



# Research report 1/2019

## Developments in wages growth

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February 2019

The contents of this paper are the responsibility of the author and the research has been conducted without the involvement of members of the Fair Work Commission.

ISBN 978-0-6482759-7-8

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- Australian Chamber of Commerce and Industry (ACCI);
- Australian Industry Group (Ai Group);
- Australian Council of Social Service (ACOSS);
- Australian Council of Trade Unions (ACTU);
- Australian Government; and
- State and territory governments.

An appropriate reference for this report is:

Rozenbes D & Ellis G (2019), *Developments in wages growth*, Fair Work Commission Research Report 1/2019, February.

The authors thank Professor Jeff Borland and staff from the Commission for their comments.

A draft of this report was also workshopped with the MWRG prior to finalisation. The authors would like to thank the MWRG for its comments.

The contents of this report, however, remain the responsibility of the authors and the research has been conducted without the involvement of members of the Fair Work Commission.

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## List of abbreviations

ABN	Australian Business Number
ABS	Australian Bureau of Statistics
AENA	average earnings from the national accounts
AHTCE	average hourly total cash earnings
AWE	average weekly earnings
AWOTCE	average weekly ordinary time cash earnings
AWOTE	average weekly ordinary time earnings
CPI	Consumer Price Index
EEH	Survey of Employee Earnings and Hours
GDP	gross domestic product
GFC	global financial crisis
HILDA	Household, Income and Labour Dynamics in Australia
NMW	national minimum wage
OECD	Organisation for Economic Co-operation and Development
RBA	Reserve Bank of Australia
WPI	Wage Price Index

## 1 Introduction

The recent period of low wages growth has been the topic of many research papers and media commentary. It is an important issue because of its effect on the performance of the economy and the living standards of employees. The Governor of the Reserve Bank of Australia (RBA) remarked that 'slow wages growth is diminishing our sense of shared prosperity'.<sup>1</sup>

The reasons for the recent period of low wages growth encompass both cyclical and structural factors and these are explored in this report. However, a review of the research suggests that there is no definitive explanation.

The latest Wage Price Index (WPI) published by the Australian Bureau of Statistics (ABS) shows that wages growth increased by 2.3 per cent over the year to the September quarter 2018, which is above its low of 1.9 per cent recorded in 2017. However, it is below its long-term average of 3.2 per cent.

In addition to the WPI, this report examines several other measures of wages growth. Each is obtained for separate purposes using different data collection methods. The report examines trends in both nominal and real wages, with growth in real wages providing a better representation of the purchasing power of employees.

In the *Annual Wage Review 2016–17* (2016–17 Review) decision, the Expert Panel for annual wage reviews (Expert Panel) commented that growth across all measures of wages had remained low.<sup>2</sup> In the *Annual Wage Review 2017–18* (2017–18 Review) decision, the Expert Panel stated that wages growth had not improved over the previous year.<sup>3</sup> This report finds that trends in wages growth across the various measures considered have been fairly similar over the last 20 years. However, growth across these measures has been below the long-term average over the last five or so years.

Overall, the indicators show that wages growth peaked prior to the global financial crisis (GFC) before falling relatively strongly. While wages growth rebounded to levels comparable with before the onset of the GFC, it has since fallen and been below long-term averages for some years. These patterns are less evident when examining growth in real wages.

The wages measures assessed in this report are those referred to in annual wage review decisions. The report provides a description of each measure, how they differ, and an explanation of their data source. It also provides a summary of the research into why recent wages growth outcomes have been lower than would be expected. Cyclical reasons, such as inflation, productivity and labour market spare capacity are tested and, while some papers find these to be an important factor, they do not provide a full explanation. This has led researchers to consider structural factors, such as job security, advances in technology and shifts in bargaining power. However, these are relatively difficult to measure and also do not provide conclusive reasons for recent wages growth outcomes.

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<sup>1</sup> Lowe P (2018), *Productivity, wages and prosperity*, address to the Australian Industry Group, Melbourne, 13 June.

<sup>2</sup> [2017] FWCFB 3500 at para. 280.

<sup>3</sup> [2018] FWCFB 3500 at para. 152.

The report is structured as follows. Chapter 2 provides a description of the measures analysed in the report, while Chapter 3 presents data on changes in these measures. Chapter 4 analyses trends in real wages growth, and Chapter 5 compares wages growth between methods of setting pay. Chapter 6 provides a discussion of the reasons for low wages growth and Chapter 7 concludes the report.

## 2 Data and definitions of indicators

This chapter provides a description of the wage measures considered in this report. Each measure is presented in annual wage review decisions and the Statistical report and is able to provide data over a long-term period (around two decades).

While they are an indicator of wages growth, each measure is compiled for different purposes using different concepts and this should be taken into account when interpreting analysis. The descriptions of each indicator include what is measured and how the data are collected.

The ABS collects information on wages from both business and household surveys. The measures considered in this report are collected through business surveys, which are the primary source of data on earnings and labour costs.<sup>4</sup> This information is generally considered to be more accurate as it is derived from payroll data.<sup>5</sup> Data on wages collected from households are generally based on the recall of survey respondents and are also collected less frequently. For example, the ABS collects information on earnings in August each year that is used to compile median earnings.<sup>6</sup> The Household, Income and Labour Dynamics in Australia (HILDA) Survey also collects information on wages from households on an annual basis.

Wages can be calculated at an average or aggregate level. Average wages provide a better representation at the individual level, while aggregate wages provide an indication of wages growth across the whole economy.

Average wages are the most common indicator used to calculate nominal wages growth. They are derived by dividing the total value of wages by total employment. However, average measures can be influenced by changes in the composition of the workforce, such as the number of hours worked or changes in the types of jobs. On a weekly basis, relatively more part-time workers would result in a lower overall increase in weekly wages, as they generally receive lower wages than full-time workers. Even on an hourly basis, where the effects of longer or shorter working weeks are removed, increases in employment among higher-paid industries can lead to larger increases in average wages compared with the same increase in employment in lower-paid industries.

Aggregate measures consider the total value of wages in the economy. As well as being affected by compositional change, aggregate measures can also be affected by changes in total employment or the total number of hours worked, even if they do not affect the average wage. For example, increases in total employment at the average wage level will increase aggregate wages but have no effect on the average wage.

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<sup>4</sup> ABS (2018), *Labour statistics: concepts, sources and methods, Feb 2018*, Catalogue No. 6102.0.55.001, p. 6.

<sup>5</sup> See ABS (2014b), 'Understanding earnings in Australia using ABS statistics', *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2013*, Catalogue No. 6310.0

<sup>6</sup> ABS, *Characteristics of Employment, Australia, August 2018*, Catalogue No. 6333.0.



A summary of the measures is provided in Table 2.1. Most of these measures are collected, or can be derived, only for non-farm employees (that is, excluding employees in the Agriculture, forestry and fishing industry).<sup>7</sup>

**Table 2.1: Comparison of wage measures**

<b>Indicator</b>	<b>What it measures</b>	<b>Frequency</b>	<b>Types of payments included</b>	<b>Disaggregated categories</b>	<b>Sample size</b>
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

<sup>7</sup> This is because a relatively high proportion of enterprises in this industry have no employees, and that the seasonal nature of activities makes it difficult to track jobs over time. See ABS (2012), *Wage Price Index: Concepts, Sources and Methods, 2012*, Catalogue No. 6351.0.55.001, Chapter 4.

## 2.1 Wage Price Index

The ABS recommends using the WPI to measure changes in the price of labour, or wages, over time.<sup>8</sup> The WPI was first published in the December quarter 1997, measuring the change in the index between the September and December quarters.<sup>9</sup>

### *What it measures*

The WPI measures changes in the price employers pay for labour due solely to market factors and is designed so that it is unaffected by changes in the quality or quantity of work performed. To ensure that the quantity and quality of labour are held constant, changes in the composition of the labour force, the number of hours worked, or changes in the characteristics of employees are all excluded. Because of this, the WPI has been considered as a more accurate measure of wages growth.<sup>10</sup> Price changes captured in the WPI include those due to inflation, cost of living, enterprise agreements, individual arrangements, award wages and salary reviews.

The ABS has developed a range of procedures to ensure that only pure prices changes are reflected in the WPI. Examples provided by the ABS as to characteristics not reflected in the WPI include changes in:

- the nature of work performed (if tasks or responsibilities change);
- the quantity of work performed (increases/decreases in employment or the number of hours worked);
- the characteristics of the person working in the job (age, apprenticeship, successful completion of training or a qualification, grade or level, experience, length of service); and
- the location where the work is performed.

The WPI is published as an index as it is intended to measure changes in wages over time, rather than earnings at a point in time. This differentiates it from most other indicators of wages growth.

The wages and salaries captured in the WPI reflect payments in cash or in kind that are made at regular intervals for an hour of labour. They include piecework payments; allowances for working overtime; penalty rates; regular supplementary allowances (e.g., travel costs to and from work); and annual leave.

### *How it is derived*

The prices of around 18 000 jobs are reported for each quarter. The sample of jobs is chosen after initially selecting a sample of around 3000 employers from the ABS Business Register.<sup>11</sup>

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<sup>8</sup> See ABS (2014b).

<sup>9</sup> Information on the WPI can be found at ABS (2012).

<sup>10</sup> [2010] FWAFB 4000 at para. 331. The WPI is also the preferred measure according to Arsov I & Evans R (2018), *Wage growth in advanced economies*, RBA Bulletin, March, p. 5; and Chua CL & Robinson T (2018), 'Why has Australian wages growth been so low? A Phillips curve perspective', *Economic Record*, Vol. 94, June.

<sup>11</sup> The Business Register is a list of businesses and organisations operating in Australia. Businesses are included on the Australian Business Register once they register for an Australian Business Number (ABN). Private households employing staff and foreign embassies/consulates are not in the scope of the Business Register.

Businesses selected for the survey provide data for five consecutive quarters.<sup>12</sup> All types of employers are within the scope of the survey except for enterprises primarily engaged in Agriculture, forestry or fishing; private households; and foreign embassies or consulates.

Only those jobs that exist in both the current and the previous quarter (i.e. matched or a fixed basket of jobs) contribute to the index calculations.<sup>13</sup> Certain characteristics are collected about each job to enable the same jobs to be identified each survey. This results in the WPI to be less volatile than other measures. All jobs are included in the scope of the WPI except for:

- Australian permanent defence force jobs;
- non-salaried directors;
- proprietors/partners of unincorporated businesses or working proprietors/owner managers of Proprietary Limited companies;
- persons paid by commission only;
- employees on workers' compensation who are not paid through the payroll;
- jobs that are expected to be occupied for less than six months of a year;
- jobs for which wages and salaries are not determined by the Australian labour market; and
- self-employed persons such as consultants and subcontractors who are not employees.

The survey is published for the March, June, September and December quarters. The reference period for the survey is the last pay period ending on or before the third Friday of the middle month of the quarter.

From the December quarter 2009, the survey ceased collecting data from businesses with fewer than five employees as jobs in these businesses were found to have the same size and frequency of pay changes as jobs in larger businesses.<sup>14</sup>

The WPI reports changes in 'ordinary hourly rates of pay excluding bonuses'. However, the main indicator that is reported is changes in 'total hourly rates of pay excluding bonuses'. This indicator is based on a weighted combination of ordinary time hourly wage and salary rates *and* overtime hourly rates.<sup>15</sup> It is the only index published in the WPI that is seasonally adjusted and is the main indicator from the WPI used throughout this report.

The ABS also publishes these indexes *including* bonuses, which do not remove the effects of bonuses and commissions. It is for this reason that only the indexes excluding bonuses are considered 'pure price indexes'.

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<sup>12</sup> In order to retain a common sample of businesses and jobs over time, the ABS attempts to retain the same sampled jobs from the selected businesses. If a job ceases or changes dramatically, the business is asked to select another job. However, to keep the survey of employers and jobs relevant over time, the sample is refreshed on an annual basis.

<sup>13</sup> Sample weights are assigned to jobs based on the number of jobs they represent in the business and the number of similar businesses that each business represents according to state, industry and sector. Expenditure weights are also applied based on employers' expenditure on wages and salaries. These are updated every two years using the EEH. Changes in the composition of the workforce over time are reflected in these weights.

<sup>14</sup> While these businesses are no longer in the sample, they remain in scope through their continued inclusion in the expenditure weights used in compiling the WPIs. Business size is asked every September quarter.

<sup>15</sup> The effect of changes in the amount of overtime paid is not provided.

## 2.2 Average weekly ordinary time earnings

The Survey of Average Weekly Earnings (AWE) produces the most direct measure of average earnings for employees. The purpose of the AWE is to measure the average level of earnings for employees at a point in time (not the earnings of the 'average employee'). Because of the relatively frequent collection of data, a time series can be derived to calculate changes over time.<sup>16</sup> The series is not directly comparable with the WPI because of different purposes, concepts, sample section and estimation approaches.

### *What it measures*

The survey is designed to measure earnings, both payments in cash and payments in kind. However, for practical reasons, it only includes wages and salaries in cash and salary sacrifice arrangements.<sup>17</sup> Earnings refer to current and regular payments in cash to employees for work done.

Weekly ordinary time earnings are calculated before taxation and any other deductions have been made. Earnings include penalty payments, shift and other allowances, commissions and retainers, regular bonuses, payments under incentive or piecework, payments under profit sharing schemes normally paid each pay period, payment for leave taken during the reference period, all workers' compensation payments made through the payroll, and salary payments made to directors.

Excluded are wages and salaries in kind, superannuation, non-cash components of salary packages, overtime payments, reimbursements to employees for travel, entertainment, meals and other expenses incurred while conducting the business of their employer, payments not related to the reference period and other irregular payments (such as irregular bonuses).

Average weekly earnings are estimated by dividing total weekly earnings by the number of employees to produce an average in dollar terms. Because weekly earnings can be influenced by the number of hours worked during a week, it is common to exclude part-time employees. Average weekly ordinary time earnings (AWOTE) of full-time adult employees is the most common indicator of wages that is reported from this survey and are also referred to in annual wage review decisions. Adult employees are those aged 21 years or above and those aged under 21 years who are paid at the full adult rate for their occupation.

AWOTE also excludes amounts salary sacrificed as they were considered to be payments in kind rather than payments in cash. Although amounts salary sacrificed were collected from 2007, the series continued to exclude salary sacrificed for comparability over time. However, the ABS also publishes a series titled 'Average weekly cash earnings' that includes amounts salary sacrificed from 2010. Data for this measure—average weekly ordinary time cash earnings (AWOTCE)—are also presented in the next section.

Unlike the WPI, changes in AWOTE can be due to several factors, such as changes in the number of hours worked, compositional change in employment by industry and the changes in the

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<sup>16</sup> However, the ABS cautions that the standard errors in the movements between periods are higher than for the level estimates.

