



Overview of research to inform the Annual Wage Review 2018–19

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1 Introduction

The Fair Work Commission (Commission) is responsible for reviewing and setting minimum wages for employees in the national workplace relations system. Each financial year the Commission's Expert Panel for annual wage reviews conducts an annual wage review and issues a decision and a national minimum wage order for employees not covered by an award or agreement.

In conducting the annual wage review, the Expert Panel must consider the provisions and objectives outlined in the *Fair Work Act 2009* (Cth) (Fair Work Act), in particular Parts 2-6 which deal with minimum wages, including the conduct of annual wage reviews. Both the 'minimum wages objective' (s.284) and the 'modern awards objective' (s.134) must be considered.

The Fair Work Act allows for research to be undertaken and reports to be prepared for consideration in an annual wage review with the expectation that it will assist parties to the review and provide a contribution to the broader research community.

For the *Annual Wage Review 2018–19* the Commission is releasing the following reports, each of which addresses one or more objectives of the Fair Work Act:

- 'Developments in wages growth' by David Rozenbes and Grant Ellis; and
- 'Insights into underemployment' by Kelvin Yuen and Oliver Smith.

The purpose of this report is to present a summary of each of these reports being released by the Commission for the 2018–19 Review.

2 Developments in wages growth

David Rozenbes and Grant Ellis

2.1 Background

The **objective** of this report is to describe and analyse recent trends in wages growth in Australia. This is **relevant** to the minimum wages objective of the Fair Work Act which requires the Expert Panel for annual wage reviews to establish and maintain a safety net of fair minimum wages taking into account the performance and competitiveness of the national economy and the relative living standards of the low paid.

The report addresses two main topics:

- What are the main trends in nominal and real wages in Australia over the past 20 years?
- What are the explanations for the recent slow-down in wages growth?

2.2 Measures of wages

The report presents data from a range of measures of wages growth in Australia. The wage measures selected for analysis are those that are referred to in the annual wage reviews undertaken by the Expert Panel, are available continuously for periods of at least 20 years (to be able to evaluate trends over time); and derived from employer surveys (considered the most reliable method for collecting data on wages). Table 1.1 provides a list of the measures included in the report and for each measure presents key information on its definition and scope, frequency and sample size.

Table 2.1: Comparison of wage measures

Indicator	What it measures	Frequency	Types of payments included	Disaggregated categories	Sample size
Total hourly rates of pay excluding bonuses (WPI)	Changes in wages due to market factors	Quarterly	Penalty rates, overtime, fixed and regular allowances	Sector, industry	18 000 jobs, 3000 employers
Average weekly ordinary time earnings (AWOTE)	Average earnings of full-time adult employees	Biannually	Penalty rates, allowances, bonuses	Gender, sector, industry	5400 employers
Compensation of employees	Total remuneration	Quarterly	Redundancy, workers' compensation	Wages and salaries, Employers' social contributions	Various
Units labour costs	Average cost of labour per unit of output	Quarterly	Redundancy, workers' compensation	–	Various
Wages and salaries	Total value of private sector wages	Quarterly	Aggregate	Industry	15 000 businesses
Average hourly total cash earnings (EEH)	Hourly earnings for non-managerial employees	Biennially	Penalty rates, allowances, bonuses, overtime, superannuation	Sector, industry, occupation, method of setting pay	53 000 employees, 8200 employers
AAWI in federal enterprise agreements	Annualised wage increases	Quarterly	Base rate of pay only	Sector, industry, state	All registered federal enterprise agreements

2.2.1 Wage measures from the Australian Bureau of Statistics

The measure of nominal wages growth in Australia recommended by the Australian Bureau of Statistics (ABS) is the **Wage Price Index (WPI)**. It measures the change in the average hourly rate of pay (excluding bonuses) for a representative sample of jobs with employers selected from the ABS Business Register. The WPI is designed to capture the effect on wages of market factors, but to exclude the effect of changes in the quality or quantity of labour used. The WPI is published as an index as it is intended to measure average changes in wages over time, rather than average wages at a point in time. The WPI series commenced in September 1997 and is available on a quarterly basis.

The main alternative measure of nominal wages growth is from the Survey of **Average Weekly Earnings**. This survey provides measures of average weekly earnings (AWE) and average weekly ordinary time earnings (AWOTE) at a point in time for workers employed by a representative sample of employers in Australia. The preferred measure of weekly earnings to derive estimates of nominal wage growth is AWOTE for full-time adult employees. This is to avoid the measure of wages growth being influenced by changes to the composition of hours worked among the workforce included in the survey. Weekly ordinary time earnings are calculated before tax and other deductions are made and include wages and salaries in cash and salary sacrifice arrangements. Average wages measures from this source are currently available for May and November each year.

Several measures of quarterly nominal wages growth can be derived from the Australian National Accounts. First, the measure of compensation of employees in the National Accounts can be used to derive a measure of **average compensation per employee**. Compensation of employees measures remuneration, paid as wages and salary or as a social contribution and made in cash or kind, for work done by employees during the relevant period. The measure of compensation per employee is derived by dividing total compensation of employees (from the National Accounts) by the number of wage and salary earners (from the Labour Force Survey). Second, the National Accounts can be used to derive a measure of the **unit cost of labour**—that is, the average cost of labour per unit of output. Average labour costs are calculated as compensation of employees plus payroll tax and minus employment subsidies divided by total hours worked by employees.

A measure of average wages and salaries for private sector employees is available from the Quarterly Business Indicators Survey. Wages and salaries are defined as gross earnings before taxation and other deductions and include provisions for employee entitlements. Data on compensation of employees in the National Accounts are taken from the Quarterly Business Indicators Survey, but also covers extra industries such as the public sector.

A measure of **average hourly and weekly earnings** is available from the Survey of Employee Earnings and Hours (EEH). The measure is collected from a representative sample of employers and is available for May in each year when the EEH Survey is undertaken. This measure is particularly relevant to the annual wage reviews as it is the only measure that provides publicly available information on average earnings by method of pay (for example, collective agreement, award etc.). Data are available from the EEH Survey for different types of earnings such as ordinary time and overtime. Earnings are defined to include allowances, penalty payments, regular bonuses and commissions, and amounts salary sacrificed.

