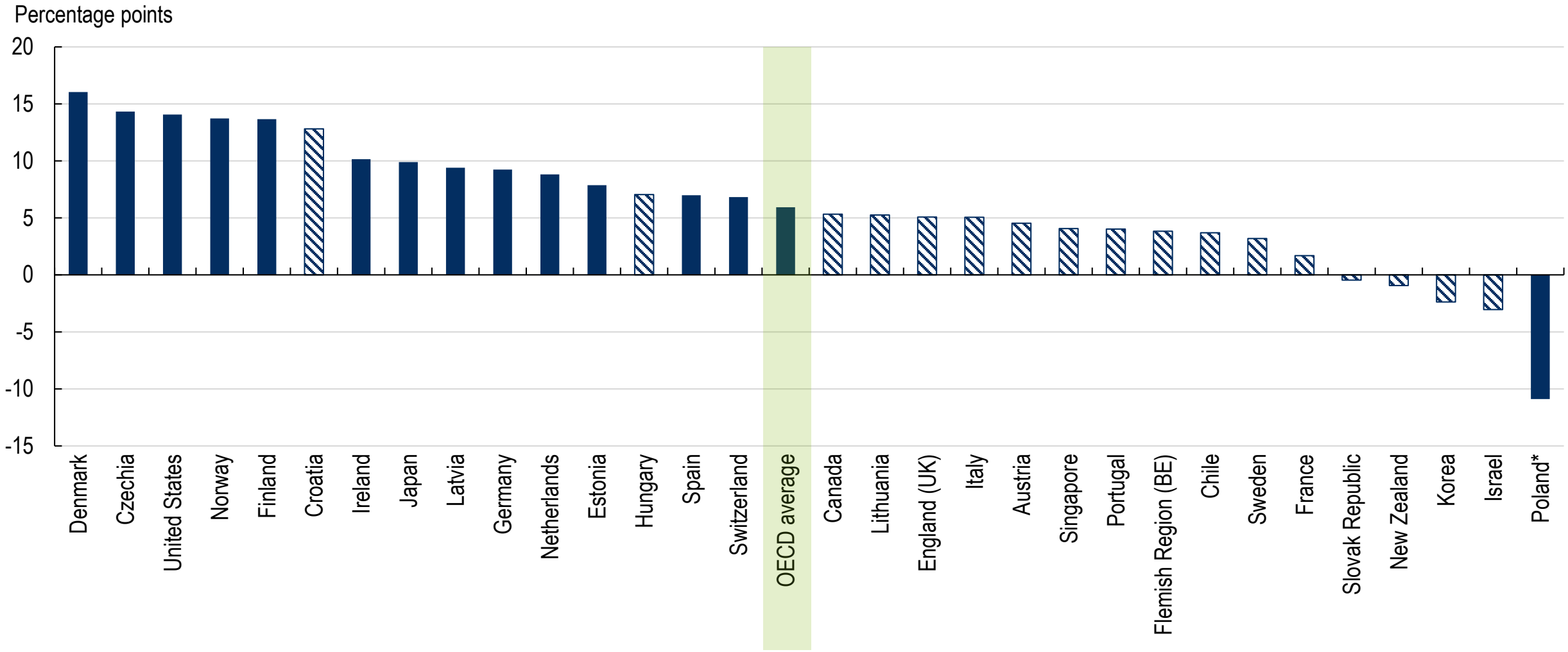


Employed adults aged 25-65 who are not self-employed

Part-time workers are 6 percentage points more likely to be over-qualified than full-time workers

Figure 4.18

Difference in likelihood of being over-qualified (part-time compared to full-time workers)