<sup>17</sup> ABS (2014a), 'Average weekly earnings and Wage Price Index – what do they measure?', *Average Weekly Earnings, Australia, May 2014*, Catalogue No. 6302.0, Feature Article.

distribution of occupations within and across industries.<sup>18</sup> The survey is also sensitive to the sample of businesses that respond to the survey, which means it can provide different outcomes in relation to growth and be relatively more volatile.<sup>19</sup>

#### *How it is derived*

The Survey of AWE samples approximately 5400 employers sourced from the ABS Business Register.<sup>20</sup> It collects information from employers on total gross earnings and the total number of employees at the business level, rather than on a sample of employees.<sup>21</sup>

The series is likely to be more volatile than the WPI because it is sensitive to changes in samples of respondent employers.<sup>22</sup> Businesses are not asked to select a sample of employees in which to provide information as the survey does not collect data on employees.

Since 2012, the survey has been undertaken biannually in May and November each year. Previously, it was conducted quarterly. The reference period is the last pay period ending on or before the third Friday of the month.

The scope of the survey includes all wage and salary earners based in Australia who received pay for the reference period except for:

- members of the Australian permanent defence forces;
- employees of enterprises primarily engaged in Agriculture, forestry and fishing, private households, overseas embassies, consulates;
- employees on workers' compensation who are not paid through the payroll;
- casual employees who did not receive pay during the reference period;
- employees on leave without pay and employees on strike, or stood down who did not receive pay during the reference period;
- directors who are not paid a salary;
- proprietors/partners of unincorporated businesses;
- self-employed persons;
- persons paid solely by commission; and
- employees paid under the Australian Government's Paid Parental Leave Scheme.

### **2.3 Compensation of employees**

The aggregate measure of earnings in the National Accounts is Compensation of employees and is the broadest measure of earnings. It measures wages and salaries over a quarter or year rather

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<sup>18</sup> ABS, *Average Weekly Earnings, Australia, May 2018*, Catalogue No. 6302.0, Explanatory Notes.

<sup>19</sup> RBA (2006), *Statement on Monetary Policy*, February, Box D.

<sup>20</sup> The sample is updated each survey to reflect new businesses, takeovers and mergers, businesses that have ceased etc.

<sup>21</sup> ABS (2018).

<sup>22</sup> RBA (2006).

than at a point in time.<sup>23</sup> This measure is used to determine GDP by the income approach and represents the labour share of total factor income.<sup>24</sup>

#### *What it measures*

Compensation of employees measures the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done during the period. They comprise wages and salaries as well as employer's social contributions.<sup>25</sup> As it is an aggregate measure, it can be influenced by the amount of employment or hours worked across the whole economy.

Wages and salaries consist of amounts payable in cash and in kind. Wages and salaries in cash include paid at regular intervals as well as piecework payments, allowances for overtime and working away from home, annual leave, and ad-hoc bonuses and commissions, gratuities and tips received by employees.<sup>26</sup> Wages and salaries in kind include separation, termination and redundancy payments. Payments to members of the defence force are also included.

Employers' social contributions are payments by employers which are intended to secure for their employees the entitlement to social benefits should certain events occur, or certain circumstances exist, that may adversely affect their employees' income or welfare, such as work-related accidents or retirement.

While Compensation of employees is an aggregate measure, it can also be derived as an average per employee or per hour worked. Average earnings from the national accounts (AENA) are calculated as total compensation of employees divided by the number of wage and salary earners obtained from the Labour Force Survey. AENA for all workers and non-farm workers is published in the National Accounts. However, AENA per hour worked is derived and cannot be restricted to non-farm workers.

The main difference between this measure and average weekly earnings is the inclusion of non-wage labour costs.

#### *How it is derived*

Various ABS surveys are used to compile these data for the quarterly National Accounts. These include the Quarterly Business Indicators Survey, Government Finance Statistics, and farm costs from the Australian Bureau of Agricultural and Resource Economics and Sciences.

## **2.4 Unit labour costs**

Another measure presented in the National Accounts is unit labour costs, which provides an understanding of how growth in labour costs relate to output.<sup>27</sup> Unit labour costs represent the costs required to pay employees to produce one unit of output and are considered to represent the

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<sup>23</sup> ABS (2018).

<sup>24</sup> ABS (2016), *Australian System of National Accounts: Concepts, Sources and Methods, 2015*, Catalogue No. 5216.0. The income approach calculates GDP as compensation of employees plus gross operating surplus, gross mixed income and taxes on production and imports less subsidies on production and imports.

<sup>25</sup> It excludes any taxes payable by the employer on the wage and salary bill (such as payroll tax).

<sup>26</sup> ABS (2018).

<sup>27</sup> ABS (2006).

best estimate of staffing costs faced by firms as it. They measure inflationary pressure arising from labour costs per unit of output, therefore, improvements in productivity would reduce cost pressures of firms, and these are taken into account. As such, unit labour costs represent a direct link between productivity and the cost of labour used to produce output.<sup>28</sup>

#### *What it measures*

Unit labour costs measure the average cost of labour per unit of output—calculated as average labour costs divided by average labour productivity. Average labour costs are calculated as Compensation of employees plus payroll tax minus employment subsidies and divided by total hours worked by employees (AENA).

An increase in average labour costs that is commensurate with an increase in labour productivity will not lead to a change in unit labour costs, whereas it will result in an increase in measures such as the WPI, AWOTE and Compensation of employees. However, when wages increase faster than productivity, unit labour costs will also rise. Increases in productivity can reduce the labour cost per unit of output.

Although labour costs are calculated for employees only, data for hours worked that is used to calculate labour productivity also includes employers and self-employed persons as it is not possible to derive this for employees only.<sup>29</sup>

Unit labour costs can be derived for the non-farm sector as well as the whole economy.

#### *How it is derived*

As unit labour costs are published in the National Accounts, they are derived using the same sources as Compensation of employees.

## **2.5 Wages and salaries**

Data on wages and salaries are also captured in the Quarterly Business Indicators Survey and published in the Business Indicators catalogue.<sup>30</sup> The survey also collects information on sales, profits and inventories that are used in the calculation of quarterly GDP figures. While this measure of wages and salaries is not presented in the Statistical report, the measure of profits is included in both the Statistical report and annual wage review decisions.<sup>31</sup>

#### *What it measures*

The indicator measures the total value of private sector wages. Wages and salaries are measured as gross earnings before taxation and other deductions and include provisions for employee entitlements. The data are presented at an aggregate level.

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<sup>28</sup> ABS (2016).

<sup>29</sup> It is assumed that average labour costs for self-employed are the same as employees.

<sup>30</sup> The survey is based on ABN registrations and is managed by the Australian Taxation Office.

<sup>31</sup> For example, [2018] FWCFB 3500 at para. 135.

*How it is derived*

The Quarterly Business Indicators Survey collects data from a random sample of around 15 000 businesses in the private sector.<sup>32</sup> Most industries are included in the survey, except for Agriculture, forestry and fishing and Public administration and safety.<sup>33</sup>

While the collection of these data is similar to Compensation of employees (it is used to compile that measure) it differs for a number of reasons. For example, the National Accounts measure incorporates industries not in the scope of the Quarterly Business Indicators Survey (such as Agriculture, forestry and fishing and those in the public sector); and it applies a different approach to seasonally adjust the data.

## **2.6 Average hourly total cash earnings**

Another measure of average hourly earnings can be derived from the Survey of Employee Earnings and Hours (EEH). The EEH is particularly relevant to annual wage reviews as it is the only survey that provides publicly available information on earnings across methods of setting pay.

*What it measures*

Data on earnings are available on both a weekly and hourly basis, and for different types of earnings including ordinary and overtime hours.<sup>34</sup> Earnings include allowances, penalty payments, regular bonuses and commissions, and (from 2006) amounts salary sacrificed.

The EEH is the only publicly available ABS data source that allows for analysis of earnings by method of setting pay.

*How it is derived*

The EEH collects information from a sample of employers about their characteristics (such as, industry and size) as well as the characteristics of a random sample of their employees (such as occupation and method of setting pay).<sup>35</sup>

Data for the EEH are collected in May of each surveyed year and are primarily intended to provide estimates at a point in time.<sup>36</sup> The last EEH was conducted with respect to the last pay period on or before 18 May 2018. This survey contained a sample of around 8200 employers covering approximately 53 000 employees.

The composition of employers and employees in each EEH sample is different. The ABS recommends that comparisons over time should be treated with caution due to sampling error, where changes over time may arise because of differences in the sample of employees rather than

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<sup>32</sup> The estimates of wages and salaries from this survey are used to compile compensation of *private* sector employees in the National Accounts.

<sup>33</sup> ABS, *Business Indicators, Australia, Sep 2018*, Catalogue No. 5676.0. It also excludes other industries such as Central banking.

<sup>34</sup> Earnings are for hours paid for. Data on hours paid for was only collected for managerial employees from 2014.

<sup>35</sup> ABS, *Employee Earnings and Hours, Australia, May 2016*, Catalogue No. 6306.0.

<sup>36</sup> In 2008 data were collected in August.



due to actual changes.<sup>37</sup> However, comparisons over time are often undertaken because of its large sample size and the types of variables collected.

All employing businesses are in the scope of the EEH except for those in Agriculture, forestry and fishing; private households employing staff; and foreign embassies and consulates. Employees who did not receive pay in the period, those based outside of Australia and permanent members of defence forces are also not in the scope of the survey.

The indicator examined in this report is average hourly total cash earnings (AHTCE). Earnings from the EEH are presented only for non-managerial employees as this provides for consistent data over the period of analysis.

## **2.7 Average annual wage increases in federal enterprise agreements**

The only measure of wages growth presented in this report that is not published by the ABS is average wages growth collected for registered federal enterprise agreements. This is obtained from the Workplace Agreements Database (WAD), maintained by the Department of Jobs and Small Business. This is also derived with the purpose of calculating wage changes rather than levels.

### *What it measures*

Two main indicators of wages growth derived from the information on collective agreements are the average annual wage increase (AAWI) for agreements approved in each quarter and the AAWI for all agreements current on the last day of the quarter.

The AAWI is derived only for federal enterprise agreements for which annual averages can be calculated. This excludes enterprise agreements that are linked to annual wage review decisions or the Consumer Price Index (CPI), as future outcomes are not known. The AAWIs are calculated only for the base rate of pay and do not measure changes in allowances or bonus payments. Only the percentage changes in the AAWI are published, rather than average wages or an index.

### *How it is derived*

The WAD provides information on all known federal enterprise agreements that have operated since the introduction of the Enterprise Bargaining Principle in October 1991. Information on the number of agreements, sector, industry, duration and the number of employees covered is released in the quarterly publication. According to the EEH 2016, federally registered collective agreements covered around 30 per cent of all employees.<sup>38</sup>

Given that many enterprise agreements are in operation for around three years, these indicators can have a longer influence on measures of wages growth than only in the current quarter or year.<sup>39</sup> However, enterprise agreements that are passed their nominal expiry date are not included in the WAD and therefore not in the calculation of the AAWI.

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<sup>37</sup> The ABS noted that there is sufficient overlap between the EEH and the AWE survey such that the EEH can be considered a complement, with the AWE providing more frequent data and the EEH providing more detailed information. See ABS (2017), 'A guide to understanding Employee Earnings and Hours Statistics', *Employee Earnings and Hours, Australia, May 2016*, Catalogue No. 6306.0, Feature article.

<sup>38</sup> Department of Jobs and Small Business, *Trends in Federal Enterprise Bargaining*, September quarter 2018, p. 44.

<sup>39</sup> RBA (2018), *Statement on Monetary Policy*, November, p. 60.

### 3 Trends in nominal wages growth

This chapter presents trends in nominal wages growth for each of the wage measures. The period of analysis is the length of the WPI, which has collected data for 21 years (or 20 years of annual growth up to the September quarter 2018).

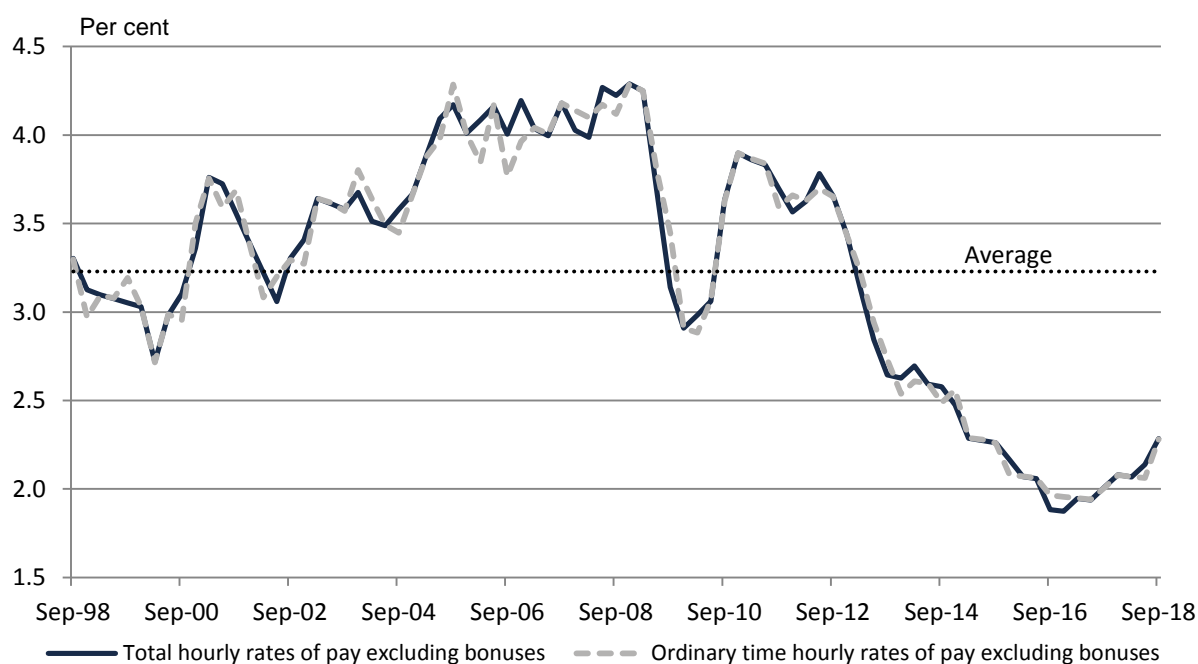
Overall, wages growth has been below average over recent years using any measure of wages, whether at the average or aggregate level.

Despite their different purpose and construction, this chapter shows that similar longer-term trends in annual WPI growth are also evident across most of the wage measures considered. The data show that annual wages growth increased across the 2000s to around 2008 before falling with the onset of the GFC. Wages growth then rebounded to around comparable growth rates recorded prior to the GFC, however, wages growth has more recently been below average for several years.

