The recent trend in income per capita — effectively the contents of people’s wallets — is far below that in the decades that preceded it, and has fluctuated from year to year.1

The purpose of this chapter is to place the stagnation of Australian wages in the context of developments in other rich nations from the post-war period to today. We do this using internationally comparative data. We are interested in the relationships between wages, productivity, inequality and overall economic stability. By testing theories about the causes of wage stagnation based on the available data, it is possible to point to the policy levers most likely to reverse wage stagnation in Australia.

What explains wage stagnation?

Taking a global perspective on wage stagnation, we start by analysing the distribution of any country’s annual total output, which can be measured in several different ways.2 The value of the nation’s output is distributed between labour and capital. Most of any country’s population derives its annual income from labour-based sources like wages, superannuation and pensions, and remittances. Wage growth is therefore an essential component of the growth in overall living standards.
Capital incomes typically include rents, interest payments and capital gains from the sale of owned assets. Any household can have several sources of income at once. An individual household may have one person working full-time, another getting a pension, while another derives their income from renting a second property. Despite this complexity, it still makes sense to think of two distinct ‘types’ of household: one that earns income primarily from work (which we will call labour), and one that derives income primarily from capital-based sources (which we will call capital).

The evolution of the share of labour income is shown in Figure 3.1 for Australia and G7 countries. Data come from the Penn World Tables (v. 9.0) and include the labour income of employees as well as the labour income of the self-employed. For some early years, the series data are shown as essentially constant, so we include them in our chart. We can see there has been a secular shift in labour’s share of output across a number of rich countries. Australian workers took home roughly 68% of total output in 1960. By 2017, that value was 52%. Both the numerator and the denominator of the ratio have risen rapidly, but the significance (in both relative and absolute terms) of the loss of value for workers is clear. Australia is not alone in this trend, but it constitutes an extreme example.

The USA began the period with a lower labour share than Australia (around 64%), and while the USA’s labour share has fallen, the decline has been smaller: around 5% over 70-year period. Denmark’s labour share has remained roughly constant over this period, while Germany’s has fallen rapidly. The average of all rich countries’ labour share of output was 61% in 1960. By 2017, that value was 51%.

The collapse in Australia’s labour share is remarkable, both for the trajectory it took, and the seemingly negligible effect it had on economic growth over a 60- to 70-year period (since, as we know, Australia has an unmatched record of sustained expansion).

The problem can be stated quite simply. Real average weekly earnings are 22% higher than they were in 1981. Labour productivity is 70% higher than it was in 1981. With productivity growing so much faster than real wages, workers’ share of total output must have fallen.

The key question is: what explains this fall in the value of economic product appropriated by workers, despite seemingly relentless economic growth? Three main answers are suggested by the literature, as summarised by Arsov and Evans, writing for the Reserve Bank of Australia (RBA):

Structurally lower employee bargaining power may also be depressing wage growth. Bargaining power is difficult to measure and may, in part, be determined by the labour market conditions themselves. Common proxies
suggest that bargaining power has shifted away from labour: unionisation rates have declined and labour markets have become more flexible across advanced economies. At the same time, automation, technological change, increasing global production integration and offshoring have affected some segments of the labour market.\textsuperscript{6}
Answer 1: The existence of large, global firms and the influence of economic
globalisation has caused a decline in the labour share everywhere. Autor and
colleagues advance a theory of ‘superstar’ firms which outcompete other firms,
increasing sectoral concentration. Using US data, they show that industries where
concentration has risen most have seen the largest declines in the labour share.7

Global integration is typically measured by trends in final goods trade,
participation in global value chains and foreign direct investment. Using a panel
of countries from 1980 to 2017, Doan and Wan show that export growth tends
to depress the wage share, while import growth increases it.8 In other words,
globalisation is bad for at least some kinds of lower-skilled domestic worker. Their
findings echo Milanovic’s thesis9 that increasing global inequality is the result of
large-scale changes in behaviour by the market as allocator of capital.

