



# **EMPLOYEE EARNINGS, BENEFITS AND TRADE UNION MEMBERSHIP** AUSTRALIA

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- For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Wendy Prowd on Canberra 02 6252 7508.

# NOTES

## ABOUT THIS PUBLICATION

This publication presents information about the weekly earnings and employment benefits received by employees, and their trade union membership.

## ABOUT THIS SURVEY

Statistics in this publication were obtained from the Employee Earnings, Benefits and Trade Union Membership Survey conducted throughout Australia in August 2001 as a supplement to the Australian Bureau of Statistics (ABS) monthly Labour Force Survey (LFS).

Data from the survey relate to employed persons aged 15 years and over who worked in their main job for a public or private sector employer and: received remuneration in wages or salary; received a retainer fee from their employer while working on a commission basis; were paid in tips or piece-rates; or operated his or her own incorporated enterprise with or without employees.

The survey collected details about the distribution of employee weekly earnings and leave entitlements. This information is cross-classified by a range of personal characteristics such as age, sex and family type, and by characteristics of employment such as full-time or part-time status, industry and occupation.

Other information collected included details of standard benefits provided by employers, such as superannuation coverage and paid leave, as well as detailed information about trade union membership.

## ROUNDING

As estimates have been rounded, discrepancies may occur between sums of the component items and totals.



## ABBREVIATIONS

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
ASCO	Australian Standard Classification of Occupations
LFS	Labour Force Survey
RSE	relative standard error
SE	standard error

Dennis Trewin  
Australian Statistician

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## EXPLANATORY NOTES

### INTRODUCTION

**1** The statistics in this publication were compiled from data collected in the Employee Earnings, Benefits and Trade Union Membership Survey conducted throughout Australia in August 2001 as a supplement to the monthly Labour Force Survey (LFS). Respondents to the LFS who fell within the scope of the supplementary survey were asked further questions.

**2** The publication *Labour Force, Australia* (Cat. no. 6203.0) contains information about survey design, sample redesign, scope, coverage and population benchmarks relevant to the monthly LFS, which also apply to supplementary surveys. It also contains definitions of demographic and labour force characteristics, and information about telephone interviewing which are relevant to both the monthly LFS and supplementary surveys. From April 2001 the LFS has been conducted using a redesigned questionnaire containing additional questions and some minor definitional changes. These changes also affect the supplementary surveys. For further details, see *Information Paper: Implementing the Redesigned Labour Force Survey Questionnaire* (Cat. no. 6295.0) and *Information Paper: Questionnaires Used in the Labour Force Survey* (Cat. no. 6232.0).

### CONCEPTS, SOURCES AND METHODS

**3** The conceptual framework used in Australia's Labour Force Survey aligns closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling these estimates, are presented in *Labour Statistics: Concepts, Sources and Methods* (Cat. no. 6102.0) which is also available on the ABS website <[www.abs.gov.au](http://www.abs.gov.au)> (Statistics — Statistical Concepts Library).

### SCOPE

**4** The scope of the LFS was restricted to persons aged 15 years and over and excluded the following persons:

- members of the permanent defence forces;
- certain diplomatic personnel of overseas governments, customarily excluded from census and estimated populations;
- overseas residents in Australia;
- members of non-Australian defence forces (and their dependants).

**5** Students at boarding schools, patients in hospitals, residents of homes (e.g. retirement homes, homes for persons with handicaps), and inmates of prisons are excluded from all supplementary surveys.

**6** The survey was conducted in both urban and rural areas in all States and Territories, but excluded approximately 80,000 persons living in remote and sparsely settled parts of Australia who would otherwise have been within the scope of the survey. The exclusion of these persons will have only a minor impact on any aggregate estimates that are produced for individual States and Territories, except the Northern Territory where such persons account for over 20% of the population.

**7** In addition to those already excluded from the LFS, employees who worked solely for payment in kind in their main job are excluded from this survey.

### COVERAGE

**8** The estimates in this publication relate to persons covered by the survey in August 2001. In the LFS, coverage rules are applied which aim to ensure that each person is associated with only one dwelling and hence has only one chance of selection in the survey (see *Labour Force, Australia* Cat. no. 6203.0).

## EXPLANATORY NOTES *continued*

### RELIABILITY OF THE ESTIMATES

- 9** Estimates in this publication are subject to sampling and non-sampling errors:
- Sampling error is the difference between the published estimate and the value that would have been produced if all dwellings had been included in the survey. For further information on sampling error, refer to the Technical Notes.
  - Non-sampling errors are inaccuracies that occur because of imperfections in reporting by respondents and interviewers and errors made in coding and processing data. These inaccuracies may occur in any enumeration, whether it be a full count or a sample. Every effort is made to reduce the non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers and efficient processing procedures.