2.2.2 Wage measure from the Commonwealth Department of Jobs and Small Business

This measure of wages growth is derived from federal enterprise agreements. Indicators of annual wages growth for agreements approved in each quarter or agreements current on the last day of the quarter are available. This measure is calculated only for the base rate of pay and incorporating agreements for which annual average rates of wage growth can be calculated (which excludes, for example, agreements that link wage increases to future changes in the CPI). The measure is published as a rate of change, and not as an average wage or index. The sample of agreements used to construct the measure is from the Workplace Agreements Database, which provides information on all known federal enterprise agreements that have operated since the introduction of

the Enterprise Bargaining Principle in 1991. According to the EEH, in May 2016 federal enterprise agreements covered about 30 per cent of all employees.

2.2.3 Interpreting data on nominal wages growth from the alternative measures

Estimates of the rate of growth in nominal wages from the alternative measures may display common trends—but may also differ in their level or variation across time. These differences between the measures reflect the differences in their construction. It is important to keep this point in mind when interpreting estimates of wages growth from the alternative measures.

An example is differences between the measures in the factors that can cause wages growth to vary across time. As has been explained above, the WPI has been deliberately designed to exclude the impact of changes to labour quality or hours of work from its measure of wages. By comparison, a measure such as AWOTE will vary when there is a change in labour quality—such as larger proportion of workers with higher levels of education attainment or working in occupations such as management or professions. For this reason, we would usually expect the rate of growth in AWOTE to be above the rate of growth in WPI. Similarly, the measure of average compensation per employee from the National Accounts will vary depending on average hours of work of employees. This constitutes an extra possible source of variation in the estimated rate of nominal wage growth compared to the WPI.

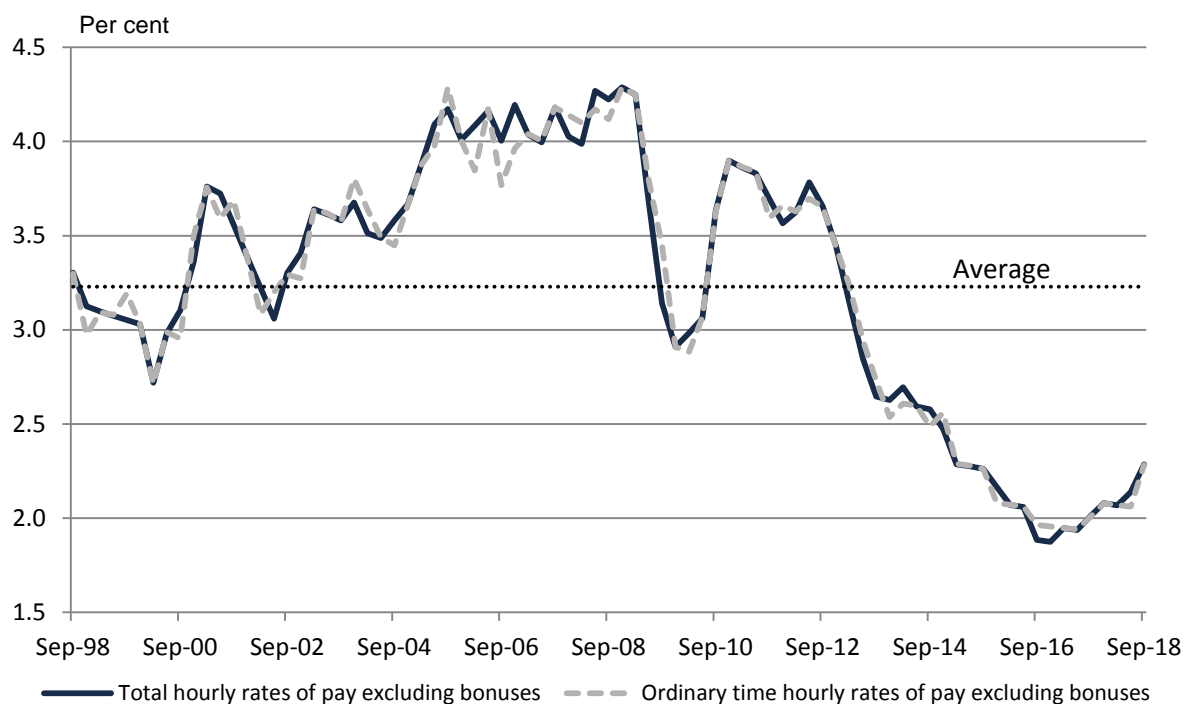
Other factors that might cause differences between the estimated rate of growth in nominal wages are the type of workers (for example, all workers versus workers from the private sector only); the scope of the earnings measure included (for example, wage and salary payments only or wage and salary payments plus employer social contributions); and the sample size of employees or jobs and frequency of change in the sample used to construct the measure of nominal wages.

2.3 Trends in nominal wages growth

2.3.1 Wage Price Index

The WPI is the most commonly used measure of nominal wage growth in Australia, and the measure preferred by the ABS. Chart 1.1 shows annual rates of growth from the WPI for both total and ordinary rates of pay excluding bonuses from September 1997–1998 to the present. Over the 20-year period of the survey the average rate of growth has been 3.2 per cent. Since 2011–12 the rate of growth has been below that average, and for the past several years by what is historically a large amount, around 1 percentage point. In the past two years there has been a slight pick-up in the rate of growth from 2 to 2.3 per cent, although clearly this still remains well below the 20-year average.

Chart 1.1: Annual WPI growth, total and ordinary hourly rates of pay excluding bonuses