Technological change also forces the labour share lower. Essentially,
information and communication technologies combine with robotics to remove
jobs via automation. Autor and colleagues estimate that half of the decline in labour
shares across the developed world resulted from a combination of rapid progress in
information and telecommunication, and a high share of occupations that could
be easily automated.10 Technology, in this view, is the enemy of workers’ progress.

Globalisation’s contribution to the fall in the labour share is estimated at
about half of that of the impact of technology. Young and Tackett examine the
experience of 125 countries over a 40-year period.11 The decline in labour shares in
advanced OECD economies has been particularly steep for middle-skilled labour,
and far less so for high-skilled labour. One of the main hypotheses is that recent
technological change is biased towards replacing labour in routine tasks.12 Routine-
based technology has taken over many of the tasks performed by these workers,
contributing to job polarisation between high-skilled and low-skilled occupations.
Adler and colleagues point to a global slowdown in productivity taking place since
the end of the Global Financial Crisis (GFC) of 2007-09.13 Australia, as a very
open economy, is caught in this global trend. In this context, wage stagnation is
understood less as a feature of the domestic policy environment, and more as a
result of global progress toward a technological frontier (affecting many countries
simultaneously).

Answer 2: The labour share of national income is falling because of
the increasing importance of the financial sector, often called financialisation.
Using a large panel dataset, Dünhaupt shows that financialisation affected the
distribution between wages on the one hand, and profits, retained earnings,
dividends and interest payments on the other.14 Parham found that the finance and
insurance sectors accounted for 44% of all multi-factor productivity growth over
the previous decade, while mining accounted for almost 40% of all input-increasing productivity. Neither activity tends to be associated with broad increases in wages or labour productivity. Finance tends to demonstrate relatively low employment intensity. Mining is associated, if anything, with capital-deepening productivity growth, not labour-augmenting productivity increases.

For the Australian economy as a whole, with its large household borrowing and lending channel, and its highly advanced superannuation industry, the financialisation hypothesis is certainly worthy of further study. Westcott and Murray provide tentative evidence that financialisation is contributing to increases in inequality in Australia; Peetz also highlights financialisation as a crucial factor in the decline of the labour share of Australian output.16

Answer 3: Labour laws and the institutions of collective bargaining have changed in favour of employers in many industrial economies. Deakin and colleagues examined the link between labour laws and the labour share of national income. They found that worker-protective labour laws in general have no consistent relationship with unemployment — which is far more likely to be affected by changes in the business cycle. Stronger protective labour laws were positively correlated with labour’s share of national income. Laws specifically relating to working time and employee representation had beneficial effects on both efficiency and distribution.17

More recently, Adams and colleagues generalised this finding to 113 countries, and found the pattern holds that weaker labour laws coincide with negative shifts in labour shares of national income.18 The trend is particularly prevalent amongst middle-income workers in rich countries, and so would certainly apply to the Australian case. In the Australian context, and following an examination of wage and productivity trends, Isaac has suggested that weakening labour laws are at least partly to blame for Australia’s wage stagnation:

The institutions that have in the past driven wages to take up productivity advances, have lost much of their capacity to influence wages. The bargaining power of organised labour has been weakened in a large section of the labour market. This has resulted, in good part, from changes in industrial relations laws that have progressively contributed to the imbalance of power.19

Productivity and inequality

Economic theory suggests that more productive workers can bid up their wages in competitive markets to get paid more. We should therefore expect to see wage increases following productivity growth, and hence wage stagnation would be
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associated with a decline in productivity. However, in the Australian context, the two series diverge — and by more than in other rich countries.

Indexed to the year 2000, Australian real wages increased by 13.7% over the 17-year period to 2017, while labour productivity rose by 26.2% over the same period. What explains this divergence (or decoupling)? Using the UK and the US as exemplars of the more general trend, Pessoa and Van Reenen suggest two main factors behind this divergence:

1. the wedge between total compensation (which includes employer-provided benefits like superannuation and health insurance) and money wages received by workers, with the former growing faster than the latter. This wedge pushes better-paid workers’ total compensation higher than less well paid workers

2. differences in producer-wages and consumption-wages. From the perspective of workers’ purchasing power, wages (deflated by consumer prices) may seem lower than from the perspective of employers (who evaluate wages relative to output or producer prices).