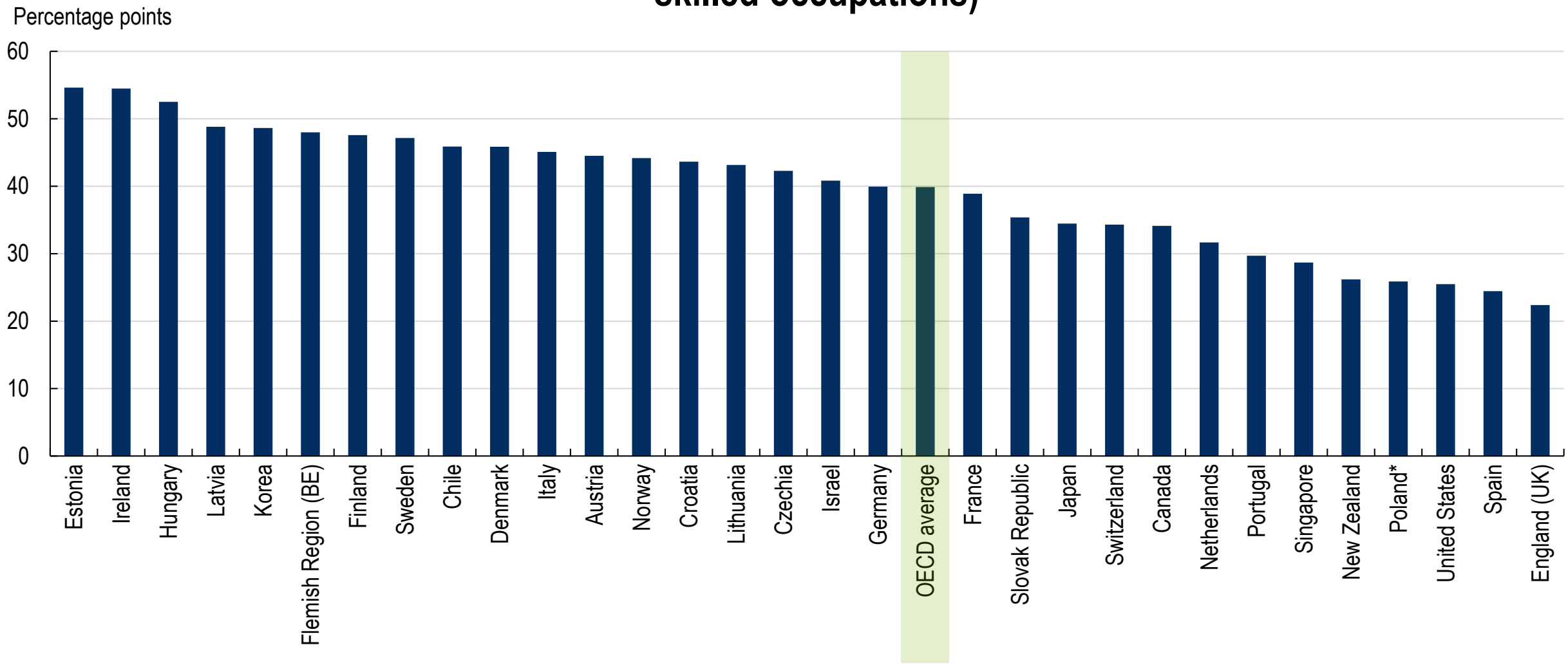


Employed adults aged 25-65 who are not self-employed; full-time work is defined as 30 hours per week or more

Elementary occupations have a much higher rate of over-qualification than skilled occupations

Figure 4.18

Difference in likelihood of being over-qualified (elementary compared to skilled occupations)

