



# *PISA 2015: Financial literacy in Australia*

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# Executive Summary

The Programme for International Student Assessment (PISA) is an international comparative assessment of student achievement directed by the Organisation for Economic Co-operation and Development (OECD). PISA measures how well 15-year-olds, who are nearing the end of their compulsory schooling in most participating educational systems, are prepared to use the knowledge and skills in particular areas to meet real-life opportunities and challenges.

In addition to measuring students' skills in the core areas of reading literacy, mathematical literacy and scientific literacy, PISA was the first large-scale international assessment to assess financial literacy in 2012. The second assessment of financial literacy was once again conducted as an optional component in PISA and was conducted in 15 countries and economies in 2015.

In Australia, the inclusion of financial literacy in PISA is funded by the Australian Securities and Investment Commission (ASIC). This report focuses on the findings from the Financial Literacy assessment in PISA 2015.

## What are the main goals of PISA?

PISA looks to answer several important questions related to education, such as:

- ▶ How well are young adults prepared to meet the challenges of the future? Can they analyse, reason and communicate their ideas effectively? Will their skills enable them to adapt to rapid societal change?
- ▶ Are some ways of organising schools and school learning more effective than others?
- ▶ What influence does the quality of school resources have on student outcomes?
- ▶ What educational structures and practices maximise the opportunities of students from disadvantaged backgrounds?
- ▶ How equitable is the provision of education within a country and across countries?

## What does PISA assess?

The core assessment domains of reading literacy, mathematical literacy and scientific literacy are measured in PISA. PISA also assesses additional domains in each cycle. In PISA 2015, financial literacy and collaborative problem solving were assessed.

The data collected from the financial literacy test and questionnaire can answer questions such as 'How well prepared are 15-year-old students to participate in the new financial systems that are becoming more global and more complex?' and 'What student characteristics are related to better knowledge and understanding of financial concepts and greater ability to make informed decisions?'

## Who is assessed?

PISA assesses a random sample of 15-year-old students, drawn from a nationally representative sample of schools. There were 72 countries and economies, including 35 OECD countries and 37 partner countries or economies, and over half-a-million students, representing about 29 million 15-year-old students internationally, that participated in PISA 2015.

Internationally around 53 000 students participated in the financial literacy assessment in PISA 2015, representing about 12 million 15-year-old students in the 15 participating countries and economies. In Australia, all students who were sampled for PISA were also sampled for the financial literacy assessment. This resulted in 14 530 Australian students participating in the financial literacy assessment, representing around 280 000 15-year-old students nationally.

## How are results reported in PISA?

International comparative studies have provided an arena to observe the similarities and differences between educational policies and practices. They enable researchers and others to observe what is possible for students to achieve and what environment is most likely to facilitate their learning. PISA provides regular information on educational outcomes within and across countries by providing insight into the range of skills and knowledge in different assessment domains.

Results in PISA are reported using statistics such as mean scores and measures of distribution of performance. PISA also attaches meaning to the performance scale by providing results in descriptive terms, where descriptions of the skills and knowledge students can typically use are attached to achievement results. Students who achieve Level 5 (a score of 625 points or higher) are considered *high performers* in financial literacy, while students who fail to reach Level 2 (a score of 400 points or lower), the international baseline proficiency level, are considered *low performers*.

## Australia's performance in the PISA 2015 financial literacy assessment

### Results from an international perspective

- ▶ Australian students achieved an average score of 504 points in financial literacy, which was significantly higher than the OECD average of 489 points.
- ▶ Australia's performance was significantly lower than 4 countries (B-S-J-G (China), Belgium, Canada and the Russian Federation).
- ▶ Australia's performance was not significantly different from the Netherlands.
- ▶ Australia's performance was significantly higher than 9 countries, including 6 OECD countries (the United States, Poland, Italy, Spain, the Slovak Republic and Chile) and 3 partner countries (Lithuania, Peru and Brazil).
- ▶ Australia's proportion of high performers (15%) was higher than the OECD average (12%).
- ▶ Australia's proportion of low performers (20%) was lower than the OECD average (22%).
- ▶ On average, for Australia, around 29% of the financial literacy score reflected factors that were uniquely captured by the financial literacy assessment, while the remaining 71% of the financial literacy score reflected skills that were measured in the mathematical literacy and/or reading literacy assessments.
- ▶ In Australia, students performed significantly lower in financial literacy than students with similar performance in mathematical literacy and reading literacy.

### Results for groups of Australian students

#### Results for females and males

- ▶ Australian females, with a mean score of 510 points, performed significantly higher than Australian males, with a mean score of 498 points.
- ▶ In Australia, the proportions of high-performing males and high-performing females were similar (16% and 15% respectively) while there were higher proportions of low-performing males (23%) than low-performing females (17%).



## Results for Indigenous students

- ▶ The mean financial literacy score for Indigenous students was 411 points, significantly lower than the OECD average (489 points) and also significantly lower than that of non-Indigenous Australian students (508 points).
- ▶ The performance gap between Indigenous and non-Indigenous students was 97 points. After adjusting for socioeconomic background, and mathematics and reading performance, the difference between the two groups was just 19 points. This finding indicates that there is some need for financial literacy programs specifically aimed at the needs of Indigenous students.
- ▶ Almost half (48%) of the Indigenous students and 18% of non-Indigenous students did not reach Level 2, the international baseline proficiency level.

## Results for geographic location of schools

- ▶ Students at metropolitan schools scored significantly higher than students from provincial schools or remote schools. There was no difference between the mean scores of students who attended provincial schools or remote schools.
- ▶ The difference in mean scores for students from metropolitan schools and non-metropolitan schools was 38 points, however this reduced to a non-significant difference after accounting for differences in socioeconomic background, as well as performance in reading literacy and mathematical literacy.

## Results for socioeconomic background

- ▶ The difference between socioeconomically advantaged and disadvantaged students was 107 points, which was higher than the OECD average difference of 89 points.
- ▶ While much of the difference associated with socioeconomic background could be accounted for by performance in mathematical literacy and reading literacy, there was still a significant difference between the mean scores of advantaged students and disadvantaged indicating a clear need for financial literacy programs aimed at students from socioeconomically disadvantaged backgrounds.
- ▶ Twelve per cent of the variance in student achievement in Australia is explained by socioeconomic background, which is higher than the OECD average of 10%. On average over the OECD, one unit change in the ESCS index resulted in an increase of 38 points; the relationship was stronger in Australia and resulted in an increase of 51 points.

## Results for immigrant background

- ▶ First-generation students scored significantly higher than either Australian-born or foreign-born students; however, all of these groups scored higher than the OECD average.
- ▶ When comparing Australian-born and first-generation students, most of the difference could be accounted for by students' performance in mathematics and reading. The difference between first-generation and foreign-born students was explained primarily by performance in reading.

## Results for language background

- ▶ Almost half of the difference in scores between English-speaking students and those with a language background other than English was accounted for by socioeconomic background. English-speaking students have a significantly higher score on the ESCS variable than students from other language backgrounds. After accounting for reading literacy performance, the difference in scores between the two groups was not significant.

## Changes in performance between PISA 2012 and 2015 in financial literacy

A number of changes have occurred in the delivery and administration between PISA 2012 and 2015. In PISA 2015, the main mode of assessment moved from a paper-based delivery to a computer-based delivery, there were methodological changes to the scaling model and the treatment of non-reached items, and there were changes to the student sampling design and scheduling of the financial literacy assessment.

*Although the results from PISA enable performance over time to be monitored, given the number of changes that have occurred in PISA 2015, comparisons between the results for this cycle and previous cycles should be interpreted with due caution.*

- ▶ Australia's performance declined significantly between PISA 2012 and 2015 (by 22 points).
- ▶ Australia's proportion of low performers increased significantly between PISA 2012 and 2015 (by 9%).

## Students' experiences, attitudes and behaviours in financial literacy

- ▶ In Australia 79% of 15-year-old students have a bank account. Generally, having a bank account is positively associated with financial literacy performance. In Australia, students who hold a bank account scored on average 26 points higher than those who do not hold a bank account, even after accounting for socioeconomic background.
- ▶ In Australia, socioeconomically advantaged students are more than twice as likely as socioeconomically disadvantaged students to hold a bank account.
- ▶ More than eight in 10 students in Australia (84%) discuss money matters with their parents at least once a month.
- ▶ Australia discussing money matters with parents at least some of the time is associated with higher performance in financial literacy than never discussing money matters, even after accounting for students' socioeconomic background.
- ▶ In Australia, 67% of students reported that they would save if they wanted to buy something for which they do not have enough money (OECD average 63%). Students who were high performers were more than 3 times more likely to report that they would save to buy an item that they do not have enough money for.
- ▶ A significantly higher proportion of disadvantaged students reported that they would *buy something they really wanted with money that really should be used for something else*, while a higher proportion of advantaged students reported that they would *save up to buy it*.

# Reader's Guide

## Target population for PISA

This report uses '15-year-olds' as shorthand for the PISA target population. In practice, the target population was students aged between 15 years and 3 (complete) months and 16 years and 2 (complete) months at the beginning of the assessment period, and who were enrolled and attending an educational institution full-time or part-time. Since the majority of the PISA target population is made up of 15-year-olds, the target population is often referred to as 15-year-olds.

## Rounding of figures

Because of rounding, some numbers in tables may not exactly add to the totals reported. Totals, differences and averages are always calculated on the basis of exact numbers and are rounded only after calculation. When standard errors have been rounded to one or two decimal places and the value 0.0 or 0.00 is shown, this does not imply that the standard error is zero, but that it is smaller than 0.05 or 0.005 respectively.

## Confidence intervals and standard errors

In this and other reports, student achievement is often described by an average score. For PISA, each average score is calculated from the sample of students who undertook PISA 2015 and is referred to as the sample average. The sample average is an approximation of the actual average score (known as the population average) that would have been obtained had all students in a country actually sat the assessment.

Since the sample average is just one point along the range of student achievement scores, more information is needed to gauge whether the sample average is an underestimation or overestimation of the population average. The calculation of confidence intervals can indicate the precision of a sample average as a population average. Confidence intervals provide a range of scores within which we are confident that the population average actually lies.

In this report, each sample average is presented with an associated standard error. The confidence interval, which can be calculated using the standard error, indicates that there is a 95% chance that the actual population average lies within plus or minus 1.96 standard errors of the sample average.

## Statistical significance

The term 'significantly' is used throughout the report to describe a difference that meets the requirements of statistical significance at the 0.05 level, indicating that the difference is real, and would be found in at least 95 analyses out of 100 if the comparisons were to be repeated. It is not to be confused with the term 'substantial', which is qualitative and based on judgement rather than statistical comparisons. A difference may appear substantial but not statistically significant (due to factors that affect the size of the standard errors around the estimate, for example) while another difference may seem small but reach statistical significance because the estimate was more accurate.

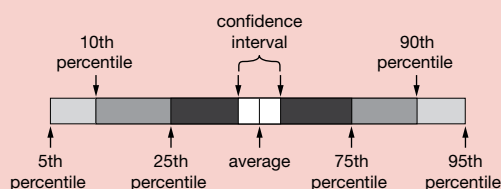
## Mean performance and distribution of scores

Mean scores provide a summary of student performance and allow comparisons of the relative standing between different countries and different sub-groups. In addition, the distribution of scores are reported in graphical format:

- ▶ for international comparisons are reported at the 10th, 25th, 75th and 90th percentiles (in Chapter 3), and
- ▶ for national comparisons are reported at the 5th, 10th, 25th, 75th, 90th and 95th percentiles (in Chapter 4)

The following box gives details on how to read these graphs.

Each country's results are represented in horizontal bars with various colours. On the left end of the bar is the 5th percentile—this is the score below which 5% of the students have scored. The next two lines indicate the 10th percentile and the 25th percentile. The next line at the left of the white band is the lower limit of the confidence interval for the mean—i.e., there is 95% confidence that the mean will lie in this white band. The line in the centre of the white band is the mean. The lines to the right of the white band indicate the 75th, 90th and 95th percentiles.



## OECD average

An OECD average was calculated for most indicators in this report and is presented for comparative purposes. The OECD average corresponds to the arithmetic average of the respective country estimates. In this report the OECD average represents those OECD countries who participated in the financial literacy assessment.

## Proficiency levels

To summarise data from responses to PISA 2015, performance scales were constructed for each assessment domain. The scales are used to describe the performance of students in different countries, including in terms of described proficiency levels.

This report uses the following categories to describe students' levels of proficiency in PISA.

**High performers:** Students who are proficient at Level 5 or above and are considered to demonstrate high levels of skills and knowledge and are highly proficient in the assessment domain.

**Low performers:** Students who are below Level 2 proficiency are considered to demonstrate low levels of skills and knowledge in the assessment domain. Their proficiency is too low to enable them to participate effectively and productively in life.

**PISA baseline proficiency level:** In PISA, Level 2 is considered the international baseline proficiency level and defines the level of achievement on the PISA scale at which students begin to demonstrate the competencies that will enable them to actively and effectively participate in life situations.



## Reporting of trends

The second assessment of financial literacy was conducted in PISA 2015. The inclusion of items from PISA 2012 (referred to as trend items) allows for comparisons to be made and trends (changes over time) to be measured.

## Definition of background characteristics

There are a number of definitions used in this report that are particular to the Australian context, as well as many that are relevant to the international context. This section provides an explanation for those that are not self-evident.

### Indigenous background

Indigenous background is derived from information provided by the school, which was taken from school records. Students were identified as being of Australian Aboriginal or Torres Strait Islander descent. For the purposes of this report, data for the two groups are presented together under the term 'Indigenous students'.

### Socioeconomic background

Two measures are used by the OECD to represent elements of socioeconomic background. One is the highest level of the father's and mother's occupation (known as the highest international social and economic index – HISEI), which is coded in accordance with the International Labour Organization's International Standard Classification of Occupations. The other measure is the index of economic, social and cultural status (ESCS), which was created to capture the wider aspects of a student's family and home background. The ESCS is based on three indices: the highest occupational status of parents (HISEI); the highest educational level of parents in years of education (PARED); and home possessions (HOMEPOS). The index of home possessions (HOMEPOS) comprises all items on the indices of family wealth (WEALTH), cultural resources (CULTPOSS), access to home educational and cultural resources and books in the home (HEDRES). It must be noted that there have been some adjustments to the computation of ESCS over the PISA cycles.

### Geographic location

In Australia, participating schools were coded with respect to the Ministerial Council on Education, Employment, Training and Youth Affairs' Schools Geographic Location Classification (Jones, 2004).

For the analysis in this report, only the broadest categories are used:

- ▶ metropolitan – including mainland capital cities or major urban districts with a population of 100 000 or more (e.g. Queanbeyan, Cairns, Geelong, Hobart)
- ▶ provincial – including provincial cities and other non-remote provincial areas (e.g. Darwin, Ballarat, Bundaberg, Geraldton, Tamworth)
- ▶ remote – including areas with very restricted or very little accessibility to goods, services and opportunities for social interaction (e.g. Coolabah, Mallacoota, Capella, Mount Isa, Port Lincoln, Port Hedland, Swansea, Alice Springs, Bourke, Thursday Island, Yalata, Condingup, Nhulunbuy).

## Immigrant background

Immigrant background is derived from students' self-report of the country in which they and their parents were born. For the analysis in this report, immigrant background is defined by the following categories:

- ▶ Australian-born students – students born in Australia with both parents born in Australia
- ▶ first-generation students – students born in Australia with at least one parent born overseas
- ▶ foreign-born students – students born overseas with both parents also born overseas.

## Language background

Language background is derived from students' self-report of the language they speak at home most of the time. For the analysis in this report, language background has been defined as:

- ▶ students who speak English at home
- ▶ students who speak a language other than English at home.

## Sample surveys

PISA is a sample survey and is designed and conducted so that the sample provides reliable estimates about the population of 15-year-old students. The PISA 2015 sample was a two-stage stratified sample. The first stage involved the sampling of schools in which 15-year-old students could be enrolled. The second stage of the selection process randomly sampled students within the sampled schools. The following variables were used in the stratification of the school sample: jurisdiction; school sector; geographic location; sex of students at the school; and a socioeconomic background variable (based on the Australian Bureau of Statistics' Socio-economic Indexes for Areas, which consists of four indexes that rank geographic areas across Australia in terms of their relative socioeconomic advantage and disadvantage).

Further information about the sample design, survey weighting and sampling outcomes can be found in the PISA 2015 Technical Report (OECD, forthcoming).

# Introduction

The Programme for International Student Assessment (PISA) is an international comparative assessment of student achievement directed by the Organisation for Economic Co-operation and Development (OECD). PISA measures how well 15-year-olds<sup>1</sup>, who are nearing the end of their compulsory schooling in most participating educational systems, are prepared to use the knowledge and skills in particular areas to meet real-life opportunities and challenges.

In addition to measuring students' skills in the core areas of reading literacy, mathematical literacy and scientific literacy, PISA was the first large-scale international assessment to assess financial literacy in 2012. The second assessment of financial literacy was once again conducted as an optional component in PISA and was conducted in 15 countries and economies in 2015.

In Australia, the inclusion of financial literacy in PISA is supported by the Australian Securities and Investment Commission (ASIC). This report focuses on the findings from the Financial Literacy assessment in PISA 2015.

## What are the main goals of PISA?

PISA looks to answer several important questions related to education, such as:

- ▶ How well are young adults prepared to meet the challenges of the future? Can they analyse, reason and communicate their ideas effectively? Will their skills enable them to adapt to rapid societal change?
- ▶ Are some ways of organising schools and school learning more effective than others?
- ▶ What influence does the quality of school resources have on student outcomes?
- ▶ What educational structures and practices maximise the opportunities of students from disadvantaged backgrounds?
- ▶ How equitable is the provision of education within a country and across countries?

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<sup>1</sup> Refer to the Reader's Guide for more information about the target population for PISA.

## What does PISA assess?

The core assessment domains of reading literacy, mathematical literacy and scientific literacy are measured in PISA. PISA also assesses additional domains in each cycle. In PISA 2015, financial literacy and collaborative problem solving were assessed.

The data collected from the financial literacy test and questionnaire can answer questions such as ‘How well prepared are 15-year-old students to participate in the new financial systems that are becoming more global and more complex?’ and ‘What student characteristics are related to better knowledge and understanding of financial concepts and greater ability to make informed decisions?’

## How often is PISA administered?

Since 2000, PISA has been conducted every three years. In each cycle, the three core assessment domains of reading literacy, mathematical literacy and scientific literacy are rotated so that one domain is the major focus (the major domain), with a larger amount of the assessment time being devoted to this domain compared to the other two assessment domains (the minor domains).

PISA 2015 was the sixth cycle of PISA and scientific literacy was the major domain, which allowed an in-depth analysis and the reporting of results by subscale to be undertaken. PISA also assesses additional domains in each cycle. In PISA 2015, collaborative problem solving was assessed and countries had the option of participating in the financial literacy assessment.

## What did participants do?

### Students

All students completed a two-hour cognitive test on the core assessment domains and collaborative problem solving, and a one-hour test on financial literacy. They were allowed 45 minutes to complete the three student questionnaires.

### Cognitive test

Students were randomly assigned to a PISA test form that comprised four 30-minute clusters of cognitive materials (scientific literacy, reading literacy, mathematical literacy, and collaborative problem solving), with each cluster consisting of units that required them to construct responses to a stimulus and a series of questions.

Students were assigned a financial literacy test form that comprised two 30-minute clusters. Each student completed one cluster of financial literacy material and one cluster of reading literacy or mathematical literacy or scientific literacy.

The stimulus material in the cognitive tests were, typically, a short written passage or text accompanying a table, chart, graph, photograph or diagram. A range of item-response formats, such as multiple-choice questions and questions requiring students to construct their own responses, was used to cover the full range of cognitive abilities and knowledge identified in the Assessment Framework.<sup>2</sup>

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<sup>2</sup> The Assessment Framework explains the guiding principles behind the PISA 2015 assessment. Refer to the *PISA 2015 assessment and analytical framework* (OECD, 2016).



## Questionnaires

As part of the PISA assessment, students were assigned three student questionnaires. These consisted of the internationally standardised student questionnaire, and two additional student questionnaires that were offered as international options: an information and communications technology (ICT) questionnaire and an educational career questionnaire. The student questionnaire sought information on students and their family background, aspects of students' lives, such as their attitudes towards learning, their habits and life in and outside of school, aspects of students' interest, motivation and engagement, and learning and instruction in science, including instructional time and class size. The ICT questionnaire collected information on the availability and use of ICT, students' perceptions of their competence in completing tasks and their attitudes towards computer use. The educational career questionnaire gathered information about whether students had experienced interruptions of schooling and their preparation for their future career.

As Australia participated in the optional assessment of financial literacy, all students also completed a questionnaire about their experiences with money matters, which was located at the end of the financial literacy test form. This questionnaire sought information about their access to money and financial products, their spending and saving behaviours, and about discussions of money matters with parents and friends.

## School principals

Principals from participating schools were asked to complete a school questionnaire, which collected descriptive information about the school, including the quality of the school's human and material resources, decision-making processes, instructional practices and school and classroom climate.

## Teachers

A teacher questionnaire was also offered as an international option for the first time in PISA 2015, and Australia was one of the 19 countries that participated in this option. There were two questionnaire options: one which had a focus for science teachers and the other for non-science teachers. Results from the teacher questionnaire will be released in a separate report.

## Administration of PISA

Students completed the cognitive test and questionnaires using computers and USB drives. The core assessment cognitive test and questionnaires were administered to students in the morning session, then, after a lunch break, students returned to complete the financial literacy test. Students were allowed two hours to complete the PISA cognitive test, one-hour to complete the financial literacy test, and up to 45 minutes to complete the student questionnaires.

The school principals and teachers completed their questionnaires online using logins to a secure website. In Australia, PISA 2015 took place during a six-week period from late July to early September 2015. For most countries in the Northern Hemisphere, the testing period took place between March and May 2015. Together with appropriate application of the student age definition, this resulted in the students in Australia being at both a comparable age and a comparable stage in the school year to those in the Northern Hemisphere who had been tested earlier in 2015.<sup>3</sup>

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3 Further information on the PISA procedures can be found in Appendix A in the full National PISA 2015 report.

## Who participates in PISA?

PISA aims to be as inclusive as possible of the population of 15-year-old students in each country and strict guidelines are enforced with regard to the percentage of schools and of students that could be excluded (which could not exceed 5% of the nationally desired target population).<sup>4</sup>

There are strict criteria on population coverage, response rates and sampling procedures. For selected schools, a minimum participation rate of 85% (weighted and unweighted) was required, as well as a minimum participation rate of 80% (weighted and unweighted) of selected students. Countries that obtained an initial school response rate between 65% and 85% could still obtain an acceptable school response by the use of replacement schools. Schools with a student participation rate lower than 50% were not regarded as participating schools. Australia successfully achieved the required response rates.

## Countries

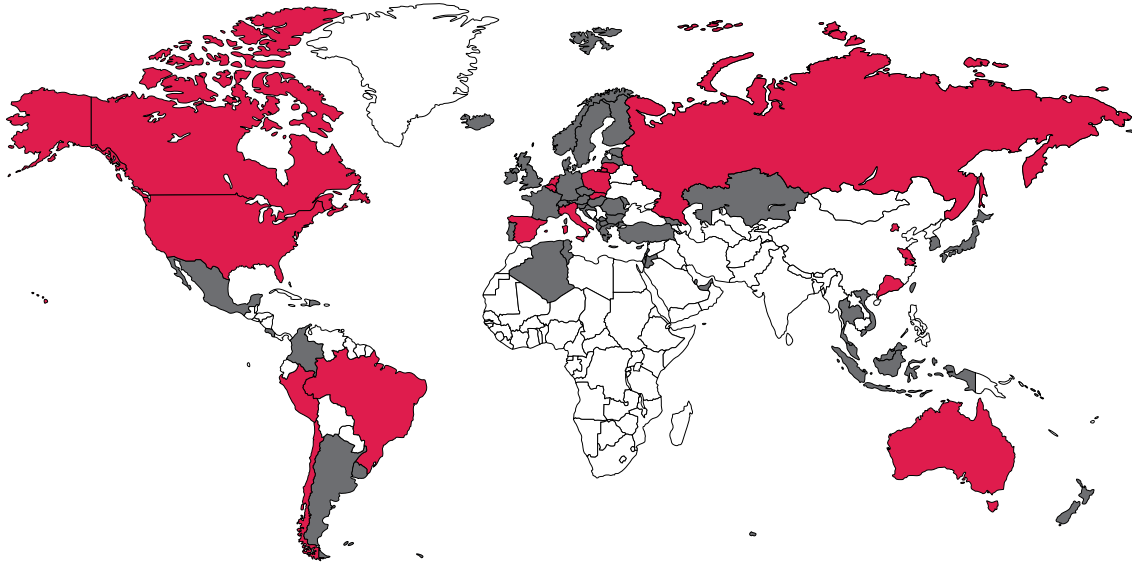
Although PISA was originally an OECD assessment created by the governments of OECD countries, it has become a major assessment in many regions and countries around the world. There were 72 countries and economies that participated in PISA 2015, including 35 OECD countries and 37 partner countries or economies (Figure 1.1).

Fifteen countries and economies<sup>5</sup> participated in the financial literacy assessment in PISA 2015, including 10 OECD countries and economies (Australia, the Flemish community of Belgium [referred to as Belgium in this report], seven provinces of Canada – British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario and Prince Edward Island [referred to as Canada in report], Chile, Italy, the Netherlands, Poland, the Slovak Republic, Spain, and the United States) and 5 partner countries and economies (Brazil, four provinces of China – Beijing, Shanghai, Jiangsu and Guangdong [referred to as B-S-J-G (China) in this report], Lithuania, Peru and the Russian Federation).

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4 Further information on the PISA procedures can be found in Appendix B in the full National PISA 2015 report.

5 For convenience, this report refers to economic regions as countries.



OECD countries			Partner countries/economies		
Australia	Hungary	Norway	Albania	Former Yugoslav Republic of Macedonia	Moldova
Austria	Iceland	Poland	Algeria	Georgia	Montenegro
Belgium	Ireland	Portugal	Argentina	Hong Kong (China)	Peru
Canada	Israel	Slovak Republic	Brazil	Indonesia	Qatar
Chile	Italy	Slovenia	B-S-J-G (China)*	Jordan	Romania
Czech Republic	Japan	Spain	Bulgaria	Kazakhstan	Russian Federation
Denmark	Korea	Sweden	Chinese Taipei	Kosovo	Singapore
Estonia	Latvia	Switzerland	Colombia	Lebanon	Thailand
Finland	Luxembourg	Turkey	Costa Rica	Lithuania	Trinidad and Tobago
France	Mexico	United Kingdom	Croatia	Macao (China)	Tunisia
Germany	The Netherlands	United States	Cyprus	Malta	United Arab Emirates
Greece	New Zealand		Dominican Republic	Malaysia	Uruguay
					Vietnam

\* B-S-J-G (China) refers to the four PISA participating provinces: Beijing, Shanghai, Jiangsu and Guangdong.

■ Participated in the core assessment domains and the financial literacy assessment.

■ Participated in the core assessment domains.

□ Non-participant in PISA.

**FIGURE 1.1** Countries and economies participating in PISA 2015

## Schools

In most countries, 150 schools and 42 students within each school were randomly selected to participate in PISA. In some countries, including Australia, a larger sample of schools and students participated. This allowed countries to carry out specific national options at the same time as the PISA assessment and for meaningful comparisons to be made between different sectors of the population.

In Australia, a larger sample of schools and students participated in PISA to produce reliable estimates that would be representative of each of the Australian jurisdictions<sup>6</sup> and of Indigenous students. In order for comparisons to be made between jurisdictions, it was necessary to oversample the smaller jurisdictions, because a random sample proportionate to jurisdiction populations would not yield sufficient students in the smaller jurisdictions to give a result that would be sufficiently precise. Further, a sufficiently large sample of Australia's Indigenous students was required so that valid and reliable separate analyses could be conducted.

The Australian PISA 2015 school sample consisted of 758 schools (Table 1.1). The sample was designed so that schools were selected with a probability proportional to the enrolment of 15-year-olds in each school. Stratification of the sample ensured that the PISA sample was representative of the Australian population of 15-year-olds. Several variables were used in the stratification of the school sample including jurisdiction, school sector, geographic location, sex of students at the school and a socioeconomic background variable.<sup>7</sup>

**TABLE 1.1** Number of Australian PISA 2015 schools, by jurisdiction and school sector

Jurisdiction	Sector			Total
	Government	Catholic	Independent	
ACT	25	8	9	42
NSW	105	44	28	177
VIC	75	30	25	130
QLD	81	27	25	133
SA	55	22	21	98
WA	57	20	21	98
TAS	33	12	8	53
NT	15	5	7	27
<b>Australia</b>	<b>446</b>	<b>168</b>	<b>144</b>	<b>758</b>

Note: These numbers are based on unweighted data.

Eighty-seven per cent of the Australian PISA schools were coeducational, while 7% of schools catered for all female students and 6% catered for all-male students. Of the single sex schools in PISA 2015, 2% (15 schools) were from the government school sector, 8% (58 schools) were from the Catholic school sector, and 3% (26 schools) were from the independent school sector.

<sup>6</sup> Throughout this report, the Australian states and territories will be collectively referred to as jurisdictions.

<sup>7</sup> Based on the Australian Bureau of Statistic's Socio-Economic Indexes for Areas.



## Students

The target population for PISA is students who were aged between 15 years and 3 months and 16 years and 2 months at the beginning of the testing period and who were enrolled in an educational institution, either full- or part-time. Since the largest part (but not all) of the PISA target population is made up of 15-year-olds, the target population is often referred to as 15-year-olds.

In each country, a random sample of 42 students was selected with equal probability from each of the randomly selected schools using a list of all 15-year-old students submitted by the school. Approximately 540 000 students took part in PISA 2015, representing about 29 million 15-year-old students internationally.

For those countries who participated in the financial literacy assessment, the student sample was drawn from the subsample of students who were sampled for PISA. Typically, around 11 students (from the 42 students sampled for PISA in each school) were randomly selected to participate in the financial literacy assessment. In Australia, a different student sample design was used. All students who were sampled for PISA were also sampled for the financial literacy assessment. This resulted in 14 530 Australian students participating in the financial literacy assessment, representing around 280 000 15-year-old students nationally. Internationally around 53 000 students participated in the financial literacy assessment in PISA 2015, representing about 12 million 15-year-old students in the 15 participating countries and economies.<sup>8</sup>

### PISA 2015 students across the jurisdictions

In most Australian jurisdictions, 20 students and all age-eligible Indigenous students were sampled per school. In the Australian Capital Territory, 30 students and all age-eligible Indigenous students were sampled per school, and in the Northern Territory, 27 students and all age-eligible Indigenous students were sampled per school. The Australian PISA 2015 sample of 14 530 students, whose results feature in the national and international reports, was drawn from all jurisdictions and school sectors according to the distributions shown in Table 1.2.

**TABLE 1.2** Number of Australian PISA 2015 students, by jurisdiction and school sector

Sector		Jurisdiction								Total
		ACT	NSW	VIC	QLD	SA	WA	TAS	NT	
Government	N students	496	2 053	1 253	1 905	922	1 104	654	275	8 662
	Weighted N	2 304	46 660	36 144	31 221	10 273	16 236	3 710	1 377	147 925
Catholic	N students	210	849	530	579	391	355	248	115	3 277
	Weighted N	1 406	20 634	14 810	10 784	4 039	5 635	1 296	259	58 863
Independent	N students	211	471	403	456	367	410	133	140	2 591
	Weighted N	822	12 906	13 252	10 903	3 887	6 356	944	472	49 542
<b>Australia</b>	<b>N students</b>	<b>917</b>	<b>3 373</b>	<b>2 186</b>	<b>2 940</b>	<b>1 680</b>	<b>1 869</b>	<b>1 035</b>	<b>530</b>	<b>14 530</b>
	<b>Weighted N</b>	<b>4 532</b>	<b>80 200</b>	<b>64 206</b>	<b>52 908</b>	<b>18 199</b>	<b>28 227</b>	<b>5 950</b>	<b>2 108</b>	<b>256 330</b>

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample.

As the PISA sample is age-based, the students come from various year levels but they are mostly from Years 9, 10 and 11. There are some variations to the year-level composition of the sample in the different jurisdictions as shown in Table 1.3, because of differing school starting ages in different jurisdictions.