### SEASONAL FACTORS

- 10** The estimates are based on information collected in the survey month and, due to seasonal factors, may not be representative of other months of the year.

### CLASSIFICATIONS USED

- 11** Occupation data are classified according to the second edition of the Australian Standard Classification of Occupations (ASCO). For more detailed information see *ASCO Australian Standard Classification of Occupations, Second Edition* (Cat. no. 1220.0).
- 12** Industry data are classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), a more detailed description of which appears in *Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993* (Cat. no. 1292.0).

### NOTES ON ESTIMATES

- 13** In August 2001 there were 35,200 persons for whom sector of main job could not be determined. These persons were included in the private sector for the purpose of this publication.
- 14** In August 2001, persons refusing to answer questions about their weekly earnings and persons working in their own limited liability company who did not draw a wage or salary represented 513,200 in the population. These persons have been classified to the 'Could not be determined' category in this publication.
- 15** Care should be taken when using estimates of mean weekly earnings. Employees refusing to answer questions about their earnings are excluded from estimates of mean weekly earnings. Where these employees have demographic and employment characteristics which differ on average from the rest of the employee population, it is likely that the exclusion of these persons has resulted in a slight downward bias on mean weekly estimates.

### COMPARABILITY OF TIME SERIES

- 16** Revisions are made to population benchmarks for the LFS after each five-yearly Census of Population and Housing. The last such revision was made in February 1999 to take account of the results of the 1996 Census of Population and Housing. Estimates from supplementary surveys conducted from and including February 1999 are therefore based on these revised population benchmarks.
- 17** Supplementary surveys are not always conducted on the full LFS sample. Since August 1994 the sample for supplementary surveys has been restricted to no more than seven-eighths of the LFS sample. Therefore the reduction in sample size means that the standard errors for this survey differ from those applicable to previous surveys.

## EXPLANATORY NOTES *continued*

### COMPARABILITY OF TIME SERIES *continued*

**18** In August 1990, persons aged 70 years and over were excluded from this survey, restricting the age of respondents to 15–69 years. The scope of surveys since 1991 and surveys run prior to August 1990, included persons aged 70 and over.

**19** Care should be taken when comparing the movements in mean weekly earnings and employment benefits estimates that include the July 1991 and August 1997 surveys. The usual period between surveys is 12 months, however, in 1991 the elapsed time was 11 months (August 1990 to July 1991) and in 1992 it was 13 months (July 1991 to August 1992). In 1997, the elapsed time was 2 years (August 1995 to August 1997).

### COMPARABILITY WITH MONTHLY LFS STATISTICS

**20** Due to differences in the scope and sample size of this supplementary survey and that of the LFS, the estimation procedure may lead to some small variations between labour force estimates from this survey and those from the LFS.

### COMPARABILITY WITH AVERAGE WEEKLY EARNINGS

**21** Caution should be exercised when comparing estimates of mean weekly earnings in this publication with estimates of average weekly earnings included in the quarterly publication *Average Weekly Earnings, Australia* (Cat. no. 6302.0), which are compiled from a survey of employers. There are important differences in the scope and methodology of the two surveys.

**22** The quarterly Survey of Average Weekly Earnings excludes employees in the industries of Agriculture, forestry and fishing (ANZSIC Division A) and Private households employing staff (ANZSIC Subdivision 97), both of which are included in this household survey. Data from the quarterly Survey of Average Weekly Earnings are collected from employers who complete a mailed questionnaire with details of their employees' weekly earnings. For this household survey, respondents are either interviewed personally at their dwelling, or another adult member of their household responds on their behalf.

**23** The methodology used in this household survey may result in non-sampling error not evident in surveys of employers (and vice versa). This may account for some of the differences between the results of the two surveys.

### PREVIOUS SURVEYS OF WEEKLY EARNINGS

**24** Similar surveys have been conducted annually since August 1975, except 1991 when the survey was conducted in July and in 1996 when the survey was not conducted.

**25** Prior to 1998, this publication was titled, *Weekly Earnings of Employees (Distribution), Australia* (Cat. no. 6310.0). The change in title reflects the inclusion of employment benefits and trade union membership data previously released in other publications.