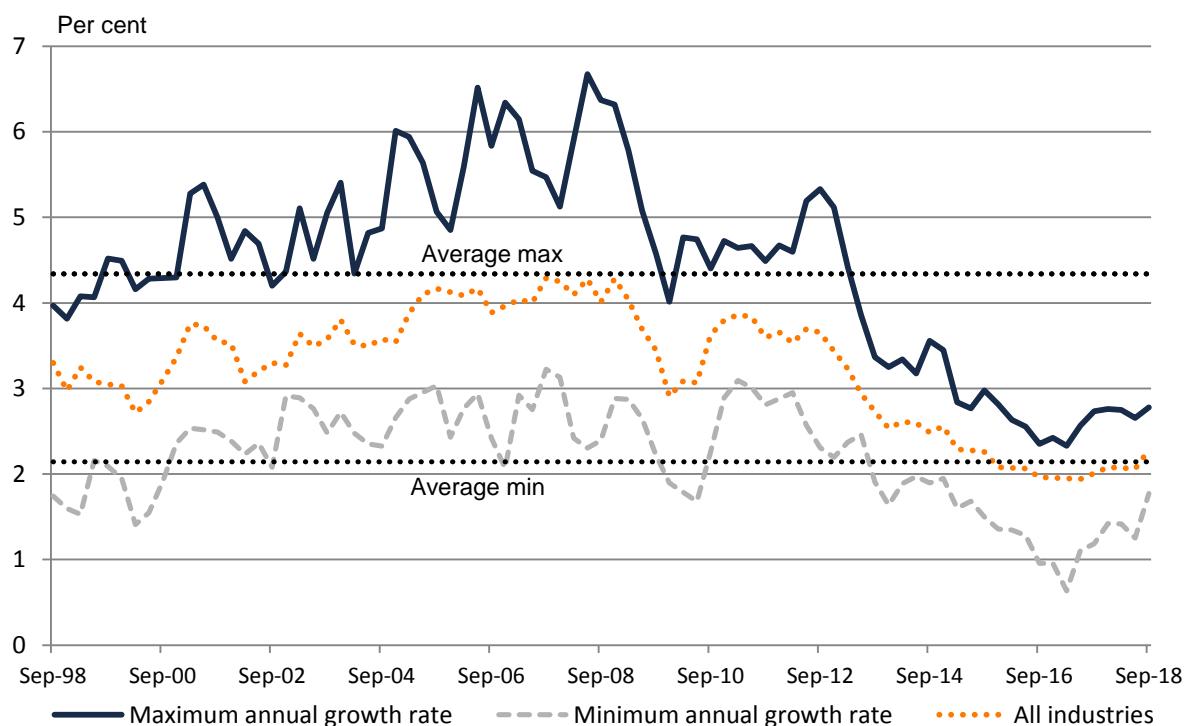
Note: Data for total hourly rates of pay are seasonally adjusted. Data for ordinary time hourly rates of pay are in original terms.

Source: ABS, *Wage Price Index, Australia, Sep 2018*, Catalogue No. 6345.0.

The WPI indicates that the slow-down in nominal wages growth has occurred for workers in both the public and private sectors. Since 2011-12 growth for these groups has been below their respective 20-year averages, and for both groups the divergence from the average has been of similar magnitude.

From the WPI it also appears that there has been a large common element in nominal wages growth between industries in Australia. Chart 1.2 shows the maximum and minimum annual WPI growth by quarter across 19 1-digit industries, represented by the highest and lowest growth rate recorded for each quarter. The chart shows that both the series for maximum and minimum annual growth rates have followed the aggregate annual WPI growth by decreasing below their 20-year averages from 2012-13 onwards.

Chart 2.2: Maximum and minimum annual WPI growth across industries



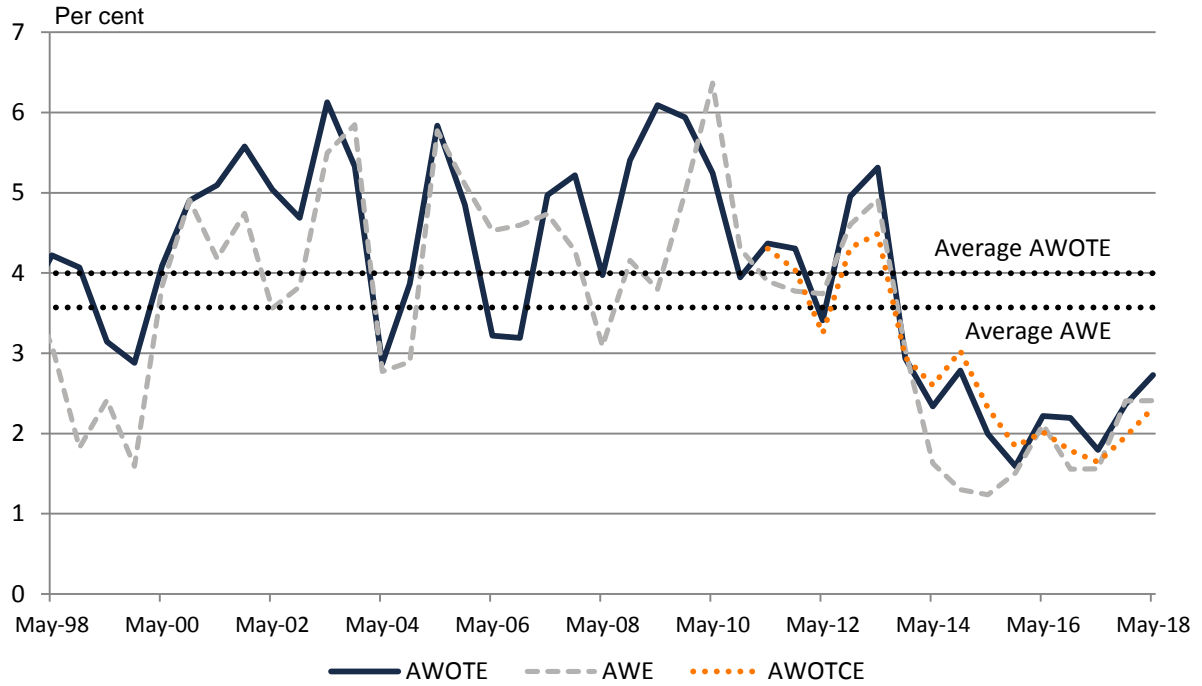
Source: ABS, *Wage Price Index, Australia, Sep 2018*, Catalogue No. 6345.0.

Research undertaken using the WPI by the Reserve Bank of Australia provides a further perspective on the evolution of growth in nominal wages (Bishop, 2016; Bishop and Cassidy, 2017; Bishop, 2018). Initial research comparing between 2012 and 2016 found that the slow-down in the rate of growth in nominal wages was due to both lower frequency of wage adjustments and a decrease in the average size of wage increases (due especially to a lower share of jobs receiving wage increases of more than 4 per cent). Subsequent research has found that the slight upturn in growth in WPI from 2016 to 2018 is due to an increase in the frequency of wage adjustment, with the average size of wage increases remaining constant.

2.3.2 Other wage measures

Other measures of wages in Australia show similar patterns to the WPI in the timing of the onset of slower growth in nominal wages. First, Chart 1.3 shows annual growth in measures of AWE and AWOTE. Both series moved below their 20-year averages in 2012–13, and for the past several years annual growth has been about 2 percentage points below that average. Second, annual growth in compensation per employee and per hour worked have been below their 20-year averages since about 2013–14. Third, Chart 1.4 shows annual average wages growth by quarter for federal enterprise agreements. The rates of growth in wages in agreements approved in the quarter and in agreements current at the end of the quarter moved below their 20-year average values in about 2012–13 and have been 0.5 to 1 percentage point below that long-term average in the past several years. Fourth, the measure of annual growth in nominal unit labour costs went below its 20-year average in 2011–12. However, it has rebounded strongly since 2015–16 to be at its average value in recent times. Some rebound in growth in nominal terms is also evident in the past one to two years from the other wage measures, but not to the same extent as for the unit labour cost measure.