<sup>8</sup> For more information about the sample design, survey weighting and sampling outcomes, please refer to the *PISA 2015 Technical Report* (OECD, forthcoming).

**TABLE 1.3** Percentage of Australian PISA 2015 students, by jurisdiction and year level

Jurisdiction	Year level					
	7	8	9	10	11	12
ACT			12	81	7	
NSW	^	^	12	81	6	
VIC	^	^	23	75	1	^
QLD		^	2	51	47	^
SA		^	8	87	5	^
WA			1	86	13	
TAS			32	68	^	
NT	^	^	8	79	13	
<b>Australia</b>	<b>^</b>	<b>^</b>	<b>11</b>	<b>75</b>	<b>14</b>	<b>^</b>

^ denotes percentages  $\leq 1$

Note: These percentages are based on unweighted data; the jurisdiction totals are reported as whole numbers without rounding off decimal places.

Table 1.4 shows the number of Australian female and male students who participated in PISA by jurisdiction. There were equal proportions of females and males in four jurisdictions (the Australian Capital Territory, New South Wales, Victoria and Western Australia), while the proportion of males was higher than the proportion of females in:

- ▶ Queensland: 49% female; 51% male
- ▶ South Australia: 49% female; 51% male
- ▶ Tasmania: 48% female; 52% male
- ▶ Northern Territory: 49% female; 51% male.

**TABLE 1.4** Percentage of Australian PISA 2015 students, by jurisdiction and sex

Sex		Jurisdiction								Total
		ACT	NSW	VIC	QLD	SA	WA	TAS	NT	
Females	N students	441	1 686	1 102	1 430	798	928	513	265	7 163
	Weighted N	2254	40 118	32 163	25 851	8 828	14 061	2 835	1 041	127 151
Males	N students	476	1 687	1 084	1 510	882	941	522	265	7 367
	Weighted N	2 278	40 081	32 043	27 057	9 370	14 165	3 116	1 067	129 177

## PISA 2015 students and geographic location of schools

The locations of schools in PISA were classified using the MCEETYA Schools Geographic Location Classification (Jones, 2004).<sup>9</sup> Table 1.5 shows 74% of PISA 2015 participants attended schools in metropolitan areas, 25% were from provincial areas and the remaining 1% of participants attended schools in remote areas.

**TABLE 1.5** Number and percentage of Australian PISA 2015 students, by geographic location

Geographic location	N students	Weighted N	Weighted (%)
Metropolitan	9 947	188 606	74
Provincial	4 065	64 073	25
Remote	518	3 650	1

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample.

<sup>9</sup> The Reader's Guide provides more information about the MCEETYA Schools Geographic Location Classification.

## PISA 2015 students and Indigenous background

In PISA 2015, Australian Indigenous students were identified from information provided by their schools. Every student from a participating school who identified as Indigenous was sampled for Australia's PISA. Four per cent of the PISA sample was of an Indigenous background. Table 1.6 shows the number of Australian Indigenous and non-Indigenous students who participated in PISA.

**TABLE 1.6** Number and percentage of Australian PISA 2015 students, by Indigenous background

Indigenous background	N Students	Weighted N	Weighted (%)
Indigenous	2 807	10 659	4
Non-Indigenous	11 723	245 670	96

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample.

The distribution of non-Indigenous students by geographic location was similar to the data reported in Table 1.5. Table 1.7 shows that 75% of non-Indigenous students were from metropolitan schools, 24% from provincial schools and 1% from remote schools. However, a different distribution was found for participating Indigenous students: 46% of students were from metropolitan schools, 47% from provincial schools and 8% from remote schools.

**TABLE 1.7** Number and percentage of Australian PISA 2015 students, by geographic location and Indigenous background

Geographic location	Indigenous students			Non-Indigenous students		
	N students	Weighted N	Weighted (%)	N students	Weighted N	Weighted (%)
Metropolitan	1 534	4 874	46	8 413	183 732	75
Provincial	1 085	4 981	47	2 980	59 092	24
Remote	188	804	8	330	2 846	1

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample.

## PISA 2015 students and socioeconomic background

Information about students' socioeconomic background was collected in the student questionnaire. Students were asked several questions about their family and home background. This information was used to construct a measure of socioeconomic background: the economic, social and cultural status index (ESCS). Using this index, participating students were distributed into quartiles of socioeconomic background.

The distribution of Australian students by school sector is provided in Table 1.8, and shows there were higher proportions of students from lower socioeconomic backgrounds who attended government schools (34%) compared to the proportions of students who attended Catholic schools (16%) or independent schools (10%). Conversely, there were lower proportions of students from higher socioeconomic backgrounds who attended government schools (17%) compared to the proportions of students who attended Catholic schools (29%) or independent schools (44%).

**TABLE 1.8** Number and percentage of Australian PISA 2015 students, by socioeconomic background quartiles and school sector

Socioeconomic background	Government			Catholic			Independent			Total weighted % of PISA population
	N students	Weighted N	Weighted (%)	N students	Weighted N	Weighted (%)	N students	Weighted N	Weighted (%)	
Lowest quartile	3 122	48 261	34	577	9 043	16	283	4 828	10	25
Second quartile	2 212	38 663	27	833	14 671	25	486	8 812	18	25
Third quartile	1 696	31 483	22	927	17 366	30	728	13 366	28	25
Highest quartile	1 192	23 596	17	888	16 927	29	1 045	21 585	44	25

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample.

The distribution of Australian Indigenous and non-Indigenous students by overall socioeconomic quartiles is provided in Table 1.9. Half of the Indigenous students sampled were classified in the lowest socioeconomic quartile, while just 8% were found to be in the highest socioeconomic quartile.

**TABLE 1.9** Number and percentage of Australian PISA 2015 students, by socioeconomic background quartiles and Indigenous background

Socioeconomic background	Indigenous students			Non-Indigenous students			Total weighted % of PISA population
	N students	Weighted N	Weighted (%)	N students	Weighted N	Weighted (%)	
Lowest quartile	1 252	4 975	50	2 730	57 159	24	25
Second quartile	691	2 642	26	2 840	59 503	25	25
Third quartile	442	1 582	16	2 909	60 633	25	25
Highest quartile	235	835	8	2 890	61 274	26	25

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample.

In metropolitan schools, which had the bulk of enrolments, there were roughly similar proportions of students across the socioeconomic background quartiles—less than half in the two lowest quartiles (45%) and nearly one-third (29%) in the highest quartile. In contrast, in provincial schools, 63% of students were in the two lowest quartiles and 15% of students were in the highest quartile. Remote schools were even more skewed in terms of socioeconomic background, with 69% of students in the two lowest quartiles and just 11% of students in the highest socioeconomic quartile. The distribution of students in schools from different geographic locations by socioeconomic background quartiles is provided in Table 1.10.

**TABLE 1.10** Number and percentage of Australian PISA 2015 students, by socioeconomic background quartiles and geographic location

Socioeconomic background	Metropolitan			Provincial			Remote			Total weighted % of PISA population
	N students	Weighted N	Weighted (%)	N students	Weighted N	Weighted (%)	N students	Weighted N	Weighted (%)	
Lowest quartile	2 304	39 346	21	1 503	21 495	35	175	1 292	37	25
Second quartile	2 308	43 673	24	1 074	17 382	28	149	1 091	32	25
Third quartile	2 468	48 220	26	777	13 301	22	106	693	20	25
Highest quartile	2 541	52 412	29	527	9 310	15	57	387	11	25

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample.

## PISA 2015 students and immigrant status

The student questionnaire collected information about the country of birth of students and their parents. This data was used to create a measure of immigrant status, with three categories: Australian-born, first-generation and foreign-born.<sup>10</sup>

Table 1.11 shows that just over 50% of students to sit PISA 2015 were Australian-born, 30% were first-generation and 12% of students were foreign-born.

**TABLE 1.11** Number and percentage of Australian PISA 2015 students, by immigrant background

Immigrant background	N students	Weighted N	Weighted (%)
Australian-born	8 483	137 006	53
First-generation	3 795	76 985	30
Foreign-born	1 465	31 468	12

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample. The weighted % doesn't sum to 100% as 4% of students didn't provide these details.

## PISA 2015 students and language spoken at home

The student questionnaire asked students which language was spoken in their homes most of the time. A measure of language spoken at home was derived to identify students who spoke English at home and students who spoke a language other than English at home.

In Australia, 87% of PISA 2015 students indicated that English was spoken at home most of the time; 11% of students indicated they spoke a language other than English at home most of the time (Table 1.12).

**TABLE 1.12** Number and percentage of Australian PISA 2015 students, by language background

Language background	N students	Weighted N	Weighted (%)
English spoken at home	12 626	221 894	87
Language other than English spoken at home	1 477	28 648	11

Note: N students is based on the achieved (unweighted) sample; weighted N is based on the number of students in the target population represented by the sample. The weighted % doesn't sum to 100% as 2% of students didn't provide these details.

## Policy interest in financial literacy<sup>11</sup>

In recent years, developed and emerging countries and economies have become increasingly concerned about the level of financial literacy among their citizens. This has stemmed, in particular, from shrinking public and private support systems, shifting demographics, including the ageing of the population in many countries, and wide-ranging developments in the financial marketplace. A lack of financial literacy contributes to ill-informed financial decisions, and these decisions could, in turn, have tremendous adverse effects on both personal and, ultimately, global finance (OECD/INFE, 2009; OECD, 2009). As a result, financial literacy is now acknowledged as an important element of economic and financial stability and development.

<sup>10</sup> The Reader's Guide provides more information about immigrant status.

<sup>11</sup> The section on policy and students' exposure to financial literacy are adapted or reproduced (with permission) from the *PISA 2015 Results (Volume IV): Students' Financial Literacy* (OECD, 2017).

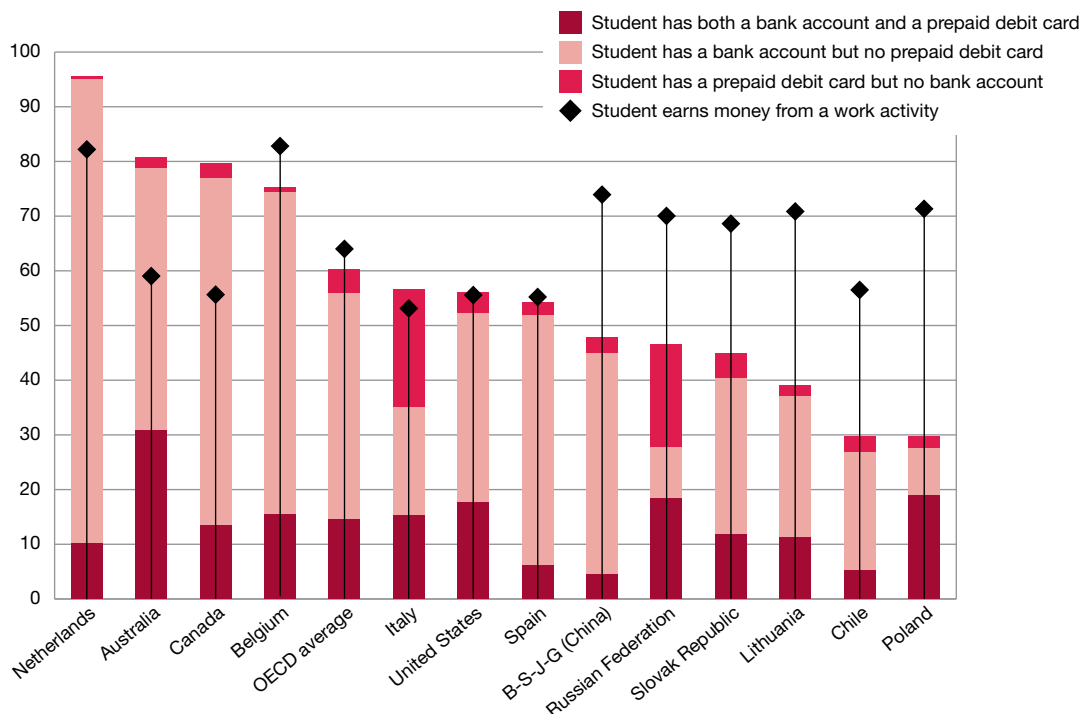
## The importance of financial literacy for young people

Young people need to understand basic financial principles and practices from an early age in order to operate within the complex financial landscape they are likely to find themselves, often before reaching adulthood. Younger generations are not only likely to face ever-increasing complexity in financial products, services and markets, but, as noted above, they are more likely to have to bear more financial risks in adulthood than their parents. In particular, they are likely to bear more responsibility for planning their own retirement savings and investments, and covering their healthcare needs; and they will have to deal with more sophisticated and diverse financial products.

Young people may learn beneficial behaviours from their friends and family, such as prioritising their expenditure or putting money aside for a rainy day; but the recent changes in the financial marketplace and social welfare systems make it unlikely that they can gain adequate knowledge or information about these systems unless they work in related fields.<sup>12</sup> The majority of young people will have to apply their skills to search for information and solve problems, and know when to make informed use of professional financial advice. Efforts to improve financial knowledge in the workplace or in other settings can be severely limited by a lack of early exposure to financial education and by a lack of awareness of the benefits of continuing financial education. It is therefore important to provide early opportunities for establishing the foundations of financial literacy.

In addition to preparing young people for their adult life, financial education for youth and in schools can also address the immediate financial issues facing young people. Children are often consumers of financial services from a young age.

PISA 2015 collected data on the extent to which 15-year-old students are already using money and involved in financial decisions. Figure 1.2 shows that, on average across the 10 participating OECD countries and economies, about 60% of students have a bank account and/or a prepaid debit card compared to 81% of Australian students, and 64% of students across the OECD countries and economies earn money from some type of work activity compared to 59% of Australian students.



**FIGURE 1.2** Students who earn money from work and/or use a basic financial product

<sup>12</sup> PISA 2012 indicates that students with a parent working in the financial services sector have higher levels of financial literacy, on average, although data are only available for a limited number of countries.



Data collected from OECD Programme for the International Assessment of Adult Competencies (PIAAC) also showed the extent to which young people and adults engage in basic financial activities. Forty-one per cent of Australian 16- to 24-year-olds reported reading bills, invoices, bank statements or other financial statements at least once a week in their everyday lives, and 29% of Australian 16- to 24-year-olds indicated that they read such financial statements at least once a week as part of their current or last job. In addition, more than half of Australian 16- to 24-year-olds (53%) reported that they calculate prices, costs or budgets at least once a week in their everyday life, and just under half of Australian 16- to 24-year-olds (48%) indicated that they calculate prices, costs or budgets at least once a week as part of their current or last job.

In many countries that participated in both PIACC and PISA 2015, adults (16- to 65-years-old) reported that they calculate prices, costs or budgets to a similar extent as young adults, and in most countries, more adults than young people reported that they read bills invoices, bank statements or other financial statements.

## Equipping young people to be financially literate

Financial literacy is now recognised by policymakers as an essential life skill. Compared with their parents' generation, young people today are likely to face more complex financial decisions and financial risks, and growing income and wealth inequality will mean that socioeconomically disadvantaged groups will need greater financial literacy to avoid being left behind.

Given this evolving landscape, a number of countries have been developing and adopting national strategies for financial education as a complement to financial consumer protection and regulation. Most of these strategies target young people by integrating financial education topics in school curricula or by developing financial education pilot programs in schools.

## Improving financial literacy through national strategies

A growing number of countries have developed and implemented national strategies for financial literacy. These coordinated approaches to financial education consist of:

- ▶ an adapted framework that recognises the importance of financial education
- ▶ the cooperation of different stakeholders
- ▶ the identification of a national coordinating body
- ▶ establishing a roadmap to achieve specific and predetermined objectives
- ▶ providing guidance to be applied by individual programs.

Seven of the 15 participating countries and economies (Australia, Brazil, Canada, the Netherlands, the Russian Federation, Spain and the United States) developed a national strategy for financial education specifically addressing young people among their target audience. Another 4 participating countries in PISA 2015 (Chile, China, Peru and Poland) are in the process of designing a national strategy for financial education.

### **Australia**

The National Financial Literacy Strategy, adopted in 2011 and revised in 2014, is coordinated by the Australian Securities and Investments Commission (ASIC), and provides a framework to develop and deliver initiatives to improve financial literacy for all Australians.

One of the key strategic priorities for the period 2014-17 is to 'Educate the next generation, particularly through the formal education system'. ASIC's MoneySmart Teaching program is the Australian Government's national financial literacy education program working with state and territory education departments, teachers, schools and the university sector to develop financial literacy knowledge and skills of young Australians from an early age.

### ***Other countries***

One of the key components of the Financial Education Plan in Spain is the implementation of financial education in schools. The national strategy in Brazil includes a financial education program in schools, which was initially developed for high schools, and is now being extended to primary schools, while the Russian Federation has developed a comprehensive nationwide program on financial literacy that focuses on students in schools as well as in universities

In Canada, the national strategy aims to strengthen the financial literacy of all Canadians and to empower them to manage money and debt wisely, plan and save for the future, and prevent and protect against fraud and financial abuse. The national strategy in the United States incorporates the focus on 'Starting Early for Financial Success', and in the Netherlands, the national strategy focuses on key life events and children/young people are one of the target groups.

### **Students' acquisition of financial literacy in schools**

Many of the existing national strategies for financial education specifically identify young people and students among their main target groups and support the introduction of financial education in schools. A number of countries are now teaching financial education in schools by integrating financial literacy into other subjects rather than introducing an additional subject into the existing curriculum.

### ***Australia***

The Australian Curriculum has been developed over a number of years and version 8.0 was endorsed by Education Ministers in 2015. Incorporation of financial literacy education in the Australian Curriculum was informed and guided by the National Consumer and Financial Literacy Framework (MCEECDYA, 2011). States and territories began a phased approach to implementing the Australian Curriculum in 2012. Financial literacy is included in the Australian Curriculum for primary and secondary schools predominantly in the learning areas of Mathematics, Humanities and Social Sciences and the General Capability of numeracy. Financial literacy education is also scaffolded through other learning areas of the curriculum. Although financial education is part of the Australian Curriculum, states and territories manage schools and determine the curriculum within their jurisdiction based on the national curriculum. In 2012, ASIC working with state and territory education departments introduced the MoneySmart Teaching program providing financial literacy professional development for teachers aligned to the Australian Professional Standards for Teachers and resources to support teachers in the classroom. All teacher professional development and classroom resources are freely available on ASIC's MoneySmart website ([www.moneysmart.gov.au/teaching](http://www.moneysmart.gov.au/teaching)). In December 2014, ASIC commissioned an independent evaluation of the program covering the period from 2013 -2017. The evaluations final report is scheduled to be released in July 2017.

### ***Other countries***

In the Flemish Community of Belgium, financial topics, alongside economics topics, are compulsory in all lower and secondary schools, but schools and teachers decide how and in which subjects these cross-curricular competencies should be integrated. The Financial Services and Markets Authority (FSMA) offers teaching materials and teaching training.

In the Netherlands, basic financial education is taught in primary schools, and in secondary school it is included in the subject of household economics. The MoneyWise website provides teaching material to schools and teachers.

In the various Canadian provinces that participated in PISA 2015, financial education is part of the secondary curriculum within mathematics, career exploration/development, business or social studies.

In Lithuania, financial education is part of the curriculum within the subjects of economy and entrepreneurship. These subjects are compulsory in lower secondary education and as an optional course in upper secondary education.

In Peru, financial education is part of the national curriculum, and is taught as part of history, economics and social science. Pedagogical support for teachers and training programs has been developed by the minister of Education and Peruvian Superintendency of Banking, Insurance and Private Pension Funds Administrators.

In the Slovak Republic, financial literacy is now part of the national curriculum as part of different subjects in primary and secondary education.

In China, some personal money-management topics have been included in the national curriculum in primary and secondary education in subjects related to ethics, society and history. Schools and regional levels have some flexibility to develop curricula tailored to the local context.

In the United States, financial education in secondary schools varies at the state and district level. In some states, schools offer an optional course in personal finance on a district-by-district basis, while in other states, personal finance is incorporated within another subject such as economics, mathematics or social sciences, and in 5 states standalone courses in personal finance are compulsory.

Some countries, including Brazil, Italy, Russia and Spain, have developed or are developing pilot programs for financial education in school before formally introducing financial education into the curriculum. In these countries, the number of schools and students that are exposed to financial education elements is limited due to the experimental nature of the program.

### **Students' acquisition of financial literacy through extracurricular opportunities**

Young people can learn about financial matters from a variety of sources, including their parents, friends, schools, extracurricular activities, and through personal experiences, such as making purchases, using a mobile phone, opening a bank account, taking a student loan. Governments, together with not-for-profit organisations and financial institutions, also try to teach young people basic financial literacy skills outside of normal school hours, whether through extracurricular activities or after-school initiatives. Extracurricular activities may include participation in events dedicated to money or saving, school visits from staff of a financial institution, stock market games, visits to a money museum, or events where students can create their own small business. For example, the Queensland Government in Australia organises an annual Buy Smart Competition, in which students have to research a consumer issue – such as scams, consumer rights and responsibilities, product safety, mobile phones, spending wisely, buying and running a car, and credit – and present it creatively to a target audience of their choice.

### **What the PISA data tells us about how students have learned to manage money**

All participating PISA 2015 students were asked if they had ever learned how to manage their money in a subject or course. Forty-seven per cent of Australian students indicated they had learned to manage their money in a subject or course that was specifically about money management. Fifty-two per cent of Australian students reported learning to manage their money as part of another subject or course at school, and 36% of Australian students indicated they had learned how to manage their money in an activity outside of school.

### **How are results reported in PISA?**

International comparative studies have provided an arena to observe the similarities and differences between educational policies and practices. They enable researchers and others to observe what is possible for students to achieve and what environment is most likely to facilitate their learning. PISA provides regular information on educational outcomes within and across countries by providing insight into the range of skills and competencies, in different assessment domains, that are considered to be essential to an individual's ability to participate in and contribute to society.

## Mean scores and distribution of scores

Similar to other international studies, PISA results are reported as mean scores, which provide a summary of student performance and allow for comparisons of the relative standing between different countries and different sub-groups. While the OECD average for the three PISA core assessment domains is the average of the data values across all OECD countries, and can be used to compare a country on a given indicator with a typical OECD country, the OECD average for financial literacy is the average of the data values across the OECD countries participating in this optional assessment.

## Proficiency levels

PISA also provides a profile of students' performance using proficiency levels – categories that summarise the skills and knowledge that students are able to display. The performance scale is divided into levels of difficulty, referred to as proficiency levels. Students at a particular level not only typically demonstrate the knowledge and skills associated with that level, but also the proficiencies required at lower levels. In PISA 2012, when financial literacy was first assessed, five levels of proficiency were defined with a difference of 75 score points representing one proficiency level on the PISA financial literacy scale.

## What has changed in PISA 2015?

In PISA 2015, the main mode of assessment moved from a paper-based delivery to a computer-based delivery. The computer-based assessment included trend items (that were originally developed for delivery as a paper-based assessment and were adapted for delivery on computer).

The computer-based software uses a 'lock-step' design, which prevents students from returning to a unit that has been previously completed. At the end of the unit, students are advised that they will be unable to return to the unit, and consequently once students reach the end of the test they are unable to review their answers.

## Scaling model

In previous cycles, a one-parameter model was used to scale the items. In PISA 2015, a hybrid model was used, which incorporates the one-parameter model for the trend items as well as a two-parameter model on which new items were scaled.

## Treatment of non-reached items

Items at the end of the assessment that students did not answer are referred to as 'not reached'. In this cycle of PISA, the not-reached items were treated as not administered, whereas in previous cycles they were treated as incorrect (when estimating student proficiency) and as not administered (when estimating the item parameters).

## Sampling design and scheduling of the financial literacy assessment

In PISA 2015, all students were sampled to participate in the core assessment and the financial literacy assessment. This was different to the sample design used in PISA 2012, whereby students sampled to participate in the financial literacy assessment were a separate sample from those students sampled for the core assessment.

In PISA 2015, students completed the core assessment in the morning and the financial literacy assessment in the afternoon. In PISA 2012, students completed the financial literacy assessment, alongside students completing the core assessment in the same morning assessment session.

***The results from PISA enable performance over time to be monitored. However, given the number of changes that have occurred in PISA 2015, comparisons between the results for this cycle and previous cycles should be interpreted with due caution.***

## **PISA in Australia**

PISA is a key part of the National Assessment Program (NAP). Components of NAP include the National Assessment Program – Literacy and Numeracy (NAPLAN), which is conducted annually for every student in Years 3, 5, 7 and 9; the national sample assessments of civics and citizenship, information and communication technology (ICT) literacy, and science literacy; and the international assessments, which comprise – in addition to PISA – the IEA’s Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS).

Unlike NAPLAN, PISA is not a curriculum-based assessment and assesses a nationally representative sample of 15-year-olds (rather than a year-level based sample), providing national and group estimates rather than providing individual student results.

The results collected from these assessments allow for nationally comparable reporting of progress towards the *Melbourne Declaration on Educational Goals for Young Australians* (MCEETYA, 2008), which set goals for high-quality schooling in Australia designed to secure students the necessary knowledge, understanding, skills and values for a productive and rewarding life.

The Australian Curriculum, Assessment and Reporting Authority (ACARA) reports on these assessments annually in its National Report on Schooling in Australia, which is the main vehicle for reporting against nationally agreed key performance measures defined in the Measurement Framework for Schooling in Australia 2015 (Australian Curriculum, Assessment and Reporting Authority, 2015).

## **Organisation of the report**

This report focuses on Australian students’ performance in the PISA 2015 financial literacy assessment. Chapter 2 provides a brief overview of the PISA financial literacy assessment framework, the assessment structure and examples of the financial literacy items. Chapter 3 presents results on the performance of Australian students in an international context, while Chapter 4 focuses on performance of different demographic groups of interest. Chapter 5 is devoted to students’ experiences, attitudes and behaviour towards financial literacy.

## **Further information**

Further information about PISA in Australia is available from the national PISA website: [www.acer.org/ozpisa](http://www.acer.org/ozpisa)



# The financial literacy assessment

The main focus of the PISA financial literacy assessment is on measuring the proficiency of 15-year-old students in demonstrating and applying the knowledge and skill that they have learned in and out of school. Like other PISA domains, financial literacy is assessed using an instrument designed to provide data that are valid, reliable and interpretable.

## How is financial literacy defined in PISA?

The definition of financial literacy for 15-year-olds that underlies the assessment of financial literacy builds on the OECD definitions of financial education and adult financial literacy. The OECD defines financial education as

*‘the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial wellbeing’ (OECD, 2005).*

The definition of financial literacy in the PISA Financial Literacy Assessment Framework refines the adult definition to make it relevant to the competencies (or literacy) of 15-year-old students. PISA is also forward looking, and so the definition incorporates the ability to use knowledge and skills to meet challenges in the future.

*Financial literacy is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial wellbeing of individuals and society, and to enable participation in economic life.*

This definition, like other PISA domain definitions, has two parts. The first part refers to the kind of thinking and behaviour that characterises the domain. The second part refers to the purposes for developing the particular literacy. PISA conceives of the term literacy as the capacity of 15-year-old students to apply knowledge and skills in key subject areas and to analyse, reason and communicate effectively as they pose, solve and interpret problems in a variety of situations.

Some parts of this chapter are adapted or reproduced (with permission) from the *PISA 2015 assessment and analytical framework: Science, reading, mathematics and financial literacy* (OECD, 2016) and from *PISA 2015 Results (Volume IV): Students’ Financial Literacy* (OECD, 2017).



In the following paragraphs in Figure 2.1, each part of the PISA 2012 definition of financial literacy is considered in turn to help clarify its meaning in relation to the assessment.

#### **Financial literacy...**

Literacy is viewed as an expanding set of knowledge, skills and strategies, which individuals build on throughout life, rather than as a fixed quantity, a line to be crossed, with illiteracy on one side and literacy on the other. Literacy involves more than the reproduction of accumulated knowledge, although measuring prior financial knowledge is an important element in the assessment. It also involves a mobilisation of cognitive and practical skills, and other resources, such as attitudes, motivation and values. The PISA assessment of financial literacy draws on a range of knowledge and skills associated with the capacity to deal with the financial demands of everyday life and uncertain futures in contemporary society.

#### **...is knowledge and understanding of financial concepts and risks...**

Financial literacy is thus contingent on some knowledge and understanding of fundamental elements of the financial world, including key financial concepts as well as the purpose and basic features of financial products. This also includes risks that may threaten financial wellbeing as well as insurance policies and pensions. It can be assumed that 15-year-old students are beginning to acquire this knowledge and gain experience of the financial environment that they and their families inhabit and the main risks they face. They are likely to have been shopping to buy household goods or personal items; some will have taken part in family discussions about money and whether what is wanted is actually needed or affordable; and a sizeable proportion of them will have already begun to earn and save money. Some 15-year-old students already have experience of financial products and commitments through a bank account or a mobile phone contract. A grasp of concepts, such as interest, inflation, and value for money, are soon going to be, if they are not already, important for their financial wellbeing.

#### **...and the skills...**

These skills include such generic cognitive processes as accessing information, comparing and contrasting, extrapolating and evaluating, applied in a financial context. They include basic skills in mathematical literacy, such as the ability to calculate a percentage or to convert from one currency to another, and language skills, such as the capacity to read and interpret advertising and contractual texts.

#### **...motivation and confidence...**

Financial literacy involves not only the knowledge, understanding and skills to deal with financial issues, but also non-cognitive attributes: the motivation to seek information and advice in order to engage in financial activities, the confidence to do so, and the ability to manage emotional and psychological factors that influence financial decision making. These attributes are considered as a goal of financial education, as well as being instrumental in building financial knowledge and skills.

#### **...to apply such knowledge and understanding in order to make effective decisions...**

PISA focuses on the ability to activate and apply knowledge and understanding in real-life situations rather than on the ability to reproduce knowledge. In assessing financial literacy, this translates into measuring 15-year-old students' ability to transfer and apply what they have learned about personal finance into effective decision making. The term 'effective decisions' refers to informed and responsible decisions that satisfy a given need.

#### **...across a range of financial contexts...**

Effective financial decisions apply to a range of financial contexts that relate to 15-year-old students' present daily life and experience, but also to steps they are likely to take in the near future as adults. For example, 15-year-old students may currently make relatively simple financial decisions, such as how they will use their pocket money or, at most, which mobile phone contract they will choose; but they may soon be faced with major decisions about education and work options with long-term financial consequences.

### ...to improve the financial wellbeing of individuals and society...

Financial literacy in PISA is primarily conceived of as literacy around personal or household finance, distinguished from economic literacy, which includes both broader concepts, such as the theories of demand and supply, market structures and so on. Financial literacy is concerned with the way individuals understand, manage and plan their own and their households' – which often means their families' – financial affairs. It is recognised, however, that good understanding, management and planning on the part of individuals has some collective impact on the wider society, in contributing to national and even global stability, productivity and development.

### ...and to enable participation in economic life.

Like the other PISA literacy definitions, the definition of financial literacy implies the importance of the individual's role as a thoughtful and engaged member of society. Individuals with a high level of financial literacy are better equipped to make decisions that are of benefit to themselves, and also to constructively support and critique the economic world in which they live.

**FIGURE 2.1** Understanding the definition of financial literacy in PISA

In practical terms, a person with a high level of financial literacy can make the kinds of personal or household decisions about money and finance that will improve their financial wellbeing, all else being equal. Improving financial wellbeing depends on the starting point; for young people, it may mean saving in order to have the money to travel or study without relying on excessive levels of credit, while for some households, it could be increasing the amount of money available to pay for essentials, such as electricity, by shopping around to find products with lower fees or interest charges.

The types of financial decisions made by young people as they reach adulthood will vary and may include relatively simple choices, such as how to spend their weekly allowance, through to complex comparisons of different student loan products or credit cards. In order to make such decisions, they need relevant knowledge and self-confidence as well as a range of other basic skills including numeracy, reading ability and problem-solving skills. They may also benefit from a broad knowledge base, including some aspects of economics, business or enterprise, although these subjects would not provide them with all of the specific skills that make up financial literacy. The item PAY SLIP (see the released items on pages 29–38), is a good example of the ways in which students may draw on other aspects of their education when answering financial literacy questions. The item is strongly grounded in personal finance, but includes numbers, although no mathematics is required; it requires basic reading, and uses terms that may be particularly familiar to economics or business students.