#### 3.1 Average and aggregate wages growth

Annual changes in both the WPI for total and ordinary hourly rates of pay excluding bonuses<sup>40</sup> have been similar over the period (Chart 3.1). Both measures peaked in 2008 at 4.3 per cent before falling with the onset of the GFC. After returning to growth of almost 4 per cent in 2010 and 2011, annual WPI growth fell to below its long-term average (3.2 per cent) to a low of 1.9 per cent. Over the most recent year to the September quarter 2018, growth in both total hourly rates of pay and ordinary time hourly rates of pay excluding bonuses increased at the same rate (2.3 per cent).

**Chart 3.1: 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.

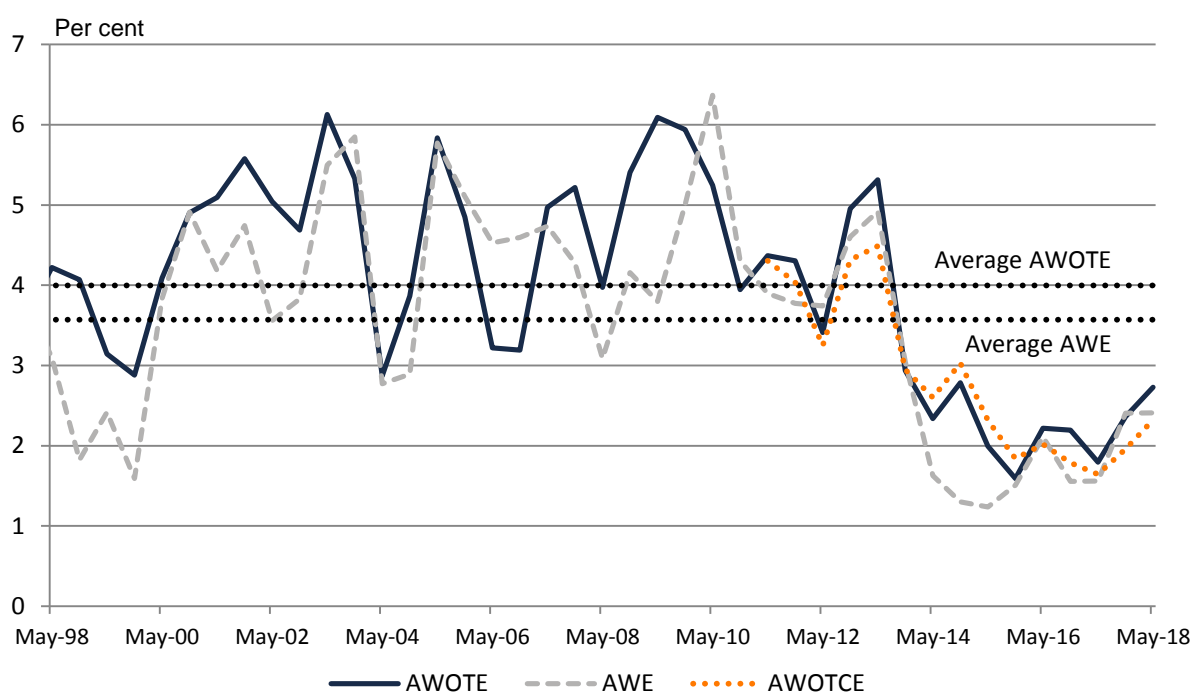
<sup>40</sup> Excludes overtime.

Because the same jobs are retained across surveys, annual WPI growth does not vary between quarters as much as other measures. In particular, changes in AWOTE, AWE and AWOTCE (from May 2011), presented in Chart 3.2, generally show greater variance in growth rates. Both the AWOTE and AWE peaked at over 6 per cent during this period yet have been lower than 2 per cent in more recent years. The AWOTCE appears to follow the trend of AWOTE.

One difference between annual growth in the WPI and AWOTE is that a fall in wages growth with the onset of the GFC is not evident for AWOTE. Annual growth in AWOTE peaked in May 2009 before falling, while AWE peaked in May 2010. As changes in the AWOTE and AWE are influenced by changes in employment and the number of hours worked, the absence of a relatively large decline in annual growth at the time of the GFC may be due to adjustments to employment or hours worked during the period.

Despite differences in the survey design, both the WPI and AWOTE show a decline in earnings from 2013, with lower growth than at any other time over the previous 20 years. Over the year to May 2018, AWOTE increased by 2.7 per cent, below its long-term average of 4.0 per cent.

**Chart 3.2: Annual growth in average weekly earnings**



Note: Data are in original terms.

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

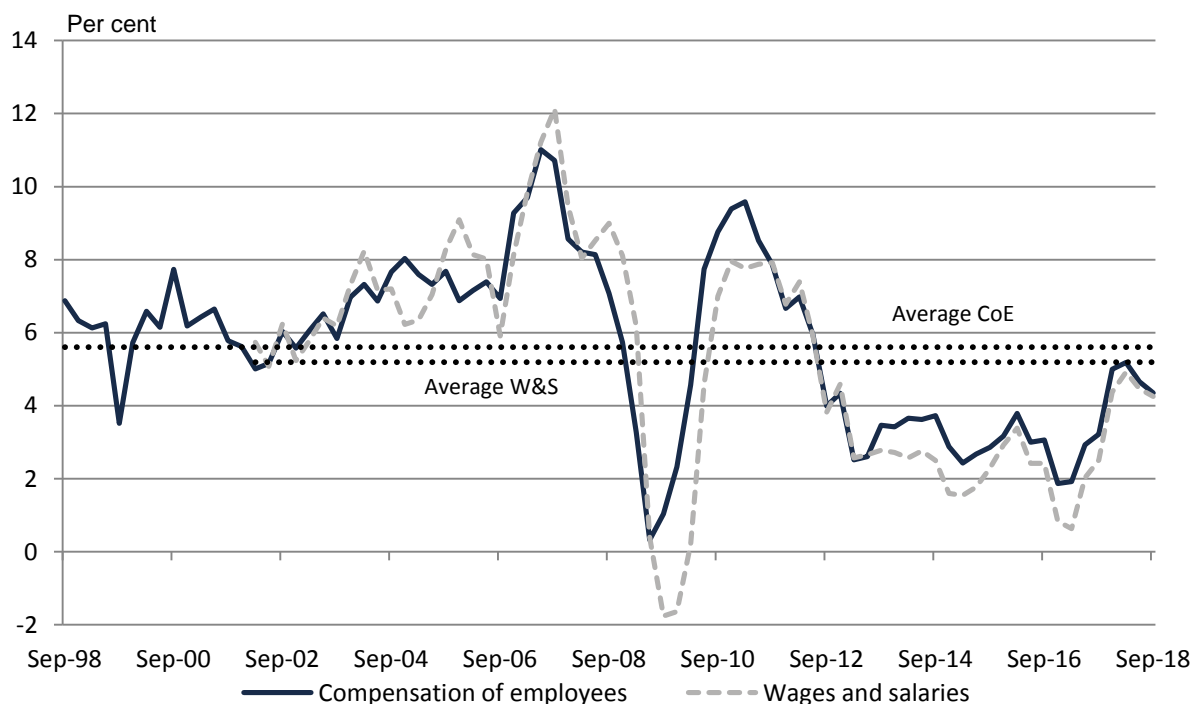
The two measures of aggregate wages, Compensation of employees and Wages and salaries, are presented in Chart 3.3. Growth rates can be larger in aggregate measures as increases in employment or the number of hours worked contribute to an increase in aggregate wages even if they have no effect on average wage levels.

The chart shows that annual growth rates for both aggregate measures followed similar patterns over the same 20-year period. They generally increased to 2007, fell relatively strongly at the time of the GFC (where Wages and salaries declined) before rebounding, and then fell once again.

Over the 20-year period, the average annual growth rate for both measures was above 5 per cent, however, both have been growing at below average rates since 2012.

Larger falls in Wages and salaries may be due to a larger fall in private sector employment growth during the GFC. Recent increases in the annual growth rates over 2017 and 2018 have coincided with higher employment growth over this period.

**Chart 3.3: Aggregate measures of annual wages growth**



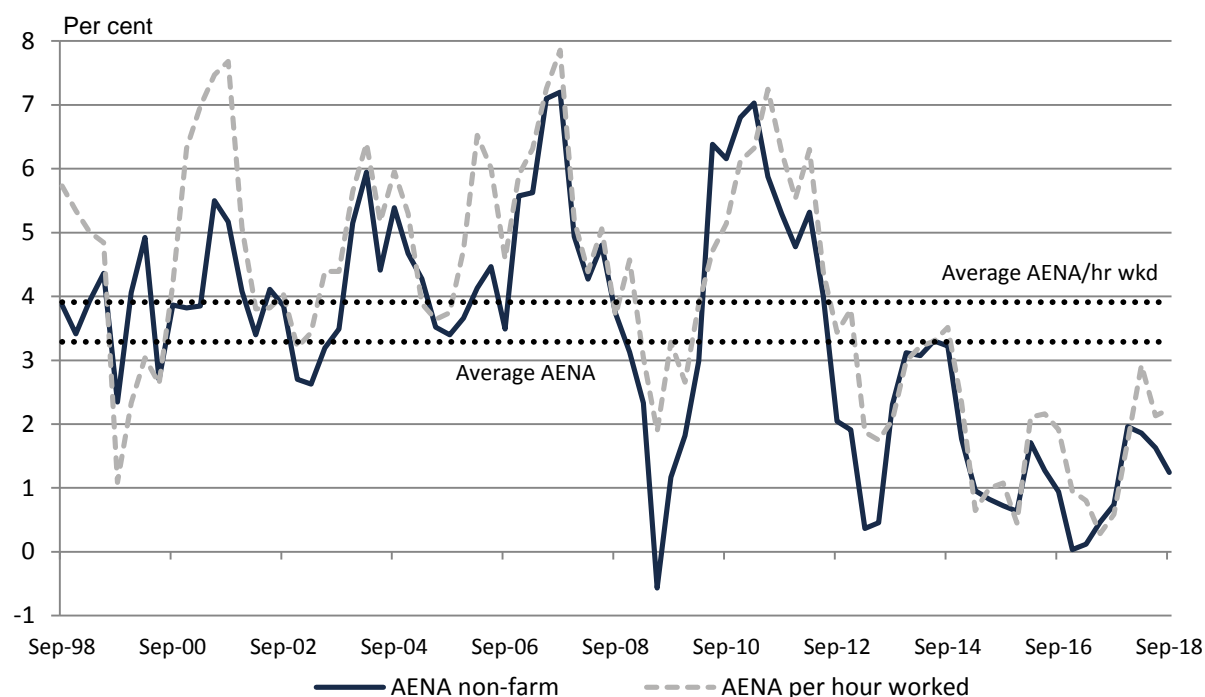
Note: Wages and salaries from the Business Indicators are only available from the March quarter 2001.

Source: ABS, *Australian National Accounts: National Income, Expenditure and Product, Sep 2018*, Catalogue No. 5206.0; ABS, *Business Indicators, Australia, Sep 2018*, Catalogue No. 5676.0.

Annual growth in measures of average earnings included in the National Accounts—AENA per non-farm employee and per hour worked—are presented in Chart 3.4.

Both measures are more volatile than the previous average measures, with higher peaks (7.9 per cent over the year to the September quarter 2007 for AENA per hour worked) and lower troughs (–0.6 per cent over the year to the June quarter 2009 for AENA per non-farm worker).

Again, they show relatively strong growth up to 2007 before falling, then increasing again to around the same growth rate as before the GFC, prior to falling below the 20-year average.

**Chart 3.4: Annual growth in AENA per employee and per hour worked**


Source: ABS, *Australian National Accounts: National Income, Expenditure and Product, Sep 2018*, Catalogue No. 5206.0.

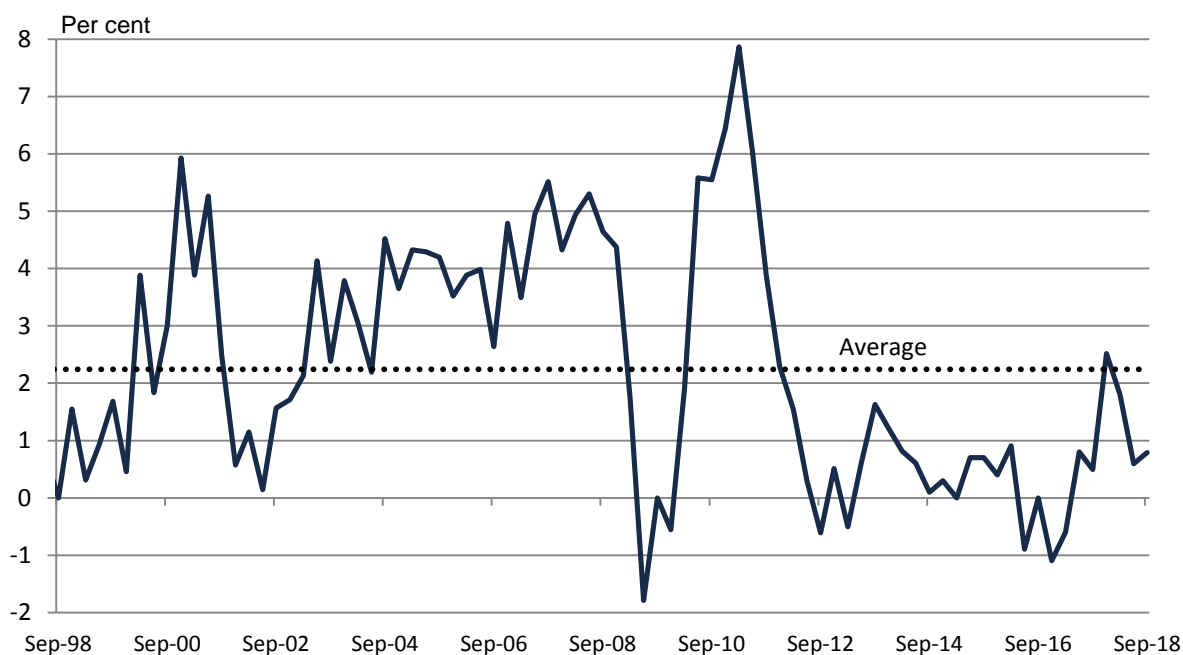
Unit labour costs provide a different measure as they take into account changes in productivity. Despite this, annual growth in nominal unit labour costs has followed similar trends to other measures of wages.<sup>41</sup>

Chart 3.5 shows that annual growth in non-farm unit labour costs generally increased from the early 2000s to a peak of 7.9 per cent over the year to the March quarter 2011 (other than a fall during the GFC period). However, annual growth in non-farm nominal unit labour costs differs from other wage measures by recording a peak after the GFC rather than prior.

Annual growth in unit labour costs has been below its 20-year average for most of the period since 2012, even falling on some occasions, including in 2016.