Figure 3.2 shows the evolution of incomes in terms of percentile ratios, grouped as deciles. We are looking for a measure of the changes in relative income inequality by income class. If a compensation wedge exists, we should expect to see increases in income inequality as better-off workers absorb greater increases in total compensation relative to less well-off workers. This is the simplest way to check Pessoa and Van Reenen’s first hypothesis. One simple measure of inequality is the ratio of incomes between higher and lower deciles of the population. For example, the 90/10 ratio measures the income of an individual at the 90th percentile (that is, receiving more income than 90% of the population) with someone at the 10th percentile. The 90/50 ratio expresses the income of someone at the 90th percentile relative to the median (that is, someone at the 50th percentile), while the 50/10 ratio expresses the median household income as a multiple of the 10th percentile.

If Pessoa and Van Reenen’s hypothesis is correct, we should expect to see large divergences by income group over time. Figure 3.2 shows the evolution of three inequality ratios (90/10, 90/50, and 50/10) for Australia. The ratio between the gross incomes of households at the 90th percentile — among the highest-earning households in Australia — and the median household increased steadily from around 1.7 in 1975 to over 2 in 2017. The 90/10 ratio increased more dramatically over the same period, from 2.6 to 3.4 (a nearly one-third increase). Meanwhile, the ratio between the median household and the poorest households barely changed over a 45-year period. This suggests that most of the growth in inequality has been driven by growing incomes at the top of the distribution; those
are the same households that receive a disproportionate share of capital income. Hence inequality in income growth is clearly associated with the significant decline in the labour share of income.

The wedge between compensation and wages is likely to be especially significant for higher-income households, given their disproportionate access to more generous superannuation benefits, health insurance and other fringe benefits. In this context, the growing inequality between high-income households and the
The rest of Australian society is likely associated with that wedge, though a deeper analysis would be required to fully assess that claim.

The second factor hypothesised by Pessoa and Van Reenan is the difference between the consumer real wage and the producer real wage. The consumer real wage is based on a deflation of wages by consumer prices; the producer real wage uses a weighted-average price of output (such as the GDP deflator) to adjust nominal wages. The two series will diverge to the extent that consumer and producer price indices differ over time. However, a comparison of the two price indices over time does not reveal any sustained or consistent differences. At times, output prices rise much faster or slower than consumer prices, typically as a result of large swings in global prices for Australian-produced resource exports. But over the long run, the two series have followed a similar trajectory. It is unlikely, therefore, that the second hypothesis regarding producer versus consumer wages will explain Australia’s wage trajectory. Something else is driving the divergence between wages and productivity.

Income inequality is driving at least some of the divergence, with higher-income households absorbing a growing share of total income. There are important compositional effects to consider as well. In 1975, low-paid workers — those workers who earn less than two-thirds of the median wage — made up about 11% of the workforce. By 2012, the low-paid were 19% of the workforce. Before locating the source of rising inequality, the question then becomes: What is (or is not) driving productivity?

It is also important to place worker productivity levels in their international context. Figure 3.3 shows the evolution of labour productivity for Australia and selected rich countries. This measure of labour productivity is calculated using data on GDP in constant 2005 US dollars, corrected for purchasing power parity, derived from the World Development Indicators database of the World Bank. To compute labour productivity as GDP per worker, ILO estimates for total employment are used. Using the figures from this chart, we can see that Australian employers have enjoyed relatively strong productivity growth relative to other rich countries, with a 38% increase relative to the year 2000. The average of all high-income countries was a 22% increase in labour productivity.