## How is financial literacy assessed in PISA?

The PISA 2015 Assessment and Analytical Framework (OECD, 2016) provides a comprehensive framework to assess the financial literacy of 15-year-old students. It uses a common language to discuss financial literacy with a view to illustrating what is being measured and gives the groundwork for building a described proficiency scale with which to interpret the results of the assessment. The PISA 2015 framework maintains the definition of the domain used in PISA 2012 while updating the measurement of the domain to ensure that it is in line with recent developments in financial markets and the latest research findings.

The assessment framework organises financial literacy around three perspectives that are relevant for the assessment of 15-year-old students:

1. **Content:** comprises the knowledge and understanding that are essential that must be drawn upon to perform a financial literacy task
2. **Process:** describes the mental strategies that students use to negotiate the task to solve the problem
3. **Context:** refers to the situation in which the financial knowledge, skills and understanding are applied.

To construct the assessment, different categories within each perspective are identified and weighted, and then a set of tasks is developed to reflect these categories.

## Content

The content categories comprise the areas of knowledge and understanding that are essential in the area of financial literacy. They are conceived of as the areas of knowledge and understanding that must be drawn upon in order to perform a particular financial task. The four content categories are: money and transactions, planning and managing finances, risk and reward, and the financial landscape. Descriptions of each content category are outlined in Figure 2.2.

**Money and transactions** – includes awareness of the different forms and purposes of money and handling monetary transactions such as everyday payments, spending, taking into account value for money, using bank cards, cheques, bank accounts and currency. It also covers practices such as taking care of cash and other valuables, calculating value for money, and filing documents and receipts.

**Planning and managing finances** – covers skills such as planning and managing of income and wealth over both the short term and long term and in particular the knowledge and ability to monitor income and expenses as well as to make use of income and other available resources to enhance financial wellbeing. It includes content related to credit use as well as savings and wealth creation.

**Risk and reward** – incorporates the ability to identify ways of balancing and covering risks and managing finances in uncertainty with an understanding of the potential for financial gains or losses across a range of financial contexts and products. The risk can be associated with financial losses, such as those that are caused by catastrophic or repeated costs or with financial products, such as credit agreements with variable interest rates, or investment products.

**Financial landscape** – relates to the character and features of the financial world. It covers awareness of the role of regulation and consumer protection, knowing the rights and responsibilities of consumers in the financial marketplace and within the general financial environment, and the main implications of financial contracts. It also incorporates an understanding of the consequences of change in economic conditions and public policies, such as changes in interest rates, inflation and taxation.

**FIGURE 2.2** The four content categories for PISA financial literacy

## Process

The process categories relate to cognitive processes. They are used to describe students' ability to recognise and apply concepts relevant to the domain, and to understand, analyse, reason about, evaluate and suggest solutions. In PISA financial literacy, four process categories have been defined with no particular hierarchical order: identify financial information; analyse information in a financial context; evaluate financial issues; and apply financial knowledge and understanding (Figure 2.3).

**Identify financial information** – this process category is applicable when the individual searches and accesses sources of financial information and identifies or recognises its relevance.

**Analyse information in a financial context** – this process category covers a wide range of cognitive activities undertaken in financial contexts, including interpreting, comparing and contrasting, synthesising, and extrapolating from information that is provided.

**Evaluate financial issues** – this process category focuses on recognising or constructing financial justifications and explanations, drawing on financial knowledge and understanding applied in specified contexts. It also involves cognitive activities, such as explaining, assessing and generalising.

**Apply financial knowledge and understanding** – this process category focuses on taking effective action in a financial setting by using knowledge of financial products and contexts and understanding of financial concepts.

**FIGURE 2.3** The four process categories for PISA financial literacy

## Context

The context categories refer to the situations in which the financial knowledge, skills and understandings are applied, ranging from the personal to the global. In PISA, assessment tasks are framed in general life situations, which may include but are not confined to school contexts. The focus may be on the individual, family or peer group, the community, or even on a global scale. The context identified for the PISA financial literacy assessment include: education and work, home and family, individual, and societal (Figure 2.4).

**Education and work** – This context is of great importance to 15-year-old students. While many students will continue in education or training at post-compulsory education, some of them may soon move into the labour market or may already be engaged in casual employment outside of school hours.

**Home and family** – includes financial issues relating to the costs involved in running a household. It is most likely that 15-year-old students will be living with family, but this context category also encompasses households that are not based on family relationships, such as the kind of shared accommodation that young people often use shortly after leaving the family home.

**Individual** – This context is important within personal finance and especially for students, as most of their financial decisions, including using products such as mobile phones or laptops, are related to themselves and made for their personal benefit, and as many risks and responsibilities must also be borne by individuals. It includes choosing personal products and services as well as contractual issues, such as getting a loan.

**Societal** – The core of the financial literacy domain is focused on personal finances, but this context category recognises that individuals' financial decisions and behaviours can influence and be influenced by the rest of society. It includes matters such as being informed and understanding the rights and responsibilities of financial consumers and understanding the purpose of taxes and local government charges.

**FIGURE 2.4** The four context categories for PISA financial literacy

## Non-cognitive factors: attitudes and behaviours

The PISA definition of financial literacy refers to the non-cognitive attributes of motivation and confidence, attitudes which may have an influence on money-management behaviour (Johnson & Staten, 2010). PISA acknowledges the importance of both financial attitudes and behaviour as aspects of financial literacy in their own right, and that there is an interest in their interaction with the cognitive elements of financial literacy.

The PISA 2015 Assessment and Analytical Framework (OECD, 2016) identifies four non-cognitive factors: access to information and education, access to money and financial products, attitudes towards and confidence about financial matters, and spending and saving behaviour (Figure 2.5).

**Access to information and money** – There are various sources of financial information and education that may be available to students, including formal discussions with friends, parents or other family members, information from the financial sector, as well as from school education.

**Access to money and financial products** – Personal experience of financial products may influence young people's financial literacy and vice versa. Personal experience may come, for example, from using financial products, such as payment cards, from dealing with the banking system, or from occasional working activities outside of school hours.

**Attitudes towards and confidence about financial matters** – Individual preferences can determine financial behaviour and affect the ways in which financial knowledge is used. Confidence in one's own ability to make a financial decision may also be a key driver in explaining who will work through complex financial problems or make choices across several possible products. At the same time, however, confidence may turn into overconfidence, leading to a tendency to make mistakes and overly risky decisions.

**Spending and saving behaviour** – While items in the cognitive assessment test students' ability to make particular spending and saving decisions, it is also useful to have some measure of what their actual (reported) behaviour is, that is, how students save and spend in practice.

**FIGURE 2.5** The four non-cognitive factors in the PISA financial literacy assessment framework

## The PISA 2015 financial literacy assessment structure

The assessment framework serves as the conceptual basis for assessing students' proficiency in financial literacy, and the assessment items were designed to reflect this. The majority of items that were used to assess 15-year-olds' cognitive abilities of financial literacy in PISA 2012 were retained and remained secure for use in PISA 2015. These items had previously been administered in the paper-based assessment in 2012 and were transposed for the computer-based assessment in 2015. A small number of new financial literacy items were developed for 2015 to replace those items that were released after 2012.

The trend and newly developed items for the PISA 2015 financial literacy assessment covered the full range of skills and knowledge identified in the assessment framework, allowing for the measurement and descriptions of students' strengths and weaknesses. The 2015 financial literacy assessment included 43 financial literacy items<sup>1</sup>, which were assembled into two clusters. In all, this was the equivalent of one hour of financial literacy assessment materials (as each cluster occupied 30 minutes of testing time). Students were assigned one of the two financial literacy clusters, and one cluster which consisted of either reading literacy items or mathematical literacy items.

<sup>1</sup> 39 financial literacy items were used in both the PISA 2012 and PISA 2015 assessments and 4 financial literacy items were newly developed items for the PISA 2015 assessment.

Similar to other PISA assessment domains, the financial literacy items were grouped into units, where one or two items shared a common stimulus. The selection of items included financially-focused stimulus material in diverse formats, including prose, diagrams, tables, charts and illustrations.

## Item response formats

Similar to other assessment domains, financial literacy was assessed through a range of item response formats. These included:

- ▶ simple multiple-choice items: where students were asked to select one correct response from among four or five possible response options.
- ▶ complex multiple-choice items: where students were asked to respond to a series of ‘Yes/No’ type questions.
- ▶ open constructed-response items: where students were asked to provide a written response that ranged from a single number or word to a few sentences or a worked calculation.

Table 2.1 shows that of the 43 financial literacy items in PISA 2015, almost one-quarter were simple multiple-choice items, over one-quarter were complex multiple-choice items, and one-half of the items were constructed-response items. All of the multiple-choice items and one quarter of the constructed-response items were computer scored, while the remainder of the constructed-response items (three quarters) were coded by experienced trained coders.

**TABLE 2.1** Distribution of items in the financial literacy assessment by item response format

Item format	Items	
	No.	%
Simple multiple-choice	10	23
Complex multiple-choice	12	28
Constructed-response	21	49

Note: Due to rounding, some percentages may not match to totals in the text. This relates to all tables and graphs in this chapter. See the Reader's Guide for more information.

## Distribution of items

The balance of items among the content, process and context categories are broadly consistent with the assessment framework and reflect the consensus view of the experts who were consulted when the framework was being reviewed for PISA 2015. The number and proportion of items, by perspective, that were selected for the assessment are shown in Table 2.2.



**TABLE 2.2** Distribution of items in the financial literacy assessment by perspectives

Perspectives	Items	
	No.	%
<b>Content</b>		
Money and transactions	11	26
Planning and managing finances	14	33
Risk and reward	9	21
Financial landscape	9	21
<b>Process</b>		
Identify financial information	7	16
Analyse information in a financial context	11	26
Evaluate financial issues	15	35
Apply financial knowledge and understanding	10	23
<b>Context</b>		
Education and work	6	14
Home and family	15	35
Individual	17	40
Societal	5	12

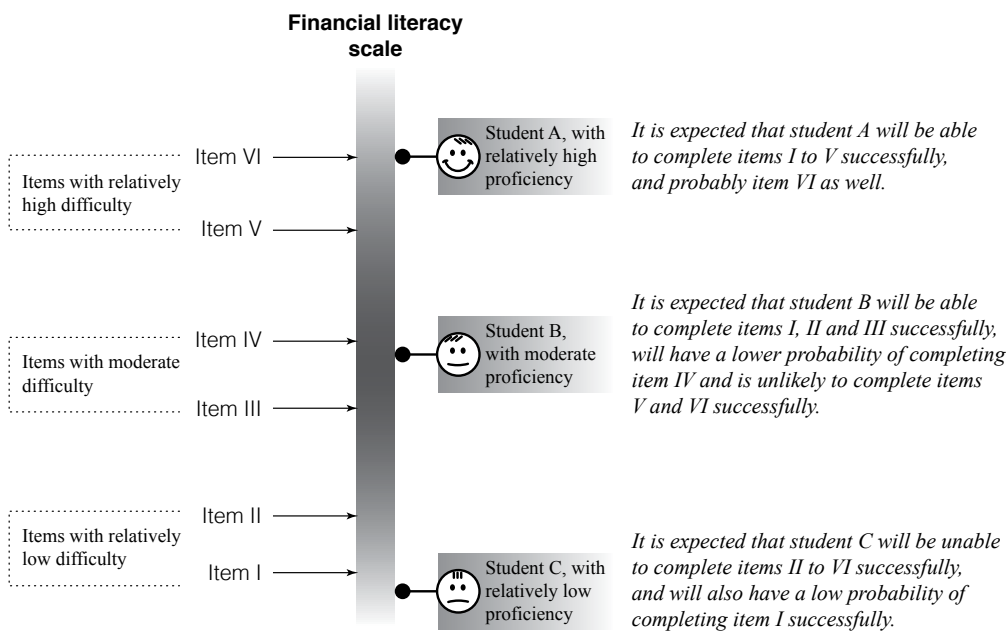
## Scaling of the financial literacy items

The assessment design, similar to those used in previous PISA assessments and for the other assessment domains, allows for a single scale of proficiency in financial literacy to be constructed. The financial literacy scale was constructed using item response theory, with each item associated with a particular point on the scale indicating its difficulty, and each student's performance associated with a particular point on the same scale indicating their estimated financial literacy proficiency.<sup>2</sup>

On this scale, the relative difficulty of items in a test can be estimated by considering the proportion of students getting each item correct; relatively easy items are answered correctly by a larger proportion of students than more difficult items. It is possible to estimate the location of individual students on the scale and to describe the degree of financial literacy that they possess by considering the proportion of items that they answer correctly.

Figure 2.6 shows that the relationship between items and students on the financial literacy scale is probabilistic. The estimate of student proficiency reflects the kinds of tasks they would be expected to successfully complete. A student whose ability places them at a certain point on the PISA financial literacy scale would most likely be able to successfully complete tasks at or below that location, and they would increasingly be more likely to be able to complete tasks located at progressively lower points on the scale, but they would be less likely to be able to complete tasks above that point, and they would be increasingly less likely to be able to complete tasks located at progressively higher points on the scale.

<sup>2</sup> The scaling procedures used in PISA 2015 are described in greater detail in the PISA 2015 Technical Report (OECD, forthcoming).



**FIGURE 2.6** The probabilistic relationship between items and student performance on the PISA financial literacy scale

## How is financial literacy reported in PISA?

Statistics such as mean scores and measures of distribution of performance allow for comparisons against other countries and sub-groups. Proficiency levels provide results in descriptive terms, where descriptions of the skills and knowledge students typically use are attached to achievement results.

### Mean scores and distribution of scores

Mean scores provide a summary of student performance and allow comparisons of the relative standing between different countries and different subgroups. In PISA 2012, when financial literacy was assessed for the first time, the metric for the overall financial literacy scale was based on an average score, across the 13 participating OECD countries, of 500 points and a standard deviation of 96 points. The mean score on the PISA 2015 financial literacy scale across the 10 participating OECD countries is 489 points with a standard deviation of 110 points.

The distribution of scores along the financial literacy scale also provides further detail about students' performance. Results at the international level are reported at the 10th, 25th, 75th and 90th percentiles in graphical format to observe the variation in student performance within a country or sub-group, while the 5th, 10th, 25th, 75th, 90th and 95th percentiles are reported at a national and sub-national level.

### Proficiency levels

While mean scores provide a comparison of student performance on a numerical level, proficiency levels provide a description of the knowledge and skills that students are typically capable of displaying. Following PISA practice, a single continuous scale of financial literacy, divided into five levels of proficiency, was constructed in PISA 2012. This proficiency scale remains valid for the PISA 2015 assessment.

The financial literacy proficiency scale spans from Level 1 (the lowest proficiency level) to Level 5 (the highest). Descriptions of each of these levels are based on the framework-related cognitive demands imposed by tasks that are located within each level to describe the kinds of skills and knowledge

needed to successfully complete those tasks, and which can then be used as characterisations of the substantive meaning of each level. Figure 2.7 provides descriptions of the financial literacy competencies, knowledge and understanding required at each level of the financial literacy scale, and the cut-off points between the proficiency levels. A difference of 75 score points represents one proficiency level on the PISA financial literacy scale.

Proficiency level		What students can typically do at each level
High performers	5	Students can apply their understanding of a wide range of financial terms and concepts to contexts that may only become relevant to their lives in the long term. They can analyse complex financial products and can take into account features of financial documents that are significant but unstated or not immediately evident, such as transaction costs. They can work with a high level of accuracy and solve non-routine financial problems, and they can describe the potential outcomes of financial decisions, showing an understanding of the wider financial landscape, such as income tax.
	624.6 score points	
Middle performers	4	Students can apply their understanding of less common financial concepts and terms to contexts that will be relevant to them as they move towards adulthood, such as bank account management and compound interest in saving products. They can interpret and evaluate a range of detailed financial documents, such as bank statements, and explain the functions of less commonly used financial products. They can make financial decisions taking into account longer-term consequences, such as understanding the overall cost implication of paying back a loan over a longer period, and they can solve routine problems in less common financial contexts.
	549.9 score points	
	3	Students can apply their understanding of commonly used financial concepts, terms and products to situations that are relevant to them. They begin to consider the consequences of financial decisions and they can make simple financial plans in familiar contexts. They can make straightforward interpretations of a range of financial documents and can apply a range of basic numerical operations, including calculating percentages. They can choose the numerical operations needed to solve routine problems in relatively common financial literacy contexts, such as budget calculations.
	475.1 score points	
Low performers	2	Students begin to apply their knowledge of common financial products and commonly used financial terms and concepts. They can use given information to make financial decisions in contexts that are immediately relevant to them. They can recognise the value of a simple budget and can interpret prominent features of everyday financial documents. They can apply single basic numerical operations, including division, to answer financial questions. They show an understanding of the relationships between different financial elements, such as the amount of use and the costs incurred.
	400.3 score points	
	1	Students can identify common financial products and terms and interpret information relating to basic financial concepts. They can recognise the difference between needs and wants and can make simple decisions on everyday spending. They can recognise the purpose of everyday financial documents such as an invoice and apply single and basic numerical operations (addition, subtraction or multiplication) in financial contexts that they are likely to have experienced personally.

**FIGURE 2.7** Summaries of the five proficiency levels on the financial literacy scale

Students who are placed at Level 5 or above on the financial literacy scale (scoring 625 points or higher) are considered high performers. These students are highly proficient and demonstrate high levels of skills and knowledge in financial literacy. These high performing students can successfully complete the most difficult items in the assessment, as well as all other items located in the lower levels on the financial literacy scale.

In PISA, Level 2 is considered the international baseline proficiency level and defines the level of achievement on the financial literacy scale at which students begin to demonstrate the financial knowledge and skills that will enable them to participate in society.

Students who are placed below Level 2, scoring less than 400 points, are considered low performers, and are not yet able to apply their knowledge to real-life situations involving financial issues and decisions.

## Examples of released items

A selection of example items has been provided to show the types of assessment items included in the PISA Financial Literacy assessment and to illustrate the ways in which performance in financial literacy was measured. Although no new items were released to the public from the PISA 2015 assessment, example items have been drawn from the PISA 2012 Field Trial (*At the Market, New Offer, Pay Slip, Bank Error, Motorbike Insurance*), and one item (*Invoice*) from the PISA 2012 assessment.<sup>3</sup> These items are similar to those used in the PISA 2015 assessment. Table 2.3 presents a mapping of the sample financial literacy items to their corresponding position on the described proficiency scale. Each item can be associated with a particular point on the scale that indicates its relative difficulty. The first column shows the proficiency level, and the cut-off points between each proficiency level. The second column shows the name of the item and unit, the item difficulty and the process category for each of the items. Items within the same unit can represent a range of difficulties. For example, the unit Invoice consists of items or parts of items at Levels 1, 2, 3 and 5.

**TABLE 2.3** Map of selected financial literacy items by proficiency level and process category

Proficiency level	Process category			
	Identify financial information	Analyse information in a financial context	Evaluate financial issues	Apply financial knowledge and understanding
5		New Offer: Item 1 (663) <i>Full credit</i>	Bank Error: Item 1 (797)	Invoice: Item 3 (660) <i>Full credit</i>
4	Pay Slip: Item 1 (551)		New Offer: Item 2 (582)	
3		New Offer: Item 1 (510) <i>Partial credit</i> Motorbike Insurance: Item 1 (494)		Invoice: Item 3 (547) <i>Partial credit</i>
2	Invoice: Item 2 (461)	At the Market: Item 2 (459)		
1	Invoice: Item 1 (360)		At the Market: Item 3 (398)	

<sup>3</sup> The example items presented in this section were prepared for the paper-based assessment and have a slightly different layout to the items in the computer-based assessment.

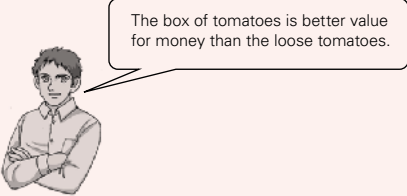
## At the Market

*At the Market* presents two constructed-response questions about money and transactions in a family context. The stimulus presents a situation where a person can buy tomatoes at different prices by the kilogram or by the box.

You can buy tomatoes by the kilogram or by the box.



### At the Market - Item 2



Give a reason to support this statement.

.....

.....

Item Details	
<b>Item type:</b>	Constructed-response (coded by a trained expert)
<b>Description:</b>	Recognise value by comparing prices per unit
<b>Content:</b>	Money and transactions
<b>Process:</b>	Analyse information in a financial context
<b>Context:</b>	Home and family
<b>Difficulty:</b>	459 (Level 2)

Scoring	
Full Credit	
<i>Explicitly or implicitly recognises that price per kilogram of boxed tomatoes is less than the price per kilogram for loose tomatoes.</i>	
<ul style="list-style-type: none"> <li>• It is 2.75 zeds per kg for the loose tomatoes but only 2.2 zeds per kg for the boxed tomatoes.</li> <li>• It is only 2.20 per kg for the box.</li> <li>• Because 10kg of loose tomatoes would cost 27.50 zeds.</li> <li>• There are more kgs for every 1 zed you pay.</li> <li>• Loose tomatoes cost 2.75 per kg but tomatoes in the box cost 2.2 per kg.</li> <li>• It is cheaper per kg. [Accept generalisation.]</li> <li>• It is cheaper per tomato. [Accept assumption that tomatoes are the same size.]</li> <li>• You get more tomato per zed. [Accept generalisation.]</li> </ul>	
No Credit	
<i>Other responses</i>	
<ul style="list-style-type: none"> <li>• The box is always better value [No explanation.]</li> <li>• You get more for less. [Vague.]</li> <li>• Bulk buying is better.</li> <li>• The price per kilogram is different. [Does not indicate that the box price is lower.]</li> </ul>	
Missing	

#### Comment

This first constructed-response item in the At the Market unit requires students to apply the concept of value for money in a context familiar to 15-year-old students. Students are asked to make a logical comparison between boxed and loose tomatoes and to explain which option provides the best value for money. In order to support their argument, students can provide their answer in words or explain their idea with quantitative information by using the price ('Zed') and weight (kilogram).

In this item, the unit of currency is the imaginary Zed. PISA items often refer to situations that take place in the fictional country of Zedland, where the Zed is the unit of currency. This artificial currency has been introduced to enhance comparability across countries and is explained to the students before the test begins.

Using the context of shopping for groceries, which is a familiar, everyday context to 15-year-old students, this item assesses whether students can interpret and use financial and numeric information and explain their judgement based on proportional reasoning and single basic numerical operations (multiplication and division). Items about the buying of goods are generally categorised as being in the content area of money and transactions. To gain credit for this item, students have to demonstrate that they have compared the two ways of buying tomatoes using a common point of comparison.

### At the Market – Item 3

Buying a box of tomatoes may be a bad financial decision for some people.

Explain why.

.....  
.....

#### Item Details

<b>Item type:</b>	Constructed-response (coded by a trained expert)
<b>Description:</b>	Recognise value by comparing prices per unit
<b>Content:</b>	Money and transactions
<b>Process:</b>	Evaluate financial issues
<b>Context:</b>	Home and family
<b>Difficulty:</b>	398 (Level 1)

#### Scoring

##### Full Credit

*Refers to wastage if a larger amount of tomatoes is not needed.*

- The tomatoes might rot before you use them all.
- Because you may not need 10 kg of tomatoes.
- The ones at the bottom of the box might be bad so you are wasting money.

OR

*Refers to the idea that some people cannot afford the higher absolute cost of buying in bulk.*

- You may not be able to afford a whole box.
- You have to spend 22 zeds (rather than 2.75 or 5.50 for 1 or 2 kg) and you might not have that amount to spend.
- You might have to go without something else that you need to pay for the box of tomatoes.

##### No Credit

*Other responses*

- It is a bad idea.
- Some people don't like tomatoes *[Irrelevant.]*

##### Missing

#### Comment


This item asks students to evaluate financial information for decision making in shopping, which is a situation familiar to 15-year-old students. The item examines whether students can recognise that buying things in bulk may be wasteful if a large amount is not needed, and it may be unaffordable to bear the higher absolute cost of buying in bulk in the short term. Students are required to evaluate a financial issue in the situation presented and describe their conclusion in this open-constructed response item. Students can provide their answers either verbally, without quantitative information, or with quantitative information of the price and weight. Full credit will be given if students can explain that buying more tomatoes at a cheaper price may not always be a good decision for some people.



## Invoice

*Invoice* consists of three questions in the content category of money and transactions, which are framed in an individual context. The stimulus presents an invoice received by post.

Sarah receives this invoice in the mail.

 <b>BREEZY CLOTHING</b>	<b>INVOICE</b>																																							
	Invoice Number: 2034 Date issued: 28 February																																							
Sarah Johanson 29 Worthill Rd Kensington Zedland 3122	Breezy Clothing 498 Marple Lane Brightwell Zedland 2090																																							
<table border="1"> <thead> <tr> <th>Product code</th> <th>Description</th> <th>Quantity</th> <th>Unit cost</th> <th>Total (excluding tax)</th> </tr> </thead> <tbody> <tr> <td>T011</td> <td>T-shirt</td> <td>3</td> <td>20</td> <td>60 zeds</td> </tr> <tr> <td>J023</td> <td>jeans</td> <td>1</td> <td>60</td> <td>60 zeds</td> </tr> <tr> <td>S002</td> <td>scarf</td> <td>1</td> <td>10</td> <td>10 zeds</td> </tr> </tbody> </table>	Product code	Description	Quantity	Unit cost	Total (excluding tax)	T011	T-shirt	3	20	60 zeds	J023	jeans	1	60	60 zeds	S002	scarf	1	10	10 zeds	<table> <tr> <td>Total Excluding Tax:</td> <td>130 zeds</td> </tr> <tr> <td>Tax 10%:</td> <td>13 zeds</td> </tr> <tr> <td>Postage:</td> <td>10 zeds</td> </tr> <tr> <td>Total Including Tax:</td> <td>153 zeds</td> </tr> <tr> <td>Already Paid:</td> <td>0 zeds</td> </tr> <tr> <td> </td> <td></td> </tr> <tr> <td>Total due:</td> <td>153 zeds</td> </tr> <tr> <td>Date due:</td> <td>31 March</td> </tr> </table>				Total Excluding Tax:	130 zeds	Tax 10%:	13 zeds	Postage:	10 zeds	Total Including Tax:	153 zeds	Already Paid:	0 zeds	 		Total due:	153 zeds	Date due:	31 March
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Total due:	153 zeds																																							
Date due:	31 March																																							

### Invoice - Item 1

Why was this invoice sent to Sarah?

- A Because Sarah needs to pay the money to Breezy Clothing.
- B Because Breezy Clothing needs to pay the money to Sarah.
- C Because Sarah has paid money to Breezy Clothing.
- D Because Breezy Clothing has paid the money to Sarah.

#### Item Details

<b>Item type:</b>	Simple multiple-choice
<b>Description:</b>	Recognise the purpose of an invoice
<b>Content:</b>	Money and transactions
<b>Process:</b>	Identify financial information
<b>Context:</b>	Individual
<b>Difficulty:</b>	360 (Level 1)

#### Scoring

Full Credit

A. Because Sarah needs to pay the money to Breezy Clothing.

No Credit

Other responses

Missing

#### Comment

This simple multiple-choice item asks students to interpret a financial document, an invoice, and identifying its purpose in the context of any individual. Items about interpreting financial documents are generally categorised as being in the content area of money and transactions. Students are required to identify financial information by demonstrating a basic understanding of what an invoice is. Calculations are not required.

## Invoice - Item 2

How much has Breezy Clothing charged for delivering the clothes?

Delivery charge in zeds: .....

Item Details	
<b>Item type:</b>	Constructed-response (computer scored)
<b>Description:</b>	Identify the cost of postage on an invoice
<b>Content:</b>	Money and transactions
<b>Process:</b>	Identify financial information
<b>Context:</b>	Individual
<b>Difficulty:</b>	461 (Level 2)

Scoring
Full Credit
10
Ten
Tene <i>[Unambiguous mis-spelling of correct numerical value.]</i>
No Credit
<i>Other responses</i>
<i>Missing</i>

Comment
This short constructed-response item asks students to identify a delivery cost in an invoice for clothing. It asks a specific question, and the relevant information is explicitly stated. To answer this item correctly, students need to identify the relevant information, understanding that postage refers to the delivery charge. This is an example of the types of interpretation that they may need to make frequently in adult life. While calculations are not required, students are required to identify numerical information: the cost of postage.

## Invoice - Item 3

Sarah notices that Breezy Clothing made a mistake on the invoice.

Sarah ordered and received T-shirts, **not** three.

The postage fee is a fixed charge.

What will be the total on the new invoice?

Total in zeds: .....

Item Details	
<b>Item type:</b>	Constructed-response (computer scored)
<b>Description:</b>	Find a new total on an invoice, taking into account several factors (or demonstrate process required)
<b>Content:</b>	Money and transactions
<b>Process:</b>	Apply financial knowledge and understanding
<b>Context:</b>	Individual
<b>Difficulty:</b>	Full credit – 660 (Level 5); Partial credit – 547 (Level 3)

Scoring
Full Credit
131
One hundred and thirty-one
One hundred and thirty-one <i>[Unambiguous mis-spelling of 131]</i>
Partial Credit
133 <i>[Leaves tax at 13 zeds]</i> OR 121 <i>[Omits postage]</i>
One hundred and thirty-three
One hundred and thirty-three <i>[Unambiguous mis-spelling of 133]</i>
One hundred and twenty-one
No Credit
<i>Other responses</i>
123 <i>[Leaves tax at 13 zeds and omits postage.]</i>
<i>Missing</i>

**Comment**

This item asks students to interpret a financial document in a complicated situation that is likely to take place in real life. Students are required to calculate the correct amount due, given that the quantity described on the invoice is incorrect. In this task, full credit is given for the responses taking into account the tax change and postage, and partial credit is given to responses that only consider one of those factors. The partial-credit score is located at Level 3 while the full-credit score is located at Level 5. To get full credit, students need to interpret and use financial and numeric information in an unfamiliar context and solve a financial problem by using multiple numerical operations (i.e. addition, subtraction and calculation of percentages). To get partial credit, students need to interpret and use financial and numeric information and apply basic numerical operations (i.e. subtraction).

## New Offer

*New Offer* consists of two questions in the content category of planning and managing finances, which are framed in an individual context. The stimulus presents details about two different personal loans.

Mrs Jones has a load of 8000 zeds with FirstZed Finance. The annual interest rate on the loan is 15%. Her repayments each month are 150 zeds.

After one year Mrs Jones still owes 7400 zeds.

Another finance company called Zedbest will give Mrs Jones a load of 10000 zeds with an annual interest rate of 13%. Her repayments each month would also be 150 zeds.

## New Offer - Item 1

If she takes the Zedbest loan, Mrs Jones will immediately pay off her existing loan.

What are two other financial benefits for Mrs Jones if she takes the Zedbest loan?

1. ....
2. ....
- .....

**Item Details**

<b>Item type:</b>	Constructed-response (coded by a trained expert)
<b>Description:</b>	Recognise positive consequences of transferring a load to a lower interest rate
<b>Content:</b>	Planning and managing finances
<b>Process:</b>	Analyse information in a financial context
<b>Context:</b>	Individual
<b>Difficulty:</b>	Full credit: 663 (Level 5); Partial credit: 510 (Level 3)

**Scoring**

**Full Credit**

*Refers to BOTH having extra money to use AND getting a lower interest rate.*

- She will be paying 13% interest instead of 15%.
- She has an extra 2600 zeds.
- She has extra money to spend.
- The interest rate is lower.

**Partial Credit**

*Refers to only one of the above.*

- She will only be paying 13% interest rate.
- [Blank]
- She has extra money to spend.
- [Blank]
- The interest rate is 2% lower.
- She will pay off her loan to FirstZed. [2nd benefit is a restatement of stem.]

**No Credit**

*Other responses*

She will pay off her debt. [Repeats stem.]

*Missing*

### Comment

This item asks students to reflect on and evaluate the consequences of changing from one set of loan conditions to another. While having a loan from a financial institution may be unfamiliar to 15-year-old students, this question is relevant to them since many of them will borrow money from financial institutions once they become adults. While all of the necessary information is provided in the question, in order to gain credit, students need to identify what is relevant and reflect on the consequences of taking a particular financial action. Therefore, the item belongs to the content category of planning and managing finances. Students need to interpret financial and numeric information, reason about the effect that different financial actions (i.e. borrowing money from different loan providers) and variables have on financial wellbeing. No numerical operations are required. In this task, full credit is given for the responses including reference to both having extra money to use and getting a lower interest rate. Partial credit is given to responses that explain one of those.

## New Offer - Item 2

What is one possible negative financial consequence for Mrs Jones if she agrees to the Zedbest load?

.....