### PREVIOUS SURVEYS OF EMPLOYMENT BENEFITS

**26** Results of previous surveys on employment benefits have been published in:

- *Employment Benefits, Australia, August 1983 to August 1992* (Cat. no. 6334.0)
- *Employment Benefits, Australia, August 1994* (Cat. no. 6334.0.40.001)
- *Weekly Earnings of Employees (Distribution), Australia, August 1995* (Cat. no. 6310.0.40.001)
- *Weekly Earnings of Employees (Distribution), Australia, August 1997* (Cat. no. 6310.0)

## EXPLANATORY NOTES *continued*

### PREVIOUS SURVEYS OF TRADE UNION MEMBERS

**27** Information on trade union membership was first collected in 1976, then biennially in its current format, from 1986 to 1992. From this time it was conducted annually (with limited data available every second year). Results of previous surveys were published in:

- *Labour Force, Australia, December 1994, December 1995* (Cat. no. 6203.0)
- *Trade Union Members, Australia, August 1986, August 1988, August 1990, August 1992, August 1996* (Cat. no. 6325.0)
- *Trade Union Members, Australia, August 1994* (Cat. no. 6325.0.40.001)

**28** Limited data on trade union membership have also been published in:

- *Weekly Earnings of Employees (Distribution), Australia, August 1995* (Cat. no. 6310.0.40.001)
- *Weekly Earnings of Employees (Distribution), Australia, August 1997* (Cat. no. 6310.0)
- *Working Arrangements, Australia, August 1995* (Cat. no. 6342.0.40.001)
- *Working Arrangements, Australia, August 1997* (Cat. no. 6342.0)

### ACKNOWLEDGMENT

**29** ABS surveys draw extensively on information provided by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated: without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

### NEXT SURVEY

**30** The ABS plans to conduct this survey again in August 2002.

### RELATED PUBLICATIONS

**31** Other publications which may be of interest include:

- *Average Weekly Earnings, Australia* (Cat. no. 6302.0)
- *Career Experience, Australia* (Cat. no. 6254.0)
- *Working Arrangements, Australia* (Cat. no. 6342.0)
- *Industrial Disputes, Australia* (Cat. no. 6332.0)
- *Labour Force, Australia* (Cat. no. 6203.0)
- *Employment Arrangements and Superannuation, Australia* (Cat. no. 6361.0)

**32** Current publications produced by the ABS are listed in the *Catalogue of Publications and Products* (Cat. no. 1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release Advice* (Cat. no. 1105.0) which lists publications to be released in the next few days. The Catalogue and Release Advice are available from any ABS office or from the ABS Information Service on the World Wide Web, <URL:<http://www.abs.gov.au>>.

## APPENDIX 1 POPULATIONS AND DATA ITEM LIST

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The ABS has a range of data available on request from the Employee Earnings, Benefits and Trade Union Membership Survey. This section lists the data items and populations which relate to the survey. More detailed breakdowns of some data items may also be available on request.

The population(s) for a particular data item refers to the persons in the survey to whom the data relates. Where alternative output categories are available for the same data item, these are shown and the data item name is followed by a bracketed numeral (e.g. Country of birth (2)).

For more information about ABS data available on request contact Wendy Prowd on Canberra 02 6252 7508, or by facsimile on 02 6252 7784.

- |                     |  |
|---------------------|--|
| <b>Population 1</b> | Employees in main job.   |
| <b>Population 2</b> | Employees who worked full-time in their main job.                              |
| <b>Population 3</b> | Employees who were full-time workers.  |
| <b>Population 4</b> | Employees who worked full-time in their main job and were born overseas.       |
| <b>Population 5</b> | Employees who worked as an employee in the reference week in their second job. |
| <b>Population 6</b> | Employees who were members of a trade union in their main job.                 |