<sup>41</sup> Unit labour costs are presented as an index in the Statistical report and annual wage review decisions.

**Chart 3.5: Annual growth in non-farm nominal unit labour costs**



Source: ABS, *Australian National Accounts: National Income, Expenditure and Product, Sep 2018*, Catalogue No. 5206.0.

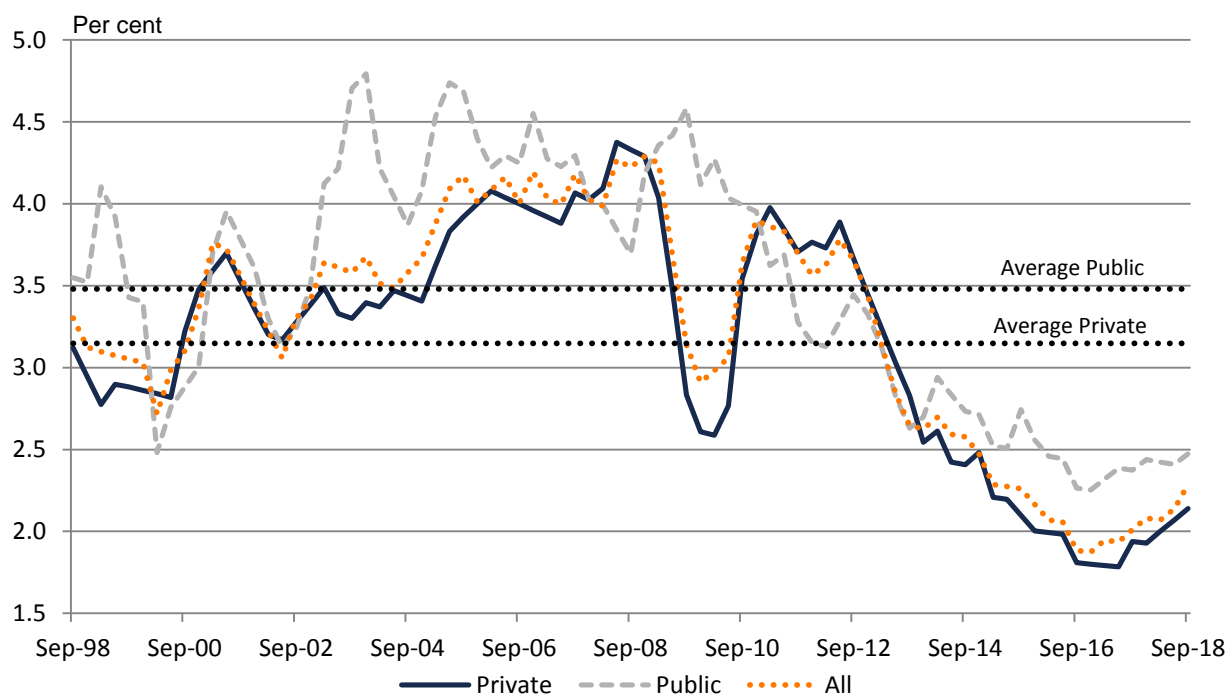
### 3.2 Wages growth between sectors

Some of the average wage measures also provide data on wages for the private and public sectors, including the WPI and AWOTE.

Chart 3.9 compares annual WPI growth between the private and public sectors and shows that WPI growth in the private sector most resembles growth in total hourly rates of pay excluding bonuses.

Average annual WPI growth in the public sector (3.5 per cent) is higher than in the private sector (3.2 per cent). The main difference in growth rates between the two sectors was during the GFC, when annual WPI growth in the private sector fell relatively strongly while annual WPI growth in the public sector fell more gradually and after a lag. Annual WPI growth in the public sector peaked at 4.8 per cent in the December quarter 2003, higher than any peak in the private sector (4.4 per cent in the June quarter 2008).

While annual WPI growth in the private sector rebounded following the GFC (before falling again), growth in the public sector mainly declined from 2009 until its trough in late 2016. Recent trends for annual WPI growth in both the private and public sectors have been similar, although WPI growth in the public sector has been higher than in the private sector since 2014.

**Chart 3.6: Annual WPI growth, private and public sectors**


Note: Data are seasonally adjusted.

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

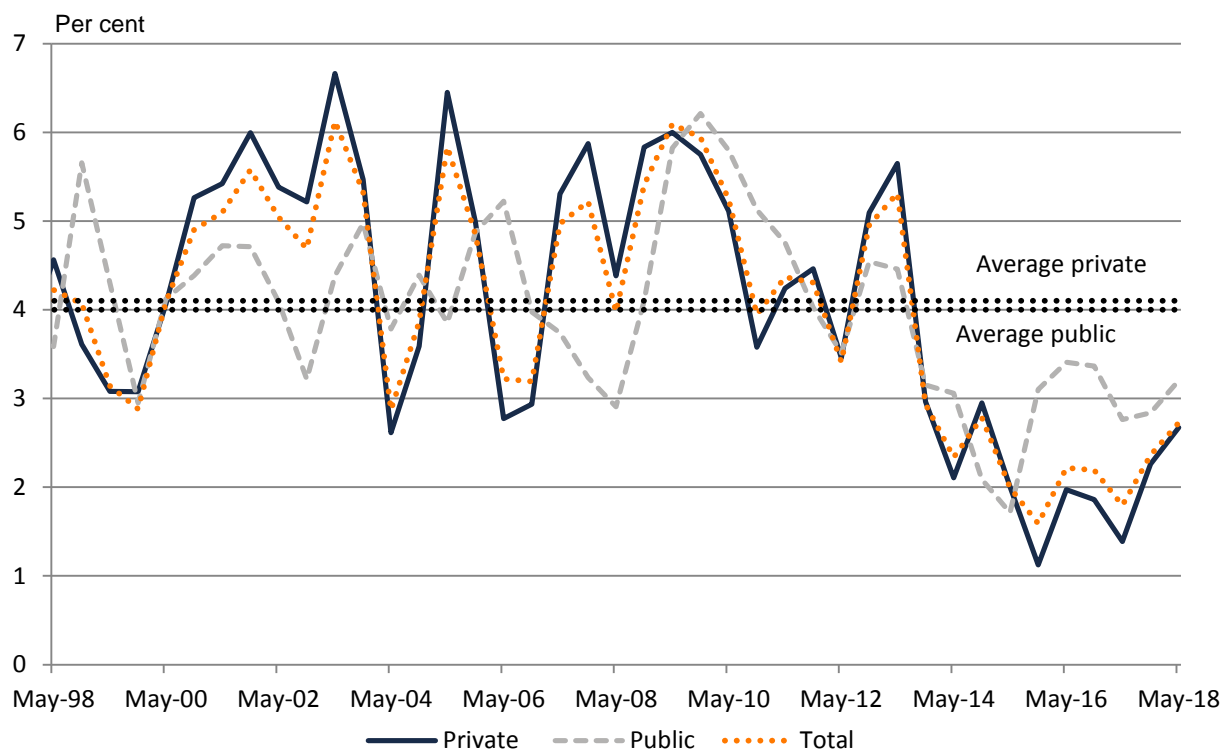
Chart 3.7 also shows that growth in AWOTE for the private sector most resembles total growth in AWOTE rather than the public sector.

Annual growth in AWOTE for the private sector peaked at 6.7 per cent over the year to May 2003, while annual growth in AWOTE for the public sector reached a peak of 6.2 per cent over the year to November 2009. However, since late 2015, annual growth in AWOTE for the public sector has been higher than for the private sector.

The lowest annual growth in AWOTE for the private sector was 1.1 per cent over the year to November 2015. For the public sector, it was 1.7 per cent over the year to May 2015.

Over the period, average growth in AWOTE for the private sector was 4.1 per cent compared with 4.0 per cent for the public sector.

**Chart 3.7: Annual growth in AWOTE, private and public sectors**



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

### 3.3 Wages growth across industries

Both the WPI and AWOTE also publish data for wages growth across industries. The data show that while wages growth varied across industries, it appears to have declined across all industries over more recent years.<sup>42</sup>

Chart 3.6 compares the maximum and minimum annual WPI growth rates across the 19 industries, represented by the highest and lowest growth rate recorded in each quarter. The chart shows that the trend in both the maximum and minimum annual growth rates have followed the aggregate annual WPI growth rate by increasing to 2008 and declining since 2012. Although the factors affecting wages growth in each industry are likely to be different, these trends suggest there is some commonality in the reasons for low wages growth across industries.

The highest maximum growth rate was 6.7 per cent in Mining in the June quarter 2008, however, the maximum growth rate across all industries has not reached at least 3 per cent since the December quarter 2014. The lowest maximum, recorded over the year to the March quarter 2017 (2.3 per cent in Health care and social assistance), was below the minimum annual growth rate recorded across much of the period.

The data show also that there was some consistency in the industries that recorded the maximum or minimum annual growth rate. For example, the maximum annual growth rate between 2006 and

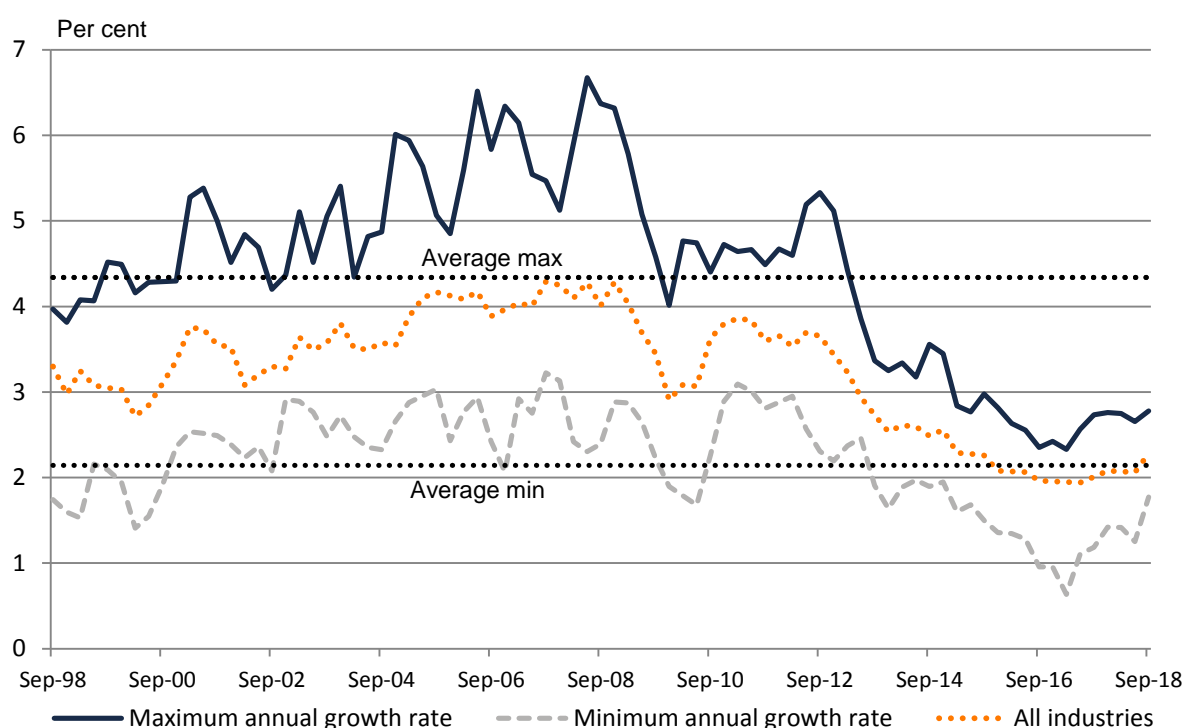
<sup>42</sup> See also Grant A & Moore A (2017), 'Recent trends in wage growth', *Analysis of wage growth*, Chapter 1, Commonwealth Treasury, November.



2009 was in Mining, while the minimum annual growth rate over this period was in Accommodation and food services. Between 2016 and 2018, the maximum annual growth rate was in Health care and social assistance and the minimum annual growth rate was in Mining.

The difference between the maximum and minimum annual growth rates narrows in the most recent data (over the year to the September quarter 2018). Bishop and Cassidy (2017) commented that the dispersion of low wages growth suggests that the labour market adjustment following the winding down of the mining boom has been completed.

**Chart 3.8: Maximum and minimum annual WPI growth across industries**



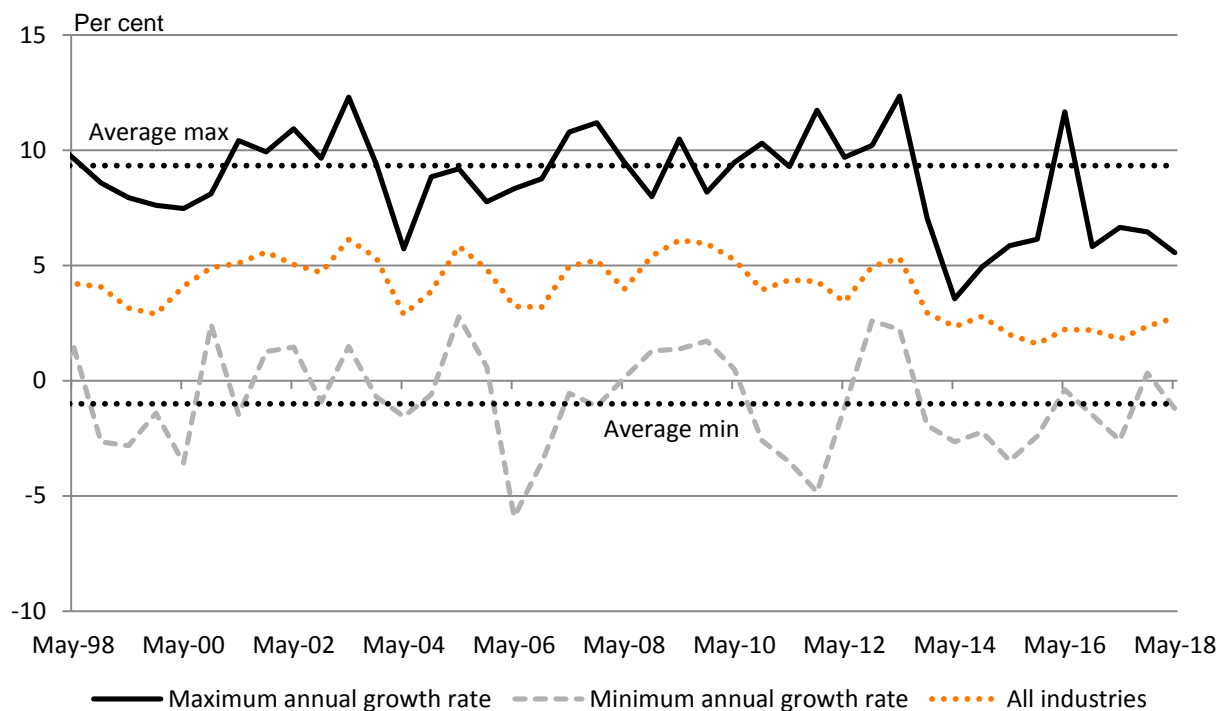
Source: ABS, *Wage Price Index, Australia, Sep 2018*, Catalogue No. 6345.0.