Item Details	
<b>Item type:</b>	Constructed-response (coded by a trained expert)
<b>Description:</b>	Recognise a negative consequence of having a large loan
<b>Content:</b>	Planning and managing finances
<b>Process:</b>	Evaluate financial issues
<b>Context:</b>	Individual
<b>Difficulty:</b>	582 (Level 4)

### Scoring

#### Full Credit

*Refers to Mrs Jones having more debt.*

- She will owe more money.
- She will be unable to control her spending.
- She is going deeper into debt.

*Refers to paying more interest in total.*

- 13% of 10 000 is greater than 15% of 8000.

*Refers to taking longer to pay the loan off.*

- It might take longer to repay because the loan is bigger and the payments are the same.

*Refers to the possibility of paying a cancellation fee with FirstZed.*

- She may have a penalty fee for paying the FirstZed loan early.

#### No Credit

*Other responses*

*Missing*

### Comment

This item asks students to evaluate two complex financial products, two different personal loans, with competing information to explain a negative financial consequence of changing to a larger loan. Students need to interpret financial and numeric information, reason about the effect that different financial actions and variables have on financial wellbeing. In order to get full credit, students are required to describe a negative consequence of changing loans, such as the time taken to repay the money or the additional interest paid. No numerical operations are required.

## Pay Slip

*Pay Slip* is set in the content category of money and transactions. The stimulus presents details of an employee pay slip.

Each month, Jane's salary is paid into her bank account. This is Jane's pay slip for July.

EMPLOYEE PAY SLIP: Jane Citizen	
Position: Manager	1 July to 31 July
Gross salary	2800 zeds
Deductions	300 zeds
Net salary	2500 zeds
Gross salary to date this year	19 600 zeds

### Pay Slip - Item 1

How much money did Jane's employer pay into her bank account on 31 July?

- A 300 zeds
- B 2500 zeds
- C 2800 zeds
- D 19600 zeds

#### Item Details

<b>Item type:</b>	Simple multiple-choice
<b>Description:</b>	Identify the net salary on a pay slip
<b>Content:</b>	Money and transactions
<b>Process:</b>	Identify financial information
<b>Context:</b>	Education and work
<b>Difficulty:</b>	551 (Level 4)

#### Scoring

Full Credit

B. 2500 zeds

No Credit

*Other responses*

*Missing*

#### Comment

This simple multiple-choice item asks students to identify financial information on a pay slip. While a pay slip is a common financial document, it may provide an unfamiliar financial context to 15-year-old students. Students need to understand the difference between gross and net pay, that is, the difference between pay before and after any deductions have been made (such as deductions for health care or tax). Numeric operations are not required.

## Bank Error

*Bank Error* is set in the context category of financial landscape. The stimulus presents the scenario of a customer from the fictitious Zedbank receiving an email about a potential fraud.

Dear ZedBank member,

There has been an error on the ZedBank server and your internet login details have been lost.

As a result, you have no access to Internet banking.

Most importantly your account is no longer secure.

Please click on the link below and follow the instructions to restore access. You will be asked to provide your Internet banking details.

<https://ZedBank.com/>

ZedBank

### Bank Error - Item 1

Which of these statements would be good advice for David?

Circle "Yes" or "No" for each statement.

Statement	Is this statement good advice for David?
Reply to the e-mail message and provide his internet banking details.	Yes / No
Reply to the e-mail message and ask for more information.	Yes / No
Contact his bank to inquire about the e-mail message.	Yes / No
If the link is the same as his bank's website address, click on the link and follow the instructions.	Yes / No

#### Item Details

<b>Item type:</b>	Complex multiple-choice (coded by a trained expert)
<b>Description:</b>	Respond appropriately to a financial scam email message
<b>Content:</b>	Financial landscape
<b>Process:</b>	Evaluate financial issues
<b>Context:</b>	Societal
<b>Difficulty:</b>	797 (Level 5)

#### Scoring

Full Credit

Four correct responses: No, No, Yes, No (in that order).

No Credit

Other responses

Fewer than four correct responses.

Missing

#### Comment

This item asks students to evaluate a financial issue (potential fraud) in the context of Internet banking, which is part of the broader financial landscape in which students are likely to participate, either now or in the near future. In this environment they may be exposed to financial fraud. This item investigates whether they know how to take appropriate precautions. Students are asked to respond appropriately to a financial scam email message. They must evaluate the presented options and recognise which piece of advice can be considered as good advice.

## Motorbike Insurance

*Motorbike Insurance* consists of one question in the content category of risk and reward, which is framed in an individual context. The stimulus provides details about a motorbike insurance policy.

Last year, Steve's motorbike was insured with the PINSURA insurance company.

The insurance policy covered damage to the motorbike from accidents and theft of the motorbike.

### Motorbike insurance - Item 1

Steve plans to renew his insurance with PINSURA this year, but a number of factors in Steve's life have changed since last year.

How is each of the factors in the table likely to affect the cost of Steve's motorbike insurance this year?

Circle "Increases cost", "Reduces cost" or "Has no effect on cost" for each factor.

Statement	How is the factor likely to affect the cost of Steve's insurance?
Steve replaced his old motorbike with a much more powerful motorbike.	Increases cost / Reduces cost / Has no effect on cost
Steve has painted his motorbike a different colour.	Increases cost / Reduces cost / Has no effect on cost
Steve was responsible for two road accidents last year.	Increases cost / Reduces cost / Has no effect on cost

Item Details	
<b>Item type:</b>	Complex multiple-choice (coded by a trained expert)
<b>Description:</b>	Recognise factors affecting motorbike insurance premiums
<b>Content:</b>	Risk and reward
<b>Process:</b>	Analyse information in a financial context
<b>Context:</b>	Individual
<b>Difficulty:</b>	494 (Level 3)

Scoring
<b>Full Credit</b>
Three correct responses: Increases cost, Has no effect on cost, Increases cost, in that order.
<b>No Credit</b>
<i>Other responses</i>
Fewer than three correct responses.
<i>Missing</i>

Comment
This item relies on students understanding that the higher their risk exposure, with regards to measurable criteria, the more it will cost them to buy appropriate insurance. This item falls under the content area category of risk and reward because insurance is a product designed specifically to protect individuals against risk and financial losses that they would not otherwise be able to bear. Students need to be able to identify factors likely to affect the cost of motorbike insurance under given circumstances.



# Financial literacy results from an international perspective

## Key findings<sup>1</sup>

- Australian students achieved an average score of 504 points in financial literacy, which was significantly higher than the OECD average of 489 points.
- Australia's performance was significantly lower than 4 countries (B-S-J-G (China), Belgium, Canada and the Russian Federation).
- Australia's performance was not significantly different from the Netherlands.
- Australia's performance was significantly higher than 9 countries, including 6 OECD countries (the United States, Poland, Italy, Spain, the Slovak Republic and Chile) and 3 partner countries (Lithuania, Peru and Brazil).
- Australia's performance declined significantly between PISA 2012 and 2015 (by 22 points).
- Australia's proportion of high performers (15%) was higher than the OECD average (12%).
- Australia's proportion of low performers (20%) was lower than the OECD average (22%).
- Australia's proportion of low performers increased significantly between PISA 2012 and 2015 (by 9%).
- Australian females, with a mean score of 510 points, performed significantly higher than Australian males, with a mean score of 498 points.
- In Australia, the mean performance in financial literacy decreased significantly by 27 points for males and 18 points for females between PISA 2012 and 2015.
- In Australia, the proportions of high-performing males and high-performing females were similar (16% and 15% respectively) while there were higher proportions of low-performing males (23%) than low-performing females (17%).

<sup>1</sup> As a number of changes have occurred in PISA 2015, comparisons between results for PISA 2012 and 2015 should be interpreted with due caution.

- In Australia, the proportion of low-performing males increased by 11% and the proportion of low-performing females increased by 8%, between PISA 2012 and 2015.
- On average, for Australia, around 29% of the financial literacy score reflected factors that were uniquely captured by the financial literacy assessment, while the remaining 71% of the financial literacy score reflected skills that were measured in the mathematical literacy and/or reading literacy assessments.
- In Australia, students performed significantly lower in financial literacy than students with similar performance in mathematical literacy and reading literacy.

This chapter presents the results of student performance in financial literacy. The performance of Australian students is compared to the performance of students from other OECD participating countries and economies. The results are discussed for PISA 2015, and for the changes in financial literacy performance over the last 3 years. The last section examines the relationship between financial literacy and two of the core assessments, mathematical and reading literacy.

#### **Interpreting differences in PISA scores: how big is 'big'?**

How do we go about understanding the difference in mean financial literacy scores between two groups of students? The following comparisons can help in judging the magnitude of score differences.

##### ***In terms of proficiency levels***

A difference of about 75 points represents one proficiency level on the PISA financial literacy scale. In substantive terms, this can be considered a comparatively large difference in student performance. For example, compare the skill sets for those students who are proficient at Level 2 and those students who are proficient at Level 3. Students who perform at Level 2 on the financial literacy scale are only starting to apply their knowledge to make financial decisions. They use given information to make financial decisions in contexts that are immediately relevant to them. Students who reach Level 3 are proficient with the tasks at Level 2 and below, and are beginning to consider the consequences of financial decisions and make simple financial plans in familiar contexts.

##### ***In terms of schooling***

It is possible to estimate the score point difference that is associated with one year of schooling. This difference can be estimated for Australia because the Australian PISA 2015 sample included a sizeable number of students from different school year levels. Analyses of these data indicate that the difference between two year levels is, on average, around 35 points on the financial literacy scale.

## **Financial literacy performance in 2015**

Mean scores provide a summary about student performance and allow relative comparisons between different countries. Figure 3.1 lists the mean financial literacy scores, along with the standard errors, confidence intervals around the mean, and the difference between the 10th and 90th percentiles. It also shows the graphical variation of student performance within a country. Countries are shown in order from the highest to the lowest mean financial literacy score and the three colour bands indicate whether a particular country has performed at a significantly higher or lower level or whether they performed at a level not significantly different to Australia.

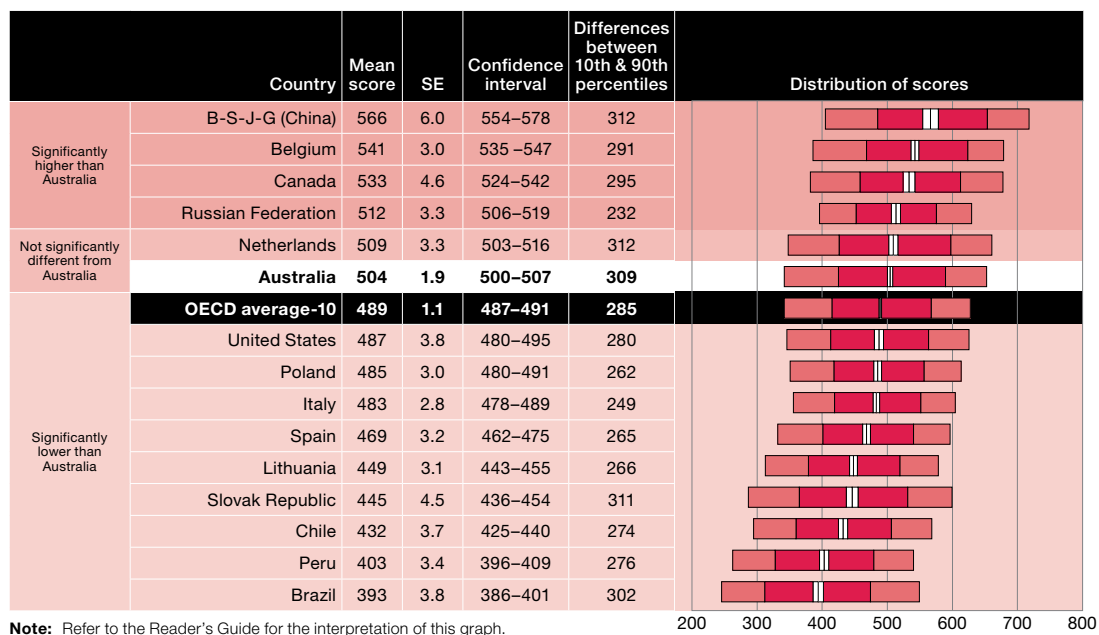
In the 2015 financial literacy assessment, Australian students achieved an average score of 504 points. This was significantly higher than for students across the 10 OECD countries, who achieved an average of 489 points.

Australia was one of 6 countries or economies<sup>2</sup> (4 OECD: Belgium, Canada, the Netherlands and Australia; 2 partner: B-S-J-G (China) and the Russian Federation) to achieve a mean score that was significantly higher than the OECD average<sup>3</sup>. Two OECD countries (the United States and Poland) performed at a level not significantly different to the OECD average. Seven countries (4 OECD: Italy, Spain, the Slovak Republic and Chile; 3 partner: Lithuania, Peru and Brazil) performed significantly lower than the OECD average.

B-S-J-G (China) achieved the highest mean score in financial literacy with a score of 566 points, which was significantly higher than any other participating country. B-S-J-G (China)'s score was 77 points higher or around one proficiency level higher than the OECD average. The average student in B-S-J-G (China) was placed at a high level within proficiency level 4, while the average student across the OECD was placed at the lower end within proficiency level 3. Belgium was the next highest performing OECD country with a score that was 52 points higher than the OECD average.

Australian students' performance in financial literacy was significantly lower than 4 countries (2 OECD: Belgium and Canada; 2 partner: B-S-J-G (China) and the Russian Federation). Australia's score was 62 points lower, or the equivalent of more than one-and-a half years of schooling compared to B-S-J-G (China)'s score. Australia's performance was not significantly different from the Netherlands, while Australia's performance was significantly higher than 9 countries, including 6 OECD countries and 3 partner countries.

The difference in financial literacy performance between the 10th and 90th percentiles across OECD countries was 285 points. The Russian Federation and Italy had one of the smallest performance differences, of 232 points and 249 points respectively, while Australia, the Slovak Republic, the Netherlands and B-S-J-G (China) had the largest performance differences of around 310 points.



**FIGURE 3.1** Mean scores and distribution of students' performance on the financial literacy scale, by country

2 For ease of reading, the economic region of B-S-J-G (China) is referred to as a country.

3 'OECD average' refers to the arithmetic mean of the 10 respective OECD country estimates.

## Financial literacy proficiency in 2015

Proficiency levels provide further meaning about students' ability in financial literacy. There are five levels of described proficiency in the 2015 financial literacy assessment, which range from Level 5 (highest proficiency) to Level 1 (lowest proficiency).

Figure 3.2 shows the proportion of students at each financial literacy level from below Level 1 to Level 5, by country. Countries have been ordered by the percentage of students performing below Level 2, which is the internationally assigned baseline benchmark. Countries with the lowest proportion of students below Level 2 are placed at the top of the figure and countries with the highest proportion of students below Level 2 are placed at the bottom.

### High performers

The students who demonstrated the highest level of proficiency, Level 5, who achieved a score of 625 points or higher, are referred to as high performers and are proficient learners of financial literacy, successfully completing the most difficult items on the assessment. Students at this level can apply their understanding of a wide range of financial terms and concepts to contexts that may only become relevant to their lives later on, such as borrowing money from loan providers. They can analyse complex financial products and take into account features of financial documents that are significant but unstated or not immediately evident, such as transaction costs. They can work with a high level of accuracy and solve non-routine financial problems, such as calculating the bank balance in a given bank statement taking into account multiple factors, such as transfer fees. The tasks at this level are related to students' ability to look ahead and plan for the future to solve financial problems or make the kinds of financial decisions that will be relevant to many of them in the future, regardless of country contexts. Students at Level 5 can also describe the potential outcomes of financial decisions, showing an understanding of the wider financial landscape, such as income tax. These tasks relate to higher-order uses of knowledge and skills and can thus reinforce other competencies, such as the use of basic mathematical knowledge and the ability to look ahead and plan for the future.

On average, 12% of students across the 10 OECD countries were high performers. B-S-J-G (China) was the highest performing country in financial literacy with 33% of high performers, while 24% of students in Belgium and 22% of students in Canada were high performers. In Australia, 15% of students were high performers and in the United States, there were 10% of high performers. Eight countries (Peru, Brazil, Chile, Lithuania, Spain, the Slovak Republic, Italy and Poland) had fewer than 10% of students who were high performers, with only 1% of students in Peru being high performers.

### Low performers

Level 2 is considered the baseline level of financial literacy proficiency. Students who do not attain this level are considered to have limited skills and are not yet able to apply their knowledge to real-life situations involving financial issues and decisions. Students who do not achieve Level 2 are considered low performers.

Students proficient at Level 1 display basic financial literacy skills: they can identify common financial products and terms, and interpret information relating to basic financial concepts, such as recognising the purpose of an invoice. They can recognise the difference between needs and wants and they make simple decisions on everyday spending, such as recognising value by comparing prices per unit. Students at this level can also apply single and basic numerical operations, such as addition, subtraction or multiplication, in financial contexts that they are likely to have personally encountered.

On average, 22% of students across the 10 OECD countries were low performers, which was also the same proportion of low performers in the United States. In Australia, Italy and Poland, 20% of students were low performers. In the countries that achieved a significantly higher score than Australia, the proportion of low performers ranged from 9% in B-S-J-G (China) to 13% in Canada, while in some of the lowest performing countries (Peru and Brazil), approximately half of their students were low performers.

## Middle performers

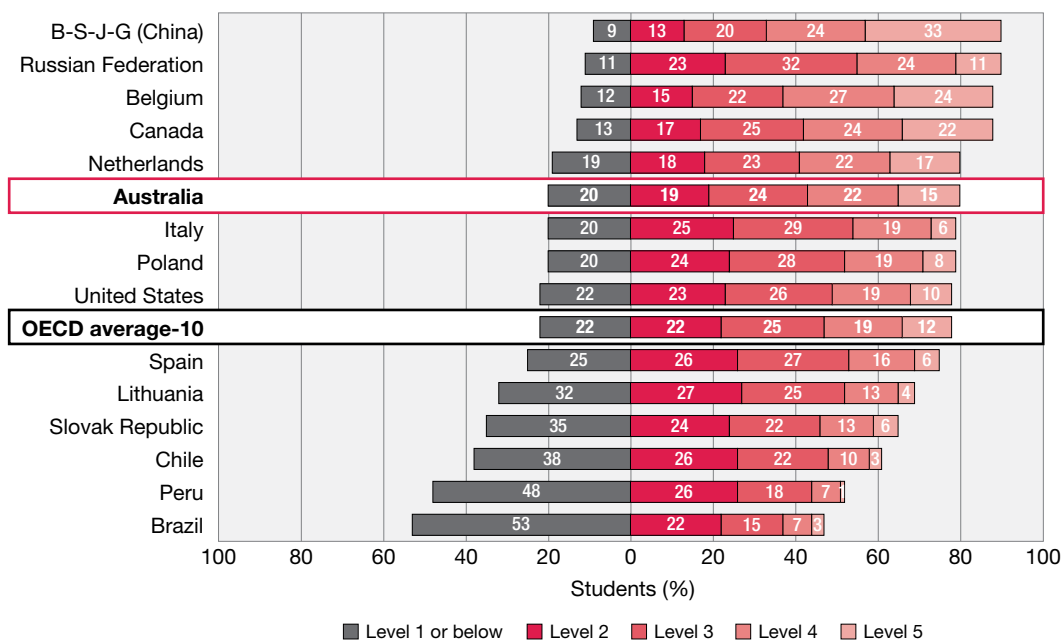
These are the students who were neither high nor low performers, and attained a proficiency of Level 2, 3 or 4.

Students proficient at Level 2 can recognise the value of a simple budget, and undertake a simple assessment of value-for-money, choosing between buying tomatoes by the kilogram or by the box, for example. They can also apply single, basic numerical operations to answer financial questions, and can show an understanding of the relationships between different financial elements, such as the amount of use and the costs incurred.

Students proficient at Level 3 can apply their knowledge to commonly used financial concepts, terms and products to situations that are relevant to them. They are beginning to consider the consequences of financial decisions, and they make simple financial plans in common contexts, such as starting to compare some of the financial benefits of borrowing money with different interest rates and repayments. They are able to make straightforward interpretations of a range of financial documents, such as an invoice and a pay slip, and apply a range of basic numerical operations, such as making budget calculations. Students at this level can also choose the numerical operations needed to solve routine problems in relatively common financial literacy contexts. Therefore, they show not only a capacity to use mathematical tools but also to choose the tools that best apply to the financial tasks at hand.

Students proficient at Level 4 can apply their knowledge of less-common financial concepts and terms to contexts that will be relevant to them as they move towards adulthood. They can interpret and evaluate a range of detailed financial documents and explain the functions of less-commonly used financial products. They can also make financial decisions taking into account longer-term consequences and can solve routine problems in perhaps unfamiliar financial contexts.

On average, two-thirds of students across the 10 OECD countries performed at these levels. This was also the same proportion of students in Canada, and similar to the proportion of students in Australia and Lithuania (65%), Belgium (64%) and the Netherlands (63%). Spain, Poland, Italy and the Russian Federation had the highest proportion of students who achieved a proficiency between Level 2 and 4, ranging from 70 to 79%, whereas in Brazil, Peru, B-S-J-G (China), Chile and the Slovak Republic, the proportion of students who achieved Level 2, 3 or 4 ranged from 44% to 59%.



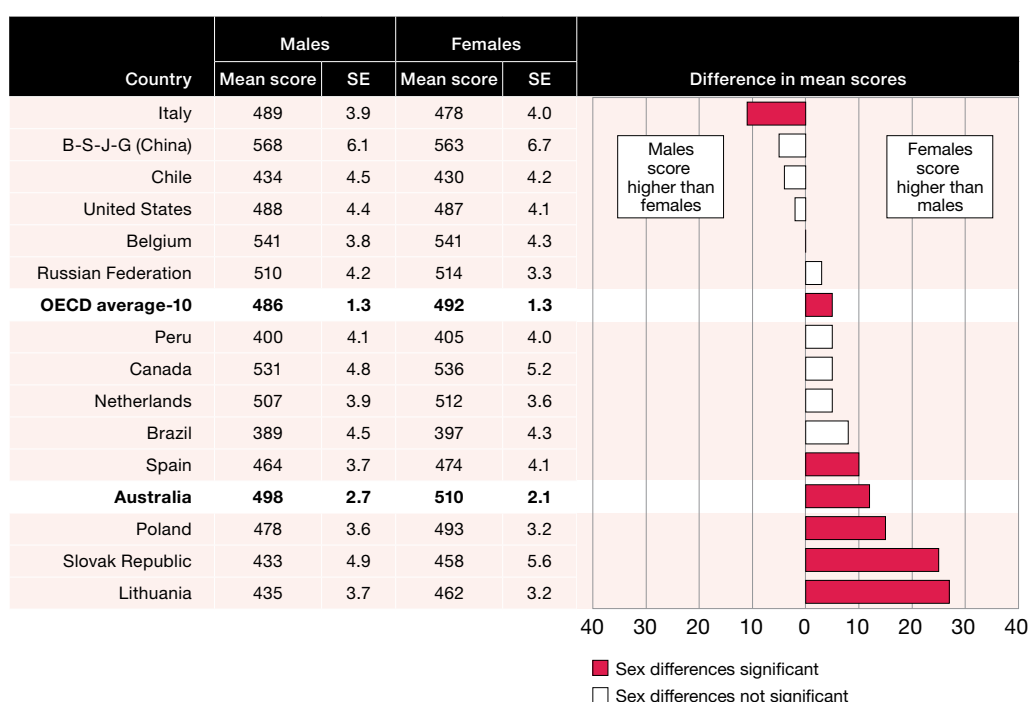
**FIGURE 3.2** Percentage of students across the financial literacy proficiency scale, by country

## Financial literacy results by sex

### Financial literacy performance in 2015 across countries by sex

Across the 10 OECD countries, the mean score for females was 492 points and for males was 486 points, a significant difference of 6 points. Females significantly outperformed males in 5 countries (Spain, Australia, Poland, the Slovak Republic and Lithuania), with the largest differences found in the Slovak Republic and Lithuania. In Australia, females scored 510 points on average, which was significantly higher than the mean score of 498 points for males. Males performed significantly higher than females in Italy, with males scoring on average 11 points higher than females.

Figure 3.3 shows the mean scores and standard errors for females and males on the financial literacy scale, graphs the difference by sex and indicates whether the difference was statistically significant.



**FIGURE 3.3** Mean scores and differences in students' performance on the financial literacy scale, by country and sex

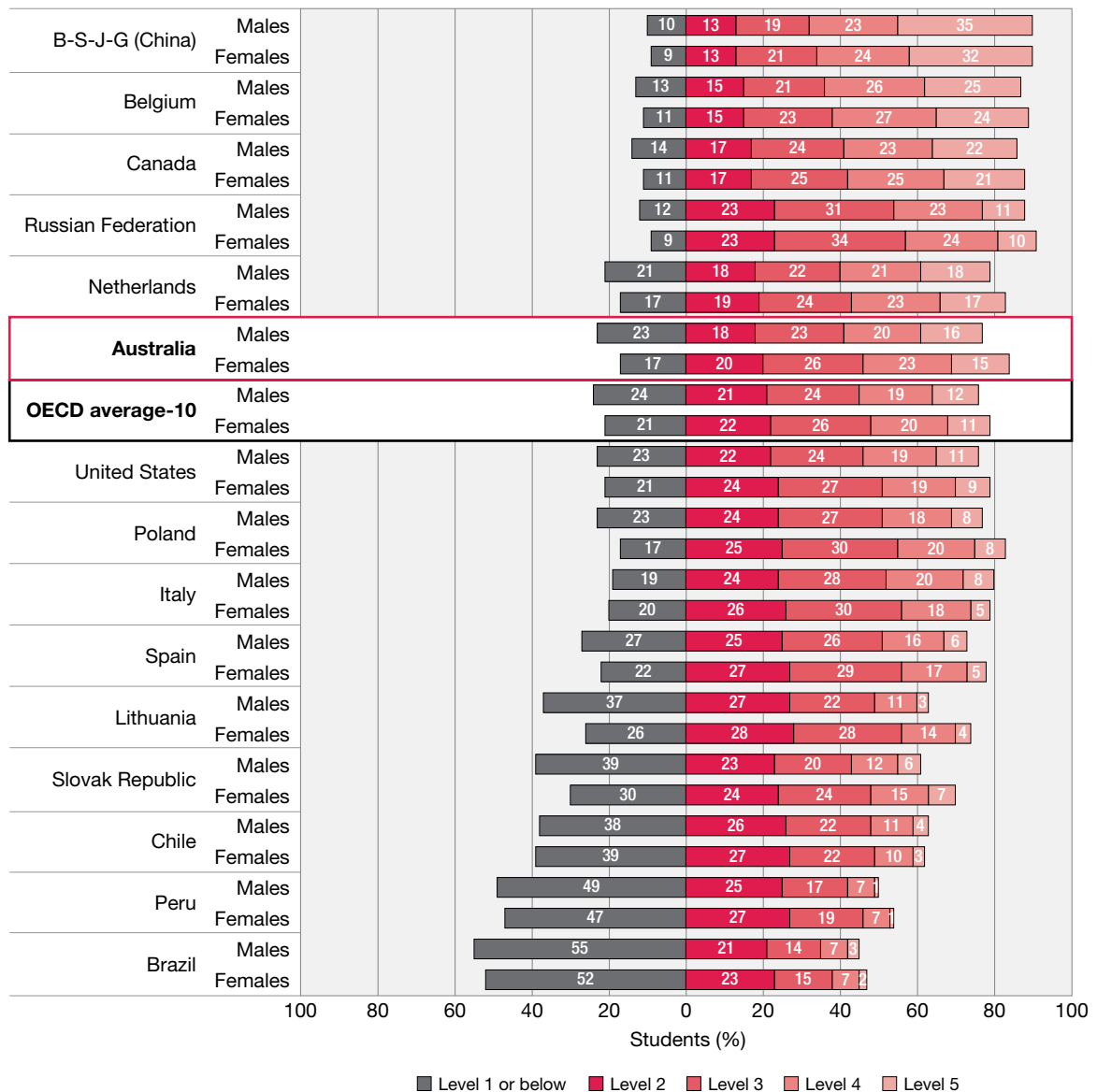
### Financial literacy proficiency in 2015 across countries by sex

Figure 3.4 shows the proportions of females and males for countries and the OECD average at each level of the financial literacy proficiency scale. The proportions of high-performing females and males were higher for Australia than for the OECD average. The results show that 15% of Australian females and 16% of Australian males were high performers compared to 11% of high-performing females and 12% of high-performing males across the OECD participating countries. The proportion of low-performing females was lower for Australia than for the OECD average, while the proportions of low-performing males for Australia and the OECD average were similar. The results show that 17% of Australian females and 23% of Australian males were low performers compared to 21% of low-performing females and 24% of low-performing males across the OECD participating countries.



In Italy, the higher average performance of males compared to females was reflected with a higher proportion of high-performing males (8%) than high-performing females (5%), while there were similar proportions of low-performing females and low-performing males.

In Poland, Spain, the Slovak Republic and Lithuania, where the mean performance for females was significantly higher than for males, the proportions of high-performing females and high-performing males were similar, while there were higher proportions of low-performing males than low-performing females.



Note: Countries are shown in descending order of mean financial literacy score.

FIGURE 3.4 Percentage of students across the financial literacy proficiency scale, by country and sex



## The relationship between financial literacy and the core assessments of mathematical literacy and reading literacy

A certain level of mathematical literacy and reading literacy is regarded as a prerequisite for financial literacy. For example, mathematically-related proficiency, such as number sense, skills in mental calculation and estimates are intrinsic to some aspects of financial literacy.

The association between financial literacy and the core assessment domains indicates that, in general, students who perform well in mathematics and/or reading also perform well in financial literacy. On average, across the 10 OECD countries, the correlation between mathematical literacy and reading literacy is 0.74. As might be expected, the correlations between financial literacy and mathematical literacy (0.80) and between financial literacy and reading literacy (0.75) were also strong. For Australian students, the correlation between financial literacy and mathematical literacy was very similar to the OECD average (0.79); however, it was stronger between financial literacy and reading literacy than on average across the OECD participating countries (0.80).

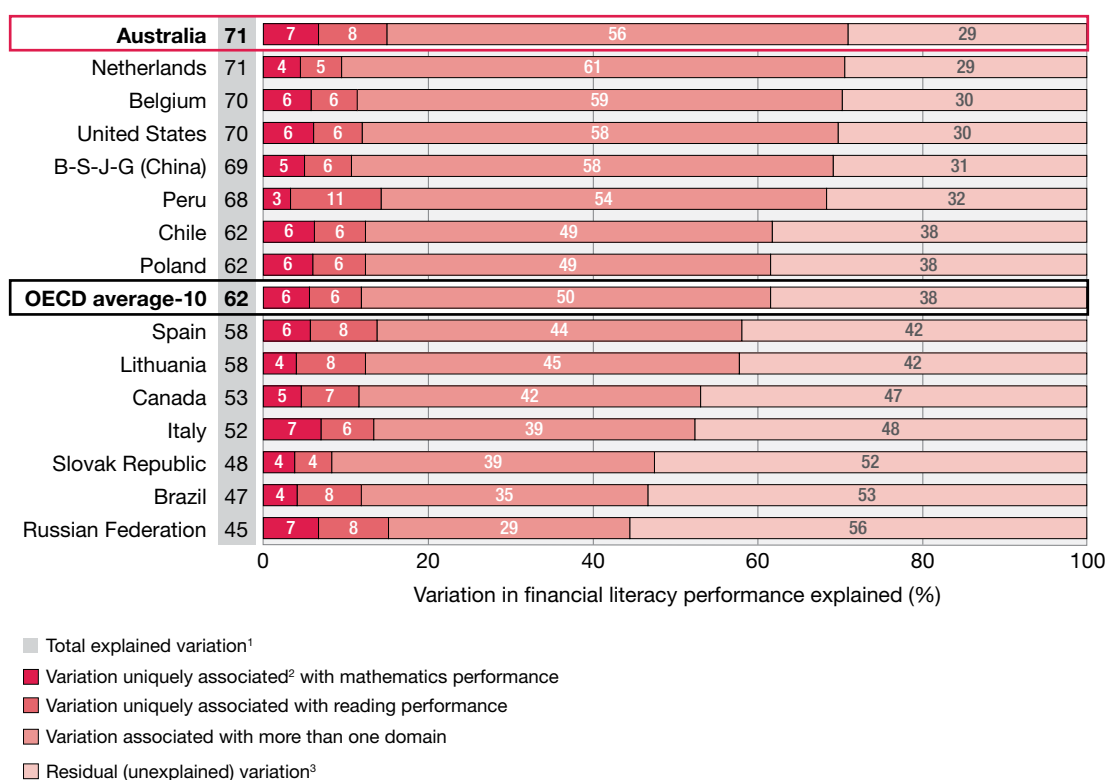
While the correlations are generally high among participating countries, there was also some variation across countries in the correlation between student performance in financial literacy and performance in mathematical literacy and reading literacy (two core assessments). In the Russian Federation, for example, the correlations between either mathematical literacy or reading literacy and financial literacy were only around 0.60, whereas in Belgium, B-S-J-G (China) and the United States, the correlations between financial literacy and the two core assessments were relatively strong (at 0.80). These differences stress that the knowledge and skills beyond mathematical literacy and reading literacy should be a strength in countries such as these to enable students to make informed financial decisions and plan their future. It underlines the importance of examining such relationships not only for countries but also for sub-populations, for similar reasons.

