A Shrinking Slice of the Pie: The Labour Income Share in Australia

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Australian Council of Trade Unions

March 2013

A Shrinking Slice of the Pie

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This paper

This paper was written by Matt Cowgill, ACTU Economic Policy Officer.

Acknowledgements

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Introduction

The 'wages breakout' has been a recurring theme in the Australian public policy debate in recent years. Political conservatives, media commentators and some business groups have warned that Australian wages growth is unsustainable, or threatens to become unsustainable (for example, see The Australian 2010). This paper critically examines such claims and finds that they are not supported by the evidence.

Warnings about a 'wages breakout' refer to a period in which real wages growth exceeds productivity growth, thus causing the labour income share to rise. This paper shows that Australia has experienced the opposite of a 'wages breakout' since 2000. Over this period Australian real wages have not kept pace with productivity growth. This means that labour's share of total income has fallen and capital's share has risen. We would now need a period in which real wages rose faster than productivity growth merely to restore the labour income share of the 1990s.

This paper also shows that many other OECD countries have experienced a falling labour share in recent years, but the fall in Australia's labour share has been relatively large. The fall in the Australian labour share has been broadly-based – the labour share has fallen within a broad range of industries. Only a small portion of the fall can be ascribed to structural change in the economy towards low-labour share industries such as mining.

The decoupling of real wages and productivity, and thus the fall in the labour income share, is a worrying development. One key implication of this fall is that household income inequality will tend to rise, as capital ownership is highly unequally distributed among households.

Decoupling and the labour income share

Krugman's (1994) famous observation that, in the long run, productivity is "almost everything" has been repeated so often that it has attained the status of cliché, but it remains a valid and important point. Productivity growth is the primary means by which average living standards in a society can rise over time. Yet if labour income fails to keep up with productivity, productivity growth may be necessary, but will not be sufficient, to ensure that the living standards of the typical worker rise over time. Productivity may be almost everything, but distribution is not nothing.

There has been a divergence between real labour income[1] per hour worked on the one hand, and output per hour worked (labour productivity) on the other, in many advanced economies including Australia (OECD 2012a). This divergence has been termed 'decoupling' (Pessoa and Van Reenen 2012; Baker 2007; Mishel and Gee 2012). Decoupling is equivalent to a fall in labour's share of national income – if real hourly labour income doesn't keep pace with productivity, then the labour share will fall, while if labour income outpaces productivity, the labour share will rise (Parham, Barnes, Roberts & Kennett 2000, p. 38; Dew-Becker & Gordon 2005, p.5).

It used to be assumed that the labour income share would remain stable over time, and thus that labour income would rise in line with productivity. Keynes (1939, p. 48) observed that "the stability of the proportion of the national dividend accruing to labour… is one of the most surprising, yet best-established, facts in the whole range of economic statistics," while Kaldor (1961) enshrined long-run stability in the labour income share as the first of his famous "stylised facts" about advanced economies. The stylised fact no longer appears to hold. A number of advanced economies, including Australia, have experienced falling labour shares, with real wages failing to keep pace with productivity growth (OECD 2012a).

Of course, a declining labour share "does not necessarily imply declining living standards for workers" (OECD 2012a, p. 110). Average real wages have grown at a solid pace in Australia despite the fact that hourly labour compensation not kept pace with productivity growth. However, decoupling should be a matter of serious concern to policymakers. It is plausible to imagine that productivity gains are most likely to be achieved when workers feel they stand to gain a fair share of the dividends of growth; decoupling erodes this sense of common purpose. By redistributing income away from labour and towards capital, decoupling can also contribute to household income inequality, as capital ownership is highly concentrated

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[1] 'Real labour income' refers to the total compensation of employees plus the imputed labour income of the self-employed. It is deflated using producer prices. The imputation method and the role of price indexes are discussed in the appendices.

among well-off households (ABS 2011a). The OECD (2012a, p. 110) even suggests that "the unequal distribution of both labour and capital income growth that went hand-in-hand with the declining of the labour share suggests that these trends might endanger social cohesion."

Measuring decoupling and the labour share of income

When the distribution of national income between factors of production (labour and capital) is discussed, reference is usually made to the "wages share" and the "profits share" of national income. The ABS reports these measures in the National Accounts. The wages share is the total compensation of employees, including non-wage benefits like employer superannuation contributions, expressed as a proportion of total factor income (TFI). The profits share is gross operating surplus as a proportion of TFI.

The problem with these common measures is that they take no account of the incomes of the self-employed, which are recorded in the National Accounts as 'gross mixed income'. Some portion of gross mixed income represents a return on capital, while some is a return on labour. A complete account of the change in the share of national income going to labour (and thus decoupling) needs to take account of the labour income of the self-employed.

In this paper, a standard method is used for calculating the labour portion of gross mixed income. This involves assuming that the average hourly labour income of the self-employed is equal to the average hourly compensation of wage and salary earners. The imputation method is discussed in detail at Appendix A along with alternative imputation methods.

Following Parham, et al. (2000, p. 40), the labour income share is defined as:

$$Labour\ income\ share = \frac{Labour\ compensation}{Total\ income\ (= total\ output)}$$

$$= \frac{Labour\ compensation}{Hours\ worked} \times \frac{Output\ price\ index}{Output\ price\ index} \times \frac{Hours\ worked}{Total\ output}$$

$$= \frac{Average\ hourly\ labour\ compensation}{Output\ price\ index} \div Labour\ productivity$$

$$= Real\ product\ wage \div Labour\ productivity$$

If the ratio of the real product wage to labour productivity falls, this means that decoupling has occurred and the labour income share has fallen.