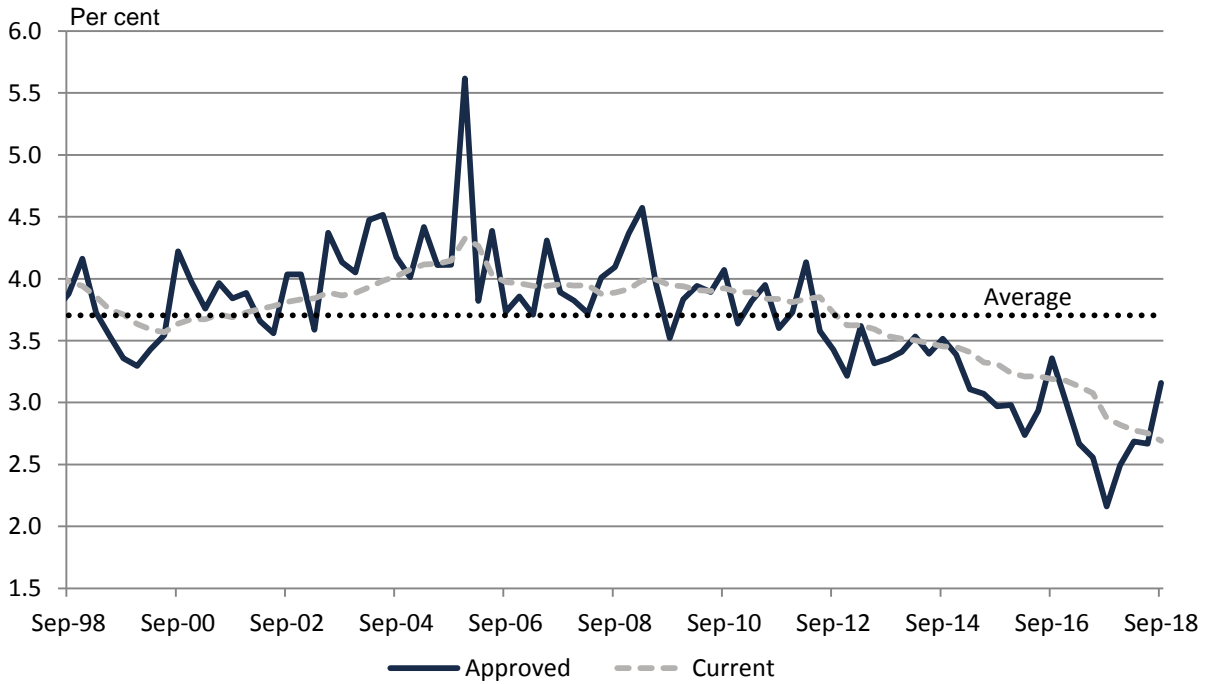
Chart 2.3: Annual growth in average weekly earnings



Note: Data are in original terms.

Source: ABS, *Average Weekly Earnings, Australia, May 2018*, Catalogue No. 6302.0.

Chart 2.4: AAWI for federal enterprise agreements approved and current in the quarter

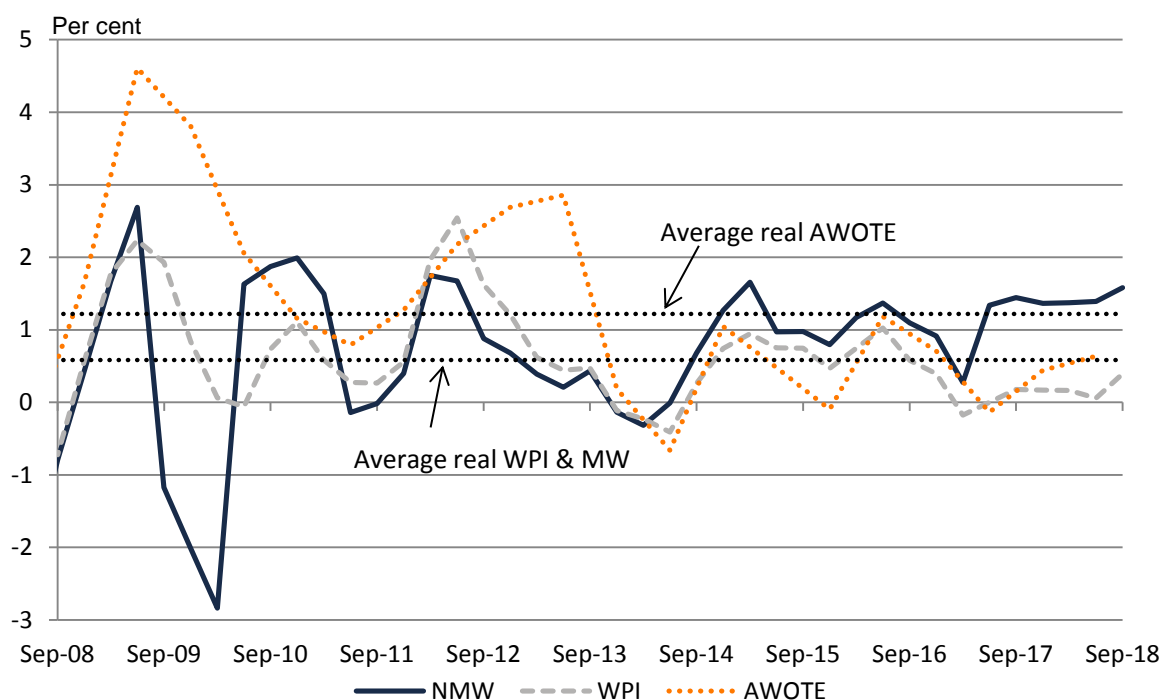


Source: Department of Job and Small Business, *Trends in Federal Enterprise Bargaining*, September quarter 2018.

2.4 Trends in real wages growth

Growth in real wages—which adjusts nominal wages growth for price inflation—provides a measure of changes in workers’ purchasing power, and hence is used as a measure of living standards in the annual wage reviews. Chart 1.5 shows annual rates of growth in real wages using the WPI, average weekly ordinary time earnings and the National Minimum Wage (NMW), adjusted using the CPI. Annual growth rates in real WPI and average weekly ordinary time earnings have generally been positive for the past decade but below their 20-year averages. Annual growth rates in the real NMW have matched or exceeded the other series since about 2013–14.