Another way of looking at the relationship between financial literacy and the two core assessments, is to examine to what extent the variation in financial literacy can be explained by performance in the two core assessments.

On average across the 10 OECD countries, around 38% of the financial literacy score reflected factors that were uniquely captured by the financial literacy assessment (the residual variation) and the remaining 62% of the financial literacy score reflected skills that were measured in the mathematical literacy and/or reading literacy assessments (Figure 3.5).

In Australia, 29% of the financial literacy score reflected skills that were directly associated with the financial literacy assessment. This was lower than on average across the 10 OECD countries. The remaining 71% of the Australian financial literacy score reflected skills that can be measured in the mathematical literacy and/or reading literacy assessments. Of this 71%, almost all of the variation was shared with mathematical literacy and reading literacy together (56% of the total variation), about 7% was uniquely shared between financial literacy and mathematical literacy, and about 8% was uniquely shared between financial literacy and reading literacy.

Figure 3.5 also shows how the association of financial literacy skills with those of the two core assessments varies among countries. In the Netherlands, Belgium, the United States and B-S-J-G (China), performance in the two core assessments explains around 70% of the variation in financial literacy performance. In these countries, the correlations between financial literacy and the two core assessments were also relatively strong. In the Slovak Republic, Brazil and the Russian Federation, where the correlations between financial literacy and the two core assessments were relatively weaker, performance in the two core assessments explains around 50% of the variation in financial literacy performance.



**Notes:** Countries are shown in descending order of the percentage of variation in financial literacy performance explained by performance in mathematical literacy and reading literacy.

- 1 Total explained variation is the R-squared coefficient from a regression of financial literacy performance on mathematical literacy and reading literacy performance.
- 2 Variation uniquely associated with mathematics (reading) is measured as the difference between the R-squared of the full regression (a regression of financial literacy on mathematics and reading performance) and the R-squared of a regression of financial literacy on reading (mathematics) only.
- 3 The residual variation is computed as: 100 - total explained variation.

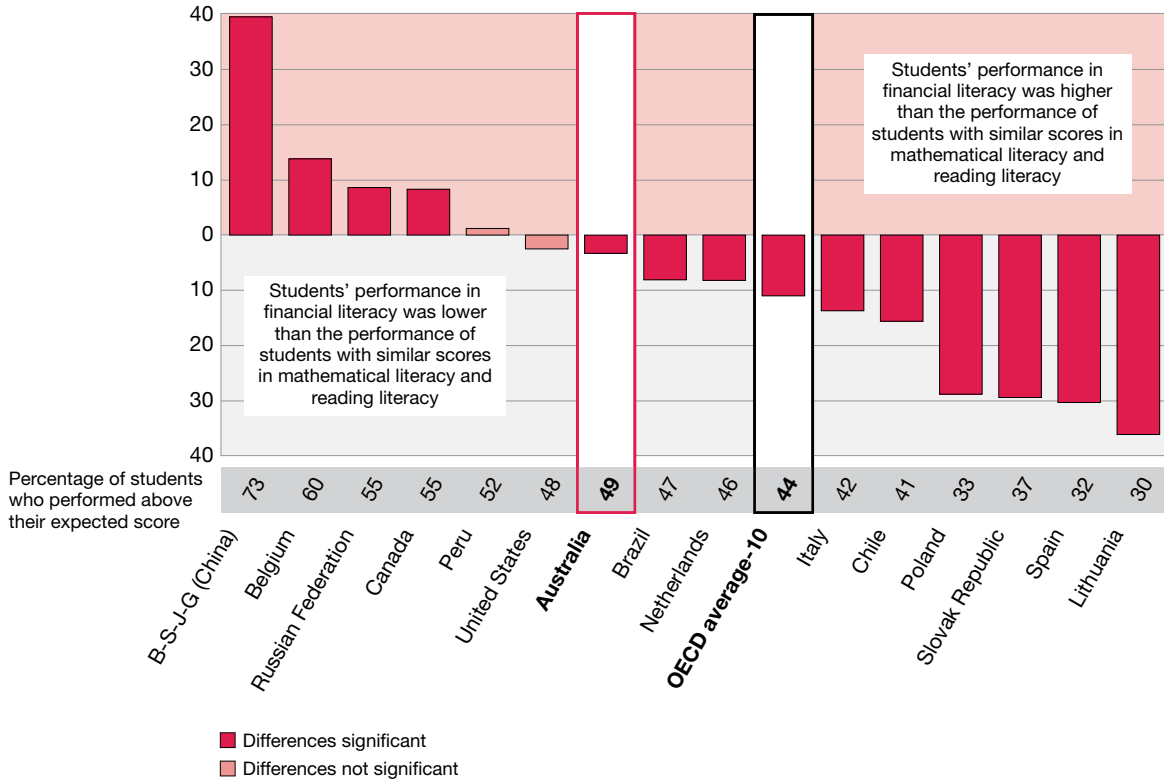
**FIGURE 3.5** Variation in financial literacy performance associated with mathematical literacy and reading literacy performance

As mentioned above, the positive correlations between financial, mathematical and reading literacy indicate that, generally, students who perform well in mathematical literacy and/or reading literacy will also perform well in financial literacy. However, there are wide variations in the financial literacy performance for any given level of performance in mathematical literacy and reading literacy. Figure 3.6 shows a ranking of countries in relative performance, where relative performance compares students' actual financial literacy performance to the performance that would be expected based on their performance in mathematical literacy and reading literacy.

In Australia, Brazil, the Netherlands, Italy, Chile, Poland, the Slovak Republic, Spain and Lithuania, students performed significantly lower in financial literacy than students in other countries with similar performance in mathematical literacy and reading literacy. The difference between students' scores in financial literacy and their expected performance, given their performance in the two core assessments ranged from 3 points in Australia to 36 points in Lithuania. In Australia, 49% of students performed better in financial literacy than expected, given their scores in the other two core assessments, while in the other countries, there were between 30% and 47% of students of students performed better in financial literacy than expected, given their scores in the other two core assessments.

In contrast, in B-S-J-G (China), Belgium, the Russian Federation and Canada, students performed significantly higher in financial literacy than students in other countries with similar performance in mathematical literacy and reading literacy. The difference between students' scores in financial literacy and their expected performance, given their performance in the two core assessments, was 39 points in B-S-J-G (China), 14 points in Belgium and 8 points for the Russian Federation and

Canada. In contrast, in B-S-J-G (China), Belgium, the Russian Federation and Canada, students performed significantly higher in financial literacy than students in other countries with similar performance in mathematical literacy and reading literacy. In B-S-J-G (China), almost three-quarters of the students performed better in financial literacy than expected, given their scores in the other two core assessments, and in the other three countries, more than half of the students performed better in financial literacy than expected, given their scores in the other two core assessments.



**Note:** Countries are shown in descending order of the score-point difference between actual and expected performance.

**FIGURE 3.6** Variation in financial literacy performance associated with mathematical literacy and reading literacy performance

## Financial literacy performance over time<sup>4</sup>

### Financial literacy performance across countries

Eight countries (7 OECD: Australia, the Flemish Community of Belgium, Italy, Poland, the Slovak Republic, Spain, and the United States; and 1 partner: the Russian Federation) participated in the financial literacy assessment in both PISA 2012 and 2015, allowing for changes in performance to be reported over time.

Table 3.1 shows the mean scores on financial literacy performance for PISA 2012 and 2015, along with the differences in mean scores in that period. The performance of students across the OECD<sup>5</sup> did not change significantly between 2012 and 2015.

Italy and the Russian Federation showed a significant improvement in their financial literacy performance, with an increase of 17 points and 26 points, respectively. In contrast, Poland, the Slovak Republic, Australia and Spain showed a significant decline in their financial literacy performance. Between 2012 and 2015, Poland and the Slovak Republic's mean score declined by 25 points and Spain's score declined by 16 points. Australia's mean score declined by 22 points, from 526 points in 2012 to 504 points in 2015.

**TABLE 3.1** Mean financial literacy performance for 2012 and 2015, and difference between 2012 and 2015 in mean financial literacy performance, by country

Country	2012		2015		Mean score difference between 2012 and 2015 (2015 - 2012)		
	Mean score	SE	Mean score	SE	Score dif.		SE
<b>Australia</b>	<b>526</b>	<b>2.1</b>	<b>504</b>	<b>1.9</b>	<b>-22</b>	<b>▼</b>	<b>6.0</b>
Belgium	541	3.5	541	3.0	0		7.0
Italy	466	2.1	483	2.8	17	▲	6.4
Poland	510	3.7	485	3.0	-25	▼	7.1
Russian Federation	486	3.7	512	3.3	26	▲	7.3
Slovak Republic	470	4.9	445	4.5	-25	▼	8.5
Spain	484	3.2	469	3.2	-16	▼	7.0
United States	492	4.9	487	3.8	-4		8.2
<b>OECD average</b>	<b>499</b>	<b>1.4</b>	<b>488</b>	<b>1.2</b>	<b>-11</b>		<b>5.6</b>

**Notes:** The symbols indicate whether the change in performance was significantly higher (▲) or significantly lower (▼). Only countries that participated in PISA 2012 and 2015 were included. The OECD average has been computed using only those countries which participated in both PISA 2012 and 2015.

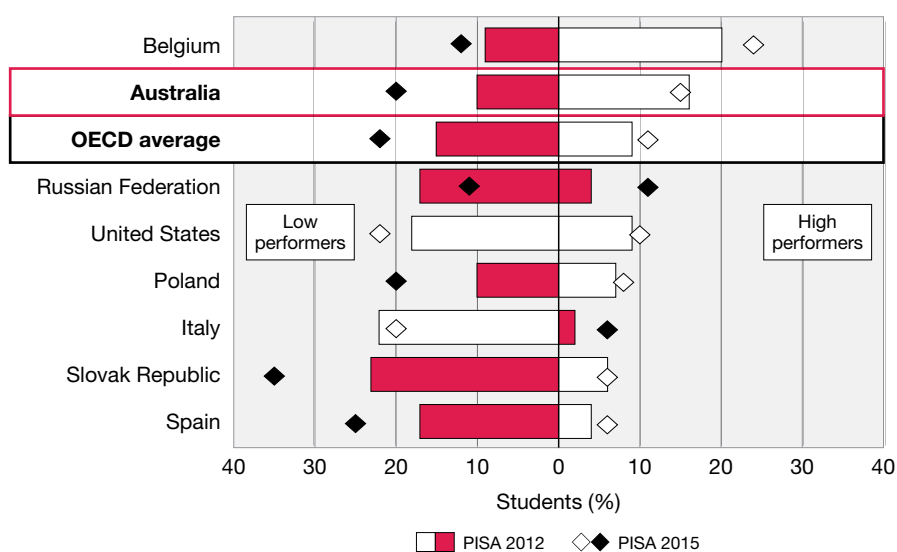
<sup>4</sup> As a number of changes have occurred in PISA 2015, comparisons between results for PISA 2012 and 2015 should be interpreted with due caution.

<sup>5</sup> 'across the OECD' refers to the 8 OECD countries and economies which participated in both the PISA 2012 and 2015 assessments.

## Financial literacy proficiency across countries

Figure 3.7 shows the proportion of low and high performers for countries that participated in PISA 2012 and 2015. Across the 8 OECD countries, there was no significant change in the proportion of high performers, but a 6% increase in the proportion of low performers, which was significant between 2012 and 2015. The proportion of high performers in the Russian Federation and Italy increased significantly by 6% and 4%, respectively, between 2012 and 2015. The proportion of low performers in 5 countries (Belgium, Spain, Australia, Poland and the Slovak Republic) increased significantly between 2012 and 2015. This increase ranged from 3% in Belgium to 12% in the Slovak Republic. In Australia, the portion of low performers increased by 9%.

In the Russian Federation, there was a significant decrease in the proportion of low performers (by 6%) and there was a significant increase in the proportion of high performers (by 6%), that is, there were fewer low performers and more high performers in 2015 than in 2012.



Notes: Only countries that participated in both PISA 2012 and 2015 are shown. Countries are shown in descending order of the percentage of high performers in 2015. A coloured bar and a black diamond indicate that the difference in the proportion of students between 2012 and 2015 was significant.

**FIGURE 3.7** Percentage of low and high performers in financial literacy for 2012 and 2015, by country

## Financial literacy performance across countries by sex

Table 3.2 shows the mean financial literacy scores for males and females for PISA 2012 and 2015, along with the mean differences between 2012 and 2015. Across the participating OECD countries in both assessments, the mean performance in financial literacy for males significantly decreased between 2012 and 2015, by 16 points on average, while the mean performance in financial literacy for females has not changed significantly during this period. The performance of males and females in financial literacy declined significantly between PISA 2012 and 2015 in Australia and Poland. In Australia, the mean performance in financial literacy decreased by 27 points for males and 18 points for females.

The performance of males and females in financial literacy improved significantly between PISA 2012 and 2015 in Italy and the Russian Federation. The performance of males improved in Italy by 19 points, and in the Russian Federation by 23 points, while the performance of females improved by 16 points and 28 points, respectively.

In Spain and the Slovak Republic, the performance for males in financial literacy declined significantly (by 23 points and 36 points, respectively).

**TABLE 3.2** Mean financial literacy performance for 2012 and 2015, and differences between 2012 and 2015, by country and sex

Country	Male						Females							
	2012		2015		2012–2015		2012		2015		2012–2015			
	Mean score	SE	Mean score	SE	Score diff.	SE	Mean score	SE	Mean score	SE	Score diff.	SE		
Australia	524	3.3	498	2.7	-27	▼	6.8	528	2.4	510	2.1	-18	▼	6.2
Belgium	547	4.7	541	3.8	-6		8.1	536	4.8	541	4.3	5		8.4
Italy	470	3.1	489	3.9	19	▲	7.3	462	2.2	478	4.0	16	▲	7.0
Poland	512	4.7	478	3.6	-34	▼	8.0	508	4.2	493	3.2	-15	▼	7.5
Russian Federation	487	4.5	510	4.2	23	▲	8.1	486	4.2	514	3.3	28	▲	7.6
Slovak Republic	469	5.8	433	4.9	-36	▼	9.3	472	6.2	458	5.6	-14		9.9
Spain	487	4.3	464	3.7	-23	▼	7.8	481	4.3	474	4.1	-8		8.0
United States	492	6.3	488	4.4	-4		9.3	491	6.0	487	4.1	-5		9.0
<b>OECD average</b>	<b>500</b>	<b>1.8</b>	<b>484</b>	<b>1.5</b>	<b>-16</b>	<b>▼</b>	<b>5.8</b>	<b>497</b>	<b>1.7</b>	<b>491</b>	<b>1.5</b>	<b>-6</b>		<b>5.8</b>

**Notes:** The symbols indicate whether the change in performance was significantly higher (▲) or significantly lower (▼). Only countries that participated in PISA 2012 and 2015 have been included. The OECD average has been computed using only those countries which participated in both 2012 and 2015.

## Financial literacy proficiency across countries by sex

Table 3.3 shows the percentages of low-performing and high-performing males and females for 2012 and 2015, and the percentage differences over this 3-year period. Across the participating OECD countries in both assessments, the proportion of low-performing males increased significantly by 8% and the proportion of low-performing females increased significantly by 5%.

Between 2012 and 2015, the proportion of low-performing males increased significantly in Australia, Poland, the Slovak Republic and Spain (ranging from 11% in Australia and Spain to 14% in the Slovak Republic), and the proportion of low-performing females increased significantly in Australia, Poland, and the Slovak Republic (ranging from 8% in Australia and Poland to 9% in the Slovak Republic). In the Russian Federation, the proportion of low-performing females decreased significantly (by 7%) between 2012 and 2015.

Between 2012 and 2015, the proportions of high-performing males and females increased significantly in Italy (by 5% for high-performing males and 4% for high-performing females) and in the Russian Federation (by 7% for high-performing males and 6% for high-performing females).

**TABLE 3.3** Percentage of low performers and high performers across the financial literacy proficiency scale for 2012 and 2015, and differences between 2012 and 2015, by country and sex

Country	Males													
	Low performers						High performers							
	2012		2015		2012–2015		2012		2015		2012–2015			
	%	SE	%	SE	% diff.	SE	%	SE	%	SE	% diff.	SE		
<b>Australia</b>	<b>12</b>	<b>1.0</b>	<b>23</b>	<b>0.8</b>	<b>11</b>	<b>▲</b>	<b>1.7</b>	<b>18</b>	<b>1.3</b>	<b>16</b>	<b>0.7</b>	<b>-2</b>	<b>2.4</b>	
Belgium	9	1.5	13	1.3	4		2.2	22	2.2	25	1.3	3	4.1	
Italy	22	1.4	19	1.4	-3		3.0	3	0.4	8	0.8	5	▲	0.9
Poland	11	1.8	23	1.4	13	▲	2.7	10	1.8	8	0.8	-2	2.1	
Russian Federation	17	1.9	12	1.1	-5		2.6	5	1.3	11	1.1	7	▲	1.8
Slovak Republic	25	2.4	39	1.7	14	▲	3.4	7	1.5	6	0.7	-1	1.7	
Spain	17	1.8	27	1.4	11	▲	3.3	4	1.3	6	0.6	1	1.5	
United States	19	1.8	23	1.5	4		3.0	10	1.7	11	0.9	1	2.2	
<b>OECD average</b>	<b>16</b>	<b>0.7</b>	<b>24</b>	<b>0.5</b>	<b>8</b>	<b>▲</b>	<b>1.8</b>	<b>10</b>	<b>0.6</b>	<b>11</b>	<b>0.3</b>	<b>1</b>	<b>1.2</b>	

Country	Females													
	Low performers						High performers							
	2012		2015		2012–2015		2012		2015		2012–2015			
	%	SE	%	SE	% diff.	SE	%	SE	%	SE	% diff.	SE		
<b>Australia</b>	<b>8</b>	<b>0.8</b>	<b>17</b>	<b>0.7</b>	<b>8</b>	<b>▲</b>	<b>1.5</b>	<b>14</b>	<b>1.0</b>	<b>15</b>	<b>0.7</b>	<b>0</b>	<b>2.6</b>	
Belgium	9	1.2	11	1.1	3		1.8	18	1.8	24	1.5	6	5.0	
Italy	21	1.0	20	1.5	-1		2.6	1	0.3	5	0.8	4	▲	1.0
Poland	9	1.6	17	1.1	8	▲	2.8	5	1.2	8	1.0	3	1.7	
Russian Federation	16	1.8	9	0.9	-7	▼	2.3	4	1.1	10	1.1	6	▲	2.0
Slovak Republic	20	2.6	30	1.9	9	▲	4.3	5	1.0	7	0.7	2	1.4	
Spain	17	1.7	22	1.5	6		3.4	3	1.2	5	0.8	2	1.5	
United States	17	2.1	21	1.5	4		3.0	9	1.5	9	0.9	0	2.1	
<b>OECD average</b>	<b>14</b>	<b>0.6</b>	<b>20</b>	<b>0.5</b>	<b>5</b>	<b>▲</b>	<b>1.9</b>	<b>8</b>	<b>0.5</b>	<b>10</b>	<b>0.4</b>	<b>3</b>	<b>1.4</b>	

**Notes:** The symbols indicate whether the change was performance is significantly higher (▲) or significantly lower (▼). Only countries that participated in PISA 2012 and 2015 have been included. The OECD average has been computed using only those countries who participated in both 2012 and 2015. Due to rounding, some percentages in the table may not exactly add to the total reported.



# Financial literacy results for students within Australia

## Key findings<sup>1</sup>

- The mean financial literacy score for Indigenous students was 411 points, significantly lower than the OECD average (489 points) and also significantly lower than that of non-Indigenous Australian students (508 points).
- The performance gap between Indigenous and non-Indigenous students was 97 points. After adjusting for socioeconomic background, and mathematics and reading performance, the difference between the two groups was just 19 points. This finding indicates that there is some need for financial literacy programs specifically aimed at the needs of Indigenous students.
- Almost half (48%) of the Indigenous students and 18% of non-Indigenous students did not reach Level 2, the international baseline proficiency level.
- The scores for Indigenous and non-Indigenous students declined significantly since PISA 2012, and the proportion of low performers in each group almost doubled.
- Students at metropolitan schools scored significantly higher than students from provincial schools or remote schools. There was no difference between the mean scores of students who attended provincial schools or remote schools.
- The difference in mean scores for students from metropolitan schools and non-metropolitan schools was 38 points, however this reduced to a non-significant difference after accounting for differences in socioeconomic background, as well as performance in reading literacy and mathematical literacy.
- The proportion of low performers almost doubled in all geographic areas between PISA 2012 and 2015. The proportion of low performers was 17% in metropolitan areas, 26% in provincial areas and 34% in remote areas. In contrast the proportion of high performers remained about the same for metropolitan schools (17%) and provincial schools (10%) but increased for remote schools (from 2% to 6%).
- The difference between socioeconomically advantaged and disadvantaged students was 107 points, which was higher than the OECD average difference of 89 points.

<sup>1</sup> As a number of changes have occurred in PISA 2015, comparisons between results for PISA 2012 and 2015 should be interpreted with due caution.

- While much of the difference associated with socioeconomic background could be accounted for by performance in mathematical literacy and reading literacy, there was still a significant difference between the mean scores of advantaged students and disadvantaged indicating a clear need for financial literacy programs aimed at students from socioeconomically disadvantaged backgrounds.
- Twelve per cent of the variance in student achievement in Australia is explained by socioeconomic background, which is higher than the OECD average of 10%. On average over the OECD, one unit change in the ESCS index resulted in an increase of 38 points; the relationship was stronger in Australia and resulted in an increase of 51 points.
- First-generation students scored significantly higher than either Australian-born or foreign-born students; however, all of these groups scored higher than the OECD average.
- When comparing Australian-born and first-generation students, most of the difference could be accounted for by students' performance in mathematics and reading. The difference between first-generation and foreign-born students was explained primarily by performance in reading.
- Scores for Australian-born and first-generation students declined significantly from the PISA 2012 assessment.
- The proportion of low performers in each of the immigrant background group doubled between PISA 2012 and 2015, increasing to 19% of Australian-born students, 17% of first-generation students and 23% of foreign-born students. Nineteen per cent of first-generation students, compared to 14% of Australian-born and 16% of foreign born students were high performers.
- Almost half of the difference in scores between English-speaking students and those with a language background other than English was accounted for by socioeconomic background. English-speaking students have a significantly higher score on the ESCS variable than students from other language backgrounds. After accounting for reading literacy performance, the difference in scores between the two groups was not significant.
- The differences in scores in the PISA 2015 financial literacy assessment were due to a much larger decline in scores among students with a language background other than English compared to English-speaking students.

This chapter provides an analysis of Australian students' financial literacy performance in the context of student background characteristics: Indigenous background, geographic location, immigrant and language background, and socioeconomic background. Each section also examines the differences between sub-groups and the relationship between these differences, socioeconomic background and achievement on the PISA mathematics and reading assessments.

## Financial literacy results by Indigenous background

### Financial literacy performance in 2015

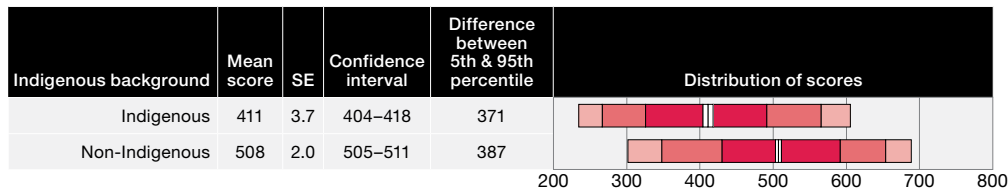
The mean financial literacy scores for Australian Indigenous and non-Indigenous students, together with the standard error, confidence intervals around the mean, the difference between the 5th and 95th percentiles and distribution of scores are shown in Figure 4.1.

The mean score for Indigenous students was 411 points, which was significantly lower than both the OECD average of 489 points and the mean score for non-Indigenous students of 508 points, and only just in the range of Level 2 (the OECD baseline proficiency level). The average score for non-Indigenous students placed them at around the middle of proficiency Level 3.

Students proficient at Level 2 on the financial literacy scale are only starting to apply their knowledge to make financial decisions in contexts that are immediately relevant to themselves. At proficiency Level 3, students have these skills, and they are beginning to consider the consequences of financial decisions and begin making simple financial plans in familiar contexts.

The mean difference of 97 points represents about one and one-third proficiency levels. This gap is larger than the gap between Indigenous and non-Indigenous students on either scientific literacy (76 points), mathematical literacy (70 points) or reading literacy (71 points).

The spread of scores was slightly smaller for Indigenous students (371 points) compared to non-Indigenous students 387 points.



**FIGURE 4.1** Mean scores and distribution of students' performance on the financial literacy scale, by Indigenous background

## Explaining the differences

On the face of it, the difference of 97 points could suggest that extra attention needs to be paid to the financial literacy needs of Indigenous students. However, Indigenous students' capacity to achieve competency in financial literacy is also likely to be related to their skills in the core domains of mathematical literacy and reading literacy, and perhaps also to their average socioeconomic background. To examine this, analysis was carried out to find the difference in scores between the two groups of students holding constant each of the other potential influences. The following section reports the results of this analysis for Indigenous and non-Indigenous students, while subsequent sections of this chapter report the analyses for each of the different student background characteristics.

After taking into account students' socioeconomic background<sup>2</sup>, the score difference between non-Indigenous and Indigenous students remained significant, at 70 points. After accounting for socioeconomic background and also performance in both mathematical literacy and reading literacy, the difference declined to 19 points (Figure 4.1). This is still a significant difference, but shows that most of the difference in scores was due to the lower socioeconomic level of Indigenous students and their weaker performance in mathematical literacy and reading literacy. However, there is still an underlying difference in achievement in financial literacy that indicates that extra attention could be directed towards programs for Indigenous students.

**TABLE 4.1** Differences in financial literacy performance between Indigenous and non-Indigenous students (Indigenous – non-Indigenous)

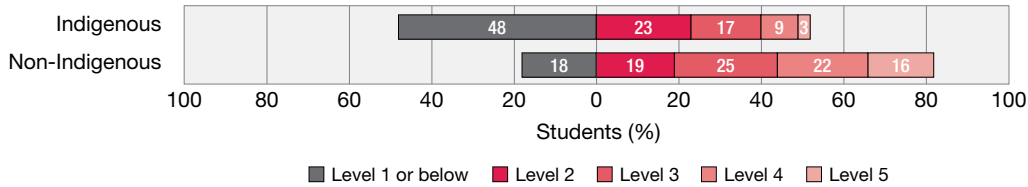
Before accounting for performance in other subjects and socioeconomic background		After accounting for socioeconomic background		After accounting for performance in mathematics		After accounting for performance in reading		After accounting for performance in mathematics and reading and socioeconomic background	
Score diff.	SE	Score diff.	SE	Score diff.	SE	Score diff.	SE	Score diff.	SE
<b>-97</b>	4.2	<b>-70</b>	3.7	<b>-27</b>	3.5	<b>-31</b>	3.1	<b>-19</b>	2.9

**Note:** significant differences are shown in bold.

<sup>2</sup> Socioeconomic background is based on student's responses to a number of questions about their family and home background. See the Reader's Guide for further details.

## Financial literacy proficiency levels in 2015

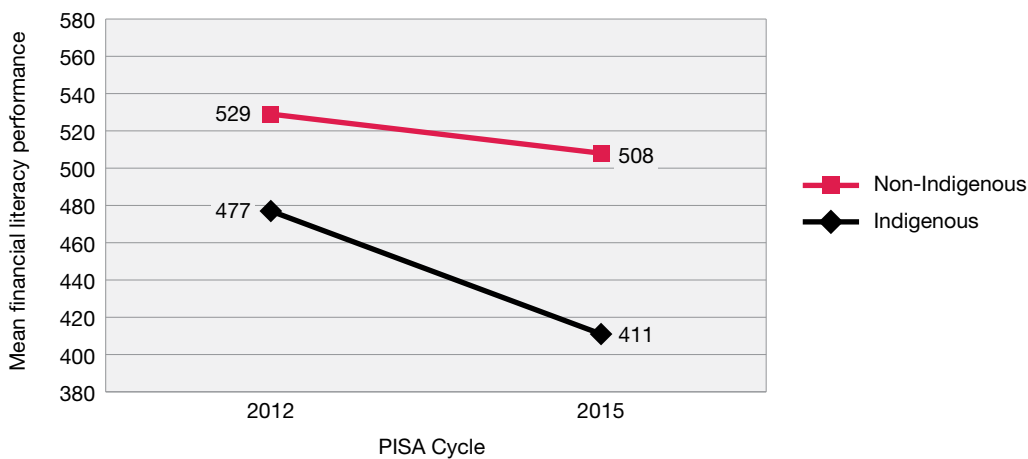
Figure 4.2 shows the achievement at the five proficiency levels for both Indigenous and non-Indigenous students. As would be expected, given their low average score, almost half (48%) of the Indigenous students assessed were operating at proficiency Level 1 or below (low performers), while a few (3%) were achieving at the highest level (high performers). In comparison, 18% of non-Indigenous students were low performers, and a slightly smaller proportion (16%) were high performers.



**FIGURE 4.2** Percentage of students across the financial literacy proficiency scale, by Indigenous background

## Financial literacy performance over time

As can be seen in Figure 4.3, there was a significant negative trend in achievement on the financial literacy assessment for both Indigenous and non-Indigenous students. For Indigenous students the decline was almost one full proficiency level, 66 points, between 2012 and 2015. For non-Indigenous students, the decline was 21 points, a little more than one-quarter of a proficiency level.



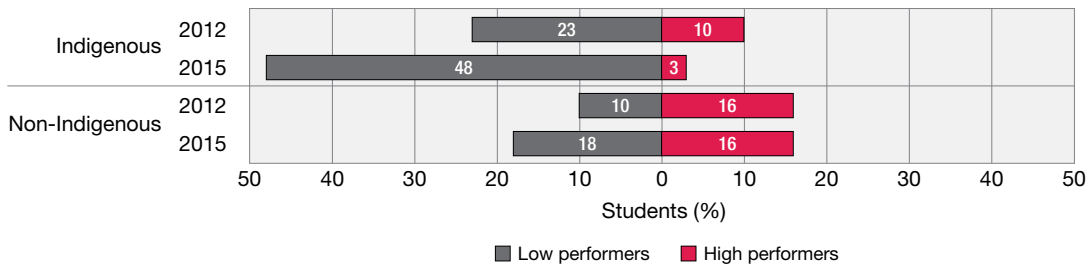
**Note:** Coloured symbols and a continuous line indicate that the difference in mean performance between PISA 2012 and 2015 is significant.

**FIGURE 4.3** Mean financial literacy performance and differences between PISA 2012 and 2015, by Indigenous background

## Financial literacy proficiency over time

In 2012, 23% of Indigenous students were found to be low performers in financial literacy, that is, proficient at Level 1 or below. In 2015, this had more than doubled to 48% of the Indigenous students sampled (Figure 4.4). The proportion of low performing non-Indigenous students also almost doubled – from 10% to 18%.

The proportion of high-performing Indigenous students was substantially lower in 2015 than 2012, declining from 10% to just 3%.



