# 2 Individual income

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| Key points |
| * Average real labour incomes have grown substantially — from around $800 per week in 1988-89, to around $1100 per week in 2009-10 in 2011-12 dollar terms (a 38 per cent increase). * While these economic gains have accrued to both high and low income groups: * income has grown faster among high earners (as a group) than low earners * the distribution of income has shifted to the right (a decline in the relative population of people on very low incomes) and has become flatter (greater diversity in earnings) * these changes have been associated with increases in measures of labour income inequality, such as the Gini coefficient (which has increased from 0.35 in 1988-89 to 0.41 in 2009-10 among employed people). * In part, labour income inequality reflects differences between the average earnings of full-time, part-time and self-employed workers. These accounted for around half of measured inequality in labour income in 2009-10. The remainder is due to income differences that occur between people within each of these groups. * Income inequality is lowest among full-time workers and highest amongst the self-employed. * Between 1988-89 and 2009-10, indicators of labour income inequality rose steadily amongst full-time workers, were stable amongst part-time workers and were volatile among the self-employed. * Employee earnings are determined by hours worked and hourly wages. * For full-time workers, real hourly wages have grown by around 23 per cent since 1998-99 while hours worked have changed little. Hourly wages have grown faster for high income earners than for low income earners. * For part-time workers, both hourly wages and working hours have increased (around 8 per cent and 16 per cent, respectively), raising weekly earnings. * Capital & other income is highly concentrated and has become more so over time. However, it is a small proportion of market income (around 11 per cent in 2009-10) * The growth in the dispersion of hourly wages for full-time workers is the key driver of overall increases in measured inequality for both labour and market income. * The growth in the relative proportion of people employed part-time has played a lesser role. * HES data suggest, that neither recent trends specific to the top 1 per cent of income earners, nor the gender-pay gap, explain the broader trends in measured individual income inequality. |
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For most people of working age, the money earned from paid employment (or self-employment) comprises their most important source of income. This is known as their labour earnings. It should be noted that current weekly incomes for some individuals who are self-employed (that is, they run their own unincorporated business) are negative. These result from individuals reporting a loss from their business. Income for this group will also include returns to capital invested in the business. Despite this, as no ‘imputed wage’ is available for unincorporated business owners, income from an own unincorporated business represents the best proxy for wages for the self-employed and has been used in this study. Capital & other income (such as rents or returns from investment and private transfers) also represent an important source of income for some people. Together, these income sources comprise an individual’s overall market income (figure 2.1), which is a determinant of where they sit in the overall distribution of income (additional determinants such as taxes, transfers and household formation are discussed in chapter 3). This chapter identifies how engagement with labour and capital markets has shaped Australian market income over the last 20 years — how the distribution of market income has changed and how developments among sub-groups have driven broader trends.

Figure 2.1 Sources of individual market income

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| Depicts individual market income is made up of labour income and capital and other income. |

This chapter does not attempt to identify causal factors or estimate their contribution to observed distributional changes.[[1]](#footnote-1) Rather, the focus is on providing a richer description of the distribution of income generally and, in particular, the distributional changes that have affected summary measures of inequality. The chapter proceeds as follows.

* Changes in labour force income are presented for those in paid employment. Particular attention is paid to the contribution of employment status, hours worked and hourly wage rates (section 2.1).
* Capital income is examined in terms of how its relative size and dispersion has changed over the last 20 years (section 2.2).
* The distributional ramifications of very high income earners and the gender pay gap are also considered (section 2.3).

## 2.1 Trends in labour income

### Labour income has grown

Over the last 20 years, average real labour incomes have increased substantially in Australia for full-time, part-time, and self-employed workers (by 50 per cent, 47 per cent and 53 per cent respectively).[[2]](#footnote-2) Overall, average labour income has increased from around $800 per week in 1988-89 to $1100 per week in 2009-10, that is 38 per cent (figure 2.2).[[3]](#footnote-3)

The time path of income growth has varied by worker category. Full-time workers have experienced real income growth between each of the periods examined, with growth being particularly strong since 2003-04. Both part-time workers and the self-employed, however, experienced a decline in average earnings between 1988-89 and 1993-94, but an increase in each subsequent period. The difference may reflect how changes in general economic conditions affected different worker types (the 1993-94 HES was conducted in the aftermath of a recession in Australia).[[4]](#footnote-4)

The growth in the incomes each of the worker sub-groups (full-time, part-time and self-employed) exceeded that seen in for all workers due to differences in the relative growth in the size of each populations sub-groups. The number of part-time workers (who as a group have the lowest average income) has increased at a faster rate (by 136 per cent, from 1.3 million to 3.1 million workers) than full-time workers (up 43 per cent, from 4.6 million to 6.6 million workers). The increase in population share of this ‘low income’ group in total workers moderated the growth of labour income when all employees are considered.