Chart 2.5: Real wages growth in the NMW, WPI and AWOTE



Note: WPI is seasonally adjusted and quarterly. AWOTE is in original terms and biannual.

Source: ABS, *Wage Price Index, Australia, Sep 2018*, Catalogue No. 6345.0; ABS, *Average Weekly Earnings, Australia, May 2018*, Catalogue No. 6302.0; ABS, *Consumer Price Index, Australia, Sep 2018*, Catalogue No. 6401.0; *Metal, Engineering and Associated Industries Award 1998; Manufacturing and Associated Industries and Occupations Award 2010*.

2.5 Reasons for low wages growth

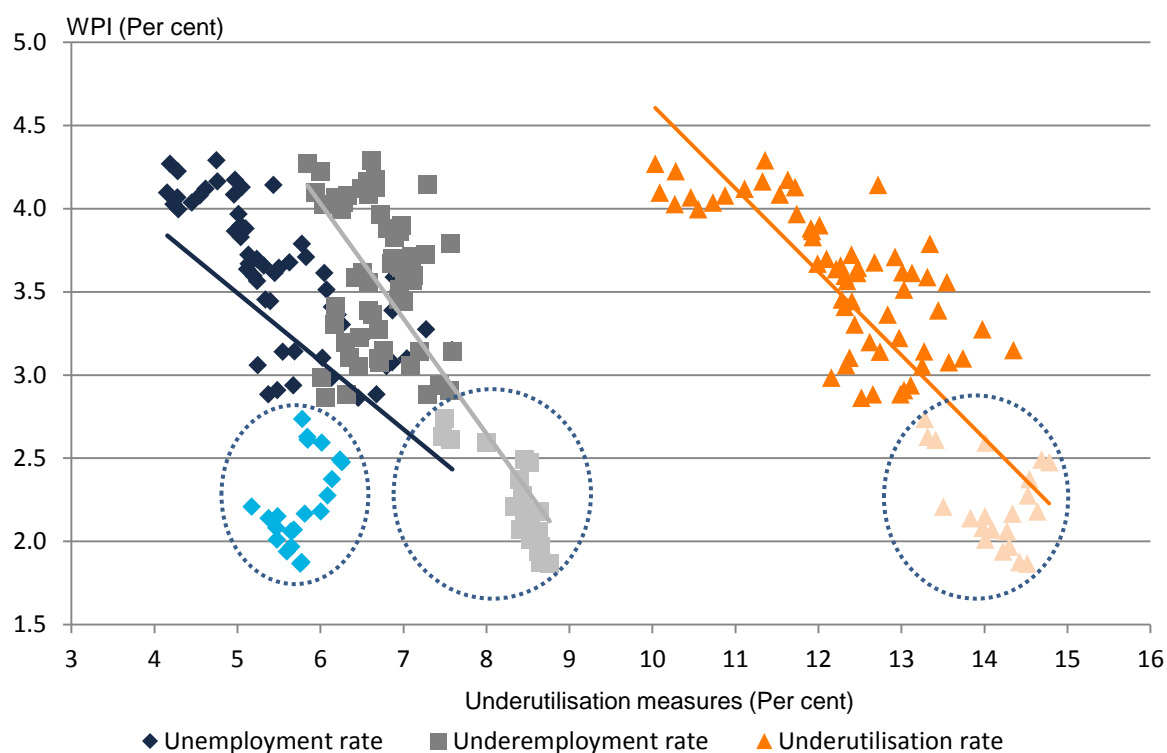
Attempts to explain recent low rates of growth in nominal wages in Australia generally begin by considering the influence of cyclical factors such as labour utilisation, price inflation expectations and labour productivity growth. Where it is concluded that those cyclical factors are unable to fully explain the current trends in wage growth, a range of structural factors have then been brought into consideration—primarily decreases in worker bargaining power due to declining unionisation and changes to wage-setting practices; or longer-term decreases in the demand for labour due to technological change and/or globalisation.

The relation between nominal wages growth and cyclical influences can be examined using a graphical representation of the Phillips curve: a scatter plot which shows the rate of growth in

wages graphed against a measure of labour spare capacity such as the rate of unemployment. Doing this for Australia for the period from 1997-1998 onwards shows that the rate of growth in nominal wages has been below what would have been predicted based on the 20-year average relation between growth in nominal wages and measures of labour underutilisation.

As an example, Chart 1.6 shows the annual rate of growth in WPI graphed against the rates of unemployment, underemployment and labour underutilisation for the period from 1997-1998 onwards using quarterly data. Average relations between growth in WPI and each measure of labour spare capacity are shown in the graph as straight lines. For each scatter plot the different colours distinguish between the periods before and after the September quarter 2013. For each measure of spare capacity it is evident that recent nominal wage growth has been below what would have been predicted given the extent of spare capacity in the labour market. This is most apparent for the rate of unemployment, but also to some extent for the other measures. A similar divergence in nominal wages growth appears in recent times when other measures of labour utilisation, such as the vacancy rate are used to represent cyclical influences on wage-setting. Hence, this type of graphical analysis is suggestive that nominal wages growth in Australia since about 2013 has been lower than expected based on cyclical factors.

Chart 2.6: Annual WPI growth and measures of labour force underutilisation



Note: All data are in trend terms.

Source: ABS, *Wage Price Index, Australia, Sep 2018*, Catalogue No. 6345.0; ABS, *Labour Force, Australia, Oct 2018*, Catalogue No. 6202.0.

More thorough investigation of the causes of recent low nominal wages growth in Australia has been undertaken in a variety of recent research. One approach has been to use a primarily descriptive empirical approach to examine the impact of a single or selected set of factors on

nominal wage growth—such as studies which have examined the effect of changes to worker bargaining power (for example, Isaac, 2018; Hardy and Stewart, 2018). The other approach has been to estimate econometric models for the rate of growth in nominal wages. This approach allows multiple potential explanations for the slow-down in nominal wages growth to be investigated in a common framework. Some of these econometric studies have had explaining wage outcomes in Australia as their focus (for example, Jacobs and Rush, 2015; Chua and Robinson, 2018); and others have provided evidence on Australia as part of a multi-country study of wage outcomes (for example, IMF, 2017; Arsov and Evans, 2018).