**FIGURE 4.4** Percentage of low performers and high performers on the financial literacy proficiency scale for PISA 2012 and 2015, by Indigenous background

## Financial literacy results by geographic location of school

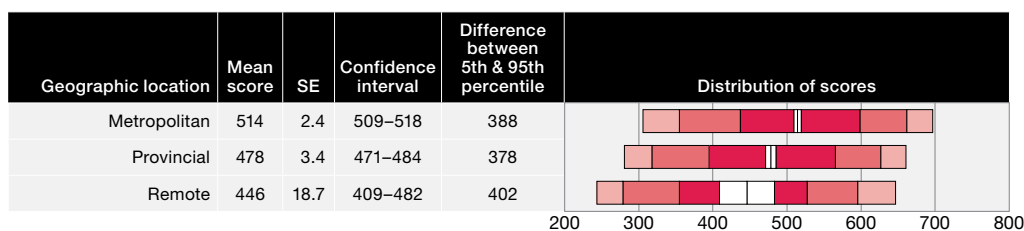
Using the MCEETYA Schools Geographic Location Classification (Jones, 2004), schools were categorised by their geographic location using three broad categories – metropolitan, provincial or remote.

### Financial literacy performance in 2015

Figure 4.5 shows students attending schools in metropolitan areas achieved a mean score of 514 points, significantly higher than the OECD average and about the middle of proficiency Level 3. The average score of 478 points for students in provincial schools places them at the bottom of proficiency Level 3, and the mean score of 446 points for students in remote schools places them at about the middle point of the baseline - proficiency Level 2.

The mean scores for students from metropolitan schools were significantly higher than those of students in either provincial or remote areas (Figure 4.5). The difference between students in metropolitan schools and provincial schools was 36 points – about one year of schooling – and 68 points (or two years of schooling) between those in metropolitan schools and remote schools. The difference between provincial schools and remote schools was not statistically significant.

There were significant differences between all three groups of schools and the OECD average. Students at metropolitan schools scored 25 points higher, and students at provincial schools and remote schools scored respectively 11 and 43 points lower than the OECD average.



**FIGURE 4.5** Mean scores and distribution of students' performance on the financial literacy scale, by geographic location

## Explaining the differences

The OECD argues that socioeconomic status and opportunities to acquire financial skills are also related to the location of schools, which gives an approximate indication of where students live (OECD, 2017). In larger communities such as cities, students are more likely to be exposed to financial products and services than are students in smaller communities. This increased exposure means that students would have more opportunities to look for particular financial products, such as selecting a bank account or seeking out a mobile phone plan.

To examine the influence of socioeconomic background on students in different geographic locations within Australia, with only a small proportion of students living in remote areas, students outside metropolitan areas were grouped together. Table 4.2 shows that, after accounting for socioeconomic background, students who attended metropolitan schools still significantly outperformed students outside metropolitan areas. After accounting for performance in mathematical literacy, the difference was still significant but much smaller, with similar results after accounting for reading literacy performance. Together, performance in these two core domains account for much of the variation in financial literacy performance. After adding socioeconomic background to the analysis, as well as performance in mathematical literacy and reading literacy, the difference between students in metropolitan and non-metropolitan schools was not significant.

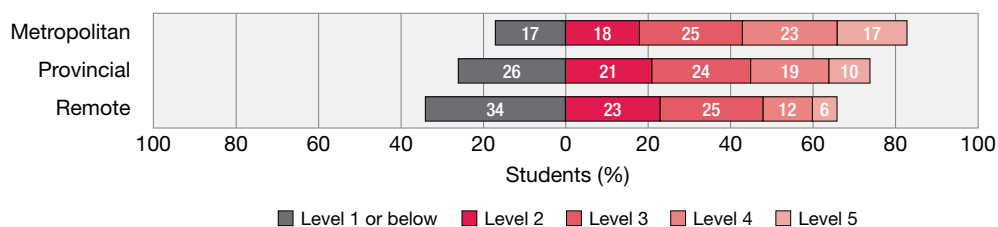
**TABLE 4.2** Differences in financial literacy performance, for students in metropolitan and non-metropolitan schools

Before accounting for performance in other subjects and socioeconomic background		After accounting for socioeconomic background		After accounting for performance in mathematics		After accounting for performance in reading		After accounting for performance in mathematics and reading and socioeconomic background	
Score diff.	SE	Score diff.	SE	Score diff.	SE	Score diff.	SE	Score diff.	SE
<b>-38</b>	4.4	<b>-23</b>	4.0	<b>-9</b>	2.7	<b>-8</b>	3.0	3	2.6

**Note:** significant differences are shown in bold.

## Financial literacy proficiency in 2015

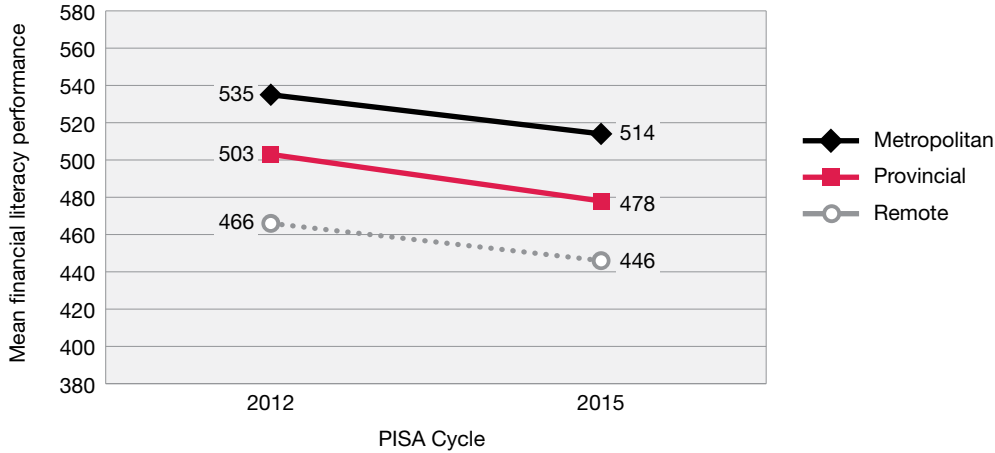
Seventeen per cent of students in metropolitan schools were high performers, compared to 10% of those in provincial schools and 6% of those in remote schools (Figure 4.6). At the other end of the scale, 17% of students in metropolitan schools did not achieve the baseline of proficiency Level 2, which categorised them as low performers. However, the proportions of low performers in schools outside metropolitan areas were substantially greater – 26% of students at provincial schools and 34% of students who attended remote schools failed to achieve this minimum level of financial literacy.



**FIGURE 4.6** Percentage of students across the financial literacy proficiency scale, by geographic location

## Financial literacy performance over time

Figure 4.7 presents the mean financial literacy scores for students in different geographic locations from PISA 2012 and 2015. There were significant declines in the scores of students in metropolitan schools (by 21 points) and in provincial schools (by 25 points). As the number of students in remote schools was quite low, the standard errors were high and so even though the decline in scores was 20 score points, it was not statistically significant.

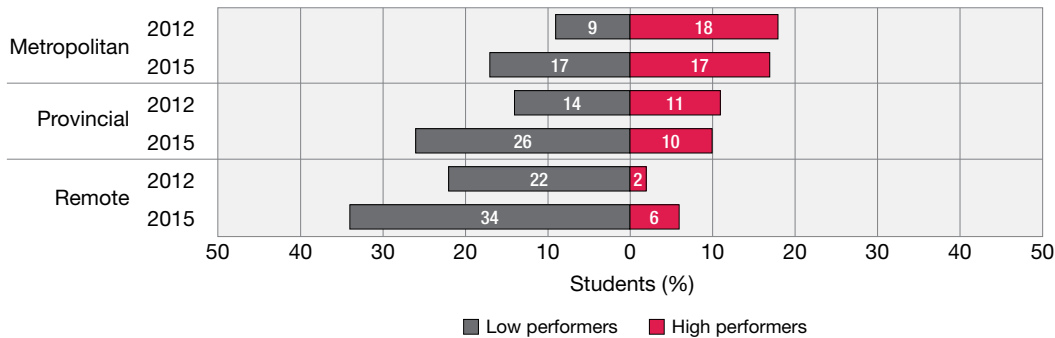


**Note:** Coloured symbols and a continuous line indicate that the difference in mean performance between PISA 2012 and 2015 is significant.

**FIGURE 4.7** Mean financial literacy performance and differences between PISA 2012 and 2015, by geographic location

## Financial literacy proficiency over time

Interestingly, the proportion of high performers has changed little between PISA 2012 and 2015 in either metropolitan schools or provincial schools, and has actually increased from 2% to 6% in remote schools (Figure 4.8). At the same time though, the proportion of low performers in all geographic locations has increased substantially – more so in provincial schools (from 14% in 2012 to 26% in 2015) and in remote schools (from 22% to 34%).



**FIGURE 4.8** Percentage of low performers and high performers on the financial literacy proficiency scale for PISA 2012 and 2015, by geographic location

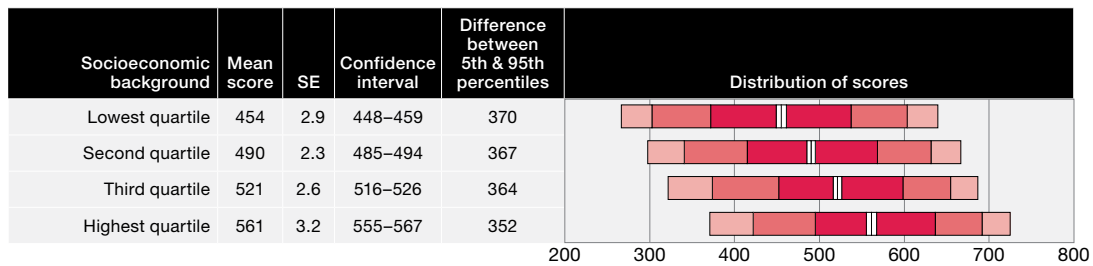


## Financial literacy results by socioeconomic background

The mean scores for financial literacy performance at each quartile of socioeconomic background (ESCS) are shown in Figure 4.9 and illustrate that, on average, students from higher socioeconomic backgrounds (advantaged students) perform at a higher level than students from lower socioeconomic backgrounds (disadvantaged students).

### Financial literacy performance in 2015

Students in the highest socioeconomic quartile achieved an average score of 561 points, placing them at proficiency Level 4. This was 107 points higher than that of students in the lowest socioeconomic quartile, and represents a difference of more than one proficiency level and three years of schooling. This difference in average financial literacy scores was similar to that found in all three of the core PISA domains, and was higher than the OECD average of 89 points.

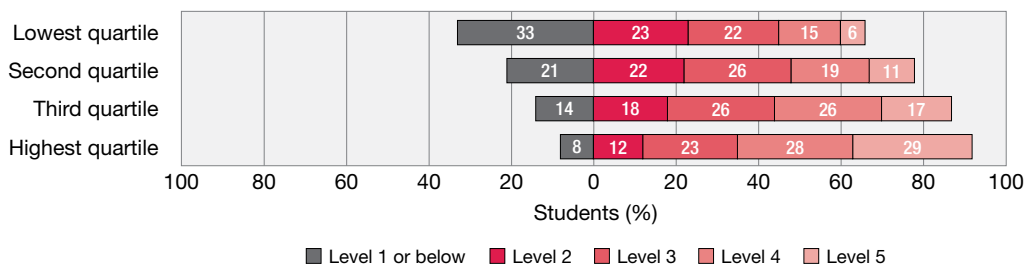


**FIGURE 4.9** Mean scores and distribution of students’ performance on the financial literacy scale, by socioeconomic background

### Financial literacy proficiency in 2015

The proportion of students in each quartile of socioeconomic background at each of the proficiency levels is shown in Figure 4.10. The proportion of high performers ranges from a substantial 29% of students in the highest quartile of socioeconomic background to just 6% of those in the lowest level of socioeconomic background.

At the same time, just 8% of advantaged students were low performers, compared to 33% of disadvantaged students



**FIGURE 4.10** Percentage of students across the financial literacy proficiency scale, by socioeconomic background

## Explaining the differences

It is likely that students from socioeconomically advantaged backgrounds would be exposed to a wider range of financial products and services than students from socioeconomically disadvantaged backgrounds, and indeed that the conversations that they have with their parents about financial matters would be quite different. For students from an advantaged background, this exposure might be reflected in a greater understanding of financial products, for example. It might also be that the differences between the two groups are merely a reflection of the differences in mathematical and reading literacy that PISA has already highlighted.

As can be seen in Table 4.3, performance in mathematical literacy and reading literacy does indeed account for much of the difference in scores in financial literacy between the two groups of students. However, even after accounting for these influences, there remains an underlying difference between advantaged and disadvantaged students, indicating that extra attention needs to be paid to the requirements of students from socioeconomically disadvantaged backgrounds.

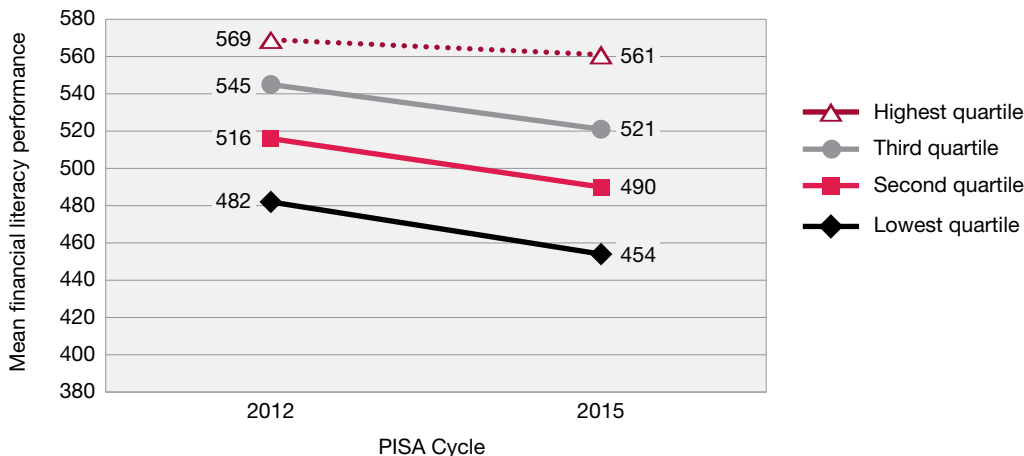
**TABLE 4.3** Differences in financial literacy performance for advantaged and disadvantaged students

Before accounting for performance in other subjects		After accounting for performance in mathematics		After accounting for performance in reading		After accounting for performance in mathematics and reading	
Score diff.	SE	Score diff.	SE	Score diff.	SE	Score diff.	SE
<b>-107</b>	3.9	<b>-25</b>	4.0	<b>-29</b>	2.9	<b>-16</b>	3.0

**Note:** significant differences are shown in bold.

## Financial literacy performance over time

The mean financial literacy scores for students in each socioeconomic quartile for 2012 and 2015 are shown in Figure 4.11. In all groups other than the highest socioeconomic quartile, the scores were significantly lower in 2015 than 2012. The declines were all around the same magnitude: 24 points in the third quartile, 26 points in the second quartile and 28 points in the lowest quartile.

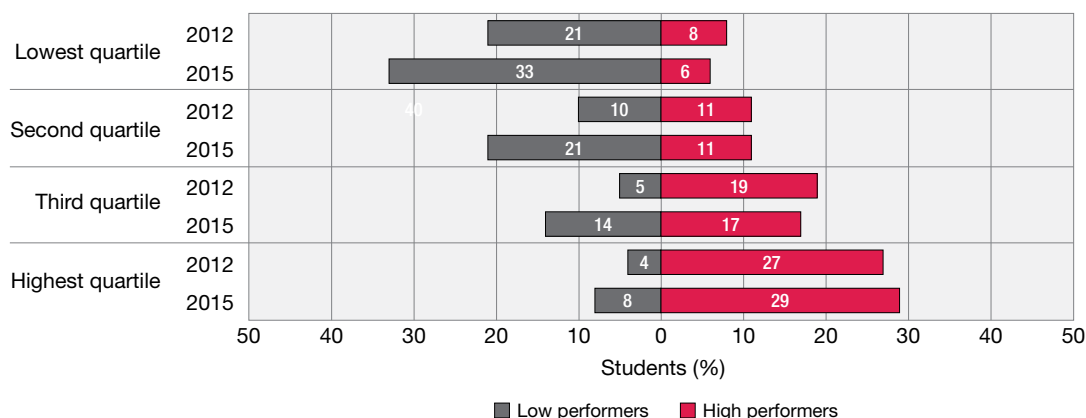


**Note:** Coloured symbols and a continuous line indicate that the difference in mean performance between PISA 2012 and 2015 is significant.

**FIGURE 4.11** Mean financial literacy performance and differences between PISA 2012 and 2015, by socioeconomic background

## Financial literacy proficiency over time

The proportion of high performers has not changed a great deal over the 2012–2015 time period; however, the proportion of low performers changed substantially. For the most disadvantaged students, the proportion of low performers increased from 21% to 33%. For those in the second quartile, the proportion of low performers more than doubled, going from 10% in 2012 to 21% in 2015. At the third quartile, the proportion of low performers almost tripled, going from 5% to 14% (Figure 4.12).



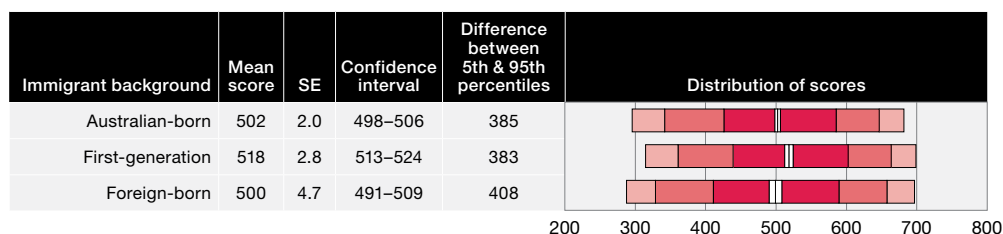
**FIGURE 4.12** Percentage of low performers and high performers on the financial literacy proficiency scale for PISA 2012 and 2015, by socioeconomic background

## Financial literacy results by immigrant background

How well do students with an immigrant background perform in financial literacy? Immigrant background was measured on students' self-report of where they and their parents were born.<sup>3</sup> On average across OECD countries, 13% of students were foreign-born or had foreign-born parents. In Australia, this proportion was 42%. Being financially literate can help immigrants integrate more easily into a new country of residence. Financially literate students may also be able to help their families integrate more easily by sharing with them information about managing their finances.

### Financial literacy performance in 2015

First-generation students scored significantly higher than either Australian-born or foreign-born students, while there was no significant difference between the scores of Australian-born and foreign-born students. The mean score for all groups of students placed them about midway in proficiency Level 3, and all were significantly higher than the OECD average. (Figure 4.13)

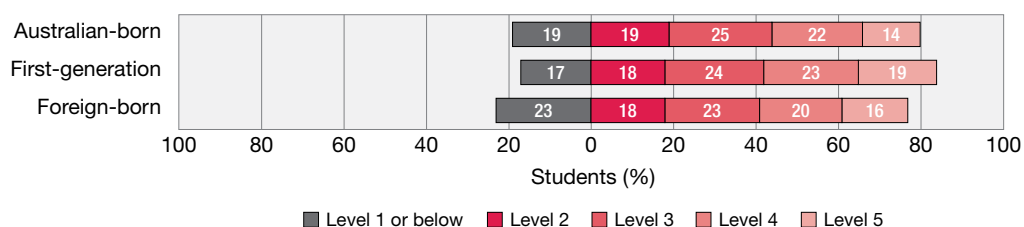


**FIGURE 4.13** Mean scores and distribution of students' performance on the financial literacy scale, by immigrant background

<sup>3</sup> The Reader's Guide provides more information about immigrant background.

## Financial literacy proficiency in 2015

At the higher end of the financial literacy proficiency scale, 19% of first-generation students were high performers, which was substantially higher than the percentage of Australian-born (14%) or foreign-born (16%) students. At the lower end of the scale, 17% of first-generation students failed to achieve the minimum standard of proficiency Level 2, which was lower than the corresponding proportions of Australian-born students (19%) or foreign-born students (23%) (Figure 4.14).



**FIGURE 4.14** Percentage of students across the financial literacy proficiency scale, by immigrant background

## Explaining the differences

Australia is the only country in which this pattern of results is seen in financial literacy. In most other countries there was a significant difference in favour of non-immigrant students; only in Canada and Lithuania was the difference not significant.

To what extent are the performance gaps in financial literacy associated with socioeconomic background or performance in mathematical literacy and reading literacy?

Table 4.4 explores whether the differences found in these sub-groups are influenced by socioeconomic background, as measured by ESCS. Clearly there is a very minimal effect, but it is not the primary factor in the differences between any of the groups.

**TABLE 4.4** Differences in financial literacy performance, by immigrant background

Comparison group	Difference in financial literacy performance			
	Before accounting for ESCS		After accounting for ESCS	
	Mean	SE	Mean	SE
Australian versus first generation	<b>16</b>	3.1	<b>14</b>	2.9
Australian versus foreign born	-2	4.7	-1	4.0
First-generation versus foreign born	<b>18</b>	4.6	<b>15</b>	4.1

**Note:** significant differences are shown in bold.

The differences in scores in financial literacy could also be a factor of a student's performance in mathematical literacy and reading literacy, particularly given that achievement in reading literacy is substantially higher for first-generation students than either Australian-born or foreign-born students.

Table 4.5 shows the difference in mean scores between each group of students. For first-generation students, the significant difference of 16 points was clearly due to the higher scores on both reading literacy and mathematical literacy and reading literacy of first-generation students – once these are accounted for there was no difference in financial literacy scores between the two groups.

Comparing first-generation and foreign-born students, it can be seen that most of the difference in the financial literacy scores was due to different proficiencies in reading literacy. While differences in mathematical literacy do have a substantial effect on the difference in scores, if we compare two students with the same proficiency in mathematical literacy there would still be a significant 10 point gap in their financial literacy performance. However, if we compared two students with the same

level of reading literacy performance, then regardless of their mathematical literacy proficiency, the financial literacy scores would not be significantly different.

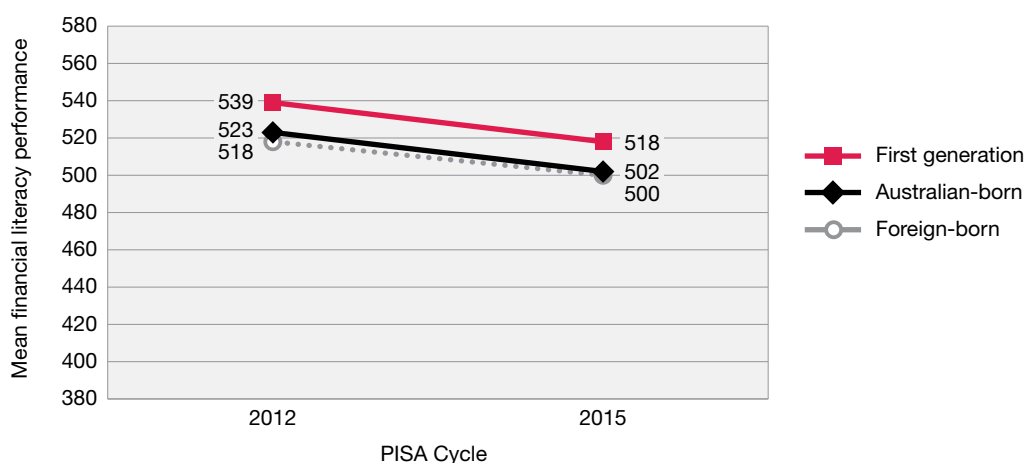
**TABLE 4.5** Differences in financial literacy performance, by immigrant background

Comparison group	Difference in financial literacy performance							
	Before accounting for performance in other subjects		After accounting for performance in mathematics		After accounting for performance in reading		After accounting for performance in mathematics and reading	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Australian versus first generation	<b>16</b>	3.1	3	2.7	1	2.3	0	2.2
Australian versus foreign born	-2	4.8	-7	4.3	-1	4.2	-4	4.0
First generation versus foreign born	<b>-18</b>	4.6	<b>-10</b>	4.0	2	4.1	4	3.7

**Note:** significant differences are shown in bold.

## Financial literacy performance over time

Figure 4.15 shows the changes in scores in financial literacy for each group of students between 2012 and 2015. The scores for both Australian-born students and for first-generation students has declined significantly since 2012, while those of foreign-born students did not change.

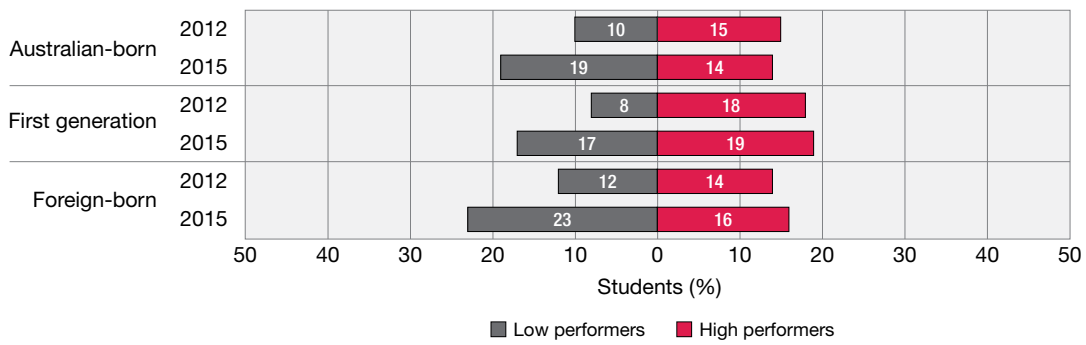


**Note:** Coloured symbols and a continuous line indicate that the difference in mean performance between PISA 2012 and 2015 is significant.

**FIGURE 4.15** Mean financial literacy performance and differences between PISA 2012 and 2015, by immigrant background

## Financial literacy proficiency over time

Figure 4.16 shows the change in proportions of high and low performers between PISA 2012 and 2015. As has been the case with other groups that have been examined, the proportion of high performers did not change a great deal. However, the proportion of low performers changed substantially for all three groups. For Australian-born students and foreign-born students, the proportions of low performers almost doubled, for first-generation students it more than doubled.



**FIGURE 4.16** Percentage of low performers and high performers on the financial literacy proficiency scale for PISA 2012 and 2015, by immigrant background

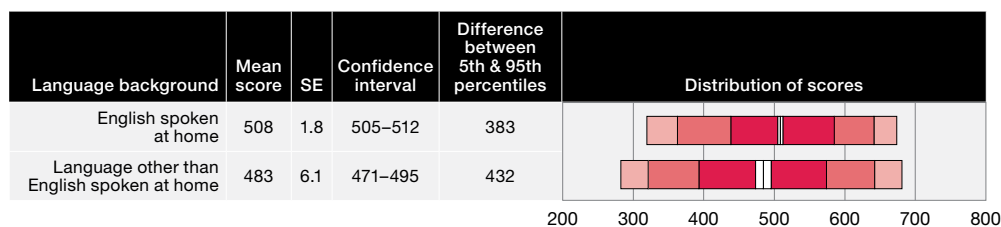
## Financial literacy results by language background

Language background was measured by students' self-report of the main language spoken in their home. These details were collapsed into two categories: those students who reported that they spoke English at home; and those students who spoke a language other than English at home.

### Financial literacy performance in 2015

Students who spoke English at home scored 508 points on average, which was significantly higher than the 483 point average for those students who spoke a language other than English at home. Both groups are located towards the lower end of proficiency Level 3.

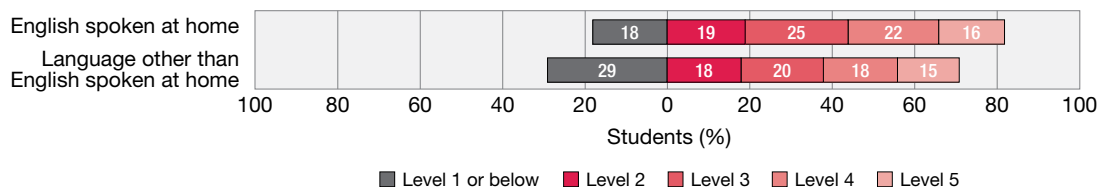
Figure 4.17 shows also that the spread of scores for students who spoke a language other than English at home was wider (432 points) than for students who spoke English at home (383 points). There were many more students whose language background was not English who scored at the lower extremes of the distribution, but there were also students in this group whose performance far exceeded that of students who spoke English at home.



**FIGURE 4.17** Mean scores and distribution of students' performance on the financial literacy scale, by language background

## Financial literacy proficiency in 2015

Figure 4.18 shows that the proportion of students who performed at Level 5 was about the same for students who spoke English at home (16%) and for students who spoke a language other than English at home (15%). The proportion of students who failed to reach Level 2 was much lower for students who spoke English at home (18%) than for students who spoke a language other than English at home (29%), although it was substantial for both groups.



**FIGURE 4.18** Percentage of students across the financial literacy proficiency scale, by language background

## Explaining the differences

The capacity of students with a language background other than English to achieve competency in financial literacy is likely also to be related to their skills in the core domain of reading literacy, in which there is a 20 score-point difference between the two language groups, and also socioeconomic background, which is significantly lower for this group (there is no difference in the mathematical literacy scores of the two groups).

After taking into account socioeconomic background, the difference between the two groups of students was just 12 points, which was still a significant difference, but clearly socioeconomic background had a substantial effect on financial literacy performance. After accounting for performance in reading literacy as well as socioeconomic background, the difference in scores between students from an English-speaking background and those from a language background other than English was no longer significant (Table 4.6).

**TABLE 4.6** Differences in financial literacy performance between English-speaking students and those from a language background other than English

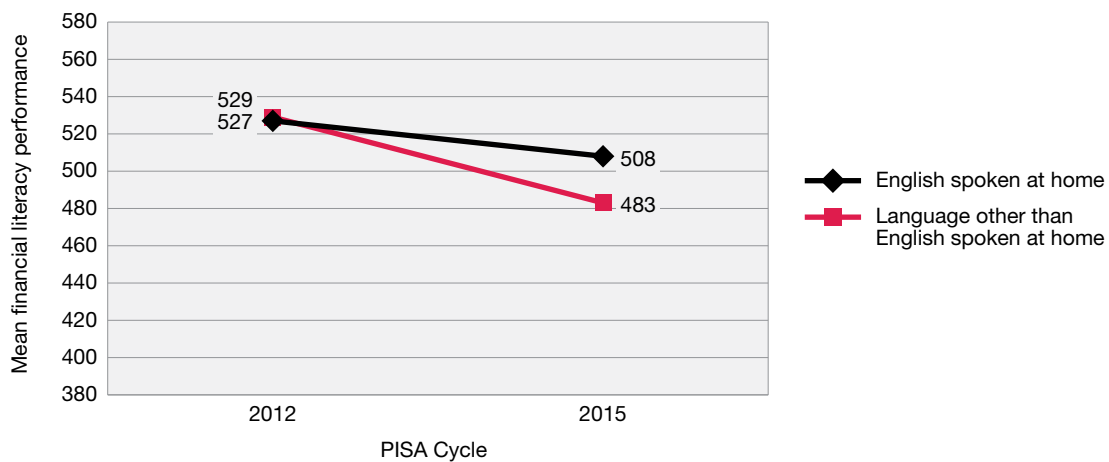
Before accounting for performance in other subjects and socioeconomic background		After accounting for socioeconomic background		After accounting for performance in reading		After accounting for performance in reading and socioeconomic background	
Score diff.	SE	Score diff.	SE	Score diff.	SE	Score diff.	SE
<b>-25</b>	5.0	<b>-12</b>	5.3	<b>-7</b>	4.3	<b>-4</b>	4.4

**Note:** significant differences are shown in bold.

## Financial literacy performance over time

Figure 4.19 shows the differences in mean scores for both groups of students between the PISA 2012 and 2015 cycles. In 2012, there was no significant difference in the financial literacy scores; however, the scores for both groups of students declined significantly between one assessment and the next: the English spoken at home group by 19 points (just under a year of schooling), and language other than English spoken at home by 46 points (representing almost two years of schooling).





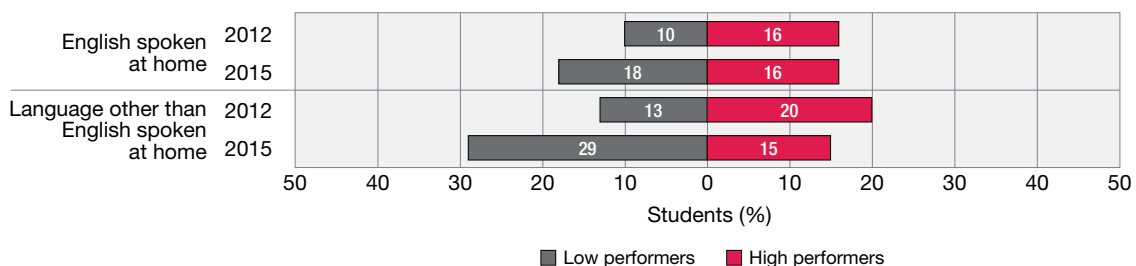
**Note:** Coloured symbols and a continuous line indicate that the difference in mean performance between PISA 2012 and 2015 is significant.