Despite the growth in their average income, the number of self-employed (with no other job) declined in relative terms although the absolute numbers remain relatively stable over the period (from 880 000 in 1988-89 to 886 000 in 2009-10).

Figure 2.2 Change in average weekly income and relative size of employment types, 1988-89 to 2009-10

Real 2011-12 dollars (left side graph) and percentage (right side graph)

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| --- | --- |
| Absolute change in average income  All labour income  38% growth  Business income  53% growth  Part time workers  47% growth  Full time workers  50% growth | Relative change in population size |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

### Labour income has grown across the distribution, but more at the top than the bottom

Overall, changes in average income can be unpacked by partitioning the income distribution into deciles and comparing how they have changed over time (figure 2.3, top panels). This shows that higher income groups have experienced higher average income growth than all cases except for the bottom decile.

Figure 2.3 Average weekly labour earnings by labour income decile and decile composition by worker type

Real 2011-12 dollars (top left) and percentage change (top right and bottom)

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| --- | --- |
| *Dollars per week, 1988-89 to 2009-10* | *Percentage change from 1988-89 to 2009-10* |
| *Composition of labour earnings deciles, 2009-10* | |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

Examining the income deciles of sub-groups,[[5]](#footnote-5) the broad patterns in figure 2.3 are mirrored in the increased dispersion of earnings amongst full-time workers and the self-employed (figure 2.4). In contrast, average income growth has been more evenly spread among part-time workers, with stronger growth in the bottom three deciles. The bottom three deciles of part-time workers dominate the bottom decile of overall labour earnings. High income growth amongst this latter group drives the spike in income growth observed in the first decile of overall labour income (figure 2.3, top right panel). The roles of hours worked and hourly wages in driving these trends in weekly income are discussed later in this chapter.

The earnings profile of the self-employed is the most complex and contains a number of distinguishing features.

* *Many self-employed are also salaried employees.* In 2009-10, around 19 per cent of people who were self-employed and earned income from their business had either a part-time (7.4 per cent) or a full-time (11.5 per cent) job. In part, this explains the greater level of dispersion in business income (discussed below), as these people are effectively splitting their labour effort their reported business income is lower than their actual labour income. Self-employed workers who rely totally on their business for their labour income earn significantly more business income than ‘mixed‑workers’ and have experienced greater income growth in the last 20 years (figure 2.4, bottom right panel). The same effect is also present in the reported income of full-time and part-time workers (those who also have a small business earn less on average). However, as mixed‑income workers are a much smaller proportion of full-time and part-time workers, their presence has little effect on the observed averages of these groups.
* *There are always some businesses losing money*. The first decile of the self-employed has reported substantial negative earnings over the last 20 years (for those with no other salaried job, average weekly losses changed from almost $200 per week in 1988-89 to around $123 in 2009-10). As the HES draws a random sample in each period, this is not suggestive of a stable cohort of loss making businesses. By necessity, the loss making group is likely to largely reflect businesses undergoing some type of transition. For example, businesses making a loss during a start-up or expansionary phase; going through a temporary ‘bad spell’; or on a path to bankruptcy and dissolution. These factors will also influence returns to those in the second and third deciles.
* *Business is risky but the potential rewards are larger.* Self-employed workers have the most volatile income series through time, as well as the largest ‘gap’ between high and low deciles, in both absolute and relative terms. For example, the 10th decile of full-time workers earns around three and a half times as much as the 2nddecile. For the self-employed (with no other salaried job) the ratio is around 46 times.[[6]](#footnote-6) Indeed, the top decile of self-employed experienced greater growth over the period than any type of worker, and in 2009-10 earned more than any other type of worker.

Figure 2.4 Change in average weekly earnings by worker type and decile

Real 2011-12 dollars (left side) and percentage change (right side)

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*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

### The distribution of labour income is shifting to the right and becoming flatter

While decile analysis provides insight into distribution changes (in terms of partitioned income groups), it is useful to consider the distribution of income as a whole in order to garner a more complete understanding of how it moves over time. This is commonly done through the estimation of Probability Density Functions (chapter 1), which are particularly useful in describing where populations tend to be *located* in terms of their real labour earnings, and how these loci shift over time.

For all periods, except 1988-89, the distribution of labour earnings is double peaked. This is due to the underlying size and shape of the distributions of full-time, part-time, and self-employed workers (that combine to form labour earnings). The lower portion (below the median) of the distribution of labour earnings is dominated by part-time workers and the self-employed, forming the first peak (figure 2.5, bottom right panel). The upper portion (roughly the full-time minimum wage upwards) is dominated by full-time workers.

Over time, the distribution of labour earnings has flattened and shifted to the right.