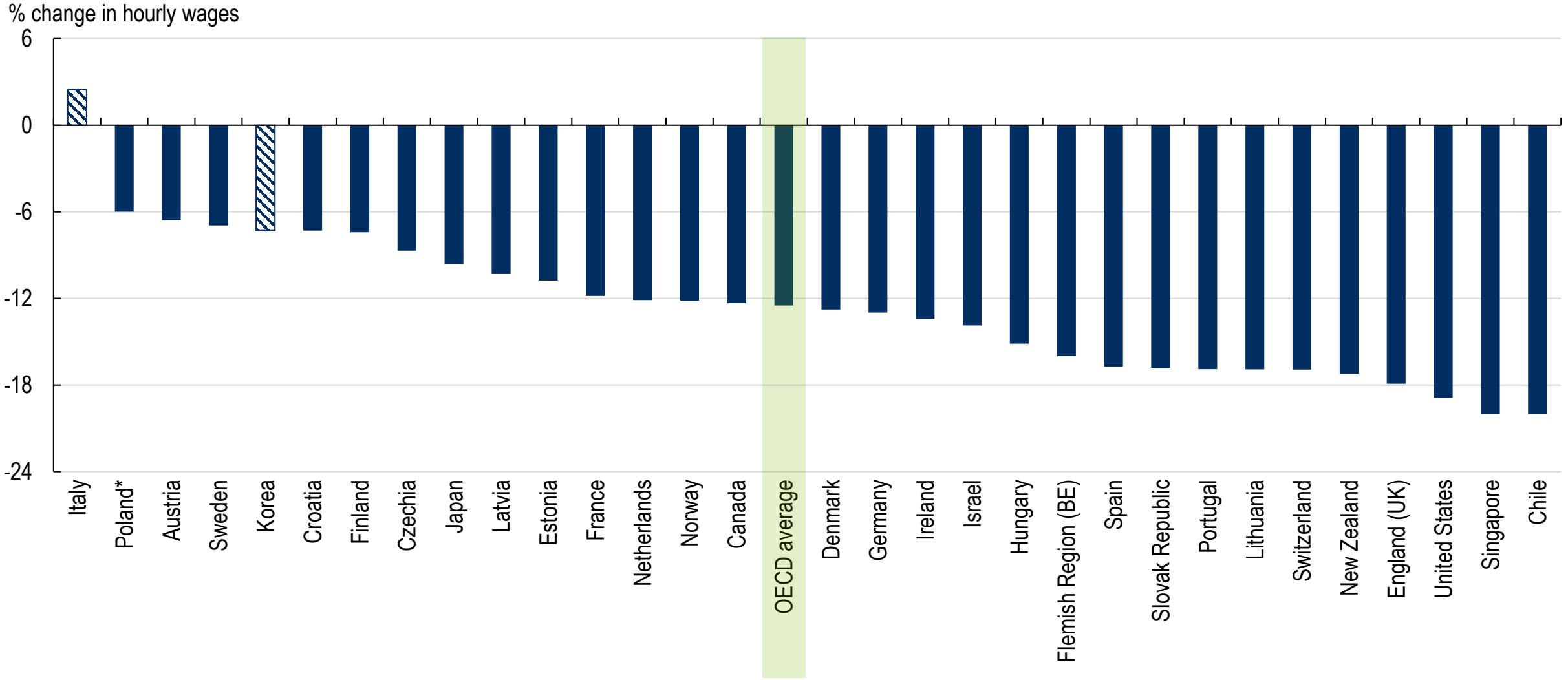


Employed adults aged 25-65 who are not self-employed

Over-qualified workers face a 12% wage penalty

Figure 4.19

Effect of over-qualification on wages

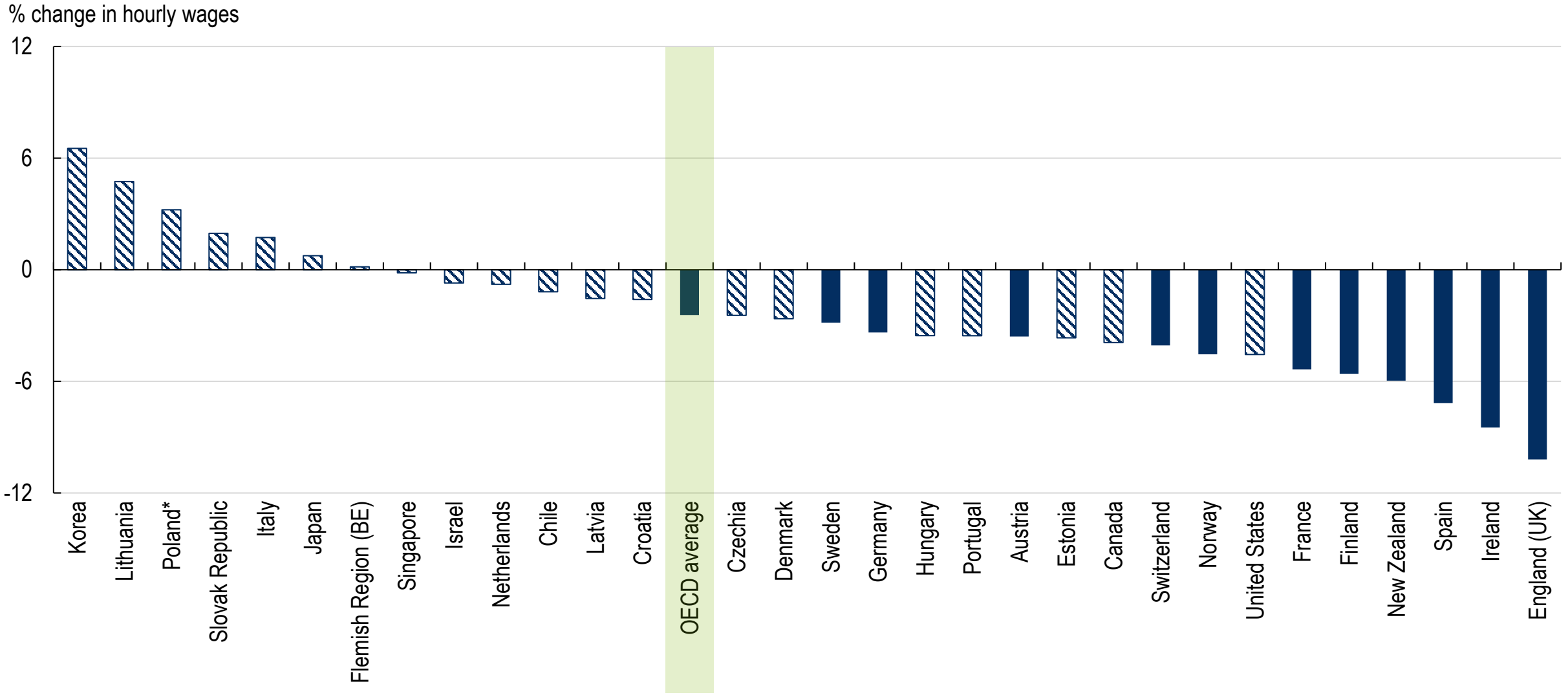


Employed adults aged 25-65 who are not self-employed