## APPENDIX 1 POPULATIONS AND DATA ITEM LIST *continued*

Data Items	Populations	Data Items	Populations
<b>1 State or Territory of usual residence</b>	<b>All</b>	<b>9 Occupation</b>	<b>All</b>
New South Wales		Managers and administrators	
Victoria		Professionals	
Queensland		Associate professionals	
South Australia		Tradespersons and related workers	
Western Australia		Advanced clerical and service workers	
Tasmania		Intermediate clerical, sales and service workers	
Northern Territory		Intermediate production and transport workers	
Australian Capital Territory		Elementary clerical, sales and service workers	
<b>2 Area of usual residence</b>	<b>All</b>	Labourers and related workers	
Capital City		<b>10 Industry</b>	<b>All</b>
Balance of State/Territory		Agriculture, forestry and fishing	
<b>3 Region of usual residence</b>	<b>All</b>	Mining	
Standard labour force dissemination regions		Manufacturing	
<b>4 Sex</b>	<b>All</b>	Electricity, gas and water supply	
Males		Construction	
Females		Wholesale trade	
<b>5 Marital status</b>	<b>All</b>	Retail trade	
Married		Accommodation, cafes and restaurants	
Not Married		Transport and storage	
<b>6 Relationship in household</b>	<b>All</b>	Communication services	
Family member		Finance and insurance	
Husband, wife or partner		Property and business services	
With dependants		Government administration and defence	
Without dependants		Education	
Lone parent		Health and community services	
With dependants		Cultural and recreational services	
Without dependants		Personal and other services	
Dependent student		<b>11 Weekly earnings in main job (\$)</b>	<b>All</b>
Non-dependent child		Under 100	
Other family member		100 and under 200	
Non-family member		200 and under 300	
Lone person		300 and under 400	
Not living alone		400 and under 500	
Relationship not determined		500 and under 600	
<b>7A Country of birth and period of arrival</b>	<b>All</b>	600 and under 700	
Born in Australia		700 and under 800	
Born overseas		800 and under 900	
Arrived before 1971		900 and under 1,000	
Arrived 1971-1980		1,000 and under 1,100	
Arrived 1981-1990		1,100 and under 1,200	
Arrived 1991-2000		1,200 and under 1,300	
Arrived 2001 to survey date		1,300 and under 1,400	
<b>7B Country of birth (1)</b>	<b>All</b>	1,400 and under 1,500	
Born in Australia		1,500 and under 1,600	
Born overseas		1,600 and under 1,700	
Born in main English-speaking countries		1,700 and under 1,800	
Born in other countries		1,800 and under 1,900	
<b>7C Country of birth (2)</b>	<b>All</b>	1,900 and under 2,000	
Born in Australia		2,000 and over	
Born overseas		Could not be determined	
The Middle East and North Africa		<b>12 Weekly earnings in second job (\$)</b>	<b>5</b>
Africa (excluding North Africa)		Under 100	
Northern America		100 and under 200	
South America, Central America and the Caribbean		200 and over	
North-East Asia		Could not be determined	
South-East Asia			
Southern Asia			
Europe and the Former USSR			
Oceania and Antarctica			
<b>8 Age group (years)</b>	<b>All</b>		
Collected in single years			

## APPENDIX 1 POPULATIONS AND DATA ITEM LIST *continued*

Data Items	Populations	Data Items	Populations
<b>13 Weekly earnings in all jobs (\$)</b> Under 100 100 and under 200 200 and under 300 300 and under 400 400 and under 500 500 and under 600 600 and under 700 700 and under 800 800 and under 900 900 and under 1,000 1,000 and under 1,100 1,100 and under 1,200 1,200 and under 1,300 1,300 and under 1,400 1,400 and under 1,500 1,500 and under 1,600 1,600 and under 1,700 1,700 and under 1,800 1,800 and under 1,900 1,900 and under 2,000 2,000 and over Could not be determined	All	<b>25 Superannuation coverage</b> Belongs to a superannuation scheme Provided by current employer Provided by other than current employer Does not belong to a superannuation scheme	All
<b>14 Hours worked in main job</b> Collected in single hours	All	<b>26 Provision of paid holiday leave</b> Entitled to paid holiday leave Not entitled to paid holiday leave Not known	All
<b>15 Hours worked in second job</b> Collected in single hours	5	<b>27 Provision of paid sick leave</b> Entitled to paid sick leave Not entitled to paid sick leave Not known	All
<b>16 Hours worked in all jobs</b> Collected in single hours	All	<b>28 Provision of paid long service leave</b> Entitled to paid long service leave Not entitled to paid long service leave Not known	All
<b>17 Hours paid for in main job</b> Collected in single hours	All	<b>29 Type of standard benefit</b> No standard benefit Superannuation Holiday leave Sick leave Long service leave	All
<b>18 Full-time or part-time status in main job</b> Full-time employee Part-time employee	All	<b>30 Trade union membership</b> Trade union member Not a trade union member Not known	All
<b>19 Full-time or part-time status of employment</b> Full-time workers Part-time workers	All	<b>31 School attendance</b> Attending school Not attending school	All
<b>20 Sector of main job</b> Public Private Could not be determined	All	<b>32 Multiple job-holder status</b> Multiple job-holder Not a multiple job-holder	All
<b>21 Frequency of pay in main job</b> Weekly Fortnightly Four-weekly Monthly Quarterly Other	All		
<b>22 Leave entitlements in main job</b> With leave entitlements Without leave entitlements	All		
<b>23 Size of location in main job (employees)</b> Less than 10 10–19 20–99 100 or more Not known	All		
<b>24 Number of standard benefits</b> No benefits One or more benefits One benefit Two benefits Three benefits Four benefits	All		