* *The rightward shift in the distribution indicates that the proportion of Australians on ‘lower’ real labour incomes (in absolute terms) has declined and the proportion of Australians on ‘higher’ real labour incomes has increased*. The lower tail of the labour income distribution has fallen for all values below $1200 per week since 1988-89 (meaning the relative share of the population in this range has declined), while the distribution has risen beyond this (meaning the relative population earning more than $1200 has grown). Put differently, if you were randomly to meet an individual in 1988-89, then another in 2009-10, the probability of the second person earning less than $1200 per week would be lower (and the probability of them earning more higher).
* *The flattening of the distribution indicates a greater spread of labour earnings*. The higher, thinner, peak observed in 1988-89 indicates a greater concentration of labour earnings – that is, there were more people with similar labour earnings in 1988-89 than there were in 2009-10. The spreading out of income is also evident in changes in the most frequently observed income level (the modal income). In 1988-89, around 9 per cent of people earned around $728 (the most frequently observed value). In 2009-10, the most frequently observed value of labour earnings had increased to $842 – but only 6 per cent of the population earned this amount. Put differently, 100 randomly met people in 2009-10 would tend to yield a greater variety of incomes than 100 randomly met people in 1988‑89.

Figure 2.5 Change in the distribution of labour income, 1988-89 to 2009-10

|  |  |
| --- | --- |
|  | |
| *2009-10 distribution of labour income* | *2009-10 components of labour income* |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

Compared to overall labour earnings, the income distribution for full-time workers is thinner, single peaked and closer to a ‘normal distribution’.[[7]](#footnote-7) Nevertheless, it exhibits the same basic pattern as overall labour earnings (that is, a relative decline in the population of low income earners, an increase in the population of high income earners and a flattening of the distribution). Changes in the upper half of the labour earnings distribution are almost entirely due to changes in the earnings of full-time workers, who form the majority of this group (figure 2.5, bottom right panel).

The income distribution for part-time workers also shows a clear pattern of a declining proportion of those on lower incomes (in this case below $500 per week) and an increasing proportion of workers earning higher wages. The absolute number of part-time workers has increased at all income levels, however growth has been higher amongst those earning more than $500 per week — meaning they now account for a relatively higher proportion of the total. In the absence of this growth in part-time workers (earning lower average wages than full-time workers), the rightward shift of overall labour earnings would have been even more pronounced (figure 2.5, top panel).

Changes in the distribution of earnings of the self-employed have several features that are not easily interpreted. First, the distribution tends to ‘bounce’ from period to period (as opposed to the smoother transitions observed in employee earnings), suggestive of either more distributive volatility, more measurement error or both — in particular, self-employed earnings are more likely to be influenced by changes in survey income concepts over time — see chapter 1 and appendix B. Second, the earnings profile has grown flatter over the whole period (suggesting more varied earnings), but, unlike employee earnings, this has also been accompanied by growth in the proportion of those in the lowest income ranges (in this case between losses of $500 per week and earnings of $76 dollars per week). The proportion of high income earners (above $900 per week) has also increased. Third, the distribution of income from self-employment also appears double peaked in 2009-10 — though it is not clear why. These features may reflect behavioural characteristics of the self-employed, difficulties in measuring their earnings, and/or variability due to the relatively small sample of this population.

Figure 2.6 Change in the distribution of income by worker type, 1988-89 to 2009-10

Proportion of workers

|  |  |
| --- | --- |
| *Full-time workers* | *Part-time workers* |
| *Self-employed workers* | |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

### How have distributional changes affected measured inequality?

Gini coefficients (appendix A) are the most common summary statistic of inequality. Full-time workers — the largest group — have the most equal distribution of income with a Gini coefficient of 0.31 in 2009-10 (figure 2.7, top panel). This is followed by part-time workers (0.40), while the self-employed (0.59) have a Gini coefficient almost twice as high as full-time workers. The Gini coefficient for labour income is effectively a weighted average of the results for each sub-group (influenced by the differences in average sub-group income, the dispersion of income within sub-groups, as well as their relative size).

This measure of income inequality has trended upwards since 1988-89 for all types of workers except part-time workers, for which the Gini coefficient has remained relatively stable (and indeed exhibits a slight downward trend since 1993-94). Nevertheless, part‑time workers have influenced the upward trend in inequality of labour earnings, due to their increasing share of the workforce (discussed below). Over the period covered labour earnings inequality has increased, with the Gini-coefficient rising from around 0.35 in 1988-89 to around 0.41 in 2009-10 (an increase of around 18 per cent).

While starting from a more equal distribution of income, full-time workers have exhibited the greatest growth in measured inequality since 1988, as well as the most consistent trend. In contrast, the self-employed displayed the most varied trajectory. Increases (decreases) in measured inequality among self-employed people appear to coincide with periods of growth (decline) in the aggregate number of self-employed.