Over-skilling is also slightly negatively associated with wages

Figure 4.19

Effect of over-skilling on wages

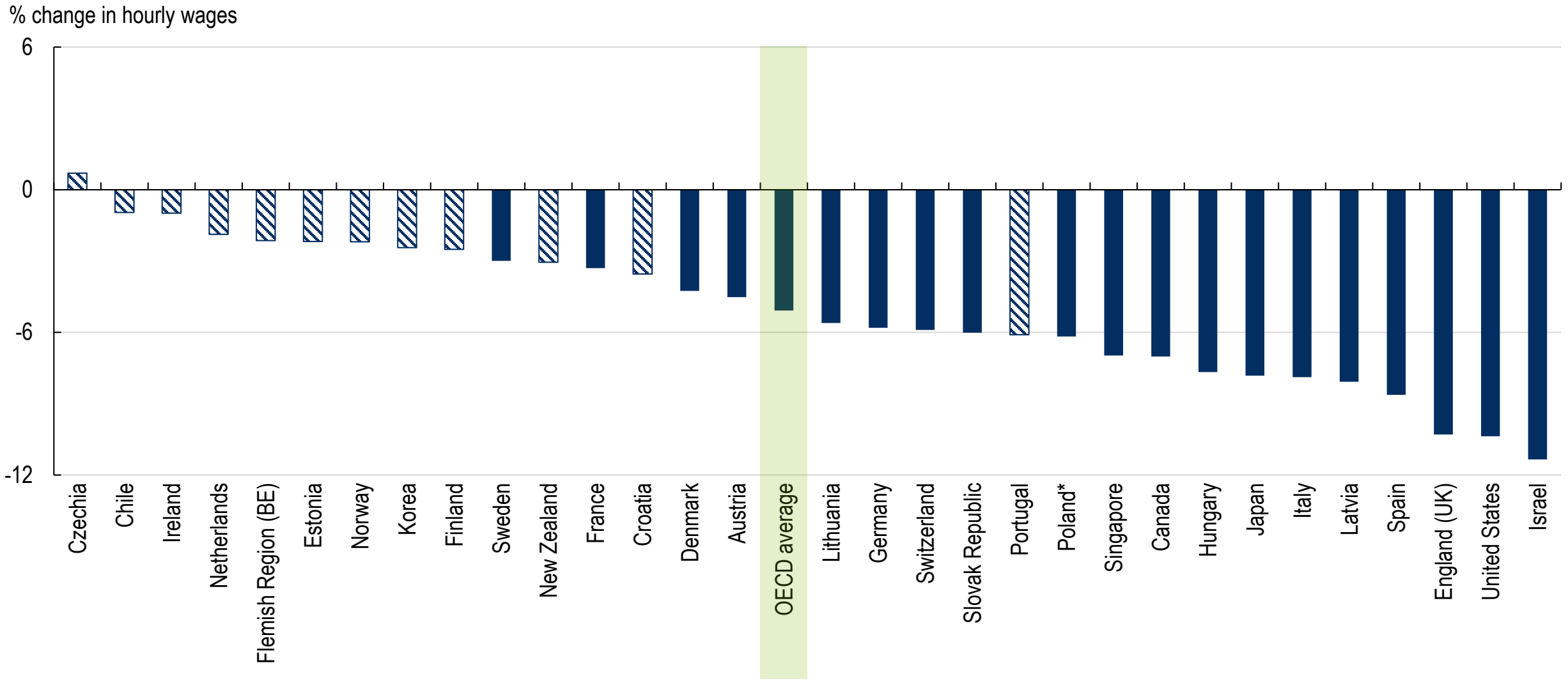


Employed adults aged 25-65 who are not self-employed

Workers earn 5% less on average when their field of work differs from their field of study

Figure 4.19

Effect of mismatch in field of study on wages