**FIGURE 4.19** Mean financial literacy performance and differences between PISA 2012 and 2015, by language background

## Financial literacy proficiency over time

For students who spoke English at home, the proportion of high performers remained the same between PISA 2012 and 2015, while the proportion of low performers almost doubled, jumping from 10% in 2012 to 18% in 2015.

A similar pattern was seen for students who spoke a language other than English at home. The proportion of high performers declined by about 5 per cent, but the proportion of low performers more than doubled, from 13% to 29% of students (Figure 4.20).



**FIGURE 4.20** Percentage of low performers and high performers on the financial literacy proficiency scale for PISA 2012 and 2015, by language background

## Socioeconomic gradients

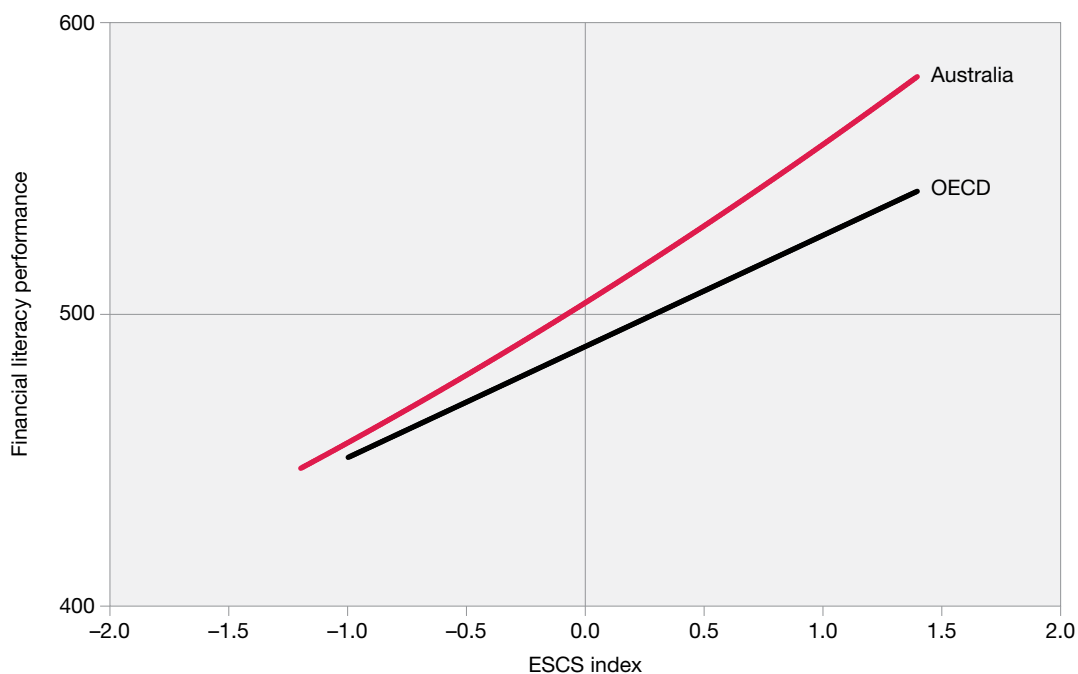
The terms socioeconomic gradient or social gradient refer to the relationship between an outcome and socioeconomic background. In the case of PISA, the outcome is students' performance (in this case in financial literacy) and the measure of socioeconomic background is the ESCS index. PISA data show that there is a significant relationship between students' performance and their socioeconomic background as measured by ESCS. This was seen earlier in this chapter, with substantial differences in scores between students in the lowest socioeconomic quartile and those in the highest.

This relationship is evident in Australia and all PISA countries, although the strength of the relationship differs among countries. Using a graphical representation, the line of best fit for the points that represent students' performance plotted against socioeconomic background (ESCS) provides information about several aspects of the relationship. This line is referred to as the socioeconomic or social gradient. Two elements of this line - the slope and the strength of the social gradient - measure

different aspects of the relationship between socioeconomic background and performance. If the slope of the gradient is steep and the strength of the relationship between socioeconomic background and performance is strong, the challenges for systems are the greatest. That is, students in these systems are more likely to perform at a level determined by their socioeconomic background and there is a greater performance differential between students from the most advantaged and least advantaged backgrounds. In Australia, it would seem that this is not the case— that while there are differences between these groups of students on average, there are also many exceptions.

The slope of the gradient line refers to the impact of socioeconomic background on performance. A steeper slope indicates a greater impact of socioeconomic background on performance, such that there is a larger difference in performance between low socioeconomic background students and high socioeconomic background students than in systems with gentler slopes. Education systems typically aim to decrease the differences in performance between different social groups. Greater equity would be indicated by a flatter gradient.

Figure 4.21 displays the socioeconomic gradients for Australia and the participating OECD countries, and shows how the higher slope for Australia reflects on scores. At the lower levels of ESCS, scores for Australian students are very similar to the OECD average; however, at the upper level of ESCS, scores for Australian students are substantially higher than the OECD average.



**FIGURE 4.21** Socioeconomic gradients for Australia and the OECD for financial literacy

The strength of the relationship between achievement and socioeconomic background refers to how well socioeconomic background predicts performance. It is important to consider how closely individual results fit to the line of best fit. In other words, are the points representing the performance and ESCS measures for all the individual students situated close to the line of best fit or are the individual students widely scattered about it? The closer all the points are to the line of best fit, the stronger the relationship. This aspect of the social gradient is represented by the percentage of the variation in performance that can be explained by the ESCS index. If the percentage is large, it indicates that performance is relatively highly determined by ESCS; whereas if the percentage is small, it indicates that performance is not highly determined by ESCS.

On average across OECD countries, financial literacy performance improves by 38 points with a one-unit increase in the ESCS index. In Australia, the slope is steeper than on average across the OECD, with a difference of 51 points for a one-unit change in ESCS (Table 4.7).

For the OECD countries that participated in PISA financial literacy in PISA 2015, the strength of the relationship between achievement in financial literacy and socioeconomic background is about 10, meaning that 10% of the variation in student performance is accounted for by socioeconomic background. In Australia, the strength of the relationship was just over 12, meaning that about 12% of the variation in achievement was explained by socioeconomic background.

**TABLE 4.7** Students' socioeconomic status and performance in financial literacy

	Score-point difference in financial literacy associated with a one-unit increase in ESCS (slope of the socioeconomic gradient)		Percentage of variance in student performance in financial literacy explained by ESCS (strength of the socioeconomic gradient)	
	Score dif.	S.E.	%	S.E.
Australia	<b>51</b>	(1.7)	12.0	(0.8)
OECD average	<b>38</b>	(0.9)	9.9	(0.4)

**Note:** significant differences are shown in bold.

# Students' experiences, attitudes and behaviour and their performance in financial literacy

## Key findings

- In Australia 79% of 15-year-old students have a bank account. Generally, having a bank account is positively associated with financial literacy performance. In Australia, students who hold a bank account scored on average 26 points higher than those who do not hold a bank account, even after accounting for socioeconomic background.
- In Australia, socioeconomically advantaged students are more than twice as likely as socioeconomically disadvantaged students to hold a bank account.
- More than eight in 10 students in Australia (84%) discuss money matters with their parents at least once a month.
- In Australia discussing money matters with parents at least some of the time is associated with higher performance in financial literacy than never discussing money matters, even after accounting for students' socioeconomic background.
- In Australia, 67% of students reported that they would save if they wanted to buy something for which they do not have enough money (OECD average 63%). Students who were high performers were more than 3 times more likely to report that they would save to buy an item that they do not have enough money for.

This chapter explores the relationship between students' experiences with money and their performance on the financial literacy assessment. It looks at whether students talk to their parents and friends about financial matters, whether they hold basic financial products such as bank accounts or debit cards, whether they receive or earn money from various sources, including family and work. The chapter also looks at students' spending and savings habits. The relationship between having a practical understanding of money and its relationship with financial literacy is also examined.

As well as looking at these facets of financial literacy for all Australian students, and making international comparisons where possible<sup>1</sup>, the results are also presented for the groups of students identified in previous chapters as having significantly lower levels of financial literacy not explained

<sup>1</sup> In some countries and economies, a significant proportion of students who sat the financial literacy assessment did not respond to one or more of the questions about money experiences. Results in this chapter are only reported for those countries and economies with a sufficiently high response rate across these questions.

by socioeconomic background or by performance in mathematical literacy and/or reading literacy. This may serve to identify areas in which there are clear differences, which may point to particular policy recommendations.

## Discussing money matters with parents or friends

For many students, parents are the primary source of values, attitudes, knowledge and behaviours that contribute to their financial understanding and financial viability and wellbeing – through a process of financial socialisation described by Danes (1994). Parents can transmit the necessary skills, knowledge and attitudes by acting as role models as well as by direct teaching. A number of surveys that examine the financial understanding of young people in Canada, the United States and the United Kingdom show that teenagers cite parents as the most important source of learning about how to manage money (Charles Schwab & Co, 2011; BCSC, 2011; MAS, 2013).

PISA 2015 asked how often students discussed money matters such as spending, saving, banking and investment with their parents or guardians. Table 5.1 shows that, on average, across participating OECD countries and economies, 16% of students reported that they *never or hardly ever* discussed money matters with their parents, 66% that they discussed money matters *weekly or monthly*, and 17% that they discussed such matters *almost every day*.

In Australia, there was a similar proportion of students (16%) who *never or hardly ever* discussed money matters with their parents, and a lower proportion of those who discussed matters *every day* (12%). In Chile, Italy and Lithuania, almost 25% of students reported discussing money matters with their parents *almost every day*, while in the partner economy B-S-J-G (China) just 8% of students reported doing so.

**TABLE 5.1** Percentage of students who discuss money matters with parents, internationally

Country	Percentage of students who discuss money matters with parents							
	Never or hardly ever		Once or twice a month		Once or twice a week		Almost every day	
	%	SE	%	SE	%	SE	%	SE
<b>Australia</b>	<b>16</b>	<b>0.4</b>	<b>35</b>	<b>0.6</b>	<b>37</b>	<b>0.6</b>	<b>12</b>	<b>0.4</b>
Belgium	16	1.2	37	1.4	33	1.5	14	1.0
B-S-J-G (China)	22	1.3	40	1.2	30	1.2	8	0.7
Canada	13	0.8	33	1.4	36	1.3	17	1.1
Chile	19	1.1	29	1.3	30	1.4	23	1.2
Italy	18	1.1	25	1.1	34	1.5	23	1.4
Lithuania	12	0.9	27	1.2	38	1.3	23	1.2
Netherlands	13	0.9	36	1.4	37	1.2	15	1.1
Poland	16	0.9	35	1.2	35	1.2	15	0.8
Russian Federation	15	1.0	29	1.7	36	1.7	20	1.5
Slovak Republic	20	1.3	34	1.5	31	1.3	15	1.1
Spain	22	0.9	28	1.3	32	1.5	18	1.1
United States	12	1.0	32	1.5	34	1.5	21	1.3
<b>OECD average</b>	<b>16</b>	<b>0.3</b>	<b>32</b>	<b>0.4</b>	<b>34</b>	<b>0.4</b>	<b>17</b>	<b>0.3</b>

Source: OECD financial literacy database, Table IV.5.1

Do such discussions occur on an equally frequent basis for males and females, for Indigenous and non-Indigenous students, and for students from advantaged and disadvantaged backgrounds? Table 5.2 presents the data for these groups of students.

There were few sex differences evident. Male students were more likely than female students to *never or hardly ever* speak to their parents about money matters, about half of both males and females did

not talk about money very often with their parents (*never or hardly ever plus once or twice a month*), while the remaining half talked at least once a week (*once or twice a week plus almost every day*).

The gap between Indigenous and non-Indigenous students who *never or hardly ever* spoke to their parents about money matters was significant. Twenty-one per cent of Indigenous students reported discussing money matters with parents *never or hardly ever* compared to 15% of non-Indigenous students. For both groups of students, about one-half reported talking about money matters at least *once a week* with their parents. On the other hand, a significantly higher proportion of Indigenous than non-Indigenous students reported talking to their parents about money matters *almost every day*.

Disadvantaged students were also significantly more likely than their advantaged peers both to *never or hardly ever* discuss money matters with their parents, but also were more likely than their more advantage peers to discuss money matters *almost every day*.

**TABLE 5.2** Percentage of students who discuss money matters with parents, for sub-groups in Australia

Sub-group	Percentage of students who discuss money matters with parents							
	Never or hardly ever		Once or twice a month		Once or twice a week		Almost every day	
	%	SE	%	SE	%	SE	%	SE
<b>Sex</b>								
Male	18	0.6	33	0.8	37	0.8	12	0.5
Female	14	0.5	37	0.7	37	0.8	13	0.5
<b>Indigenous background</b>								
Indigenous	21	1.4	28	1.3	34	1.4	18	1.1
Non-Indigenous	15	0.4	35	0.6	37	0.7	12	0.4
<b>Socioeconomic background</b>								
Disadvantaged	18	0.8	34	1.0	34	1.2	14	0.7
Advantaged	13	0.7	35	1.1	40	1.0	11	0.7

## Discussing money matters and financial literacy

The relationship between discussion of money matters and financial literacy achievement was not linear. Table 5.3 provides mean financial literacy scores for students according to the frequency of their discussions about money matters with their parents, internationally. For each group of students, the highest financial literacy scores were found for those students who discuss money matters on a regular basis, but not *almost every day*. It is hypothesised that this is because the group who discusses money matters on a daily basis are those who are most under financial stress. For those students, the discussion of money matters might be about a shortage of money for regular needs, including the school needs of the PISA students.

In 10 of the 13 countries with available data, discussing money matters with parents at least *once or twice a month* was associated with higher levels of financial literacy than never discussing money matters, even after accounting for students' socioeconomic background. However, students in the United States, Australia, B-S-J-G (China), and the Netherlands who discussed money matters *almost every day* with their parents scored significantly lower in financial literacy than students who discussed these *once or twice a month* or *once or twice a week*.

**TABLE 5.3** Student performance in financial literacy, by discussing money matters with parents

Country	Financial literacy performance in PISA 2015								Difference in financial literacy performance in PISA 2015 (monthly, weekly or almost every day - never)				Difference in financial literacy performance in PISA 2015 (almost every day - monthly or weekly)			
	Students who discuss money matters with parents								Before accounting for ESCS		After accounting for ESCS		Before accounting for ESCS		After accounting for ESCS	
	Never or hardly ever		Once or twice a month		Once or twice a week		Almost every day		Score dif.	SE	Score dif.	SE	Score dif.	SE	Score dif.	SE
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE	Score dif.	SE	Score dif.	SE	Score dif.	SE	Score dif.	SE
Australia	480	4.3	515	2.7	518	2.4	480	4.6	31	4.1	23	4.1	-36	4.8	-31	4.5
Belgium	517	11.1	557	5.2	545	7.2	533	8.3	32	10.7	27	9.3	-18	9.0	-9	9.0
B-S-J-G (China)	537	9.0	581	7.3	581	10.5	544	12.1	40	10.4	20	9.0	-37	12.2	-36	11.0
Canada	527	8.6	539	6.6	544	5.8	534	8.4	13	9.1	8	8.5	-8	8.9	-7	8.9
Chile	410	7.3	439	6.4	449	6.1	434	6.2	31	7.3	25	7.0	-10	7.1	-8	6.6
Italy	453	8.1	493	6.0	501	5.0	490	6.2	43	8.2	40	7.8	-7	6.4	-7	6.4
Lithuania	403	8.7	454	6.2	469	4.8	454	5.8	57	8.7	53	8.6	-9	6.2	-10	6.2
Netherlands	474	9.0	531	6.2	535	4.8	505	10.4	54	9.3	46	8.7	-28	10.9	-26	10.2
Poland	462	7.7	488	5.3	497	4.6	491	8.5	30	8.1	26	7.9	-2	8.1	-1	7.8
Russian Federation	480	8.0	503	6.5	509	6.4	520	5.8	30	7.6	30	7.7	13	6.5	13	6.7
Slovak Republic	402	7.9	451	7.3	452	8.1	447	9.5	49	7.5	42	7.4	-4	10.4	-2	10.4
Spain	459	7.8	469	5.6	472	5.3	465	7.2	10	7.5	8	7.0	-5	7.7	-2	7.0
United States	486	8.3	503	4.9	504	5.9	462	6.8	7	8.0	-1	7.9	-41	7.3	-41	7.0
<b>OECD average</b>	<b>467</b>	<b>2.6</b>	<b>498</b>	<b>1.8</b>	<b>502</b>	<b>1.8</b>	<b>484</b>	<b>2.5</b>	<b>30</b>	<b>2.6</b>	<b>25</b>	<b>2.4</b>	<b>-16</b>	<b>2.6</b>	<b>-13</b>	<b>2.5</b>

**Notes:** Means and differences in performance in this table are calculated considering only students for whom data on the PISA index of economic, social and cultural status are available. Values that are statistically significant are indicated in bold.

**Source:** OECD Database Table IV.5.5

Table 5.4 provides similar information for the Australian sub-groups under examination. A pattern similar to that seen in Table 5.3 can be seen here – for both male and female students, Indigenous and non-Indigenous students, and for socioeconomically advantaged students. Students who discussed money matters with their parents at least *once or twice a month* had higher average financial literacy scores than those who *never or hardly ever* discussed these matters with their parents, even after adjusting for socioeconomic background. For all groups, scores in financial literacy were significantly lower for students who spoke with their parents *almost every day*, rather than *once or twice a month* or *once or twice a week*, even after adjusting for socioeconomic background.

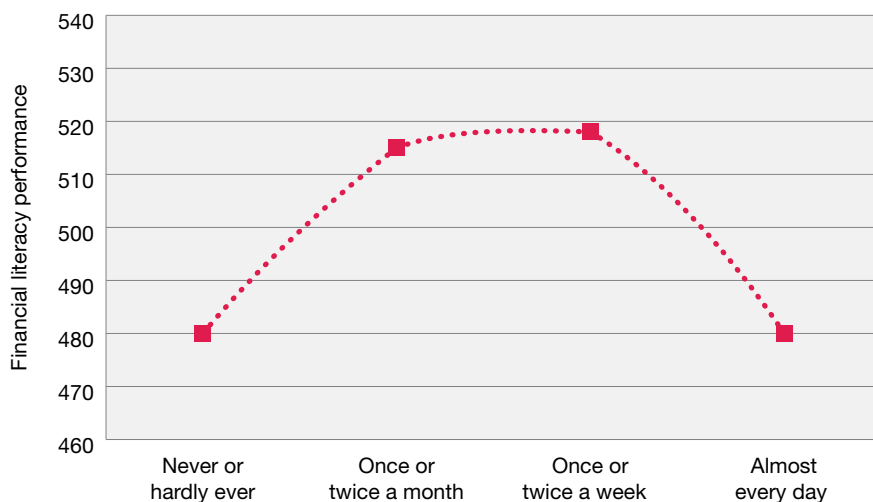
**TABLE 5.4** Financial literacy performance, by frequency of discussing money matters with parents, for sub-groups groups in Australia

Sub-groups	Financial literacy performance in PISA 2015								Difference in financial literacy performance in PISA 2015 (monthly, weekly or almost every day - never)				Difference in financial literacy performance in PISA 2015 (almost every day - monthly or weekly)			
	Students who discuss money matters with parents								Before accounting for ESCS		After accounting for ESCS		Before accounting for ESCS		After accounting for ESCS	
	Never or hardly ever		Once or twice a month		Once or twice a week		Almost every day		Score dif.	SE	Score dif.	SE	Score dif.	SE	Score dif.	SE
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE	Score dif.	SE	Score dif.	SE	Score dif.	SE	Score dif.	SE
<b>Australia</b>	<b>480</b>	<b>4.3</b>	<b>515</b>	<b>2.7</b>	<b>518</b>	<b>2.4</b>	<b>480</b>	<b>4.6</b>	<b>31</b>	<b>4.1</b>	<b>23</b>	<b>4.1</b>	<b>-36</b>	<b>4.8</b>	<b>-31</b>	<b>4.5</b>
<b>Sex</b>																
Male	468	5.7	506	3.9	513	3.5	481	7.2	26	5.0	27	6.1	-29	7.0	-24	6.4
Female	488	5.0	520	3.3	521	3.3	475	5.1	37	5.9	17	4.9	-46	5.9	-37	5.3
<b>Indigenous background</b>																
Non-Indigenous	482	4.5	516	2.7	521	2.6	482	4.8	31	4.3	22	4.4	-36	5.0	-31	4.7
Indigenous	387	8.1	425	5.6	419	6.3	405	8.5	31	8.6	28	8.4	-17	9.4	-10	9.5
<b>Socioeconomic background</b>																
Disadvantaged	439	6.6	456	4.7	464	4.4	431	8.5	15	6.8	10	6.7	-29	8.7	-27	8.5
Advantaged	541	8.9	575	4.2	567	5.0	536	7.7	25	9.1	25	9.3	-35	8.5	-36	8.4

**Note:** Values that are statistically significant are indicated in bold.



Figure 5.1 shows the relationship between the frequency of discussions of money matters with parents and scores on the financial literacy assessment. This clearly shows that poorer performance was associated with speaking to parents *almost every day*, probably for the reasons previously suggested. It should be encouraging for parents, however, that it does seem beneficial for their 15-year-olds to be discussing money matters with them on a regular basis.



**FIGURE 5.1** Financial literacy performance, by frequency of discussing money matters with parents, all Australian students

Studies of young people’s financial behaviour have shown that they consider friends to be much less a source of information than parents and family (see, for example, Australian Government Financial Literacy Foundation, 2011).

Not only did students tend to discuss money matters more often with parents than friends internationally, doing so was related to higher financial literacy performance. This can be seen in Table 5.5, in which 12 of the 13 participating countries showed significantly higher performance in financial literacy for the group who spoke *more often with parents than friends*, even after accounting for socioeconomic background.

**TABLE 5.5** Financial literacy performance by frequency of discussing money matters with parents and friends, internationally

Country	Percentage of students who discuss money matters						Financial literacy performance in PISA 2015									
							Students who discuss money matters						Difference in financial literacy performance in PISA 2015 (more often with parents than with friends - more often with friends than with parents)			
	More often with friends than with parents		Equally often with parents and friends		More often with parents than with friends								More often with friends than with parents		Equally often with parents and friends	
	%	SE	%	SE	%	SE	Mean score	SE	Mean score	SE	Mean score	SE	Score dif.	SE	Score dif.	SE
<b>Australia</b>	<b>12</b>	<b>0.4</b>	<b>38</b>	<b>0.5</b>	<b>50</b>	<b>0.5</b>	<b>460</b>	<b>4.5</b>	<b>501</b>	<b>2.6</b>	<b>523</b>	<b>2.2</b>	<b>64</b>	<b>4.6</b>	<b>25</b>	<b>1.9</b>
Belgium	11	1.2	32	1.4	57	1.8	512	13.6	544	7.3	551	4.5	39	14.2	14	5.6
B-S-J-G (China)	18	1.2	44	1.3	38	1.7	549	9.8	571	7.4	576	8.1	28	9.5	4	4.1
Canada	10	0.8	32	1.2	58	1.2	512	11.7	532	6.0	546	4.9	34	12.2	14	4.9
Chile	15	1.0	31	1.3	54	1.5	389	7.7	434	6.0	450	4.7	60	8.0	24	3.7
Italy	12	1.0	25	1.2	63	1.5	447	8.6	485	6.0	497	3.8	49	8.9	20	3.7
Lithuania	19	1.1	30	1.2	51	1.4	422	7.0	461	5.0	465	4.4	43	7.3	18	3.3
Netherlands	12	0.9	36	1.4	52	1.5	482	11.8	519	5.8	532	4.8	50	12.9	20	4.9
Poland	19	1.0	34	1.3	46	1.3	455	6.6	496	5.5	496	4.5	41	7.8	16	3.7
Russian Federation	18	1.8	27	1.8	55	1.9	486	7.3	509	6.1	512	5.1	26	7.3	11	3.3
Slovak Republic	25	1.5	30	1.4	45	1.5	392	7.5	453	6.6	465	5.8	72	7.7	32	3.7
Spain	14	1.2	35	1.3	51	1.3	431	8.7	470	5.5	478	4.5	47	9.3	18	3.9
United States	11	1.1	27	1.5	63	1.7	452	10.8	487	6.5	504	4.1	52	10.9	17	4.5
<b>OECD average</b>	<b>14</b>	<b>0.3</b>	<b>32</b>	<b>0.4</b>	<b>54</b>	<b>0.5</b>	<b>453</b>	<b>3.0</b>	<b>492</b>	<b>1.9</b>	<b>504</b>	<b>1.4</b>	<b>51</b>	<b>3.2</b>	<b>20</b>	<b>1.3</b>

**Notes:** Means and differences in performance in this table are calculated considering only students for whom data on the PISA index of economic, social and cultural status are available. Values that are statistically significant are indicated in **bold**.

**Source:** OECD financial literacy database, Table IV.5.7

Similar data are provided for Australia in Table 5.6. A similar pattern to Table 5.5 can be seen in Table 5.6; students from all groups scored at a significantly higher level in financial literacy if they *spoke more often with parents than with friends* about money matters. Male students, Indigenous students and socioeconomically disadvantaged students were significantly more likely to *speak more often with friends than with parents* about money matters than their sub-group counterparts. However, the proportion who did so was still far lower than the proportion who spoke *more often with parents than with friends*.

**TABLE 5.6** Financial literacy performance, by frequency of discussing money matters with parents and friends, for Australian sub-groups

Sub-groups	Percentage of students who discuss money matters						Financial literacy performance in PISA 2015									
							Students who discuss money matters						Difference in financial literacy performance in PISA 2015 (more often with parents than with friends - more often with friends than with parents)			
	More often with friends than with parents		Equally often with parents and friends		More often with parents than with friends								More often with friends than with parents		Equally often with parents and friends	
	%	SE	%	SE	%	SE	Mean score	SE	Mean score	SE	Mean score	SE	Score dif.	SE	Score dif.	SE
<b>Australia</b>	<b>12</b>	<b>0.4</b>	<b>38</b>	<b>0.5</b>	<b>50</b>	<b>0.5</b>	<b>460</b>	<b>4.5</b>	<b>501</b>	<b>2.6</b>	<b>523</b>	<b>2.2</b>	<b>64</b>	<b>4.6</b>	<b>25</b>	<b>1.9</b>
<b>Sex</b>																
Male	14	0.6	40	0.7	46	0.8	447	5.7	492	4.0	523	3.4	76	6.5	64	6.3
Female	10	0.5	35	0.7	54	0.7	469	7.3	507	3.0	522	2.5	52	7.6	39	7.2
<b>Indigenous background</b>																
Indigenous	17	1.1	39	1.5	44	1.5	369	7.3	411	6.4	430	5.0	61	8.7	62	8.7
Non-Indigenous	12	0.5	38	0.5	51	0.5	461	4.8	503	2.6	526	2.3	64	4.7	52	4.6
<b>Socioeconomic background</b>																
Disadvantaged	14	0.9	38	1.1	48	1.1	410	8.3	451	4.6	467	4.0	58	9.5	51	9.5
Advantaged	9	0.7	39	1.1	52	1.1	543	10.6	555	5.2	574	4.2	31	10.9	32	11.1

**Note:** Values that are statistically significant are indicated in bold.

## Students' access to money – basic financial products

Is experience in having access to basic financial products such as a bank account or a prepaid debit card related to students' performance in financial literacy? The PISA 2015 Financial Literacy framework identified money and transactions as one of the main areas of assessment. Skills in this area include awareness of different forms of money, handling simple monetary transactions such as making everyday payments, and handling simple financial products such as bank accounts and prepaid debit cards.

As shown in Figure 1.2 in Chapter 1 of this report, about 81% of Australian students had a bank account and/or a prepaid debit card, compared to 64% on average across participating OECD countries. This can be seen in more detail in Table 5.7, for all participating countries and economies.

Between PISA 2012 and 2015, there was not a lot of change in the proportion of students in participating countries who held bank accounts. In Poland and the Slovak Republic, there was a significant increase, both from a very low base in 2012, and both still significantly lower than the OECD average in 2015. Spain was the only country in which there was a significant decline in the proportion of students who held bank accounts; Australia and Belgium remain the two countries with the highest proportion of students who hold bank accounts.

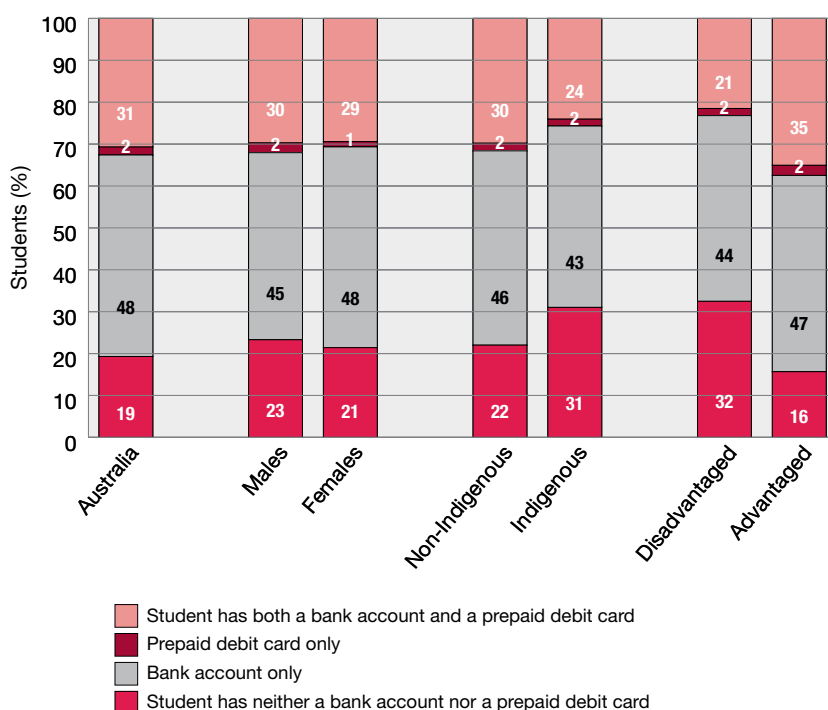
Between PISA 2012 and 2015, there was a substantial increase in the proportion of 15-year-old students who hold prepaid debit cards. In particular in Poland, the United States, Italy and Australia, the proportions of such students significantly increased, which resulted in an increase across the OECD average. In Spain, the use of such prepaid debit cards has significantly decreased since 2012. In Italy and Australia in 2015, at least one in three students used a prepaid debit card.

**TABLE 5.7** Change between 2012 and 2015 in the percentage of students holding a bank account or prepaid credit card – internationally

Country	Students holding a bank account						Students holding a prepaid debit card					
	PISA 2012		PISA 2015		Change 2012-2015		PISA 2012		PISA 2015		Change 2012-2015	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
<b>Australia</b>	<b>82</b>	<b>1.2</b>	<b>79</b>	<b>0.5</b>	<b>-3</b>	<b>1.3</b>	<b>26</b>	<b>1.4</b>	<b>33</b>	<b>0.5</b>	<b>6</b>	<b>1.5</b>
Belgium	78	1.7	75	1.4	-3	2.2	17	1.6	16	1.1	0	1.9
Italy	36	1.3	35	1.7	-1	2.1	19	1.1	37	1.4	17	1.8
Poland	16	1.8	28	1.2	12	2.1	9	1.4	21	1.1	12	1.8
Slovak Republic	25	1.9	42	1.4	17	2.4	19	1.9	16	1.1	-3	2.2
Spain	59	2.3	52	1.3	-7	2.6	13	1.8	9	0.7	-4	1.9
United States	51	2.4	53	1.8	1	3.0	14	1.6	22	1.2	7	2.0
<b>OECD average</b>	<b>50</b>	<b>0.7</b>	<b>52</b>	<b>0.5</b>	<b>3</b>	<b>0.9</b>	<b>17</b>	<b>0.6</b>	<b>22</b>	<b>0.4</b>	<b>5</b>	<b>0.7</b>

Source: PISA 2015 Financial literacy database, Tables IV.5.8 and IV.5.9

Figure 5.2 shows, for Australia and for the sub-groups under examination, the rate of exposure to different financial products. It is clear from this figure that a substantially lower proportion of Indigenous compared to non-Indigenous students and disadvantaged compared to advantaged students had either bank accounts or prepaid debit cards, which meant their exposure to financial products was limited. These differences were statistically significant. These are most likely contributing factors to Indigenous students and students from socioeconomically disadvantaged backgrounds having lower levels of understanding of financial products, which would lead to lower levels of financial literacy.