Other summary measures of inequality (appendix A), including the ratio of the income of top of the 90th percentile to the top of the 10th percentile(P90/P10), the mean logarithmic deviation and the Theil index also indicate measured inequality in Australia has increased between 1988-89 and 2009-10 (figure 2.7, bottom panel). However, patterns in each measure within this period vary — in particular the P90/P10 and P75/P25 measures which initially rose but remained stable between 2003-04 and 2009-10.

Figure 2.7 Changes in labour income inequality, 1988-89 to 2009-10

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| *Gini coefficient by type of workera*  *Alternative measures of labour inequalityb* |

a Increases in Gini coefficient over the whole period are statistically significant for all groups at the 1 per cent level. b GE(0) refers to the mean logarithmic deviation and the GE(1) refers to the Theil index.

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

### Are the important differences ‘within’ or ‘between’ worker types?

Interpreting changes in summary measures such as the Gini coefficient is made more difficult due to the presence of different groups, each with different earning profiles. Overall, changes in the Gini coefficient are affected by varying relativities *between* groups (for example, the higher average income growth of self-employed workers compared to part-time workers exerts an upward pressure on inequality). Overall changes are influenced by the level of income dispersion *within* each group (for example, inequality increased markedly amongst self-employed workers, exerting upward pressure on inequality). These effects are commonly referred to as the impact of ‘between’ variation and ‘within’ variation.

*So which effect has been most important?*

A commonly cited drawback of the Gini coefficient is that it usually cannot be fully decomposed (box 2.1). While the contribution of *within* and *between* variability can be estimated, a residual term (usually)remains, which contains both *within* and *between* effects and has no clear interpretation. This means that total contribution of *within* and *between* variability to the Gini coefficient cannot be exactly calculated. The greater the contribution of this ‘overlapping’ residual, the less informative the decomposition.

The decomposition analysis suggests that differences in the average incomes between worker types, and differences in individual incomes within each type, are roughly equal contributors to labour income inequality in Australia (figure 2.8).

The unexplained ‘overlapping’ residual is typically around 10 per cent. While relatively small, this residual obscures trends in the relative importance of the two types of variation. Nevertheless, the decomposition is suggestive of two features.

* Since 1993-94, the differences in the average incomes of full-time, part-time and self-employed workers have been more important in determining overall inequality than the variation in income of workers within each of these categories.
* However, the difference in the contribution of ‘between’ and ‘within’ variability to the Gini coefficient is small (at most 9 per cent in 1998-99) and has been declining over time. That is, variation in income of individuals within each group has grown in relative importance, while variation in average income between each group has declined in relative importance.

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| Box 2.1 Decomposition of the Gini coefficient |
| The most general decomposition of any inequality index *I* generates a *within* element and a *between* element.  *I=Iwithin + Ibetween*  The within element describes how the variation that occurs among members of a specified group contributes to inequality. The between element describes how the different average incomes of specified groups contributes to inequality.  In the simple case comparing two groups *A and B,* it can be shown that the within element of the Gini can be calculated as follows:  where and are the Gini coefficients for each group, and are the population shares for each group and and are the income shares for each group.  The between element of the Gini coefficient can be calculated as follows  where is the distribution of income obtained by replacing actual incomes with sub-groups means. In this case, as the within group incomes are all equal (to the sub-group mean), the covariance term represents the dispersion of income attributable to differences between the mean income of the sub-groups.  In the (unusual) case where ranking by sub-group incomes from poorest to richest does not involve any overlap, then the Gini coefficient is perfectly decomposable as described above. However, in general, a residual exists that is essentially a mixed term, representing both within and between (that is, the sum of the within component and the between component is less than total inequality). |
| *Sources*: Rao (1969); Bourguignon (1979) and Bellu and Liberati (2006). |
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The following two sections examine in more detail how changes in the distribution of incomes have been influenced by underlying changes to worker groups in terms of their relative size, hours worked, and hourly wages.

Figure 2.8 Contribution of ‘within’ and ‘between’ variation of worker type to the Gini coefficient, 1988-89 to 2009-10

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| --- |
| *Absolute contribution to the Gini coefficient*  *Percentage contribution to the Gini coefficient* |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

### What effect has the growth of part-time work had on the Gini coefficient?

The increasing share of part-time workers is a key compositional shift in the labour force in Australia over the last 20 years (figure 2.1). As identified in the preceding section, differences between groups are an important factor in determining the measure of overall inequality. As such, the rising share of part-time workers (who are relatively low paid compared to full-time workers) should increase individual income inequality. But how important has this effect been in practice?

Shift-share analysis can give some indication of the magnitude of the impact of the growth of part-time workers on labour income inequality (box 2.2). This involves recalculating the Gini coefficient based on an hypothetical scenario where the relative shares of full-time and part-time work are held constant at 1988-89 levels. The difference between the hypothetical Gini coefficient and the Gini coefficient calculated from the actual data approximates the effect of changes in share of part-time employees.