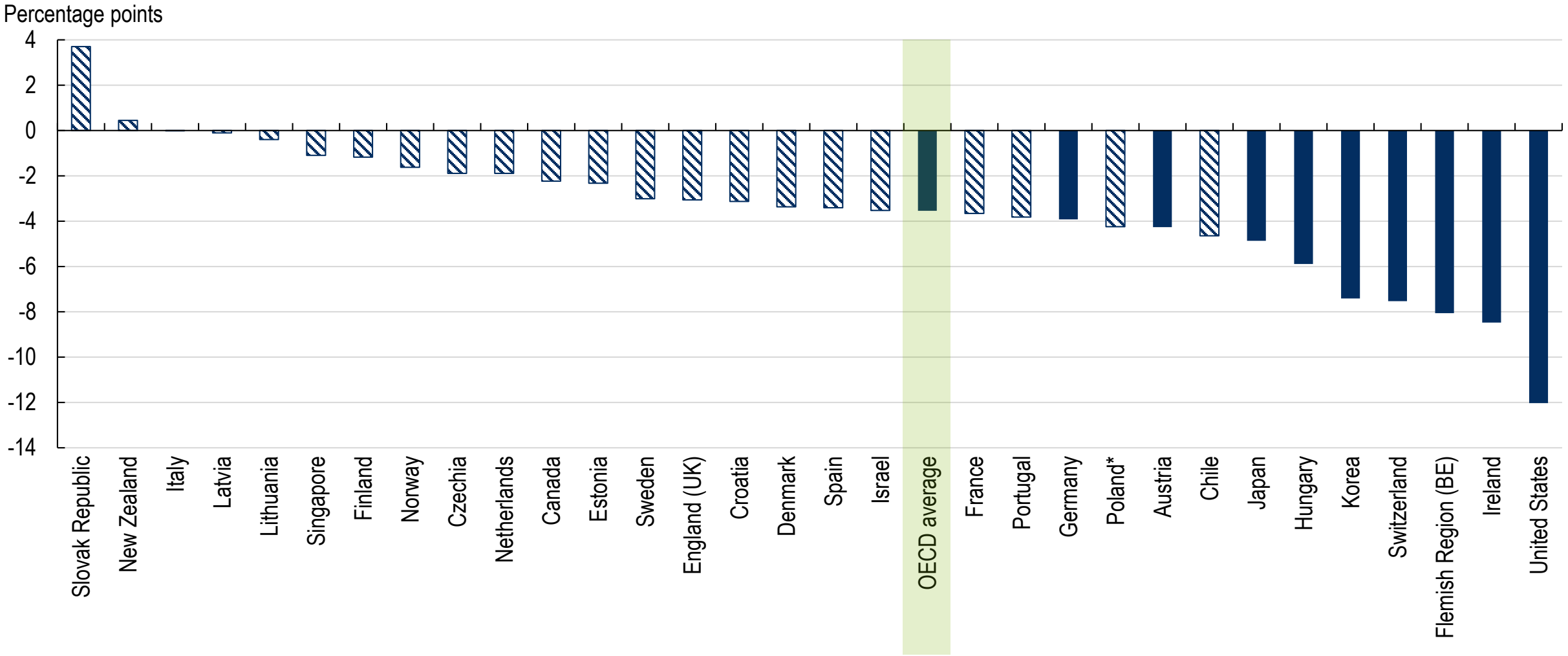


Employed adults aged 25-65 who are not self-employed

Workers who are over-qualified report being less happy with their life

Figure 4.20

Effect of over-qualification on likelihood of reporting high life satisfaction



Employed adults aged 25-65 who are not self-employed