## APPENDIX 2 SUPPLEMENTARY SURVEYS

### SUPPLEMENTARY SURVEYS

The Monthly Population Survey program collects data on particular aspects of the labour force. The following is an historical list of supplementary surveys to the monthly labour force surveys. Data are available in publication form, by subscription or on request. Additional data from these surveys is available on request and can be obtained by contacting the ABS.

- *Career Experience*. Irregular. Latest issue November 1998 (Cat. no. 6254.0)
- *Career Paths of Persons with Trade Qualifications*. Final issue 1993 (Discontinued) (Cat. no. 6243.0)
- *Child Care*. Irregular. Latest issue June 1999 (Cat. no. 4402.0)
- *Education and Training Experience*. Irregular. Latest issue 1997 (Cat. no. 6278.0)
- *Employment Benefits*. Final issue August 1994 (Discontinued) (Cat. no. 6334.0.40.001)
- *Forms of Employment*. Irregular. Latest Issue August 1998 (Cat. no. 6359.0)
- *Job Search Experience of Unemployed Persons*. Annual. Latest issue July 2000 (Cat. no. 6222.0)
- *Labour Force Experience*. Two-yearly. Latest issue February 2001 (Cat. no. 6206.0)
- *Labour Force Status and Educational Attainment*. Final issue February 1994 (Discontinued) (Cat. no. 6235.0)
- *Labour Force Status and Other Characteristics of Families*. Final issue June 2000 (Discontinued) (Cat. no. 6224.0)
- *Labour Force Status and Other Characteristics of Migrants*. Irregular. Latest issue November 1999 (Cat. no. 6250.0)
- *Labour Mobility*. Two-yearly. Latest issue February 2000 (Cat. no. 6209.0)
- *Locations of Work*. Irregular. Latest issue June 2000 (Cat. no. 6275.0)
- *Multiple Jobholding*. Irregular. Latest issue August 1997 (Cat. no. 6216.0)
- *Participation in Education*. Final issue September 1999 (Discontinued) (Cat. no. 6272.0)
- *Persons Not in the Labour Force*. Annual. Latest issue September 2000 (Cat. no. 6220.0)
- *Persons Who had Re-entered the Labour Force*. Final issue July 1995 (Discontinued) (Cat. no. 6264.0.40.001)
- *Persons Who Have Left the Labour Force*. Final issue September 1994 (Discontinued) (Cat. no. 6267.0.40.001)
- *Retirement and Retirement Intentions*. Irregular. Latest issue November 1997 (Cat. no. 6238.0)
- *Retrenchment and Redundancy*. Irregular. Latest issue July 1997 (Cat. no. 6266.0)
- *Successful and Unsuccessful Job Search Experience*. Two-yearly. Latest issue July 2000 (Cat. no. 6245.0)
- *Superannuation*. Irregular. Final issue November 1995 (Discontinued) (Cat. no. 6319.0)
- *Trade Union Members*. Two-yearly. Final issue August 1996 (Discontinued) (Cat. no. 6325.0)
- *Transition from Education to Work*. Annual. Latest issue May 2000 (Cat. no. 6227.0)
- *Underemployed Workers*. Annual. Latest issue September 2000 (Cat. no. 6265.0)
- *Working Arrangements*. Irregular. Latest issue August 2000 (Cat. no. 6342.0)
- *Work-Related Injuries*. Irregular. Latest issue September 2000 (Cat. no. 6324.0)

# TECHNICAL NOTE DATA QUALITY

## INTRODUCTION

**1** Since the estimates in this publication are based on information obtained from occupants of a sample of dwellings, they are subject to sampling variability. That is, they may differ from those estimates that would have been produced if all dwellings had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings was included. There are about two chances in three (67%) that a sample estimate will differ by less than one SE from the number that would have been obtained if all dwellings had been included, and about 19 chances in 20 (95%) that the difference will be less than two SEs. Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate.