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| Box 2.2 Shift-share analysis of the Gini coefficient |
| It is possible to separately highlight the influence on the Gini coefficient of the change in shares of part- and full-time employees in the workforce and the changes in their incomes (that is, changes in the way part- and full-time employees are paid).  Probability density functions can be decomposed into non-overlapping sub-groups (Jenkins and Van Kerm 2004). In essence, the population probability density function is just the weighted (by population share) sum of the density functions of each non-overlapping sub-group. Thus, if the population can be divided into sub-groups, and the population shares are known, a counterfactual distribution can be calculated that holds population shares constant (but allows other distributional changes to occur as observed in the data). The difference between the Gini coefficient yielded by the counterfactual distribution and Gini coefficient yielded from the actual data approximates the effect of the changing population share on measured inequality. |
| *Source:* Jenkins and Van Kerm (2004). |
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As employees comprise 90 per cent of the workforce and drive overall distributional trends[[8]](#footnote-8), this exercise was conducted for employee earnings only (excluding the self-employed). This approach facilitates the estimation of the specific effect of changes in part-time work, rather than joint changes in the share of all three work types. The Gini coefficient for employee earnings increased from 0.313 in 1988-89 to 0.388 in 2009-10.[[9]](#footnote-9)

If the share of part- and full-time workers had remained at 1988-89 levels, but all other distributional changes had still taken place, then the Gini coefficient for employee earnings would have been 0.367 in 2009-10. This suggests around one quarter of the *increase* in the Gini-coefficient over the period was because of the rising share of part-time workers.

The remainder of the increase in inequality reflects the increasing dispersion of income between high and low income earners, primarily those working full-time (as pointed out in figure 2.7, inequality has been relatively stable among people working part-time). The following section examines this in more detail.

### Have changes in labour income inequality measures for full- and part-time workers been driven by hours worked or hourly wages?

Among part-time and full-time workers, changes in income inequality reflect changes in two underlying determinants — wages and hours worked.

Prior to 1998-99, the HES provided limited data on hours worked, which also limits the analysis of hourly wages (which are imputed based on hours worked). For this reason, this section considers the period from 1998-99 to 2009-10. For the analysis, income deciles were calculated separately for full-time and part-time workers, based on weekly income.

#### Hours worked

Unsurprisingly, higher working hours are associated with higher income for both full-time and part-time workers (figure 2.9). For example, in 2009-10 full-time workers in the 10th decile worked around 10 extra hours per week on average than those in the 1st decile, while for part-time workers the difference is around 22 hours.

Average working hours have been relatively stable for full-time workers, who worked around 45 hours per week in 2009-10. For part-time workers, average hours have increased substantially in all deciles (except the 1st), with particularly strong growth from the 3rd to the 5th decile. Overall, average hours worked for part-time workers increased from 17.6 in 1998-99 to 20.4[[10]](#footnote-10) per week in 2009-10 (an increase of around 16 per cent).

Figure 2.9 Hours worked by decile and worker type, 1998-99 to 2009-10

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| *Full-time workers*  *Part-time workers*  *Percentage change in hours worked* |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

#### Wages

Average hourly wages are not gathered in the HES. The estimates presented here are based on respondents’ reported hours usually worked (per week) and weekly income. This introduces two potential sources of error:

* individual sampling error in hours worked and weekly income will be compounded when these variables are combined to form hourly wage, increasing the uncertainty of the estimate
* midpoints are used for categorical hours worked data, reducing the precision of the average hourly estimate for each decile.

Estimates based on the HES suggest that in 2009-10, the average real hourly wage for a full-time worker was $31.10, and for a part-time worker it was $28.10.[[11]](#footnote-11)

Like hours worked, hourly wages tend to be higher among higher (weekly) income deciles (figure 2.10). In 2009-10, the average hourly wage of $12.20 for the lowest deciles of full-time workers was considerably lower than the national minimum wage of $15.96. There are several possible causes.

* Employees younger than 20 years of age can be paid less than the minimum wage. The lowest a junior employee can be paid is $5.87 per hour for someone less than 16 years of age.
* Trainees and apprentices can be paid less than the minimum wage. For example, the minimum rate for a first year apprentice is currently $10.22 per hour.
* Employees with a disability that affects their productive capacity can also be paid below the minimum wage (following an individual assessment and subject to meeting the impairment criteria for receipt of the Disability Support Pension).
* Some full-time employees may work unpaid overtime, or work long hours under contract.
* Some workers may overstate their working hours, or understate their wages (or both).

