# Student performance and equity in education

The quality of education and school systems is reflected in their ability to provide students with the knowledge and skills necessary to achieve their full potential. The PISA survey measures once every three years the performance of 15-year-old students in reading, mathematics and science in more than 60 countries. It allows a comparison not only of average national scores but also of the equity of the results among children and schools within each country (PISA, 2012). The last wave of the PISA survey in 2012 focussed particularly on assessing performance in mathematics.

In 2012, among OECD countries, the performance of 15 years old students in PISA in mathematics was the highest in Korea, Japan and Switzerland while students in Mexico, Chile and Turkey performed somewhat more poorly (PISA, 2012).

Between 2003 and 2012, the PISA mathematics scores on average across OECD countries have remained relatively stable. However, there have been some remarkable improvements in countries that started with relatively low scores in 2003 (e.g. Israel, Turkey, Mexico), which have closed to some extent the gaps with other OECD countries. Student performance in mathematics has also increased in countries with average scores like Germany, or below the OECD average like Poland, Italy and Portugal. By contrast, student performance in mathematics has decreased in some countries that started with high scores in 2003 (e.g. Sweden and Finland). Student performance in mathematics has also declined in Czech Republic, New Zealand and Australia.

PISA also shows how equitably participating countries are providing education opportunities and achieving education outcomes across students from different socio-economic background. On average across OECD countries, about 15% of the variation in students' mathematics performance can be explained by their socio-economic background. The countries where the variation in PISA mathematics performance can be explained to a larger extent by socio-economic background are the Slovak Republic, Chile, Hungary and France. By contrast, it is much less the case in Norway, Estonia, Iceland, Finland and Canada.

The performance of students in mathematics and other subjects is also affected by the school they attend. When there is substantial variation in performance between schools and less variation between students within schools, this means that students tend to be grouped in schools where other students perform at levels similar to their own. In Nordic countries, the share of the variance between schools is about one-tenth of the OECD average. Therefore, parents in these countries can be less concerned about school choice affecting their children's performance. By contrast, variation between schools is higher in countries like the Netherlands, Belgium, Hungary, Turkey, the Slovak Republic, Slovenia and Germany.

### *Methodology and definitions*

Data for both figures come from the 2012 Programme for International Student Assessment (PISA). It assessed the competencies of 15-year-olds in reading, mathematics and science (with a focus on mathematics) in 65 countries and economies. For more information on the underlying data see: *www.oecd.org/pisa/keyfindings/pisa-2012-results-volume-i.htm*.

The PISA index of economic, social and cultural status (ESCS) was derived from the following three indices: highest occupational status of parents, highest educational level of parents and home possessions. For more information on the underlying data and methodology see: *www.oecd.org/pisa/keyfindings/pisa-2012-results-volume-II.pdf*.

## Further reading

OECD (2014), *PISA 2012 Results: What Students Know and Can Do – Student Performance in Mathematics, Reading and Science*, Volume I, OECD, Paris, *http://dx.doi.org/10.1787/9789264208780-en*.

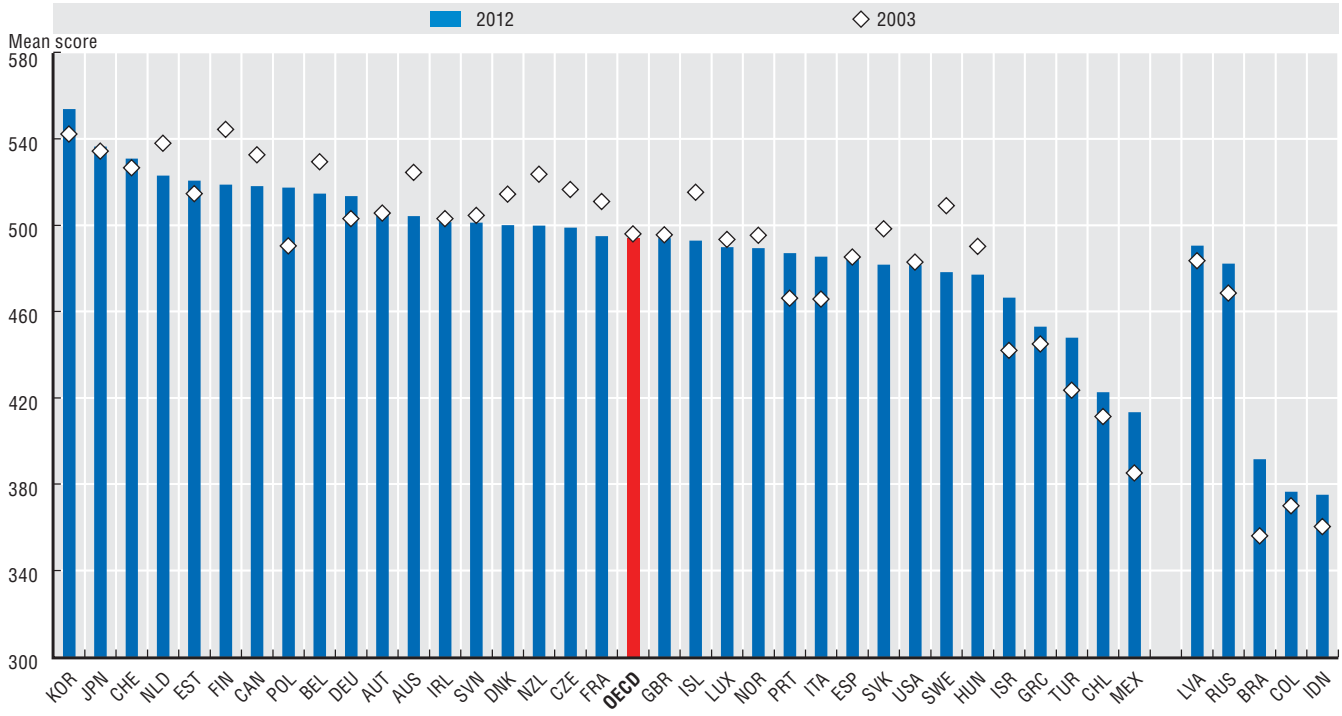
OECD (2013), *PISA 2012 Results: Excellence Through Equity: Giving Every Student the Chance to Succeed*, Volume II, OECD, Paris, *http://dx.doi.org/10.1787/9789264201132-en*.