**FIGURE 5.2** Proportion of students holding a bank account and/or a prepaid debit card

Table 5.8 shows that having a bank account was positively associated with financial literacy in most countries. In Australia, even after accounting for socioeconomic background, students who held bank accounts scored 26 score points higher than those who did not. On average across the participating OECD countries, this was the case; however, within several countries there was no difference after taking into account socioeconomic background (Poland, B-S-J-G (China), and Chile).

The pattern for having prepaid debit cards was less conclusive. In Italy, holding a prepaid debit card was associated with higher performance; however, in Poland, Chile and Australia, the differences were accounted for by socioeconomic background.

**TABLE 5.8** Financial literacy performance, by having a bank account or prepaid debit card, internationally

Country	Students holding a bank account								Students holding a prepaid debit card							
	Yes		No or Do not know what it is		Difference in financial literacy performance in PISA 2015 (yes - no or do not know)				Yes		No or Do not know what it is		Difference in financial literacy performance in PISA 2015 (yes - no or do not know)			
					Before accounting for ESCS		After accounting for ESCS						Before accounting for ESCS		After accounting for ESCS	
	Mean score	SE	Mean score	SE	Score dif.	SE	Score dif.	SE	Mean score	SE	Mean score	SE	Score dif.	SE	Score dif.	SE
Australia	514	2.0	474	3.7	41	3.3	26	3.0	514	3.0	506	2.2	8	3.1	-2	2.9
Belgium	553	3.9	509	9.5	44	9.0	24	7.8	554	8.6	542	4.7	12	9.4	-4	7.7
B-S-J-G China	584	7.8	556	7.3	27	7.5	4	7.2	568	16.9	571	6.1	-3	13.7	-17	11.1
Canada	547	4.3	507	8.3	40	8.7	31	8.4	528	9.7	542	4.3	-14	9.7	-19	10.0
Chile	453	7.4	428	4.2	25	7.5	12	6.9	474	13.5	431	4.3	43	13.9	12	12.7
Italy	505	5.2	478	4.6	26	7.4	23	7.5	507	4.2	477	4.3	30	5.4	23	5.3
Lithuania	457	5.9	451	4.2	5	6.6	-4	6.6	476	9.1	454	3.8	23	9.1	14	8.9
Netherlands	526	3.8	440	13.5	85	13.5	72	13.2	509	9.6	526	3.9	-16	10.8	-21	10.2
Poland	498	5.2	483	4.1	16	5.6	2	5.5	505	5.4	483	4.0	21	5.7	8	6.1
Russian Federation	503	6.9	507	4.1	-4	6.4	-5	6.2	505	6.2	508	4.1	-3	5.3	-4	5.2
Slovak Republic	435	6.6	442	5.7	-7	6.1	-14	5.8	418	10.9	448	5.8	-30	12.5	-42	12.1
Spain	485	4.8	448	5.1	37	6.1	28	5.7	454	10.8	469	3.9	-15	10.2	-28	9.8
United States	513	4.7	471	4.7	42	6.0	22	6.3	496	7.5	494	4.0	2	7.3	-12	7.1
<b>OECD average</b>	<b>503</b>	<b>1.6</b>	<b>468</b>	<b>2.2</b>	<b>35</b>	<b>2.5</b>	<b>23</b>	<b>2.4</b>	<b>496</b>	<b>2.8</b>	<b>492</b>	<b>1.3</b>	<b>4</b>	<b>3.0</b>	<b>-8</b>	<b>2.8</b>

Source: Adapted from OECD Financial Literacy database, Tables IV.5.13 and IV.5.14

## Where do students get their money from?

Whether students used financial products such as bank accounts or prepaid debit cards also depended on their level of access to money. The content area 'Planning and managing finances' in the PISA Financial Literacy Assessment Framework refers to students' ability to monitor income and expenses both in the short and long term, including being able to identify various types and measures of income (OECD, 2013, 2016). Research, including that from the PISA 2012 financial literacy assessment, showed that students got their money from a variety of sources – gifts from friends and relatives, pocket money, and for work outside the home.

Figure 5.3 shows the main sources of income for students from participating OECD countries. The most frequently observed source of money in all countries and economies was gifts from friends or relatives. More than 80% of students in Poland, Italy, Lithuania, the Russian Federation, Netherlands, Belgium, Canada, the United States and Australia received money in the form of gifts.

The receipt of pocket money was quite varied among students in the participating countries. Between 31% of students (in Italy) and 50% of students (in Belgium) got pocket money regularly for doing chores around the home. Forty-nine percent of Australian students got pocket money for participating in chores at home. However, between 29% of students (in the United States) and 70% of students (in the Netherlands and Belgium) got pocket money without doing any chores. In Australia, this was less common, with just 30% of students getting pocket money without doing chores.

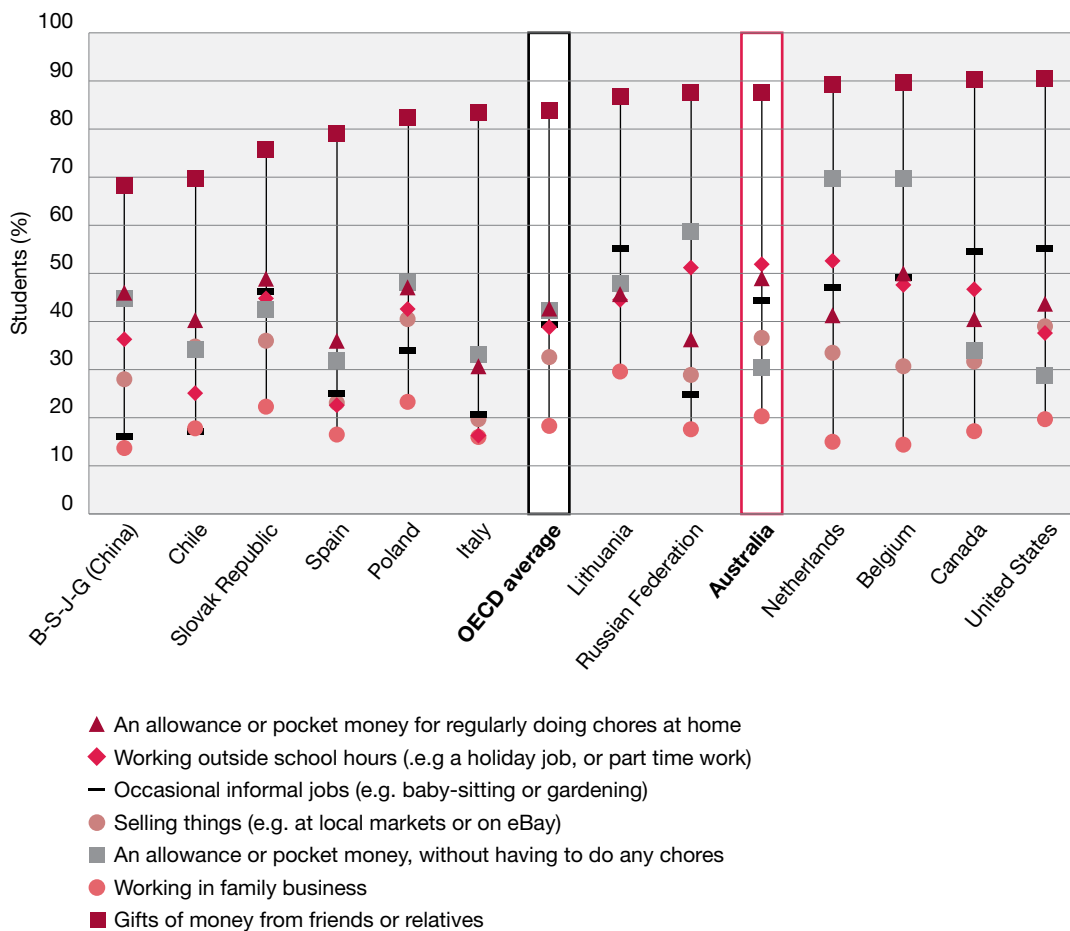
In many countries, a substantial proportion of 15-year-old students worked outside the home for money. In Australia, more than half (52%) of students reported that they worked outside school hours, for example part-time work after school or work in the school holidays. More than 40% of students in Poland, Lithuania, the Slovak Republic, Canada, Belgium, the Russian Federation, Australia and

Belgium also worked outside school hours, while in Italy just 16% of students reported working outside of school hours.

While less common than other sources of income, in some of the countries, some students reported gaining money working for a family business. More than 20% of students in Australia, the Slovak Republic, Poland and Lithuania reported receiving money in this way.

More than 40% of students in Australia, the Slovak Republic, the Netherlands, Belgium, Canada, the United States and Lithuania reported receiving money from occasional informal jobs such as baby-sitting or gardening.

Earning money from selling things, such as local markets or on line, varies from 20% of students in Italy to 48% of students in Lithuania. In Australia, on average, 37% of students reported receiving money from selling things online or at markets.



**Notes:** Countries and economies are ranked in ascending order of the percentage of students who receive gifts of money from friends and relatives.

**Source:** OECD, PISA 2015 Database, Figure IV.5.6

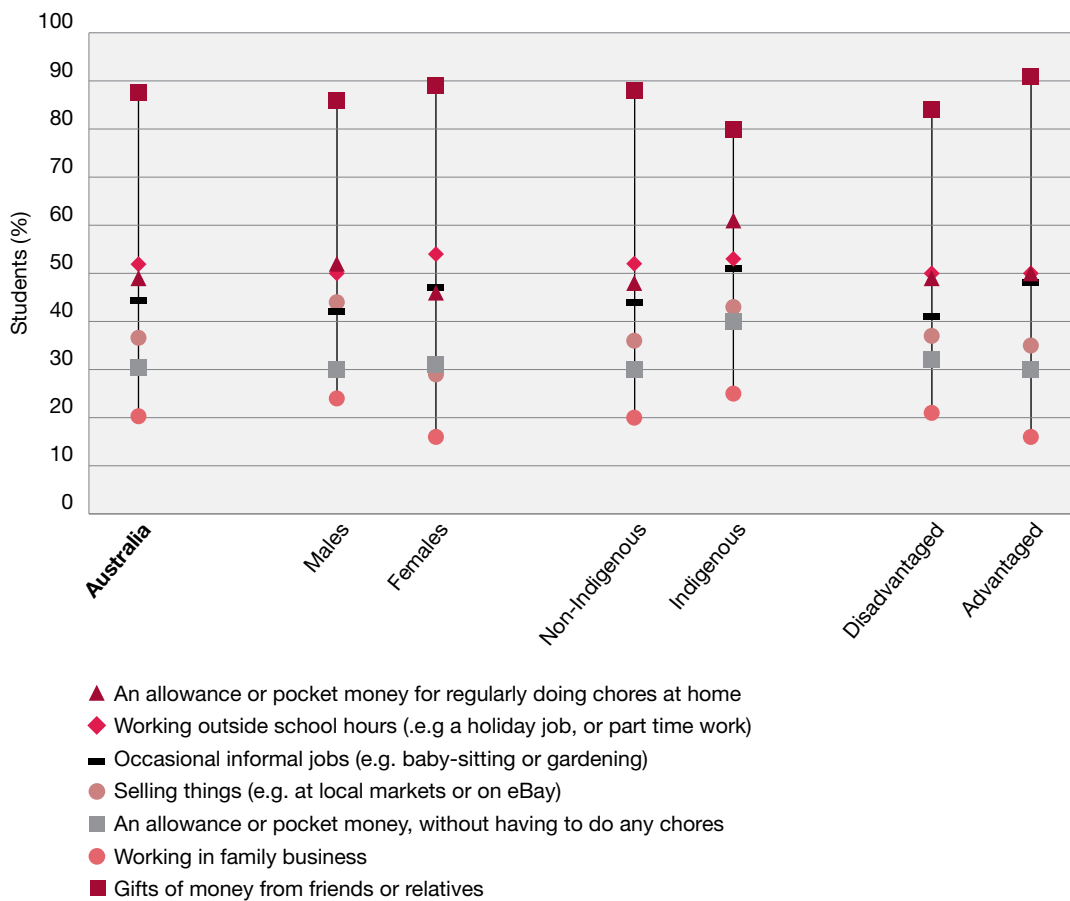
**FIGURE 5.3** Students' access to money from different sources, internationally

Figure 5.4 provides the same information for the sub-groups within Australia. Similar to the international findings, students who obtained money from gifts was the most often-reported manner of getting money. More than 80% of all groups of students reported getting money in this way. Socioeconomically advantaged students reported this more than any other students (91%), and significantly more than socioeconomically disadvantaged students (84%). A significantly larger proportion of non-Indigenous (88%) than Indigenous students (80%), and a higher proportion of female (89%) than male (86%) students also reported receiving money from gifts, although the gap was relatively small.

A higher proportion of male (52%) than female (46%) students, and a higher proportion of Indigenous (61%) than non-Indigenous (48%) students reported getting pocket money for doing jobs around the home, and significantly more Indigenous (40%) than non-Indigenous (30%) students reported getting pocket money without having to do any jobs.

Similar proportions of all of the sub-groups reported getting money for working outside school hours – around one-half of each group of students. While the proportion of students who worked in a family business was fairly low – less than one-quarter of any of the sub-groups reported this – it was significantly higher for male (24%) than female (16%) students, for Indigenous (25%) rather than non-Indigenous (20%) students, and for disadvantaged (21%) rather than advantaged (16%) students. Around half of the participating students reported that they obtained money working occasional jobs – this was more common for Indigenous (51%) than non-Indigenous (44%) students, and for socioeconomically advantaged (48%) than disadvantaged (41%) students.

Selling things at markets or online was carried out more often by male (44%) than female (29%) students, and by Indigenous (43%) rather than non-Indigenous (36%) students.



**FIGURE 5.4** Students' access to money from different sources, Australia



## Students' spending behaviours

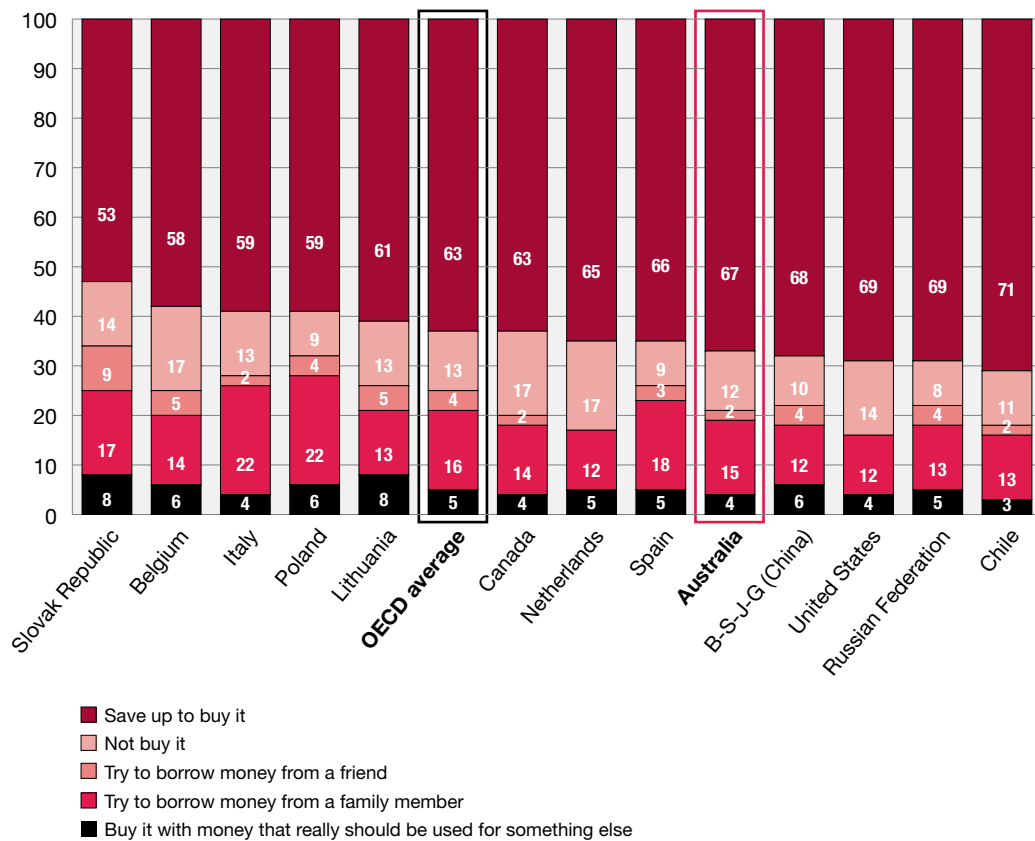
Financial literacy is particularly important for the students who completed the test as part of PISA. Within the next few years they will be involved in making all sorts of important life decisions – the first of which is likely to be whether or not to continue to further study or whether to join the workforce. The end of compulsory secondary school is also associated with a higher level of autonomy and freedom to enter into legally binding financial contracts, including credit agreements.

The PISA definition of financial literacy stresses that financial knowledge and understanding can be used 'to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life'. Students who perform at Level 5 on the assessment can already apply their understanding of financial concepts to situations that will be relevant to them as they move towards adulthood. Financially literate students can be expected to be able to make decisions about finances based not only on their current needs but also on their anticipated future needs, such as recognising the importance of saving and of investing in their higher education.

PISA 2015 asked participants in the financial literacy assessment, 'If you don't have enough money to buy something you really want (e.g. an item of clothing, sports equipment) what are you most likely to do?' Students could choose their response from various hypothetical strategies: *buy it anyway with money that really should be used for something else*; *try to borrow the money from a family member*; *try to borrow money from a friend*; *save up to buy it*; or *not buy it*.

Figure 5.5 shows that, on average across OECD countries, most students (63%) reported that given the scenario presented to them, they would *save up to buy it*. Sixteen per cent reported that they would *try to borrow the money from a family member* and 13% reported that they would *not buy it*. Only 4% reported that they would *try to borrow money from a friend*, or *buy it with money that really should be used for something else* (5%).

There were some differences across countries: in the Slovak Republic just over 50% of students said they would *save up to buy it* while almost 25% said they would *try to borrow the money from either family or friends* and a further 8% would *buy it with money that really should be used for something else*. In contrast, in Chile, 71% of students said they would *save up to buy it*, and 15% said that they would *try to borrow money from family or friends*. The proportions of Australian students who agreed to each category were not vastly different to the OECD average.

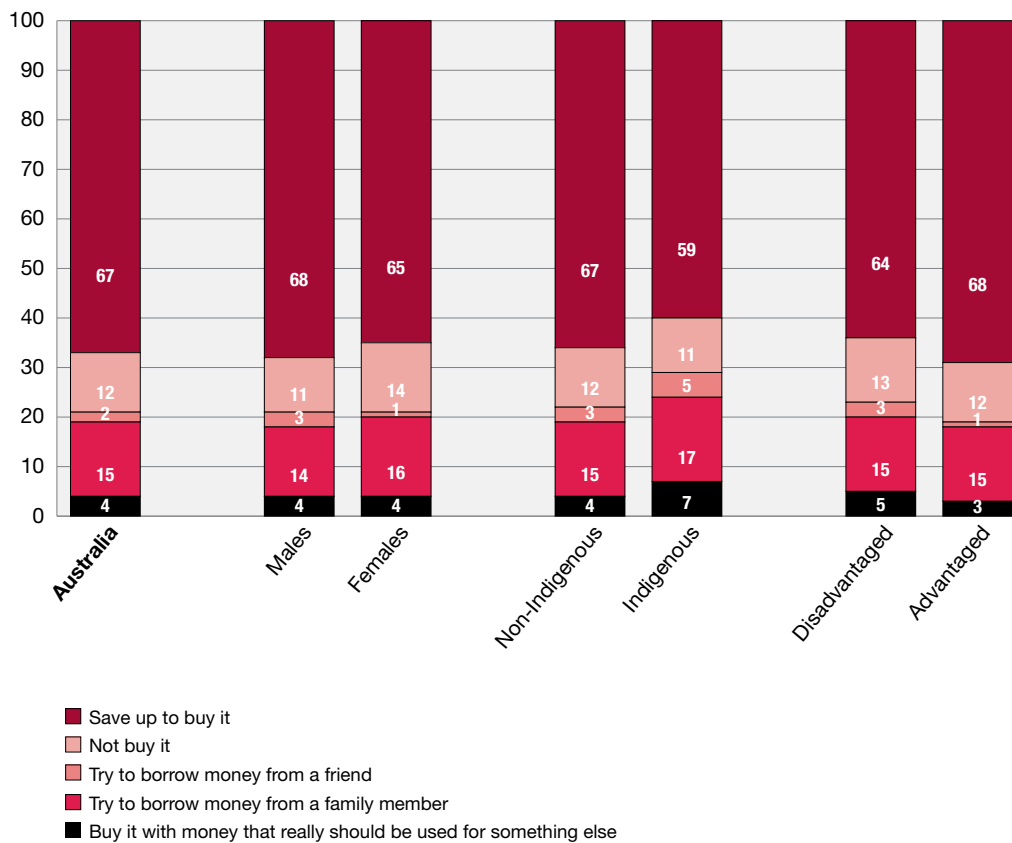


**Notes:** Countries and economies are ranked in ascending order of the percentage of students who would “save up to buy it”. Results based on students’ response to the question “If you don’t have enough money to buy something you really want (e.g. an item of clothing, sports equipment) what are you most likely to do?”

**Source:** OECD, PISA 2015 Database, Table IV.6.1.

**FIGURE 5.5** Students’ expected spending behaviour, internationally

Figure 5.6 provides the same data for the sub-groups in Australia. A significantly larger proportion of Indigenous than non-Indigenous students reported that they would be more likely to *buy it with money that really should be used for something else*, or that they would *try to borrow money from a friend*. A significantly lower proportion of Indigenous students than non-Indigenous students said that they would *save up to buy it*. A significantly higher proportion of disadvantaged students also reported that they would *buy it with money that really should be used for something else*, while a higher proportion of advantaged students reported that they would *save up to buy it*. A significantly higher proportion of males than females reported that they would *try to borrow money from a friend*, or that they would *save up to buy it*, whereas a higher proportion of females than males reported that they would *not buy it*.

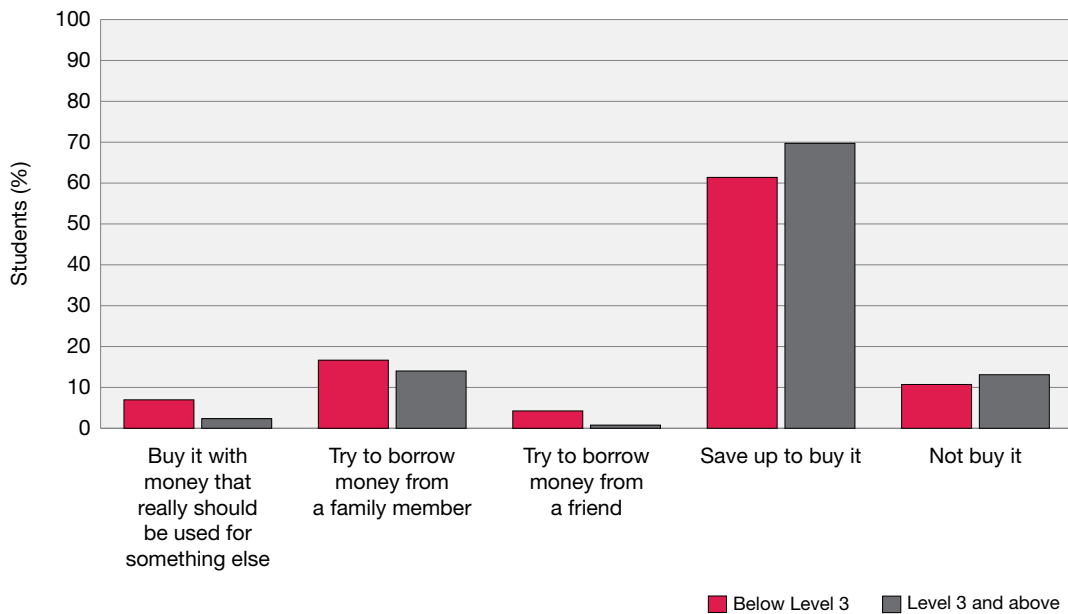


**Notes:** Results based on students' response to the question "If you don't have enough money to buy something you really want (e.g. an item of clothing, sports equipment) what are you most likely to do?"

**FIGURE 5.6** Students' expected spending behaviour, Australian sub-groups

To what extent is financial literacy associated with the choice students would make in this spending situation? Figure 5.7 shows the proportion of students at different proficiency levels (below Level 3 and Level 3 and above) within Australia who reported that they would save up for the item, buy it with money that should really be used for something else, borrow the money or not buy the item. *Save up to buy it* or *not buy it* could be considered as safer choices than *buy it with money that really should be used for something else*, which may indicate a lack of ability to distinguish between needs and wants.

Students at the lower end of the proficiency scale (below Level 3) were less likely to report that they would *not buy it*, and more likely than the higher achieving group to report that they would *try to borrow money from a family member or friend* or *buy it with money that really should be used for something else*. This reflected the lack of financial understanding of this group of students. A significantly higher proportion of students at or above proficiency Level 3 than those below Level 3 said that they would *save up to buy it* or *not buy it*.

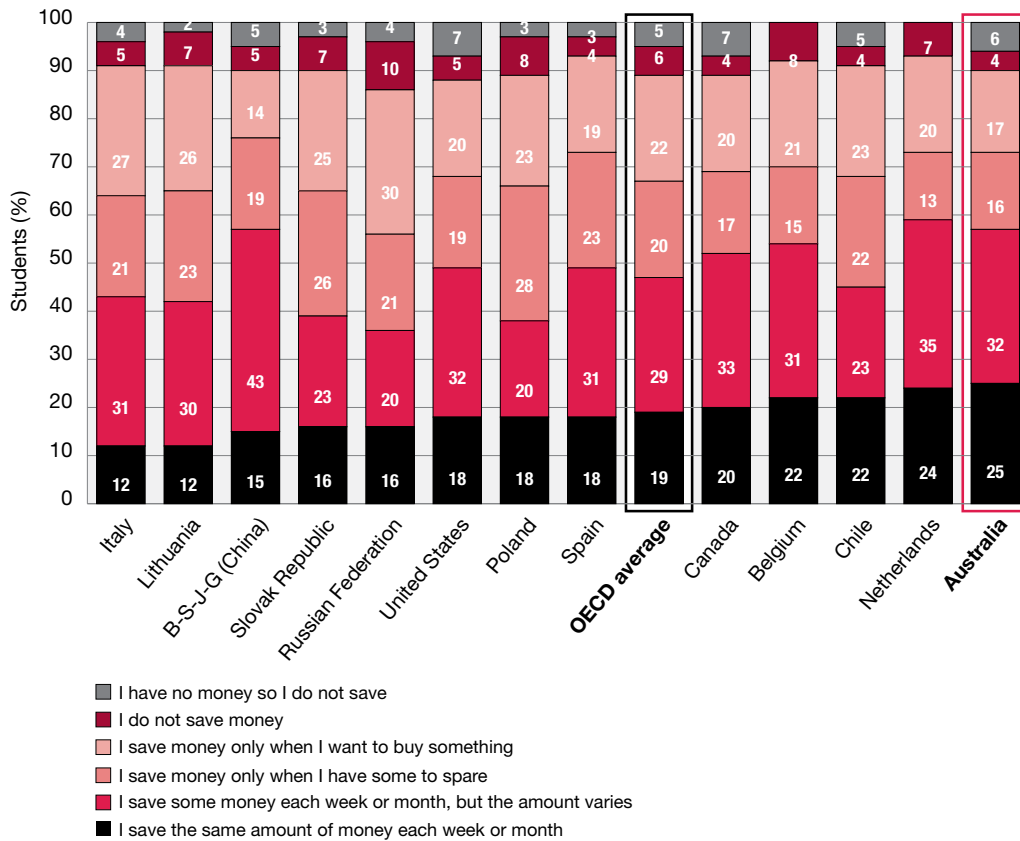


**FIGURE 5.7** Students' expected spending behaviour, Australia, by proficiency level

## Students' saving behaviours

PISA 2015 also asked students who sat the financial literacy assessment to choose which of a series of statements about saving money best applied to them. Students could indicate that they *save the same amount of money each week or month*, that *they save some money each week or month, but the amount varies*, that *they save money only when I have some to spare*, *they save money only when I want to buy something*, that *they do not save any money*, or that *they have no money so I do not save*.

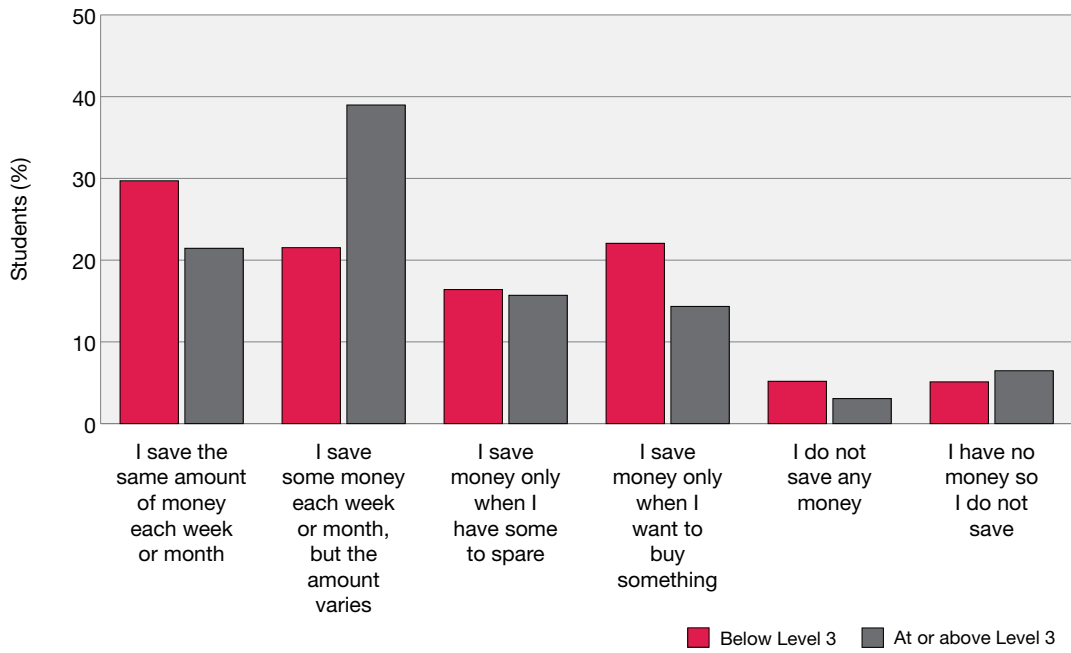
Figure 5.8 shows that 25% of Australian students reported that they *save the same amount each week or month*, 32% reported that they *save some money each week or month, but the amount varies*, 16% *save only when I have money to spare*, and 17% *save only when I want to buy something*. Few Australian students responded that they *do not save any money* (4%) or that they *have no money so I do not save* (6%). Australian students were fairly similar to the OECD average, with a higher percentage saving the same amount regularly and a lower percentage saving only when they had money to spare.



Countries and economies are ranked in ascending order of the percentage of students who reported "I save the same amount of money each week or month". Percentage of students who reported that this statement about saving money best applies to them.  
**Source:** OECD, PISA 2015 Database, Table IV.6.4.

**FIGURE 5.8** Students' saving behaviour, international

Figure 5.9 shows the relationship between levels of financial literacy and saving behaviour among Australian students. Interestingly, a higher proportion of students at the lower proficiency levels than higher proficiency levels reported that they *save the same amount of money each week or month*, with a substantially higher proportion of students at the higher levels than lower proficiency levels reporting that they *save some money each week or month, but the amount varies*. A similar proportion of students in both groups reported that they *only save money when I have some to spare*, but a significantly higher proportion of lower proficiency than higher proficiency students reported that they *do not save any money* when they have it.



**FIGURE 5.9** Students' saving behaviour, within Australia

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