Another notable feature is that, in 2009-10, up to the 4th decile, hourly wage rates are similar between part-time and full-time workers (indeed part-time workers in the first deciles earn more per hour than their full-time counterparts). Hourly wages diverge between full-time and part-time workers beyond the 4th decile (though the gap never exceeds $10 an hour). This aligns with the finding that the hourly wage gap between full-time and part-time workers occurs because of differences in the income of workers in the top half of the income distribution, not the bottom (Abhayaratna et al. 2008).

Figure 2.10 Hourly real wage by decile and worker type, 1998-99 to 2009-10

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| --- |
| *Full-time workers*  *Part-time workers*  *Percentage change in hourly wages 1998-99 to 2009-10* |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

In contrast with trends in hours worked, growth in hourly wages has been much stronger for full-time workers than part-time workers since 1998-99 (23 per cent and 8 per cent respectively). Hourly wage growth amongst full-time workers has been concentrated at the top end, with only the top four deciles exceeding overall average growth.

For part-time workers the trend is less clear (for example, there is strong growth in the 1st and the 7th decile and negative growth in 5th and 8th). Nevertheless, hourly wages have tended to grow at a faster rate in bottom deciles than the top.

#### What do changes in hours and wages mean?

Given relatively stable working hours among full-time workers over the last 10 years (1 per cent growth overall), the growth in average incomes appears to be driven by substantial increases in average hourly wages (around 23 per cent). For part-time workers, rising average wages and working hours have both contributed (8 per cent increase in hourly wages and 16 per cent increase in working hours).

As with changes in average income, observed increases in measured labour income inequality for full-time workers were caused mainly by increased dispersion in hourly wages, not working hours. Trends in the hourly wage rates and working hours of part-time workers do not appear to have resulted in greater inequality amongst this group of workers. This suggests that trends in the hourly wages of full-time workers are the main source of the rise in the ‘within’ groups aspect of inequality, and the major contributor to the increase in measured inequality in labour income for all workers more generally.

## 2.2 The impact of capital & other income

Many Australians have additional sources of private income beyond the direct remuneration they receive in exchange for their labour. They earn income from funds held in interest bearing deposits and securities as well as returns on other investments (such as equities, property etc.). In 2009-10, around 51 per cent of respondents to the HES reported receiving some type of capital income.[[12]](#footnote-12)

Outside of inheritance, accumulation of capital tends to occur gradually over an individual’s life, and capital income continues to be received after people retire and leave paid employment. For these reasons, the population of people who receive capital income is different from those considered earlier in terms of their labour force income — only around 38 per cent of respondents reported receiving both types of income (figure 2.11). The bottom two deciles of market income are mainly comprised of people receiving capital income only. Beyond the fourth decile, almost everyone is employed (or self-employed) and the proportion of those also receiving some capital income increases by decile (reaching around 64 per cent for the 10th decile).

Figure 2.11 Composition of market income, 2009-10

Per cent

|  |
| --- |
|  |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

Average capital incomes have varied around an upward trend over the last 20 years in the HES data. It is not clear whether this is an inherent feature of this type of income (for example, due to business or asset price cycles) or whether it reflects difficulties in accurate measurement. Nevertheless, capital & other income appears to have trended upwards (figure 2.12), with its overall growth (76 per cent since 1988-89) exceeding the growth of labour income (the majority of the growth in capital income occurred between 2003-04 and 2009-10).

This growth comes off a substantially smaller base. In 2009-10, the average capital income was around $165 per week, compared with an average of around $1100 for labour income. Similarly, the total amount of capital & other income earned is relatively small compared with that earned from participation in the labour market. In 2009-10, capital & other income represented around 11 per cent of total market income. This has trended upwards since 1993-94. (The share of capital & other income fell between 1988-89 and 1993-94 possibly reflecting the impact of the economic downturn.)

Capital & other income is highly unequally distributed, and has become more unequal over time. For most people who receive *any* capital income, the amount is very small — 60 per cent earned less than $35 per week in 2009-10. Unlike labour income, the growth in capital income has been concentrated in the upper portion of the distribution. While the capital income of 60th percentile and below has changed little in real terms over the last 20 years, the 90th, 95th and 99th percentiles have increased by 86 per cent, 73 per cent and 109 per cent respectively.

Figure 2.12 Trends in components of market income, 1988-89 to 2009-10

|  |  |
| --- | --- |
| *Average income* | *Capital & other share of market income* |
| *Gini coefficient by income typea* | *Capital & other income by percentile* |

a The Gini coefficient for capital & other income exceeds 1 in 2003-04 due to the presence of large negative incomes.

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

## 2.3 Earnings of men, women and the top ‘1 per cent’

Trends in the distribution of income can be examined in a multitude of different dimensions. However, two areas attract particular attention:

* pay differences between men and women
* the incomes of the very top earners (the ‘1 per cent).

The complexity of both issues gives rise to diverse presentations of evidence and (often hotly) contested interpretations. The vast majority of this debate is beyond the scope of this paper. Here a comparatively limited approach is adopted – focussing on the extent to which income differences observed between these groups impact on summary measures of inequality.