**2** Due to space limitations, it is impractical to print the SE of each estimate in the publication. Instead, a table of SEs is provided to enable readers to determine the SE for an estimate from the size of that estimate (see table T1). The SE table is derived from a mathematical model, referred to as the "SE model", which is created using data from a number of past Labour Force Surveys. It should be noted that the SE model only gives an approximate value for the SE for any particular estimate, since there is some minor variation between SEs for different estimates of the same size.

## CALCULATION OF STANDARD ERROR

**3** An example of the calculation and the use of SEs in relation to estimates of persons is as follows. Table 5 shows the estimated number of female part-time employees in main job was 1,648,000. Since this estimate is between 1,000,000 and 2,000,000, table T1 shows that the SE for Australia will lie between 11,550 and 15,250 and can be approximated by interpolation using the following general formula:

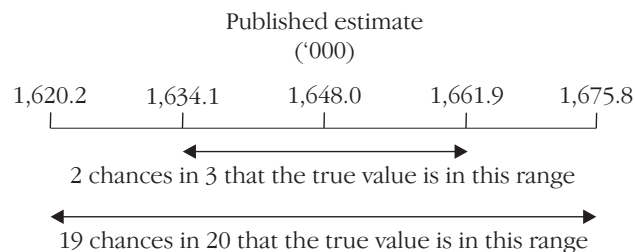
*SE of estimate* =

$$\text{lower SE} + \left( \left( \frac{\text{size of estimate} - \text{lower estimate}}{\text{upper estimate} - \text{lower estimate}} \right) \times (\text{upper SE} - \text{lower SE}) \right)$$

$$= 11,550 + \left( \frac{1,648,000 - 1,000,000}{2,000,000 - 1,000,000} \right) \times (15,250 - 11,550)$$

$$= 13,900 \text{ (rounded to the nearest 100)}$$

**4** Therefore, there are about two chances in three that the value that would have been produced if all dwellings had been included in the survey will fall within the range 1,634,100 to 1,661,900 and about 19 chances in 20 that the value will fall within the range 1,620,200 to 1,675,800. This example is illustrated in the diagram below.



**CALCULATION OF STANDARD  
ERROR** *continued*

**5** In general, the size of the SE increases as the size of the estimate increases. Conversely, the RSE decreases as the size of the estimate increases. Very small estimates are thus subject to such high RSEs so that their value for most practical purposes is unreliable. In the tables in this publication, only estimates with RSEs of 25% or less are considered reliable for most purposes. Estimates with RSEs greater than 25% but less than or equal to 50% are preceded by an asterisk (e.g. \*3.4) to indicate they are subject to high SEs and should be used with caution. Estimates with RSEs of greater than 50%, preceded by a double asterisk (e.g. \*\*0.3), are considered too unreliable for general use and should only be used to aggregate with other estimates to provide derived estimates with RSEs of less than 25%.

**MEANS AND MEDIANS**

**6** The RSEs of estimates of mean and median weekly earnings are obtained by first finding the RSE of the estimate of the total number of persons contributing to the estimate (see table T1) and then multiplying the resulting number by the following factors:

- mean weekly earnings: 0.9
- median weekly earnings: 1.0

**7** The following is an example of the calculation of SEs where the use of a factor is required. Table 7 shows an estimate of 1,648,000 female part-time employees with mean weekly earnings of \$317. The SE of 1,648,000 can be calculated from table T1 (by interpolation) as 13,900. To convert this to an RSE we express the SE as a percentage of the estimate, or  $13,900/1,648,000 = 0.8\%$ .

**8** The RSE of the estimate of mean weekly earnings is calculated by multiplying this number (0.8%) by the appropriate factor shown in the previous paragraph (in this case 0.9):  $0.8 \times 0.9 = 0.7\%$ . The approximate SE of this estimate of mean weekly earnings of female part-time employees in main job is therefore 0.7% of \$317, i.e. about \$2.20. Therefore, there are two chances in three that the mean weekly earnings for female part-time employees that would have been obtained if all dwellings had been included in the survey would have been within the range \$314.80 to \$319.20, and about 19 chances in 20 that it would have been within the range \$312.60 to \$321.40.