A first major question which these studies (mainly those using the econometric approach) address is whether cyclical factors can explain any or all of the slow-down in nominal wage growth in Australia. Universally the studies find that the slow-down has been related to a decrease in price inflation expectations and a rise in labour market spare capacity since the early 2010s. Interestingly, several studies find that the rate of unemployment is a sufficient measure of labour market spare capacity, with little explanatory power being added by broader measures that incorporate dimensions such as underemployment. Not all studies have examined the relation between nominal wages growth and labour productivity, but those that do have found that the slow-down in wages growth can also be partly attributed to slower productivity growth. There is mixed evidence on whether the recent slow-down in nominal wage growth can be wholly explained by these cyclical factors—for example, the study by Chua and Robinson (2018) says yes, but the study by Arsov and Evans (2018) says no.

A second major question that the studies address is what structural factors might be important in explaining the slow-down in nominal wage growth in Australia. Despite a wide range of possible structural influences being proposed, there is little definitive evidence on which, if any, of the factors have mattered in Australia. One reason is that there are still relatively few empirical studies on this question, and each study tends to consider different explanations, which makes it difficult to build a robust story. Another reason is that the different studies reach opposing conclusions on the role of factors such as trade and technology. Several studies do, however, find evidence consistent with the hypothesis that declines in worker bargaining power (proxied for example by union density) are related to the recent slow-down in wage growth (for example, Isaac, 2018; Arsov and Evans, 2018).

3 Insights into underemployment

Kelvin Yuen and Oliver Smith

3.1 Background

The **objective** of this report is to examine recent trends in underemployment in Australia. This is **relevant** to the minimum wages objective of the Fair Work Act which requires the Expert Panel for annual wage reviews to establish and maintain a safety net of fair minimum wages taking into account the performance and competitiveness of the national economy. The Expert Panel stated in the *Annual Wage Review 2016-17* that underemployment should continue to be monitored.

The report addresses several main topics:

- What have been the main trends in aggregate underemployment in Australia over the last 25 years?

- How have trends in underemployment varied depending on workers' demographic and job characteristics?
- What are the causes of the growth in aggregate underemployment that has occurred in the last 25 years?

3.2 The concept of underemployment

Underemployment is a measure of labour market spare capacity that identifies workers who would prefer to work more hours. It is an additional measure of labour market spare capacity to unemployment. The sum of unemployment and underemployment is generally referred to as labour underutilisation.

Underemployment is defined by the ABS to occur where an employed person aged 15 years and above who is working part-time wants and is available to work for more hours than they currently do. This definition includes workers who usually work part-time and workers who usually work full-time but worked part-time hours for economic reasons (such as being stood down or insufficient work being available) in the reference week for an ABS survey.

Underemployment can be expressed as the number of persons who are underemployed (headcount) or as the extra hours that underemployed workers would like to work (volume).

The **rate of underemployment** expresses underemployment as a ratio of available labour supply. The most widely applied measure of the rate of underemployment is based on the headcount approach—being defined as the ratio of persons underemployed to persons in the labour force. The alternative measure is based on the volume approach – where the rate of underemployment is defined as the ratio of extra hours desired by underemployed workers to the total available hours of labour supply (with total available hours of labour supply being equal to hours worked, hours being sought by unemployed persons and extra hours desired by underemployed workers).

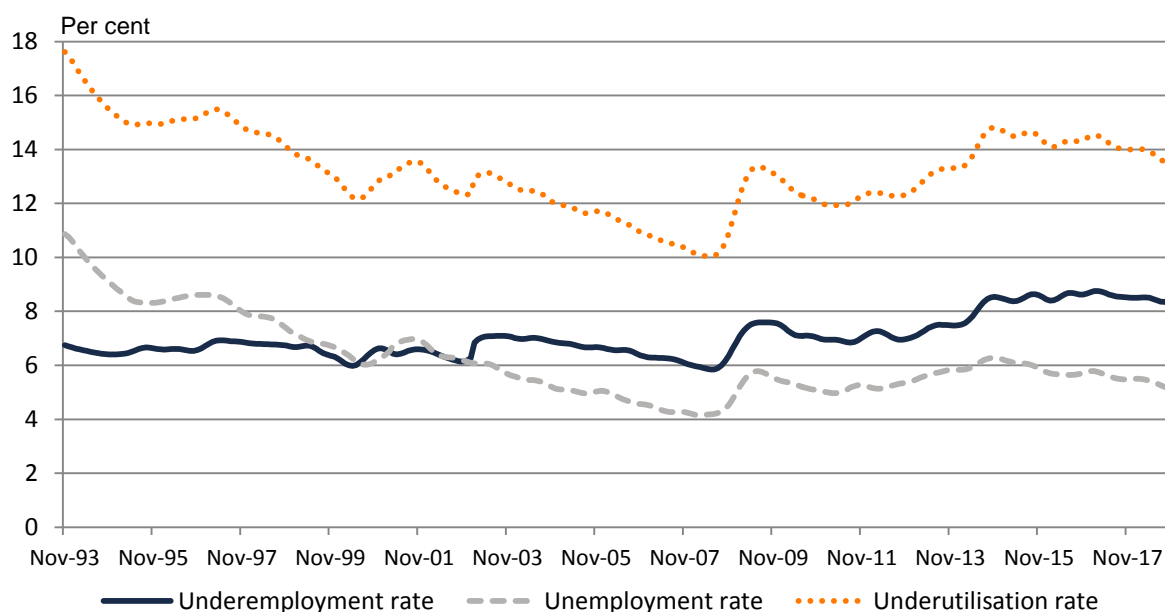
Data on underemployment used in this report are from the ABS *Labour Force Survey*. A headcount measure of the monthly rate of underemployment in Australia from February 1978 onwards has recently been made available (see ABS, *Labour Force Australia*, Catalogue No. 6202.0, Table 22). A volume measure of the rate of underemployment in Australia is now also available on quarterly basis from August 2014 onwards (see ABS, *Labour Force Australia Detailed Quarterly*, Catalogue No. 6291.0.55.003, Tables 23a/23b).

3.3 Aggregate underemployment in Australia

A headcount measure of the rate of underemployment in Australia over the past 25 years is shown in Chart 2.1. The rate was relatively steady at about 6 to 7 per cent from 1993 to 2008. Since 2008 it has increased by about 2 percentage points, rising from 6 per cent to just over 8 per cent in 2018.

Headcount measures of the rates of unemployment and labour underutilisation are also shown in Chart 2.1. The rate of unemployment decreased steadily from 1993 to 2008, increased through to 2014, and after that has fallen. The evolution of the rate of labour underutilisation has mainly reflected changes in the rate of unemployment.