### The impact of the gender pay gap on inequality

Disparity between average male and female earnings is a persistent feature of the Australian labour market. In May 2012, women’s ordinary full-time earnings were 18 per cent lower than men’s. This difference has been relatively stable over the last 20 years, and has trended gradually upward over the last 10 years (ABS 2012b). Non-managerial adult hourly wages in 2012 were almost 11 per cent lower for women working full-time than men (ABS 2012c).

This raises the question as to how much the gender pay gap impacts on overall inequality, and if it has contributed to observed trends in measured income inequality.

The contribution of the gender pay gap to measures of inequality can be examined through the decomposition techniques discussed above (box 2.2). In this case, the greater the contribution of variation ‘between’ groups (that is, the average difference in men’s and women’s wages) to the Gini coefficient, the greater the effect of the gender pay gap on overall income inequality.

In terms of weekly income, decomposition analysis suggests around 25 per cent of the Gini coefficient can be attributed to differences in men and women’s average earnings in 2009 (figure 2.13). However, this result is influenced by the difference in average working hours, as a considerably higher proportion of women work part-time compared to men. For this reason, the impact of the gender pay gap on measures of inequality is more appropriately examined using *hourly* wages.

Figure 2.13 Decomposition of weekly income and wage by gender

Per cent

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **Percentage of Gini attributable to between and within variation** | ‘**Between’ variation as a percentage of various Generalized Entropy indices** | | *Weekly labour force income, 1988-89 to 2009-10* | | |  | GE(1) | | *Hourly wage, 1998-99 to 2009-10* | | |  |  | |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

Decomposition analysis of hourly wages suggests that differences between men and women accounted for around 15 per cent of the Gini coefficient in 2009‑10. In contrast to the decompositions of the Gini coefficient by employment type (section 2.1 above), the unexplained portion of the Gini coefficient is relatively high (around 35 per cent of the Gini coefficient cannot be decomposed by gender). As an additional check, a range of other summary measures of income inequality (specifically, generalized entropy indices — appendix A) were also estimated and decomposed (figure 2.13, right panels). Generalized entropy indices suggest an even lower contribution at between 1 and 2.5 per cent.

Although decomposition of all indices suggests that the contribution of the average hourly wage gap between men and women to labour income inequality has grown over time, it remains very small.

The decompositions suggest that the differences in earnings between women and other women (and men and other men) are the important driver of labour income inequality, not average differences between the two groups. In 2009-10, income inequality among men was higher than among women for every category (table 2.1). Nevertheless, trends for both men and women mirror aggregate (combined) distributional trends— inequality was relatively stable for part-time workers, grew amongst full-time workers, and for labour earnings in general. This suggests that overall trends have been a result of factors that affect both men and women (albeit, the trends are more pronounced for men). In addition, inequality in hourly wages has increased for men since 1998, but has been stable for women.

Table 2.1 Gini coefficient by gender and type of work

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Full-time workers | | Part-time workers | | Labour income | | Hourly wages | |
|  | Male | Female | Male | Female | Male | Female |  | Female |
|  |  |  |  |  |  |  |  |  |
| 1988-89 | 0.25 | 0.21 | 0.51 | 0.38 | 0.32 | 0.35 |  |  |
| 1993-94 | 0.26 | 0.21 | 0.52 | 0.39 | 0.36 | 0.39 |  |  |
| 1998-99 | 0.28 | 0.22 | 0.47 | 0.39 | 0.38 | 0.38 | 0.29 | 0.27 |
| 2003-04 | 0.29 | 0.23 | 0.48 | 0.37 | 0.38 | 0.37 | 0.31 | 0.25 |
| 2009-10 | 0.33 | 0.25 | 0.49 | 0.36 | 0.41 | 0.38 | 0.32 | 0.27 |
|  |  |  |  |  |  |  |  |  |
| *% change* | *31.7* | *22.7* | *-3.1* | *-3.3* | *28.9* | *7.8* | *11.2* | *1.5* |

*Source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

### How important is the top ‘1 per cent’?

The top 1 per cent of income earners attract considerable public attention. Yet their contribution to the overall income distribution, and how it changes over time, is not obvious using standard graphical techniques (such as figure 2.4 above). It is also more difficult to accurately measure the incomes of the top 1 per cent due to lower survey response rates that are not accounted for in sample weighting procedures. For this reason, the ABS does not recommend analysis of this group based on HES. Notwithstanding this caution, the HES does provide useful ‘proxy’ information on this group. As a basic check, the top average income for the top three percentiles are consistent with the income ranges for these percentiles based on ATO data (ATO 2012).[[13]](#footnote-13)

As a group, the top 1 per cent earn a disproportionally larger share of the total income, for all types of worker. (This is true by definition for all non-uniform distributions of income). The share earned by the top 1 per cent is largest for self-employed workers (around 16 per cent in 2009-10) and is between 5 and 7 per cent for other worker types (figure 2.14). The share of total income earned by the top 1 per cent has trended upwards over the last 20 years for all types of worker.