The maximum and minimum annual growth rates across industries based on AWOTE are compared in Chart 3.7.

The maximum annual growth rate in AWOTE across all industries centred around 10 per cent for much of the 20-year period to May 2018. However, since November 2013, the maximum annual growth rate has been relatively low compared with earlier in the period (other than unusually large growth of 11.7 per cent in Rental, hiring and real estate services over the year to May 2016). The lowest maximum annual growth rate (3.5 per cent) was recorded in May 2014, while the minimum annual growth rate was often negative. In more recent years, the difference between the maximum and minimum annual growth rates has been relatively small, but not at historical lows like the WPI.

There is less consistency in AWOTE with regards to the industries that recorded the maximum or minimum annual growth rates compared with the WPI. In fact, the maximum annual growth rate was recorded in Arts and recreation services on more occasions than in Mining. This makes it relatively more difficult to determine the reasons for wages growth across industries using this measure.

**Chart 3.9: Maximum and minimum annual AWOTE growth across industries**



Note: Data are in original terms.

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

### 3.4 Analysis of quarterly WPI growth

As the WPI is designed specifically to look at changes in wages and has been considered by the Expert Panel as a more accurate measure, this section provides further analysis of the indicator. In particular, it analyses quarterly changes in the WPI which can provide further insights to analysis of annual changes by examining when wage changes actually occur during the year. Discussion of the WPI will refer to the main indicator, total hourly rates of pay excluding bonuses.

#### 3.4.1 Research into wages growth between quarters

Analysis was undertaken of the frequency and size of wage changes using microdata from the WPI up to 2016 (Bishop 2016; Bishop and Cassidy 2017). 'Frequency' refers to the share of jobs that experience a wage change in a given quarter, while 'size' measures the average magnitude of wage increases for those jobs that received a change.

The research found that, in 2016, the frequency of wage adjustments was relatively low, with around one-fifth of all wages adjusted each quarter compared with around one-quarter in 2012. It was suggested that this was caused by more wage freezes or longer delays in renegotiating wage contracts.

The analysis found a fall in the frequency of wage changes in 2009 around the time of the GFC and the Australian Fair Pay Commission's decision not to increase the Federal Minimum Wage and award wages. However, the analysis also found that there had been a decline in the frequency of wage changes since the early 2000s. A fall in the average size of wage changes between 2012

and 2016 was found to be the result of a fall in the share of jobs that received a wage increase of more than 4 per cent.

With the increase in annual WPI growth over late 2017 and 2018, the research was updated in 2018 (Bishop 2018). The research found that the average frequency of wage changes had increased between 2016 and 2018, accounting for all of the increase in aggregate wage growth. The average size of wage increases remained similar to that in 2016.

While the previous research found a decrease in the share of jobs receiving a wage increase of more than 4 per cent, this proportion had since stabilised. The analysis found an increase in the proportion of jobs receiving wage increases of between 3 and 4 per cent and suggested that part of the reason was due to annual wage review decisions to increase the national minimum wage (NMW) and modern award minimum wages by 3.3 per cent in 2017 and 3.5 per cent in 2018.

The contributions of increases in the NMW and modern award minimum wages to increases in the WPI have been assessed by the ABS through research on wages growth by method of setting pay. These have made use of microdata from the WPI which are not publicly available.

Page (2018) found that, since 2009, wage increases in collective agreements had made the largest contribution to wage growth, followed by wage increases in individual arrangements and award wages. In 2017, the most recent year analysed, the contribution from award wages was found to be 10.7 per cent, which was the largest contribution since 2006, and up from 6.9 per cent in 2014. This compared with a contribution of almost 50 per cent from collective agreements and around 40 per cent from individual arrangements.<sup>43</sup>

### **3.4.2 Analysis of quarterly WPI growth**

The indicators of annual WPI growth in Chart 3.1 are presented in seasonally adjusted terms. The purpose of seasonal adjustment is to remove the effects of systematic calendar events from the data. However, analysis of the original data can provide further information on the timing and size of wage changes.

Quarterly growth rates are presented in Chart 3.10, comparing the original and seasonally adjusted series. The chart shows that WPI growth in the September quarters in original terms (orange columns) is generally higher than in other quarters (at least since 2009). For much of this period, this coincided with tribunal decisions to increase minimum and award wages.

Since 2010, decisions of Fair Work Australia/Commission have come into effect from 1 July, with changes to wages affecting the September quarter of the WPI. This also represents the beginning of the financial year when many other wage negotiations are finalised (Page 2018). Previously, decisions of the Australian Fair Pay Commission came into effect on 1 October, contributing to the WPI in the December quarter.<sup>44</sup>

The quarterly increase in the WPI in original terms was highest in the September quarter 2010 (1.4 per cent), when the NMW increased by \$26.00 or 4.8 per cent.<sup>45</sup> Quarterly increases then

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<sup>43</sup> This analysis was updated in ABS, *Wage Price Index, Australia, Sep 2018*, Catalogue No. 6345.0, Commentary.

<sup>44</sup> Chart 3.10 shows that the largest increase for quarters other than the September quarter was in the December quarter 2008 (1.2 per cent). This coincided with an increase in the federal minimum wage of \$21.66 or 4.1 per cent.

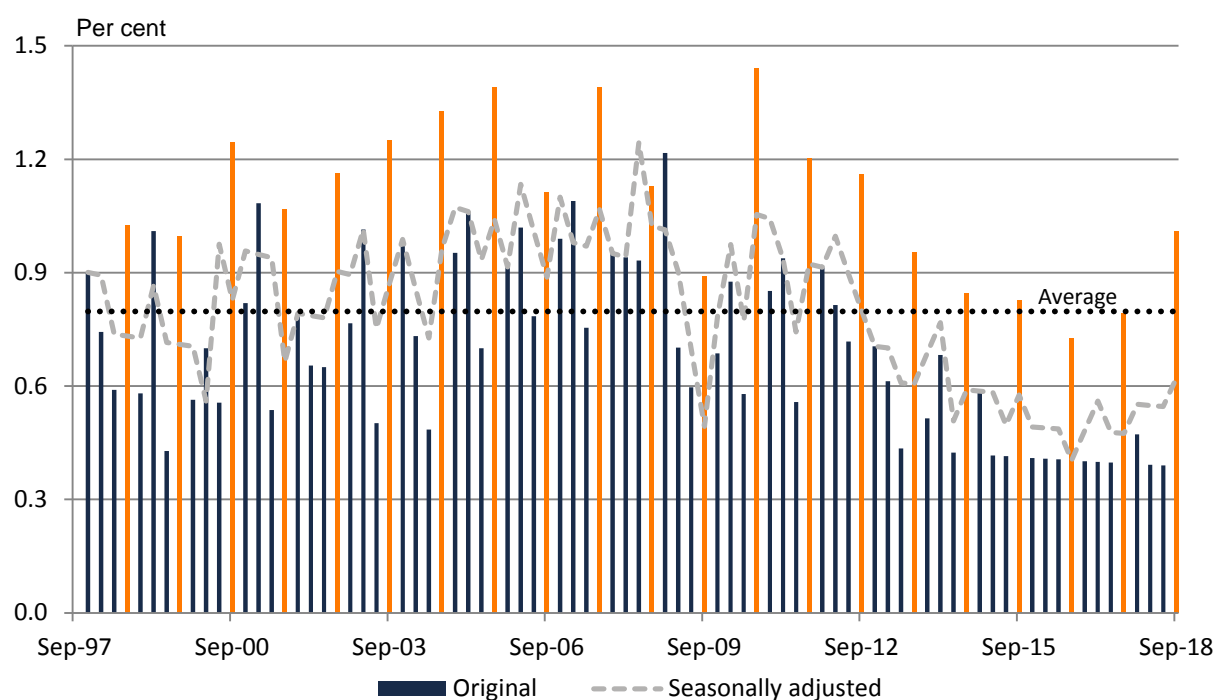
<sup>45</sup> [2010] FWAFB 4000. As the increase was a flat dollar amount, the equivalent percentage increase to modern award minimum wages was lower than 4.8 per cent.

declined across each September quarter up to 2016 (0.7 per cent) when the NMW and modern award minimum wages increased by 2.4 per cent.

Increases in the WPI in recent September quarters, particularly in 2016 and 2017, were relatively low compared with earlier in the period and below the quarterly average growth rate across the entire period (0.8 per cent). This is despite the 2016–17 Review decision to increase the NMW and modern award minimum wages by 3.3 per cent, the highest increase since 2011. The chart also shows that growth in quarters other than September has also been relatively low, particularly since 2015.

Relatively low quarterly WPI growth and the finding that 90 per cent of the contribution to WPI growth is from collective agreements and individual arrangements (from Page 2018) suggests that most of the influence on WPI growth comes from collective agreements and individual arrangements.

**Chart 3.10: Quarterly WPI growth, original and seasonally adjusted**



Note: Columns are quarterly increases in the WPI in original terms. September quarters are in orange.

Source: ABS, *Wage Price Index, Australia, Sep 2018*, Catalogue No. 6345.0; Australian Fair Pay Commission/Fair Work Australia/Commission decisions.

### 3.5 Summary on trends in nominal wages growth

This chapter has shown that trends across the various wage measures considered have generally been similar over a 20-year period. This is despite the different definition of wages and variations in the design and composition of the data sources.

Annual wages growth increased over the 2000s, up to around 2008, before falling during the GFC period. Only the AWOTE did not show a relatively large fall in wages growth during this period, possibly due to adjustments to in full-time employment.

For the majority of the measures, wages growth then rebounded to around comparable growth rates to before the GFC. However, wages growth has been below a long-term average for several years. This was evident across all measures and reasons for this outcome are explored further in Chapter 6.

## 4 Trends in real wages growth

The previous chapter presented indicators of nominal wages to show that recent wages growth is low across a variety of measures. This chapter examines changes in real wages, that is, how wages have grown taking into account changes in prices. Real wages are used as a measure of living standards in annual wage reviews as they measure changes in purchasing power.<sup>46</sup>

Chart 4.1 compares the change in real wages for the WPI, AWOTE and the minimum wage, which are adjusted using the CPI. Because of the introduction of the Goods and Services Tax and changes in the timing of decisions to increase the minimum wage and award wages, changes in real wages varied widely in the early part of the period. The chart therefore focuses on changes in real wages over the last 10 years.

The chart shows that annual growth in real WPI and AWOTE was generally positive over the 10 years to 2018. Annual growth in real WPI peaked over the year to the June quarter 2012 (2.5 per cent) and for AWOTE it peaked over the year to June 2009 (4.6 per cent).<sup>47</sup>

Although generally positive, real wages growth has been relatively modest since 2013, particularly for AWOTE. This is despite growth in the CPI being below the RBA's medium-term target band of 2 to 3 per cent for most of the period since late 2014.<sup>48</sup> Real increases in the minimum wage have matched or been higher than these average wage measures since the end of 2014.

Average growth in the real AWOTE over the 10-year period (1.2 per cent) was higher than for the real WPI and real minimum wage (both 0.6 per cent). Since 2013, annual growth in real AWOTE has been below average, while annual growth in real WPI has only been below average since 2016. Annual growth in the real minimum wage has generally been above its average since 2014.

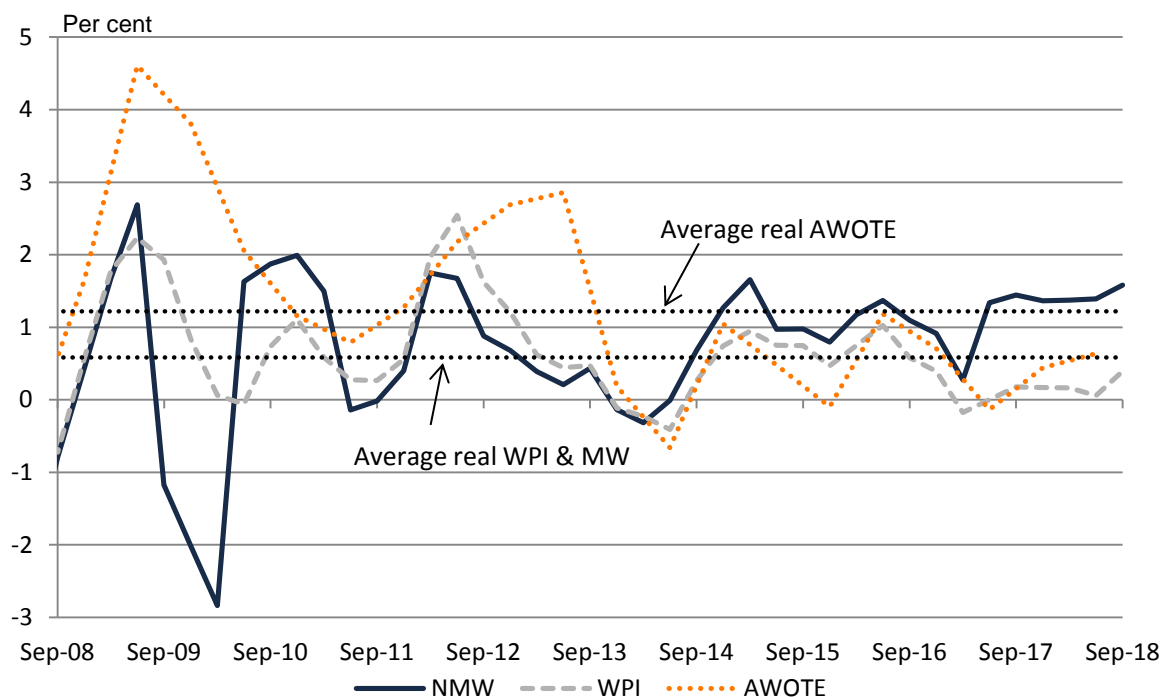
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<sup>46</sup> Data on real wages is also presented in the Statistical report.

<sup>47</sup> Data on the AWOTE for the June quarter refers to May.

<sup>48</sup> See RBA (2018), Graph 4.2.

**Chart 4.1: 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*.

Unit labour costs are also presented in the National Accounts in real terms. This allows for a measure of the direct labour cost pressures associated with the employment of labour, excluding price impacts.<sup>49</sup>

As noted earlier, unit labour costs take into account labour productivity. Rather than the CPI, real unit labour costs are calculated by adjusting nominal unit labour costs by the GDP deflator.<sup>50</sup> This is preferred because its scope directly relates to the production of goods and services in the domestic economy.<sup>51</sup> The GDP deflator tends to rise with increases in the terms of trade (the ratio of export to import prices).