**PROPORTIONS AND  
PERCENTAGES**

**9** Proportions and percentages formed from the ratio of two estimates are also subject to sampling errors. The size of the error depends on the accuracy of both the numerator and the denominator. A formula to approximate the RSE of a proportion is given below. This formula is only valid when x is a subset of y.

$$RSE\left(\frac{x}{y}\right) = \sqrt{[RSE(x)]^2 - [RSE(y)]^2}$$

**10** Considering the example from the previous page, the 1,648,000 females who were part-time employees in their main job represent 46% of the 3,587,800 female employees. The SE of 1,648,000 was calculated previously as 13,900. To convert this to a RSE we express the SE as a percentage of the estimate, so the RSE is  $13,900/1,648,000 = 0.8\%$ . The SE for 3,587,800 may be calculated by interpolation as 19,300, which converted to a RSE is  $19,300/3,587,800 = 0.5\%$ . Applying the above formula, the RSE of the proportion is:

$$RSE = \sqrt{(0.8)^2 - (0.5)^2} = 0.6\%$$

## TECHNICAL NOTE DATA QUALITY *continued*

**11** Therefore, the SE for the proportion (46%) is 0.3 percentage points (= (46/100)x0.6). Therefore, there are about two chances in three that the proportion of female part-time employees was between 45.7% and 46.3%, and 19 chances in 20 that the proportion is within the range 45.4% to 46.6%.

### DIFFERENCES

**12** Published estimates may also be used to calculate the difference between two survey estimates (of numbers or percentages). Such an estimate is subject to sampling error. The sampling error of the difference between two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates (x-y) may be calculated by the following formula:

$$SE(x-y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

**13** While this formula will only be exact for differences between separate and uncorrelated characteristics or subpopulations, it is expected to provide a good approximation for all differences likely to be of interest in this publication.

### T1 STANDARD ERRORS OF ESTIMATES

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.	RSE
	no.	no.	no.	no.	no.	no.	no.	no.	no.	%
Size of estimate (persons)										
100	90	100	180	160	160	110	110	130	80	80.0
200	160	170	260	220	220	140	150	160	140	70.0
300	220	230	310	260	260	170	170	180	190	63.3
500	330	320	390	320	340	210	210	220	270	54.0
700	420	400	460	370	390	240	250	240	350	50.0
1,000	530	500	540	420	460	280	280	270	440	44.0
1,500	690	630	650	500	550	330	330	310	580	38.7
2,000	820	750	740	570	620	370	370	350	700	35.0
2,500	950	850	800	600	700	400	400	400	800	32.0
3,000	1 050	950	900	650	750	450	450	400	900	30.0
3,500	1 150	1 000	950	700	800	450	450	450	1 000	28.6
4,000	1 250	1 100	1 000	750	850	500	500	450	1 050	26.3
5,000	1 400	1 200	1 100	850	900	550	550	500	1 200	24.0
7,000	1 650	1 400	1 300	950	1 050	600	600	550	1 450	20.7
10,000	1 950	1 700	1 500	1 100	1 200	700	700	650	1 750	17.5
15,000	2 350	2 000	1 800	1 300	1 450	800	800	750	2 150	14.3
20,000	2 700	2 250	2 050	1 450	1 600	900	900	850	2 450	12.3
30,000	3 150	2 650	2 450	1 700	1 850	1 050	1 050	1 000	2 950	9.8
40,000	3 500	2 900	2 750	1 900	2 100	1 200	1 150	1 100	3 350	8.4
50,000	3 800	3 150	3 000	2 100	2 250	1 300	1 250	1 250	3 700	7.4
100,000	4 750	4 000	4 000	2 750	2 900	1 700	1 600	1 650	4 850	4.9
150,000	5 350	4 600	4 750	3 250	3 350	1 950	1 850	2 000	5 600	3.7
200,000	5 900	5 150	5 300	3 650	3 750	2 150	2 000	2 300	6 250	3.1
300,000	6 900	6 100	6 250	4 300	4 300	2 500	..	2 750	7 250	2.4
500,000	8 550	7 700	7 650	5 250	5 050	3 050	..	..	8 800	1.8
1,000,000	11 950	10 800	10 050	6 850	6 350	..	..	..	11 550	1.2
2,000,000	17 600	15 650	13 100	9 000	7 800	..	..	..	15 250	0.8
5,000,000	31 550	26 900	18 450	..	..	..	..	..	23 400	0.5
10,000,000	..	..	..	..	..	..	..	..	40 950	0.4

.. not applicable

**TECHNICAL NOTE DATA QUALITY *continued***

DIFFERENCES *continued*

**T2 LEVELS AT WHICH ESTIMATES HAVE RELATIVE STANDARD ERRORS OR 25% AND 50% (a)**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	no.	no.	no.	no.	no.	no.	no.	no.	no.
25% RSE									
Mean weekly earnings	5 459	4 205	3 791	2 212	2 624	1 063	1 127	1 038	4 026
Median weekly earnings	6 789	5 192	4 582	2 647	3 153	1 270	1 342	1 219	5 149
All other estimates	6 245	4 689	4 100	2 469	2 937	1 206	1 233	1 145	4 574
50% RSE									
Mean weekly earnings	977	867	1 071	675	762	326	354	367	567
Median weekly earnings	1 327	1 132	1 300	808	923	391	422	429	806
All other estimates	1 182	996	1 160	754	857	371	387	404	682

(a) Refers to the number of persons contributing to the estimate.