Another way to examine how the top 1 per cent shapes the overall distribution of income is by calculating their contribution to summary measures. This essentially asks: *How would measured inequality change if the current top 1 per cent were removed from the distribution?*

In 2009, the Gini coefficient for labour earnings would have been around 6.5 per cent lower if the top 1 per cent were not represented (a change in the Gini coefficient of around 0.02). The HES data also suggest that the top 1 per cent is making a greater contribution to measured changes in the Gini coefficient over time — but this trend is very gradual.[[14]](#footnote-14) Using the Gini coefficient, the overall trends identified in figure 2.6 (above)are not changed with the exclusion of the 1 per cent.

In short, analysis of data from the HES for employed workers over the period 1988‑89 to 2009-10 suggest that the ‘1 per cent’ have a significant level effect on inequality (as measured by the Gini coefficient) but changes in income for this group are not overly accounting for the rise in measured labour income inequality between 1988-89 and 2009-10.[[15]](#footnote-15) This would suggest that the effect of the top 1 per cent of earners as being major contributors to rising inequality over the longer run, as found by other researchers (such as Leigh 2005 and Atkinson, Piketty and Saez 2011) has moderated between 1988‑89 to 2009-10.

Figure 2.14 Distributional impact of the top 1 per cent, 1988-89 to 2009-10

Per cent

|  |
| --- |
| *Combined earnings of top 1 per cent as a share of total earnings*  *Per cent reduction in the Gini coefficient if top 1 per cent are removed* |

*Data source*: Author estimates based on ABS (Household Expenditure Survey, cat. no. 6503.0, confidentialised unit record files).

1. See Gaston and Rajaguru (2009) for a recent analysis of the causal factors underlying distributional changes in Australia. [↑](#footnote-ref-1)
2. All figures in this section refer to HES respondents who report non-zero labour income over the period. [↑](#footnote-ref-2)
3. Whilst not directly comparable due to differences in scope and coverage, these estimates are similar to those derived from ABS 6302.0. In 2011-12 dollars, this survey suggests average weekly earnings of all employees grew from $802 in February 1989 to $1014 in 2009-10. [↑](#footnote-ref-3)
4. For example, if full-time workers wages are ‘sticky’ (in the sense that nominal hourly wages cannot easily decline in response to periods of lowered labour demand (Hall 2005)) then in recessionary periods (that are not too prolonged) full-time time workers will tend to maintain their earnings or exit full-time employment (through unemployment or becoming part-time). On the other hand, the earnings of part-time workers and the self-employed may be more flexible. Part-time workers can have their hours scaled back, while a deterioration in the business environment directly impacts the earnings of the self-employed. [↑](#footnote-ref-4)
5. Deciles were separately constructed for full-time, part-time and the self-employed earnings. [↑](#footnote-ref-5)
6. The ratio of the 2nd decile to the 10th is used here as the 1st decile of the self-employed has a negative income on average. [↑](#footnote-ref-6)
7. That is, singled peaked with a single value for the mode, median and mean. [↑](#footnote-ref-7)
8. That is, inclusion of the self-employed changes the level of the Gini coefficient, but has little effects on trends on the Gini coefficient. [↑](#footnote-ref-8)
9. Over the same period, the Gini coefficient for labour income increased from 0.349 to 0.412. [↑](#footnote-ref-9)
10. Growth in average working hours for part-time workers is also found in ABS 6302.0, which suggests an increase from 17.7 hours per week to 22.4 hours per week. [↑](#footnote-ref-10)
11. Estimates based on ABS 6302.0 and converted to 2011-12 dollars are similar for part-time workers ($28.6 per hour) and higher for full-time workers ($33.6 per hour). [↑](#footnote-ref-11)
12. Capital & other income is defined as: non-zero net investment income made up of interest, rent, dividends and royalties including that from superannuation (capital income) and non-zero income from private transfers made up of income from workers’ compensation, scholarships, child support and other private sources (other income). [↑](#footnote-ref-12)
13. In any event, measurement error in the top 1 per cent will also affect overall income averages and distributional measures. At the very least approach, this allows analysis of the impact of the *measured* top 1 per cent on the *measured* distribution. [↑](#footnote-ref-13)
14. For example there is less than one  percentage point difference between the contribution of the top one per cent to Gini for labour earnings between 1989 and 2008. The increase is greatest amongst the self-employed at around 4 percentage points. [↑](#footnote-ref-14)
15. This finding is unchanged when examining the impact of the top 1 per cent on market income (including capital). [↑](#footnote-ref-15)