Annual growth in non-farm real unit labour costs was negative for much of the 20-year period, with two periods of particularly strong decline, over 2008 and late 2016 to early 2017 (Chart 4.2). Growth in non-farm real unit labour costs declined by an average of 0.4 per cent per year, and reached 2.1 per cent in the September quarter 2009 and the March quarter 2016.

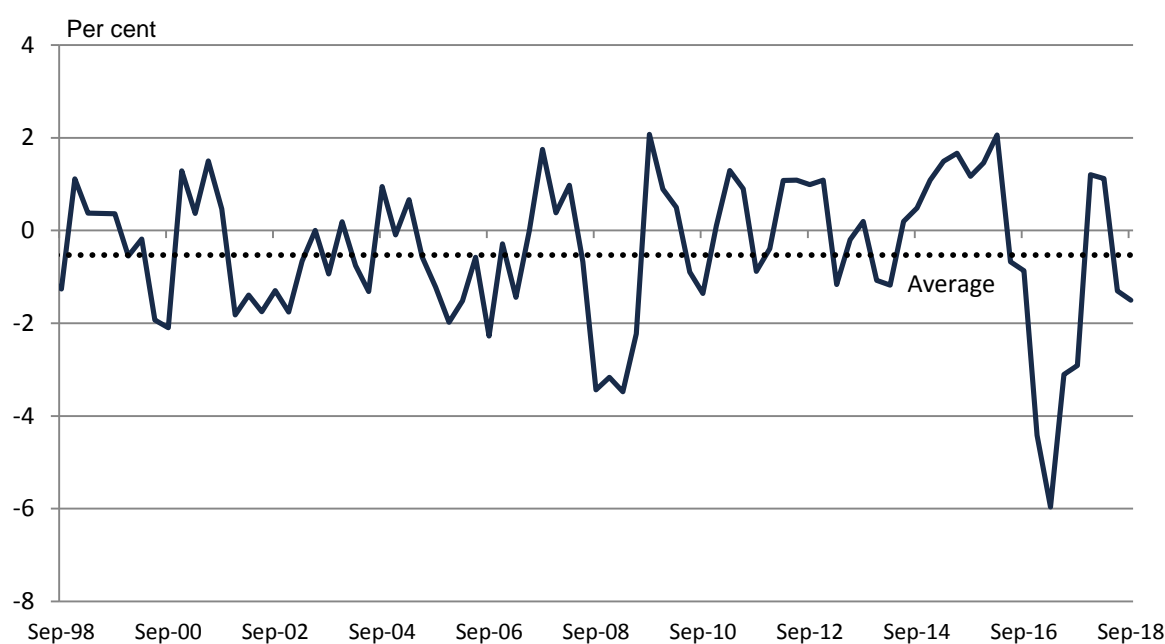
<sup>49</sup> ABS (2016), para. 20.33.

<sup>50</sup> The GDP deflator represents a price index of GDP, calculated as the current price of GDP (or nominal) divided by the chain volume (real) measure.

<sup>51</sup> See ABS (2016), paras 20.39–20.42 for a discussion on the most appropriate measure.

Despite the recent decline across most measures of nominal wages growth over recent years, annual growth in non-farm real unit labour costs was higher than its long-term average for much of the period since 2014 (other than the relatively large fall in 2016 and 2017). Recent increases in the terms of trade have been an important factor in the fall in real unit labour costs (Grant and Moore (2017)).

**Chart 4.2: Annual growth in real unit labour costs**



Source: ABS, *Australian National Accounts: National Income, Expenditure and Product, Sep 2018*, Catalogue No. 5206.0.

Grant, Fazzone and Moore (2017) commented that, in the long-term, real wages growth is driven by labour productivity. They discussed two measures of real wages: the real producer wage, which compares producers' labour costs with the price of their output (measured by AENA deflated by the GDP deflator), and the real consumer wage, which compares the consumers' wage with the cost of goods and services purchased (measured by AENA deflated by the household final consumption deflator).

Their analysis found that only the real producer wage had been growing in line with labour productivity during the mining boom, while the real consumer wage had grown by more than labour productivity.<sup>52</sup> The real consumer wage grew at a faster pace for almost 10 years up to 2011 and had been relatively flat since, as growth in incomes have matched changes in consumer prices. Grant, Fazzone and Moore commented that the divergence between these two measures reflect the unwinding of the terms of trade.

These measures of real wages growth provide some support to show that wages growth has been below average over recent years. However, they differ from measures of nominal wages growth in that some have also been above the long-term average over recent years. Overall, current growth rates in nominal wages appear to be more unusual than for real wages.

<sup>52</sup> This was also presented in [2018] FWCFB 3500 at para. 158.

## 5 Earnings across methods of setting pay

This section compares wages growth for different methods of setting pay—award, collective agreement and individual arrangement.

While the WPI collects information on method of setting pay (as discussed in section 3.4.2), these data are not publicly available. The EEH is the only source for information on methods of setting pay that is publicly available. This chapter presents measures of wages growth across methods of setting pay from the EEH as well as analysis of wages growth in federal enterprise agreements.

### 5.1 All methods of setting pay

This section draws on data from the EEH to compare average hourly earnings across methods of setting pay. As the survey aims to collect data at a point in time, comparisons over time should be treated with caution. This is because there are several factors that can impact data on earnings between surveys other than increases in wages, including the different compositions of each survey, where the businesses and employees selected across survey samples are not the same.

The ABS reviews the conceptual categorisation of methods of setting pay every EEH to ensure that it reflects a contemporary picture of pay-setting arrangements in Australia. Changes that were made as a result of the 2016 and 2018 reviews affect the comparability of methods of setting pay estimates over time.

Chart 5.1 presents the average hourly total cash earnings (AHTCE) for award, collective agreements and individual arrangements compared with the AHTCE for all methods of setting pay as a ratio for each year from 2006 to 2018. It does this specifically for non-managerial employees as this provides a longer period of analysis than is available for all employees. A ratio above 1.0 shows that the AHTCE is higher than the AHTCE for all non-managerial employees.<sup>53</sup>

The chart shows that the AHTCE for award wages was below the AHTCE for all non-managerial employees across each survey, while the AHTCE for collective agreements and individual arrangements was above the AHTCE for all non-managerial employees across all years.

The ratio of AHTCE for awards was at its lowest in 2010 at 0.65, or 35 per cent below the AHTCE for all non-managerial employees. The AHTCE for awards subsequently increased to 0.76 of the AHTCE for all non-managerial employees in 2016, or 24 per cent below the average. In 2018, the ratio was 0.75.

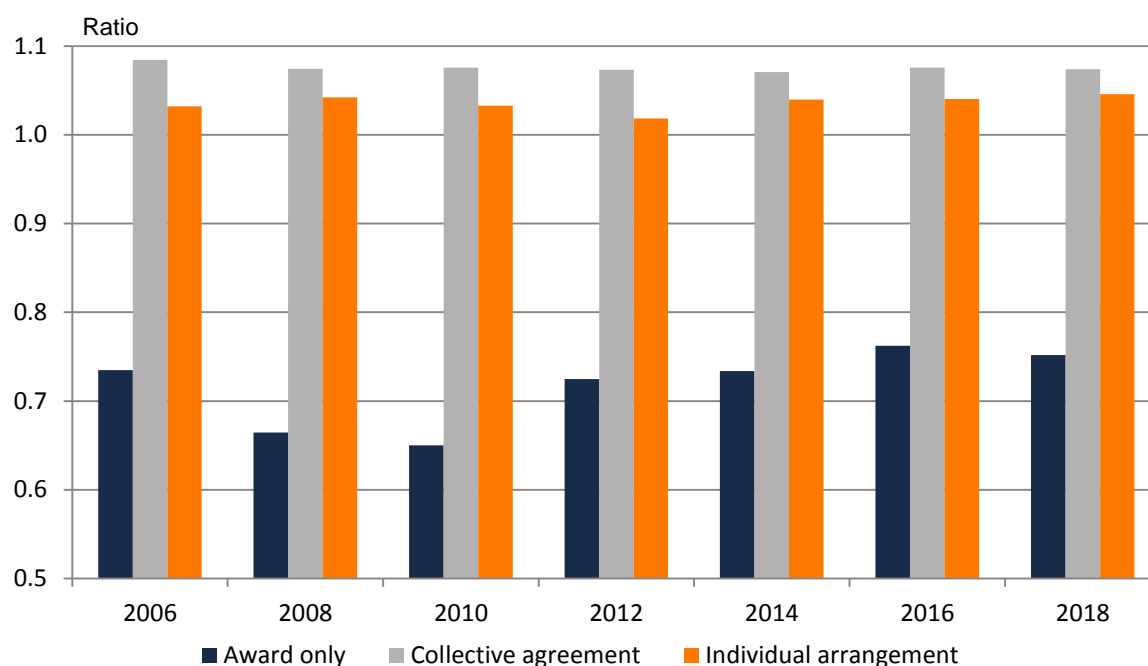
The AHTCE for collective agreements remained around 7 to 8 per cent above the AHTCE for all non-managerial employees, while the AHTCE for individual arrangements was around 2 to 4 per cent above.

A smaller gap between AHTCE for awards and for all non-managerial employees in 2018 relative to earlier years could be due to a number of reasons, including higher growth in award wages, lower growth in average wages across all non-managerial employees, and changes in the samples between surveys.

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<sup>53</sup> A ratio using median earnings would be preferred to the average as this would reduce the impact of very high earnings. However, median earnings are not yet available for 2018.



**Chart 5.1: Ratio of AHTCE by method of setting pay to AHTCE for all non-managerial employees**

Note: This chart incorporates indicative comparable data for 2016 based on the conceptual changes to method of setting pay. The ABS undertook a broad level analysis of the 2016 EEH to gauge the extent to which the 2016 estimates would have differed had the 2018 treatment been available. It was not possible to produce indicative comparable estimates, using the 2018 treatment, for either EEH 2012 or EEH 2014. The indicative data for 2016 were released on 13 February 2019.

Source: ABS, *Employee Earnings and Hours, Australia*, various, Catalogue No. 6306.0.

## 5.2 Federal enterprise agreements

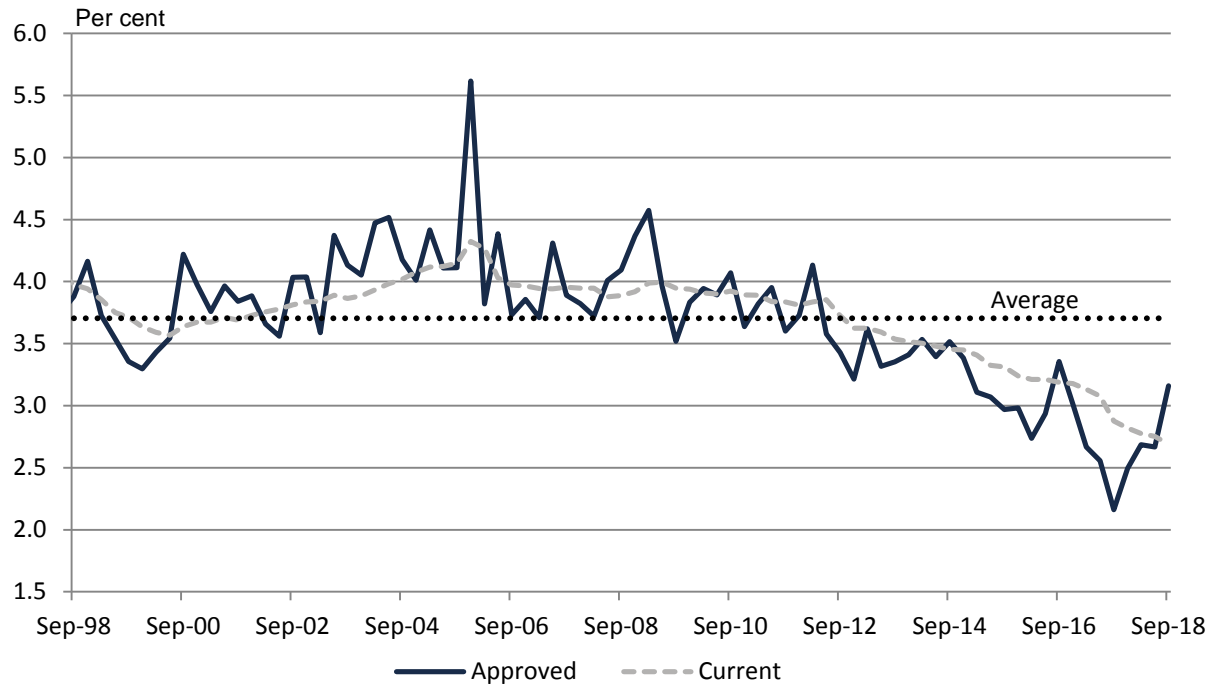
Further analysis of wages growth in collective agreements can be undertaken using measures of wages growth in the Workplace Agreements Database. Data are provided on a quarterly basis and can be presented as a time series. The indicators of wages growth are the average annual wage increases (AAWI) for federal enterprise agreements approved in the quarter and those current at the end of each quarter. Given that many enterprise agreements are in operation for around three years, these indicators can have a longer influence on broader measures of wages growth than only in the current quarter or year.<sup>54</sup>

Chart 5.2 presents the two main indicators of AAWI in federal enterprise agreements. Both measures show similar trends over the 20-year period, with average wage increases of 3.7 per cent for both approved and current agreements. The AAWI for federal enterprise agreements approved in each quarter tends to be more volatile because it is calculated on a fewer number of agreements. However, both measures peaked in the December quarter 2005 and since then have generally fallen and have been below their 20-year average since 2012. The effect of the GFC had some impact on federal enterprise agreements approved in 2009. The AAWI for approved

<sup>54</sup> RBA (2018), p. 60.

enterprise agreements reached a trough in the September quarter 2017, while the AAWI for current enterprise agreements was at its lowest level on record in the September quarter 2018.