## GLOSSARY

<b>Employee</b>	A person who works in their main job for a public or private employer and receives remuneration in wages, salary, a retainer fee by their employer while working on a commission basis, tips or piece-rates, or a person who operates his or her own incorporated enterprise with or without hiring employees.
<b>Full-time employees in main job</b>	All employees for whom 'full-time' was the response to the question 'Is your main job full-time or part-time?'
<b>Full-time workers</b>	Employed persons who usually worked 35 hours or more a week (in all jobs) and those who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week.
<b>Holiday leave</b>	The entitlement of an employee to paid holiday, vacation or recreation leave.
<b>Hours paid for in main job</b>	The number of hours for which employees were paid, not necessarily the number of hours actually worked during the reference week (e.g. an employee on paid leave for the week was asked to report the number of hours for which they were paid).
<b>Hours worked</b>	The number of hours actually worked during the reference week.
<b>Industry</b>	Classified according to <i>Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993</i> (Cat. no. 1292.0). In this publication, industry relates to the main job and is shown at the ANZSIC Division level.
<b>Leave entitlements</b>	The entitlement of employees to either paid holiday leave or paid sick leave in their main job.
<b>Long service leave</b>	The entitlement of an employee to paid long service leave.
<b>Main English speaking countries</b>	The United Kingdom, Ireland, South Africa, Canada, the United States of America and New Zealand.
<b>Main job</b>	The job in which a person usually works the most hours.
<b>Mean weekly earnings</b>	The amount obtained by dividing the total earnings of a group by the number of employees in that group.
<b>Median weekly earnings</b>	The amount which divides the distribution of employees into two equal groups, one having earnings above and the other below that amount.
<b>Multiple jobholder</b>	Employees who, during the reference week, worked in a second job or held a second job from which they were absent because of holidays, sickness or any other reason.
<b>Occupation</b>	Classified according to <i>ASCO — Australian Standard Classification of Occupations, Second Edition</i> (Cat. no. 1220.0). In this publication, occupation relates to the main job and is shown at the ASCO Major Group level.
<b>Part-time employees in main job</b>	All employees for whom 'part-time' was the response to the question 'Is your main job full-time or part-time?'
<b>Part-time workers</b>	Employed persons who usually worked less than 35 hours a week (in all jobs) and either did so during the reference week, or were not at work in the reference week.
<b>Second job</b>	A job, other than the main job, in which some hours were worked during the reference week.
<b>Sector of main job</b>	Is used to classify a respondent's employer as a public or private enterprise. The public sector includes all government units, such as government departments, non-market non-profit institutions that are controlled and mainly financed by government, and corporations and quasi-corporations that are controlled by government.
<b>Sick leave</b>	The entitlement of an employee to paid sick leave.



## GLOSSARY *continued*

<b>Size of location</b>	The number of persons employed at the location of the respondent's main job.
<b>Standard benefit</b>	The entitlement of an employee to paid holiday leave, sick leave, long service leave or a superannuation benefit.
<b>Superannuation benefit</b>	Membership of a superannuation or retirement benefits scheme, arranged or provided by the person's current employer even if the employer did not contribute to the fund.
<b>Superannuation coverage</b>	Membership of a superannuation or retirement benefits scheme regardless of whether the scheme was arranged or provided by the person's current employer.
<b>Trade union</b>	An organisation consisting predominantly of employees, the principal activities of which include the negotiation of rates of pay and conditions of employment for its members.
<b>Trade union member</b>	Employees with membership in a trade union in conjunction with their main job.
<b>Weekly earnings</b>	Amount of 'last total pay' from wage and salary jobs prior to the interview (i.e. before taxation and other deductions had been made). For persons paid other than weekly, earnings were converted to a weekly equivalent. No adjustment was made for any back payment of wage increases or prepayment of leave, etc.
<b>With leave entitlements in main job</b>	Employees who were entitled to either paid holiday leave or paid sick leave in their main job.
<b>Without leave entitlements in main job</b>	Employees who were entitled to neither paid holiday leave nor paid sick leave in their main job.







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