Some of Australia’s relatively strong productivity growth is attributable to the mining boom of the mid-2000s. Labour productivity has also grown strongly in the agriculture, forestry and fishing sectors. Still more is attributable to the fact that Australia weathered the GFC more successfully than comparator countries. However, Australian wages have not kept pace even with average wage growth for other rich economies, let alone with the superior growth in productivity experienced here over the recent period.
One possible factor alluded to above is technological change. Perhaps technological change is causing workers to lose out relative to the owners of capital, especially when significant numbers of jobs can be automated away. Yet Dolman finds that Australia has been a laggard in technological change relative to other advanced economies.\textsuperscript{26} Perhaps a closer examination of the dimensions and pace of innovation and productivity growth in the Australian context would shed additional light.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure3.3.png}
\caption{Labour productivity, indexed to the year 2000}
\textit{Source: ILO stat. Labour productivity measured as output per worker in units of GDP in constant 2010 US dollars, indexed to the year 2000. Latest release data are used for May 2018.}
\end{figure}
One common measure of technological change is total factor productivity, which is approximated by that portion of output not explained by the quantity of inputs used in production (such as labour and capital). The level of total factor productivity thus reflects how efficiently, and with what intensity, inputs like land, labour and capital are combined and utilised in the many production processes that make up an economy. It should be stressed that total factor productivity is only one indicator of efficiency. Bergeaud and colleagues have computed long-run measurements of total factor productivity from 1890 to 2012 for many countries, including Australia and the Euro-area. They found that, in the post-war era, Australia has typically been at about 80% of US total factor productivity. The US is commonly assumed to be at, or near, the technological frontier in most sectors. Technical change, should it occur, most often occurs in the US first. In that case, workers should expect to see changes in US workforce before they see changes in the Australian workforce, and Dolman's hypothesis has at least some support. Bergeaud et al.’s computation of Australia’s total factor productivity and labour productivity levels shows that Australia has traditionally been well below corresponding measures in Europe and the US, but that Australia caught up very rapidly in the post-war era. Productivity levels rose very rapidly during the post-war decades until the 1990s, when a policy-induced structural break occurred. Trend productivity growth has been slower in the decades since then.

Moreover, a recent Productivity Commission inquiry suggested that virtually all of the labour productivity growth that was experienced in Australia between 2003/04 and 2015/16 came from capital deepening, and almost none from improved multifactor productivity. Capital deepening results from increased investment in capital goods (such as plant, equipment and automation), most likely associated with strong investment in mining and agriculture. No acceleration of labour productivity growth was noted, despite the strong investment rates.

Labour productivity also depends on capacity utilisation. When production facilities are less than fully utilised, productivity levels are unlikely to be optimised. Capacity utilisation levels in Australia have certainly recovered from the nadir of the GFC, and labour productivity has improved commensurately, but wage growth remains subdued. We can therefore remove capacity utilisation issues as the source of the lack of wage growth.

**Population and unionisation**

Another assumption often made in relation to the presence of inequality of income and levels of unionisation is that ‘size matters’. In other words, countries with smaller
populations, such as Australia, can be expected to have lower rates of unionisation, and therefore greater wage inequality, than countries with larger populations.\footnote{31}

Australia’s population is small relative to its landmass. Despite this, the population is exceptionally urbanised relative to OECD countries. It is also, as shown above, moderately unequal in both income and wealth distributions. The
wealth share held by the top 1% of households in Australia has been growing almost continuously over the past two decades. The wealth share held by the poorest 50% of Australians has been falling almost continuously over the same period. How much of this has to do with changes in population?

Figure 3.4 shows a scatter plot of the Gini coefficient — a measure of income inequality where a lower value indicates a more equal society — and union density. To take account of changes in income inequality caused by the great financial crisis, we average the coefficients over a 10-year period from 2004 to 2014. We do the same with union density. The size of each country bubble represents the population of the country, in millions of people.

We note three clear relationships from Figure 3.4. First, countries with higher income inequality tend to be associated with lower levels of union representation. Second, the lower quadrant is associated with social democratic, Nordic countries. Third, population size seems to have no bearing on union density and inequality.