Chart 3.7: Underemployment, unemployment and underutilisation rates, November 1993 to November 2018 (Trend)



Note: Data are in trend terms.

Source: ABS, *Labour Force, Australia, November 2018*, Catalogue No. 6202.0.

3.4 Why is the aggregate rate of underemployment rising?

Underemployment occurs almost exclusively for workers who are employed part-time (at least in standard definitions such as the ABS Labour Force Survey). Hence, a sensible starting point to examine why underemployment in Australia has increased is to investigate its relation with part-time employment.

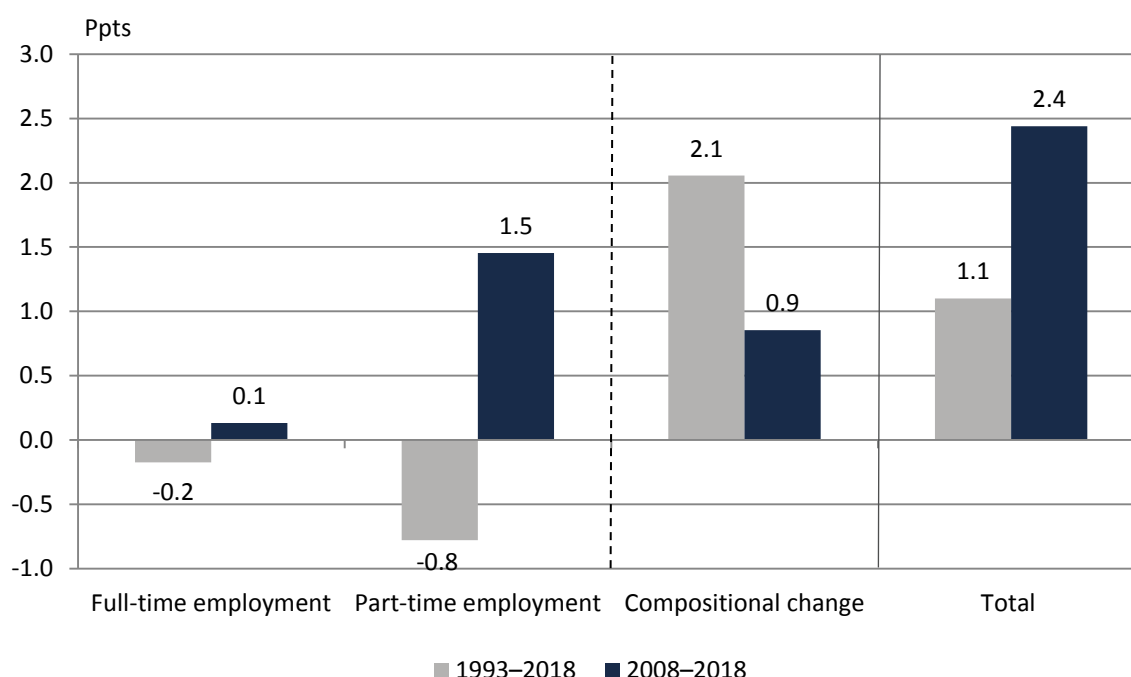
The rate of underemployment can increase in two ways. First, an increase in the share of workers who are employed part-time, holding constant the likelihood of any part-time worker being underemployed, will bring an increase in the rate of underemployment. Second, the share of part-time workers who are underemployed may increase, so that even without a rise in the share of part-time employment, an increase in the rate of underemployment can occur.

To illustrate, suppose that at time 0 in Australia the composition of employment is 80 per cent full-time and 20 per cent part-time, that 50 per cent of part-time workers want to work more hours, and that there is no unemployment. Then at time 0 the rate of underemployment in Australia is 10 per cent. The first way in which the rate of underemployment might increase is due to an increase in the share of part-time employment. Suppose that the share of part-time employment in Australia increases so that at time 1 full-time and part-time employment account for 70 per cent and 30 per cent of total employment respectively. Where the proportion of part-time workers who are underemployed remains unchanged, then at time 1 the rate of underemployment rises to 15 per cent. The second way in which the rate of underemployment can increase is where the incidence of underemployment among part-time workers rises. Suppose at time 1 that the shares of full-time and part-time employment remain at the same proportions as time 0, but that the share of part-time workers who are underemployed increases from 50 per cent to 75 per cent. Then at time 1 the rate of underemployment will rise to 15 per cent.

The effects on underemployment of changes in the share of part-time employment and in the incidence of underemployment among part-time workers can be assessed using a method known as shift-share analysis. With this method the impact of changes in the share of part-time employment is referred to as a ‘composition effect’ and the impact of changes in the incidence of underemployment is referred to as a ‘within-group’ effect.

Results from applying the shift-share method to underemployment in Australia are shown in Chart 2.2. This is done for two time periods: from 1993 to 2018 and 2008 to 2018, and the results differ between those periods. For the overall time period from 1993 to 2018 the increase in the rate of underemployment of 1.1 percentage point is entirely explained by the composition effect due to an increase in the share of part-time employment over that time. For the sub-period from 2008 to 2018, however, the composition effect can explain only about one-third of the increase in the rate of underemployment of 2.4 percentage points. Instead, two-thirds of the increase in underemployment from 2008 to 2018 is due to an increasing incidence of underemployment among part-time workers. (The effect shown for full-time employment in Chart 2.2 represents the impact of changes to the incidence of underemployment among workers who usually work full-time but were temporarily working part-time. The impact of this effect on underemployment in both time periods was negligible.)