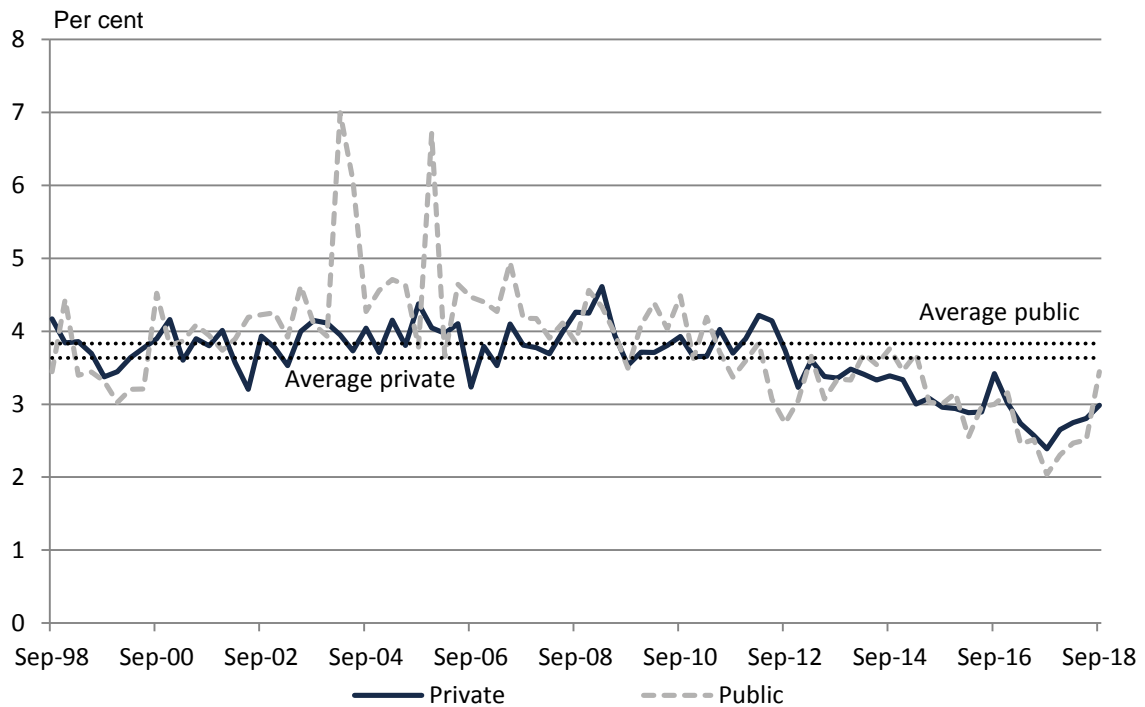
**Chart 5.2: AAWI for federal enterprise agreements approved and current in the quarter**



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

Data on AAWI in federal enterprise agreements for both approved and current agreements in the private and public sectors generally show similar trends (Charts 5.3 and 5.4). AAWIs for approved public sector enterprise agreements tended to be higher than for the private sector during the 2000s, and accounted for the spike in the December quarter 2005 (also in the March quarter 2004). AAWIs for approved agreements in both sectors have been below average since the December quarter 2012. The AAWI for approved enterprise agreements was at a historic low in the September quarter 2017 for both the private (2.4 per cent) and public (2.0 per cent) sectors.

**Chart 5.3: AAWI for federal enterprise agreements approved, by sector**

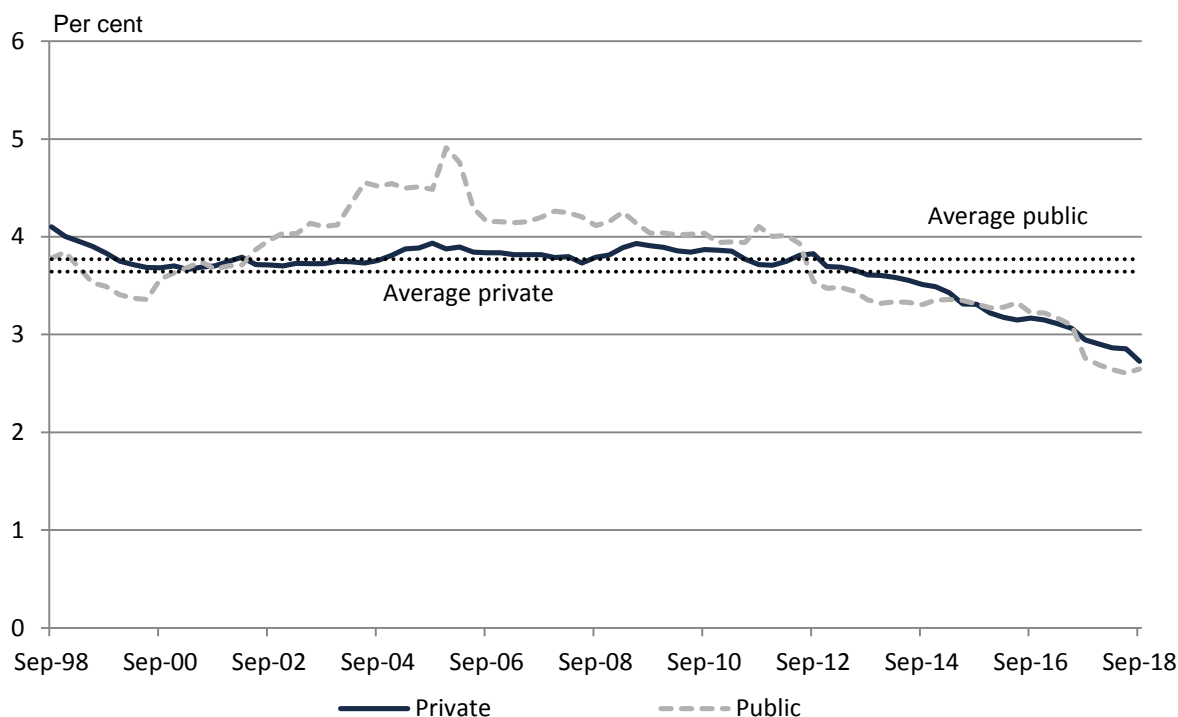


Source: Department of Job and Small Business, *Trends in Federal Enterprise Bargaining*, September quarter 2018.

Comparing all current agreements between sectors, Chart 5.4 shows that the AAWI for the private sector remained between 3.5 and 4.0 per cent for much of the period up to the September quarter 2012 before falling below its long-term average to a low of 2.7 per cent in the September quarter 2018.

The AAWI for the public sector showed a different trend, increasing to the March quarter 2006 before falling. However, the AAWI for current public sector enterprise agreements also began to fall below its long-term trend from 2012, to a low of 2.6 per cent in the June quarter 2018.

**Chart 5.4: AAWI for current federal enterprise agreements in the quarter, by sector**



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

The analysis of wages growth from the EEH showed that average hourly total cash earnings for non-managerial employees on collective agreements and individual arrangements remained above the average across all non-managerial employees between 2006 and 2018. For award-reliant employees, average hourly total cash earnings were below the average across all non-managerial employees, but have increased in relative terms since 2012.

Wages growth across federal enterprise agreements, as measured by the AAWI, has been below the long-term average since 2012 after being fairly consistent during the 2000s (particularly in the private sector).

## 6 Reasons for low wages growth

The previous chapters have shown that wages growth across various measures, particularly in nominal wages, has been below its long-term average for some years. There have been a number of research papers that have analysed these trends and presented in annual wage review Research reference lists.

In trying to determine the reasons for the recent period of low wages growth, papers have compared wages with trends in other factors related to the labour market, both cyclical and structural factors. Comparing trends in wages growth against these factors assists with determining whether the more recent outcomes in wages growth will be permanent or whether wages growth will return towards its long-term average.

Cyclical factors are generally short-term, such as measures of spare capacity, inflation and productivity. The short-term relationship between these indicators and wages can be illustrated by the Phillips curve, which suggests that higher unemployment is associated with lower wages

growth (Jacobs and Rush 2015). Conversely, higher inflation and higher productivity are associated with higher wages growth.

Models of the Phillips curve attempt to estimate the non-accelerating inflation rate of unemployment (NAIRU). The NAIRU is the rate of unemployment that is consistent with stable inflation. It is only estimated, not observed, and can change over time. When the actual unemployment rate is below the NAIRU, there will be upward pressure on wages growth and inflation. When the unemployment rate is above the NAIRU, there is spare capacity in the labour market and downward pressure on wages growth and inflation (Cusbert 2017). Chua and Robinson (2018) found that the WPI, rather than price inflation, produced more precise estimates of the NAIRU, which was estimated at close to 5.5 per cent. The Treasury also estimated the NAIRU at around 5 per cent (Grant, Fazzone and Moore 2017).<sup>55</sup>

Wages growth and labour market indicators are compared with measures of labour market spare capacity in section 6.1. This report does not include modelling of the Phillips curve or attempt to estimate the NAIRU. Papers that have undertaken this type of analysis to explain the recent period of wages growth are discussed in section 6.2. This discussion also includes papers that have examined structural factors, which tend to refer to longer-term influences. Structural factors include shifts in employment across industries, changes in the bargaining power of labour and advances in technology (such as automation and the gig economy).

These factors have been explored because modelling of the Phillips curve has often found that the recent wages growth outcomes are lower than estimated by the models. However, structural factors can be difficult to measure or assess.

## 6.1 Wages growth and indicators of labour market supply and demand

In this section, wages growth is compared with several measures of labour market spare capacity which indicate the amount of extra labour that is willing to be supplied. While spare capacity is generally indicated by the unemployment rate, the recent divergence between the unemployment and underemployment rates, and near record high underemployment rate has led to suggestions that the unemployment rate alone cannot capture labour market spare capacity (Chua and Robinson 2018; and Yuen and Smith (2018) for insights into underemployment).

The Phillips Curve is often presented with wages and unemployment on separate axes.<sup>56</sup> Chart 6.1 expands on indicators of labour market spare capacity to also include the underutilisation rate (the sum of the unemployment and underemployment rates). A trendline is also presented in the chart and its negative slope suggests that higher wages growth occurs with lower measures of labour market spare capacity. The slope for the underutilisation rate lies between those of the unemployment and underemployment rates.

The chart shows that recent wage outcomes (circled and highlighted in lighter colours) have been lower than for the same unemployment rates recorded over the previous 20 years. However, while

<sup>55</sup> Grant, Fazzone and Moore (2017) also compared wages growth with other indicators such as labour productivity. In these comparisons, wages are measured using earnings from the National Accounts rather than the WPI.

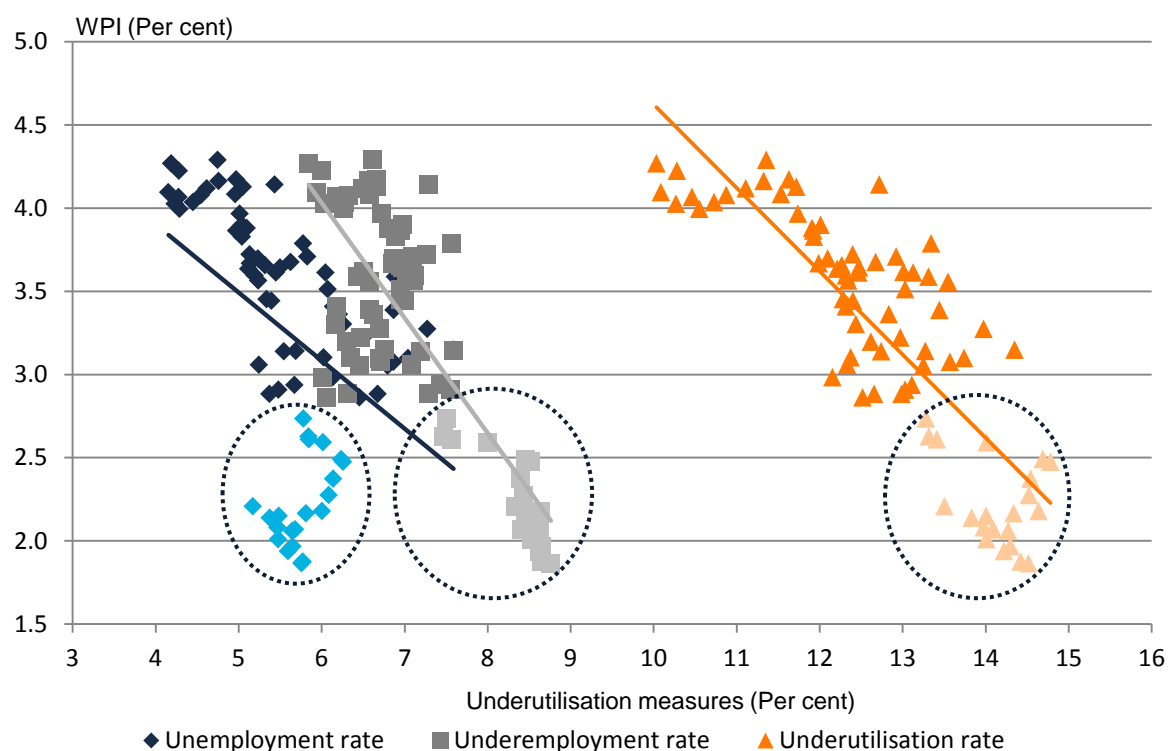
<sup>56</sup> Such as Graph 1 in Arsov & Evans (2018) and in Grant, Fazzone & Moore (2017). Jacobs & Rush (2015) use the unemployment gap—the difference between the unemployment rate and the estimated NAIRU. According to Bishop & Cassidy (2017), this is the typical measure used by the RBA.

wages growth fell with relatively little change in the unemployment rate between 2013 and early 2017, the recent pick up in wages growth has coincided with a decline in the unemployment rate.

These outcomes are less apparent for the underemployment rate where, although it has recently reached record high levels, equivalent wages growth has been closer to what would be expected (as suggested by the trendline). Recent outcomes for the underutilisation rate are both around and below the trendline.

Additional data points would provide further confirmation as to whether the relationship between wages and labour market spare capacity has shifted.

**Chart 6.1: Annual WPI growth and measures of labour force underutilisation**



Note: All data are in trend terms. Circled data refer to the period from the September quarter 2013 to the September quarter 2018.

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

Job vacancies are a measure of labour demand and are also surveyed by the ABS. A job vacancy is a job available for immediate filling and for which recruitment action has been taken (such as advertising, notices or notifying employment agencies).<sup>57</sup> The ABS samples job vacancies on a quarterly basis.<sup>58</sup> The survey is similar to the WPI in that it covers all employing organisations in Australia (public and private sectors), except enterprises in Agriculture, forestry and fishing; private

<sup>57</sup> ABS, *Job Vacancies, Australia, Aug 2018*, Catalogue No. 6354.0.