## Figure notes

12.25: Data for Chile, Estonia, Israel, Slovenia and the United Kingdom are based on PISA 2006 rather than PISA 2003.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

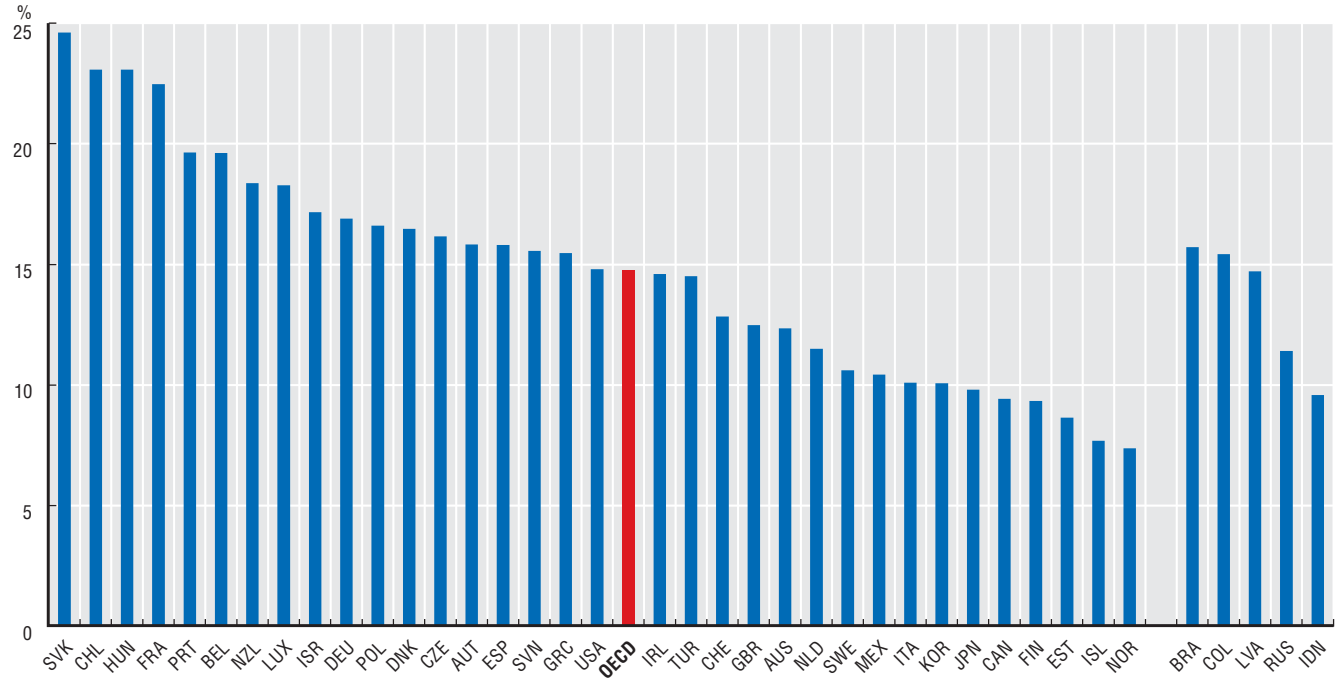
## 12.25. Evolution of PISA mean score in mathematics, 2003 and 2012




*Source:* OECD (2014), *PISA What Students Know and Can Do* (revised edition), OECD, Paris.

StatLink http://dx.doi.org/10.1787/888933249588

## 12.26. Percentage of variance in PISA mathematics score explained by socio-economic background, 2012




*Source:* OECD (2014), *PISA What Students Know and Can Do* (revised edition), OECD, Paris.

StatLink http://dx.doi.org/10.1787/888933249591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