Chart 8: Shift-share decomposition of contributions to the change in the underemployment ratio, by full-time/part-time status (November; Original)



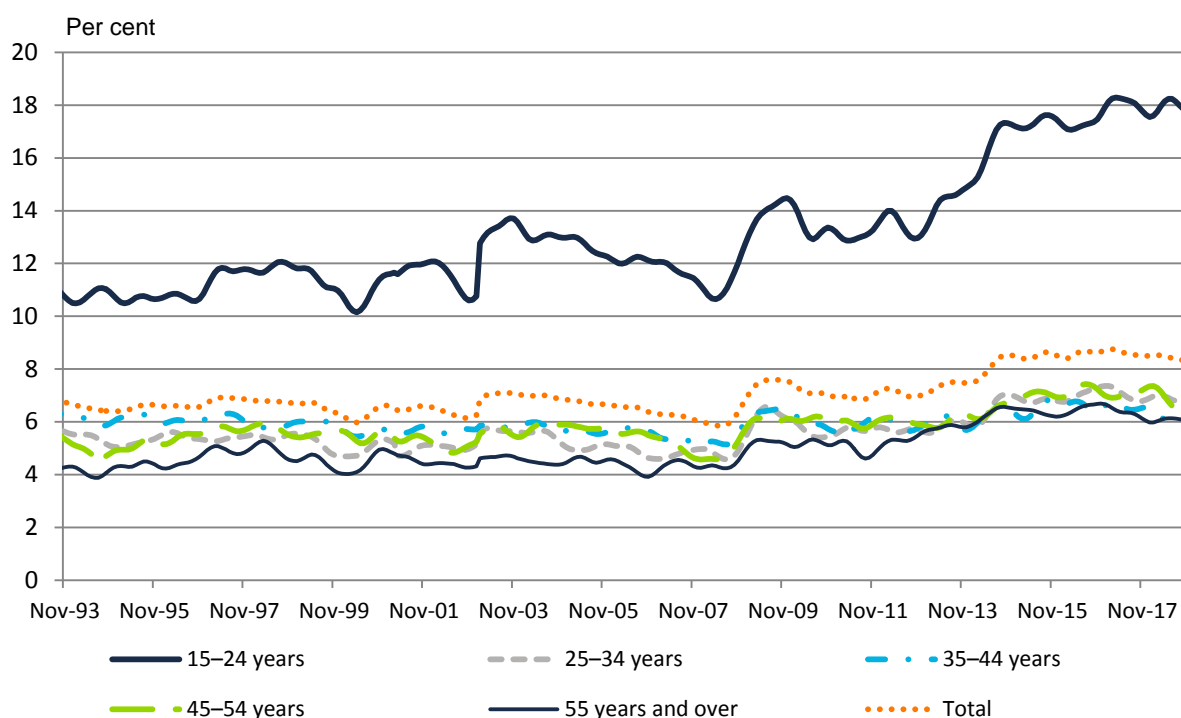
Note: Data are in original terms and year averages to the November quarter.

Source: ABS, *Labour Force, Australia, November 2018*, Catalogue No. 6202.0; ABS, *Labour Force, Detailed – Electronic Delivery, Nov 2018*, Catalogue No. 6291.0.55.001.

3.5 Underemployment for workers by demographic and job characteristics

Distinctive patterns in the rate of underemployment are evident for workers by age and gender and by their type of job. As an example, Chart 2.3 shows the rate of underemployment by age in Australia from 1993 to 2018. What is mainly evident is that younger workers, aged 15 to 24 years, have a rate of underemployment that is substantially higher than average; and that the increase in the rate of underemployment post-2008 has been concentrated among this younger group of workers.

Chart 9: Underemployment rate by age group, November 1993 to November 2018 (Trend)



Note: Data are in trend terms.

Source: ABS, *Labour Force, Australia, November 2018*, Catalogue No. 6202.0.

Patterns over time in the rate of underemployment for workers disaggregated by demographic characteristics can be examined in the same way as aggregate underemployment. That is, there are two reasons why the rate of underemployment might have increased more for younger workers than for older workers. First, because the composition of employment for younger workers has shifted more towards part-time employment than for older workers. Or second, because the likelihood of younger workers who are employed part-time being underemployed has increased relative to older workers. The impact of each of these potential explanations can again be tested using a shift-share method.

Table 2.1 shows the results from applying the shift-share method to examine changes in rates of underemployment in Australia by age of worker. For the whole sample period from 1993 to 2018 the finding is that increases in rates of underemployment are entirely explained by the composition effect. In other words, the reason why the rate of underemployment grew by 6.5 per cent for

workers aged 15 to 24 years but less for older for workers was because there was a much larger increase in the share part-time employment among younger than older workers. But looking at the sub-period from 2008 to 2018 again gives a different story. For workers aged 15 to 34 years the composition effect and an increasing incidence of underemployment among part-time workers have been equally important in explaining the rise in the rate of underemployment. For workers aged 35 years and above, the increase in the rate of underemployment has been mostly due to a higher incidence of underemployment for part-time workers.

Table 2.1: Shift-share decomposition of contributions to the change in the underemployment ratio, by full-time/part-time status and age group, 1993–2018

	Full-time employment	Part-time employment	Compositional change	Total
1993–2018				
15–24 years	0.1	–1.1	7.5	6.5
25–34 years	–0.2	–0.6	1.5	0.6
35–44 years	–0.3	–0.7	0.7	–0.3
45–54 years	–0.3	0.2	1.2	1.1
55 years and over	–0.1	0.5	1.3	1.7
All ages	–0.2	–0.8	2.1	1.1
2008–2018				
15–24 years	0.2	3.6	3.6	7.4
25–34 years	0.2	0.7	1.3	2.1
35–44 years	–0.0	0.9	0.0	0.9
45–54 years	0.1	1.7	0.4	2.1
55 years and over	0.3	1.2	0.4	2.0
All ages	0.1	1.5	0.9	2.4

Note: Data are in original terms and year averages to the November quarter.

Source: ABS, *Labour Force, Australia, November 2018*, Catalogue No. 6202.0; ABS, *Labour Force, Detailed – Electronic Delivery, Nov 2018*, Catalogue No. 6291.0.55.001.

Patterns in the rate of underemployment by gender and industry/occupation of employment can also be identified from the ABS *Labour Force Survey*.

The rate of underemployment for females has been consistently higher than for males, by about 4 percentage points—at present the rate for females is a bit over 10 per cent and for males about 6 per cent. Increases in the rate of underemployment have occurred fairly evenly for females and males since 2008. Over the whole period from 1993 to 2018 the growth in the rate of underemployment for both genders has been entirely due to the growth in the share of part-time employment. But for the most recent 10-year period from 2008 to 2018 growth in part-time employment and an increasing incidence of underemployment among part-time workers have both been important causes of the rise in the rate of underemployment for males and females.

The share of the workforce who are underemployed and the changes over time in those shares have varied substantially by industry and occupation. An example by industry is that the share of workers underemployed in the accommodation and food services industry was 17.3 per cent in

1993 and 20.3 per cent in 2018; compared to 2.9 per cent in 1993 and 2.6 per cent in 2018 for the finance and insurance services industry. An example by occupation is that the share of sales workers underemployed was 14.2 per cent in 1993 and 19.5 per cent in 2018; compared to 3.3 per cent in 1993 and 2.3 per cent in 2018 for managers.

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