It is possible for countries to have a low level of union membership, but relatively high levels of collective agreement coverage (this is the case, for example, in France). Figure 3.5 is a slopegraph which measures the level of collective wage determination by the proportion of workers covered by collective agreements. Figure 3.5 compares changes over a 50-year period in bargaining coverage for six selected countries. Australia is highlighted in red. The figure includes both union-negotiated collective agreements at the workplace or sectoral level, but also the coverage provided by statutory sector- or economy-wide agreements. The latter are especially important in Australia’s history, because of the dominant role played by the award system in setting benchmarks for wages and other terms and conditions across most of the economy. Figure 3.5 confirms the striking decline of collective agreement coverage in Australia. From near-universal coverage in the early post-war period, Australia’s collective agreement coverage fell gradually through the 1960s and 1970s, and then more precipitously in the 1990s — coinciding with the thorough restructuring of Australian labour law based on neoliberal principles, including the expanding scope for individual employment contracts. This is precisely the moment Bergeaud and colleagues identify as the structural break in Australian labour productivity and wage growth data. The only other country to experience declines in collective agreement coverage of comparable magnitude is the UK, where it declined from 72% to roughly 30% over the same period. The influence of active policy choices is also apparent in the UK case, with the most dramatic decline beginning in the 1980s as the anti-union policies of the Thatcher government came into force.
Conclusion

This chapter has considered three hypotheses for wage stagnation in Australia on the basis of internationally comparative data.

The first hypothesis centred on whether the decoupling of wage growth and labour productivity was related to the influence of globalisation or technological change. The evidence for this hypothesis is mixed; more study in an Australian context is required.
The second hypothesis considered whether financialisation was responsible for wage stagnation and hence increasing income inequality. There is some evidence for this viewpoint, given Australia’s highly financialised economy, but again, more evidence is required.

The third hypothesis centred on the erosion of workers’ collective bargaining rights. Here more conclusive evidence was found, both with respect to union density and bargaining coverage.

The decoupling of wage growth from labour productivity is almost certainly affected by globalisation and technological change, but these ‘megatrends’ are to some extent out of Australian policy makers’ control. The influence of financialisation is within domestic policy makers’ purview, but quite difficult to solve as a positive policy problem (given factors such as the concentrated influence of the major banks, the scale of the superannuation industry, and the high indebtedness of the household sector).

All this suggests that the erosion of workers’ rights is the most consequential, and actionable, factor behind the stagnation of wages in Australia, and the corresponding growth of income inequality and decline in labour’s share of national income. Our analysis indicates that this erosion seems closely related to policy choices made here (with a particular shift in policy evident in the 1990s); the relationship between the evolution of policy and the trajectory of Australian wages is explored further by other chapters in this volume. By implication, if the stagnation of wages, the decline in labour’s share of GDP and the break between real wage growth and productivity growth all reflect the effects of past policy choices, then those variables should be amenable to alternative policy choices today. Therefore, if the erosion of workers’ bargaining rights and other institutional supports for wages can be arrested and ameliorated (and this should be possible, and relatively quickly), the international experience suggests that this would likely have a positive impact on wage levels and growth rates.

Endnotes
1. Productivity Commission 2017a: 34.
2. Gross Domestic Product, Gross National Income, Net National Product and many other measures have been employed for decades to measure economies’ output. All have their flaws. Stiglitz et al 2009 discuss these flaws and possible alternative measurement schema.
4. For example, the value of the 'labsh' variable from the Penn World Tables for Canada from 1951 to 1972 is shown as 0.7205036. We include this value and others like it for completeness.

20. Real wage growth computed from ABS series 6345.0 (Wage Price Index) and series 6401.0 (Consumer Price Index).
22. 95% confidence intervals around these estimates are indicated in grey.
23. There are various reasons that this might be the case, including the different composition of consumption and output bundles (the latter, in Australia’s case, include a large proportion of natural resource exports whose prices are especially volatile), different competitive conditions in domestic and foreign markets, the effect of taxes, and others.
31. This argument is made by, among others, Lee and Roemer 2004.