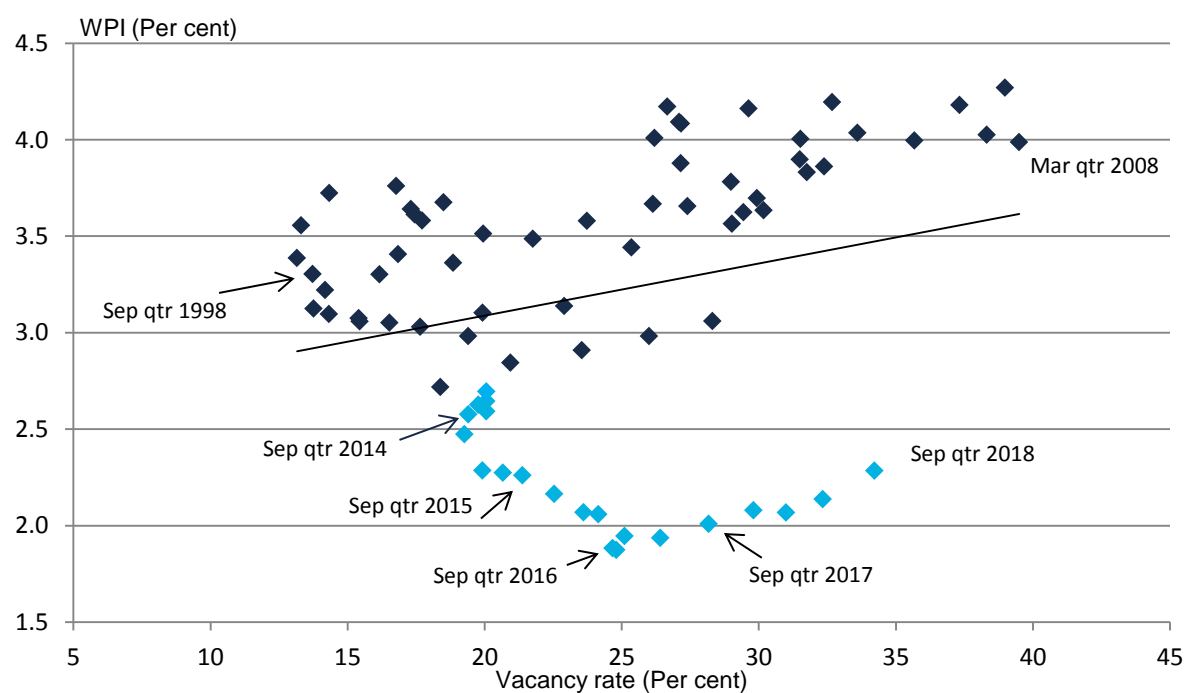
<sup>58</sup> The survey was suspended following the May quarter 2008 and re-commenced in the November quarter 2009.

households employing staff; foreign embassies and consulates; those in the Australian permanent defence forces; and those located outside Australia. Around 5400 employers are surveyed.<sup>59</sup>

The vacancy rate is calculated as the number of job vacancies as a proportion of the number of unemployed persons. Higher annual WPI growth over the 2000s occurred with an increase in the vacancy rate (Chart 6.2). This would be expected as wages increase with greater demand for workers. However, between 2014 and 2016, the vacancy rate began to increase while annual WPI growth continued to decline.

As with the Phillips curve, recent outcomes for the vacancy rate are lower for comparable rates of wages growth in the early part of the period. This is indicated by data points below the trendline (in light blue). From 2013, lower wages growth occurred with an increasing vacancy rate, before wages growth picked up and the vacancy rate continued to increase. Additional data points may also be useful in confirming whether there has been a more permanent shift in the relationship or whether wages growth will return towards the trendline.

**Chart 6.2: Annual WPI growth and the vacancy rate**



Note: The vacancy rate is the number of job vacancies as a proportion of the number of unemployed persons. The Job Vacancy Survey was not conducted from August 2008 to November 2009. Data are in trend terms.

Source: ABS, *Job Vacancies, Australia, Nov 2018*, Catalogue No. 6354.0; ABS, *Labour Force, Australia, Dec 2018*, Catalogue No. 6202.0; ABS, *Wage Price Index, Australia, Sep 2018*, Catalogue No. 6345.0.

<sup>59</sup> Only employing businesses are included in the scope of the survey.

## 6.2 Research into recent wages growth

A number of research papers presented in annual wage review Research reference lists have considered reasons for the recent period of low wages growth. These and other papers released since the 2017–18 Review decision are summarised in this section. Although these papers do not represent an exhaustive list of research on this topic, they discuss a wide range of reasons, covering both cyclical and structural factors. However, no paper is definitive in their explanation for low wages growth, which is why the reasons continue to be somewhat ‘puzzling’.<sup>60</sup>

A summary of the research papers discussed in this section is provided in Table 6.1.

**Table 6.1: Possible reasons for recent low wages growth**

Possible reason	Research paper
Labour market spare capacity	Hong, Koczan, Lian & Nabar (2017); Chua & Robinson (2018); Jacobs & Rush (2015)
Inflation (incl. inflation expectations)	Hong, Koczan, Lian & Nabar (2017); Chua & Robinson (2018); Jacobs & Rush (2015); Grant, Fazzone & Moore (2017); OECD (2018); Foster and Guttmann (2018)
Productivity	Hong, Koczan, Lian & Nabar (2017)
Wage levels	Arsov & Evans (2018); Eslake (2018)
Structural change	Grant, Withers & Vandyk (2017)
Shifts in bargaining power	Arsov & Evans (2018); Isaac (2018); Hardy & Stewart (2018)
Technology and the gig economy	Weir (2018); Hardy & Stewart (2018)
Labour market flexibility	Jacobs & Rush (2015); Grant, Fazzone & Moore (2017)
Use of foreign labour	Hardy & Stewart (2018)
Precarious employment	Hardy & Stewart (2018)

Most of the papers discussed in this section undertake modelling of a Phillips curve to provide an explanation for the recent low growth in wages.

Hong, Koczan, Lian and Nabar (2017) undertook a study of advanced economies using a Phillips curve model. The study found that indicators of labour market spare capacity (both unemployment and underemployment), inflation expectations and productivity growth explained the majority of recent low wages growth. The paper also commented that, due to greater linkages between countries, downward pressure on wages growth in one country may put downward pressure on wages growth in other countries.

A number of Australian papers have empirically tested models of the Phillips curve using the WPI. Chua and Robinson (2018) found that inflation expectations and slower growth in labour productivity may be more important factors that have contributed to low wages growth than indicators of labour market spare capacity. Including underemployment to the model did not provide further explanation as the underutilisation rate tends to move with the unemployment rate. Similarly, Bishop and Cassidy (2017) found little empirical evidence to suggest that the level of

<sup>60</sup> [2018] FWCFB 3500 at para. 152.



underemployment in Australia had affected wage growth separately to unemployment, particularly given the 'tight' relationship between the two.

Grant, Fazzone and Moore (2017) found that, although the relationship between wages and unemployment was relatively stable between the late 1990s and 2012, the fall in wages growth since late 2012 was 'relatively large' compared with previous periods. They also considered that there may be more spare capacity in the labour market than indicated by the unemployment rate, in the form of underemployment. However, as underemployed persons do not seek the same additional amount of hours worked as unemployed persons, they concluded that underemployment is unlikely to contribute as much as unemployment to spare capacity.

They also found that, as labour productivity had grown at around its 30-year average, it was unlikely to be a factor in the recent low wages growth and instead remarked that expectations of future inflation have influenced wages growth as wage-setting decisions are forward looking (also Organisation for Economic Co-Operation and Development (OECD) 2018).<sup>61</sup>

Jacobs and Rush (2015) estimated a Phillips curve for the private sector and also found that lower inflation expectations were a factor for why wages growth had declined by more than the historical relationship suggests. About two-thirds of the decline in wages growth over the previous few years could be explained by lower inflation expectations, higher unemployment and a decline in the terms of trade.

Arsov and Evans (2018) estimated Phillips curves for several advanced economies based on cyclical factors and found that while the models could explain wage movements over the previous two decades, actual wages growth over the previous two years was weaker than estimated by the models. They found that much of the labour market slack resulting from the GFC, which had exerted downward pressure on wages growth, had been absorbed since mid-2016 and should have resulted in upward pressure on wages growth.

Using an extended Phillips curve, Arsov and Evans (2018) modelled the long-run relationship between wages, productivity and prices in addition to structural factors such as globalisation, bargaining power and underemployment. Factors such as underemployment, which captured similar information as unemployment, and globalisation (measured by increased competition from foreign workers) were not found to be reasons for low wages growth. However, changes in bargaining power, such as falls in union density and the level of wages, were considered to provide some explanation.

In describing the level of wages, Arsov and Evans (2018: 12) stated that 'when wages in a given year are higher than what is implied by the long-term relationship between wages, labour productivity and output prices, there is a downward pressure on the subsequent year's wage growth. The implication is that wages tend to adjust slowly to changes in trend productivity growth and inflation, possibly because of nominal wage rigidities.'

Arsov and Evans therefore suggested that part of the reason for low wages growth following the GFC was that wages adjusted slowly to 'cyclically weak' economic conditions, and that a wage 'overhang' may help explain weakness in nominal wages in Australia, Canada and the United States in 2017. Similarly, Bishop and Cassidy (2017) suggested that movements in the terms of

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<sup>61</sup> Bishop and Cassidy (2017) considered whether lower wages growth may also have contributed to lower inflation as wages are the largest component of business costs.

trade have had a significant effect on wages growth, as higher output prices and profits allowed firms to pay higher wages. Wages growth has since declined with a fall in the terms trade.

However, Weir (2018) argued that this does not align with stronger employment and profit growth in recent years in Australia. Eslake (2018) suggested that there is actually a real wage 'underhang' in Australia and other advanced economies, as growth in real wages has been lower than productivity growth for some years.

Given that cyclical factors have not been able to provide conclusive reasons for recent wages growth outcomes, research has also examined structural factors. These range from job security, advances in technology and shifts in bargaining power. Structural factors tend to move slowly and are difficult to observe so they are often measured using proxies (Arsov and Evans 2018).

Davis, McCarthy and Bridges (2016) commented that employees may be willing to accept lower growth in earnings for greater job security because of concerns of job prospects, the global nature of labour markets with relatively weak wages growth, and the perception of fewer alternative job opportunities. Similarly, Bishop and Cassidy (2017) observed that measures of job security are at low levels and have tracked labour market conditions in Australia.

Using data from the HILDA survey, Foster and Guttmann (2018) found that although (self-assessed) job security was associated with higher wages growth in the following year, wages growth in recent years had fallen for workers who were either secure or less secure. Therefore, job security measures were considered to only explain a relatively small proportion of the fall in average wages growth. Subdued inflation was found to have made the largest contribution. A fall in job security was found broadly across industries, occupations, job structure and personal characteristics.

Grant, Fazzone and Ljubic (2017) explained that it was unclear how advances in technology and automation would affect wages growth, while Hong, Koczan, Lian and Nabar (2017) found that automation had made only a small contribution to low wage growth.

Grant, Fazzone and Ljubic argued that jobs that perform non-routine tasks would be associated with higher skill and therefore higher pay, lower-skilled workers may be under more pressure to seek or receive smaller wage increases. Together with globalisation and outsourcing, these factors may be creating more competition for workers in advanced economies who would feel less secure. However, they found that, for Australia, levels of job tenure had not changed for a number of years.

Jacobs and Rush (2015) highlighted that wages may have become more flexible over time because of a greater use of individual contracts. Grant, Fazzone and Moore (2017) also posited that an increase in labour market flexibility may have affected the Phillips curve, as employers are more likely to reduce hours worked rather than number of employees, which raises underemployment. While Grant, Withers and Vandyk (2017) suggested that shifts in the structure of output and employment from the goods sector to the services industries may have influenced the decline in the labour share of income.

Hardy and Stewart (2018) also considered factors such as employers' use of foreign labour; the rise of the gig economy; non-compliance of employers; increased use of precarious employment; and businesses structures that have brought down the overall cost of production and wages, as possible explanations for low wages growth. They argued that the cumulative effect of these and other factors, has led to this period of low wages growth and point out that union density has fallen from around 50 per cent to 15 per cent over the last 35 years. Reasons for the decline in

bargaining power, and a discussion of the decline in unions more broadly and its impact on low wages growth, are also discussed in Isaac (2018).

After also finding a shift in the relationship between wages and unemployment, OECD (2018) posited that there has been an increase in the supply of labour for low-paying jobs which is driving down wages. Jobseekers that would prefer higher-paid jobs are accepting lower-paid jobs while still looking for other type of work.

Slower wages growth in these jobs may therefore be driving down growth in average wages, with an increase in the number of these jobs leading to lower aggregate wages growth. Further, those who became employed after being unemployed during the GFC may have received lower wages or be more likely to receive job offers in non-standard forms of employment.

While not undertaking empirical analysis, Weir (2018) concluded that structural factors still only partly explained recent low wages growth. Weir commented that there is an absence of a large enough database in Australia in which to allow for proper examination of potential indicators. Structural factors considered included greater import competition, globalisation and job insecurity; declining unionisation; casualisation of the workforce; and wage levels. Weir commented that job insecurity and falling unionisation have only made a small contribution, and that there was little evidence of an increase in workers on temporary contracts, employed by labour hire firms or in casual employment.

Weir therefore suggested that part of the reason for the recent low wages growth is due to differences at the firm level. Weir contended that the uneven take-up of technology between high productivity and low productivity firms within the same industry has led more productive firms to increase their market share without a corresponding increase in their employment. Instead, these firms have been using their greater market share to increase profits and lower output prices rather than provide higher wages. In contrast, lower productivity firms have limited capacity to increase wages in order to remain competitive with these firms. This led Weir to suggest that differences at the firm level is not only contributing to lower average nominal wages growth but also to a lower labour share<sup>62</sup> of total factor income and productivity growth. However, Weir commented that this may only be applicable to certain industries.

## 7 Conclusion

This report discussed the different measures of wages and their trends over the last 20 years. It analysed various measures of average and aggregate wages growth and found that, overall, wages growth peaked prior to the GFC before falling relatively strongly, although this was not the case for changes in AWOTE. While wages growth across most measures rebounded to comparable levels prior to the GFC, it has since fallen and been below long-term averages for some years.

Trends across measures of real wages growth provided some support to the finding that wages growth has been below average over recent years. Overall, current growth rates in nominal wages appear to be more unusual than for real wages. Further analysis of changes in the WPI show that wages growth is lower across all quarters of the year, even after increases in the minimum wage and award wages. Earnings across methods of setting pay show that the AHTCE for awards has

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<sup>62</sup> Weir commented that it is widely accepted that the majority of the shift in the labour share is due to changes within, rather than between, industries.

been below the AHTCE for all non-managerial employees, however, it has increased since 2010. The AHTCE for collective agreements and individual arrangements were consistently above the AHTCE for all non-managerial employees. Analysis of AAWI in federal enterprise agreements show that wages growth has also fallen.

The report also provides a summary of research that has examined reasons for the recent period of low wages growth. This research does not provide a definitive explanation for recent low wages growth. Cyclical reasons, such as inflation, productivity and labour market spare capacity are tested and, while some papers find these to be an important factor, they do not provide a full explanation.

Recent wages growth is lower than suggested by the modelling undertaken in the papers, leading researchers to consider structural factors, such as job security, advances in technology and shifts in bargaining power. However, these are relatively difficult to measure and also do not provide definitive reasons for recent wages growth outcomes. More conclusive evidence may come with further data releases to determine if wages growth is returning to its long-term average.

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