This paper focuses on 'net decoupling' and (equivalently) the change in the labour income share. This means the focus is on the change in the distribution of national income between labour and capital. This paper does not focus on 'gross decoupling', which considers the relationship between median hourly consumer wages and productivity; this is affected by rising earnings inequality, rising non-wage compensation as a share of labour income, and differences in price deflators on the rate of growth in the living standards of the median worker. The distinction between net and gross decoupling is considered in the Appendix C.

Trends in Australian wages and productivity

In the 1960s and early 1970s, hourly labour income and productivity grew at around the same pace - the labour share was roughly stable. In the mid-1970s, from around 1973[2], labour income rose much faster than productivity, so that a "real wage overhang" opened up. During the mid-1980s, real hourly labour income was more or less flat while productivity continued to rise, so that by the end of the 80s the "overhang" had been entirely eliminated and the labour share was back to the same level as in the 1960s and early '70s. In the 1990s, the labour share remained around this level, with wages and productivity growing at the same pace over the decade. From around 2000, wages growth decoupled from productivity – the labour share fell, as real hourly labour income failed to keep pace with productivity growth.

These trends are shown in Figure 1 and Figure 2, the central charts of this paper. The cumulative divergence between labour income and productivity in the 2000s is a similar size to the divergence in the 1970s, but in the opposite direction, with labour income lagging productivity growth rather than the other way around. In 2009 the labour share fell below 60% for the first time in at least 50 years. To the extent that we had a "real wage overhang" in the 1970s, we now evidently have a "real wage underhang".

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[2] This paper uses financial-year data; '1973' refers to the 1972-73 financial year.

Figure 1: Decoupling in Australia
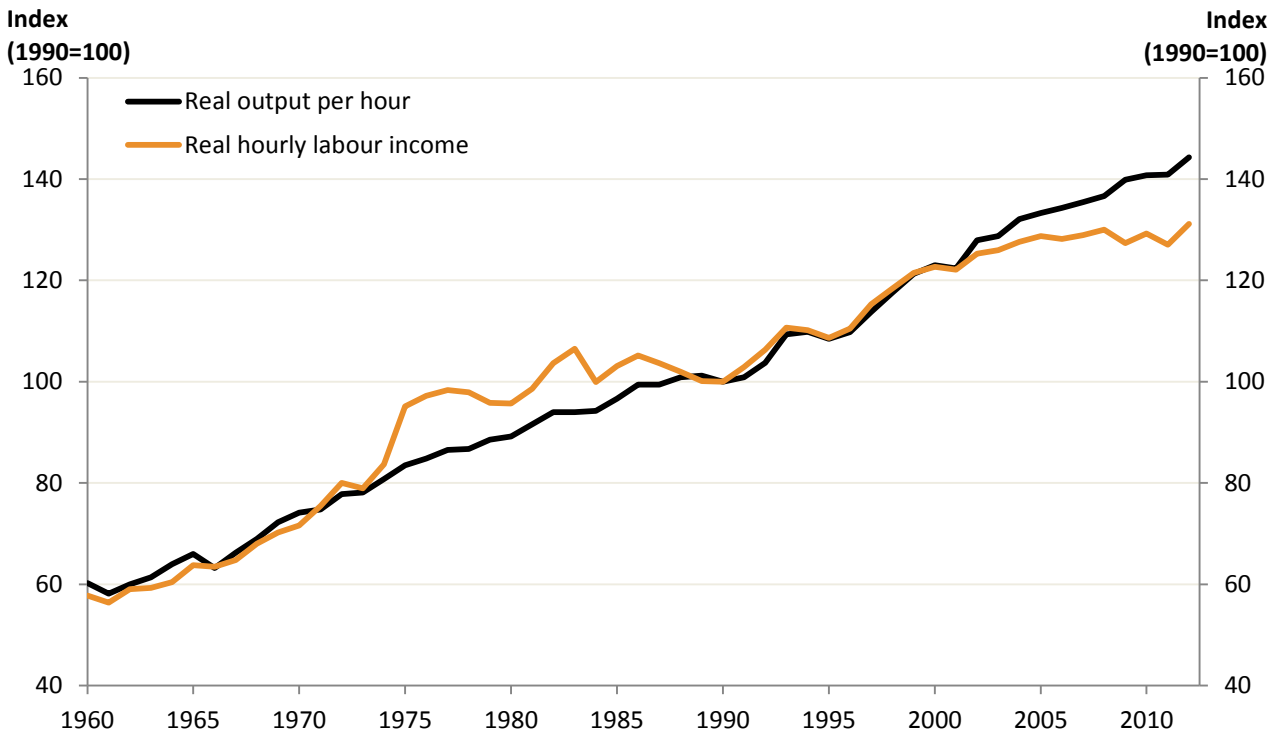
Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, Butlin 1977. Chart shows real total factor income per hour, compared to real labour income per hour, including employers' social contributions and the imputed labour income of the self-employed. Both series are deflated using the GDP implicit price deflator.

Figure 2: The labour income share
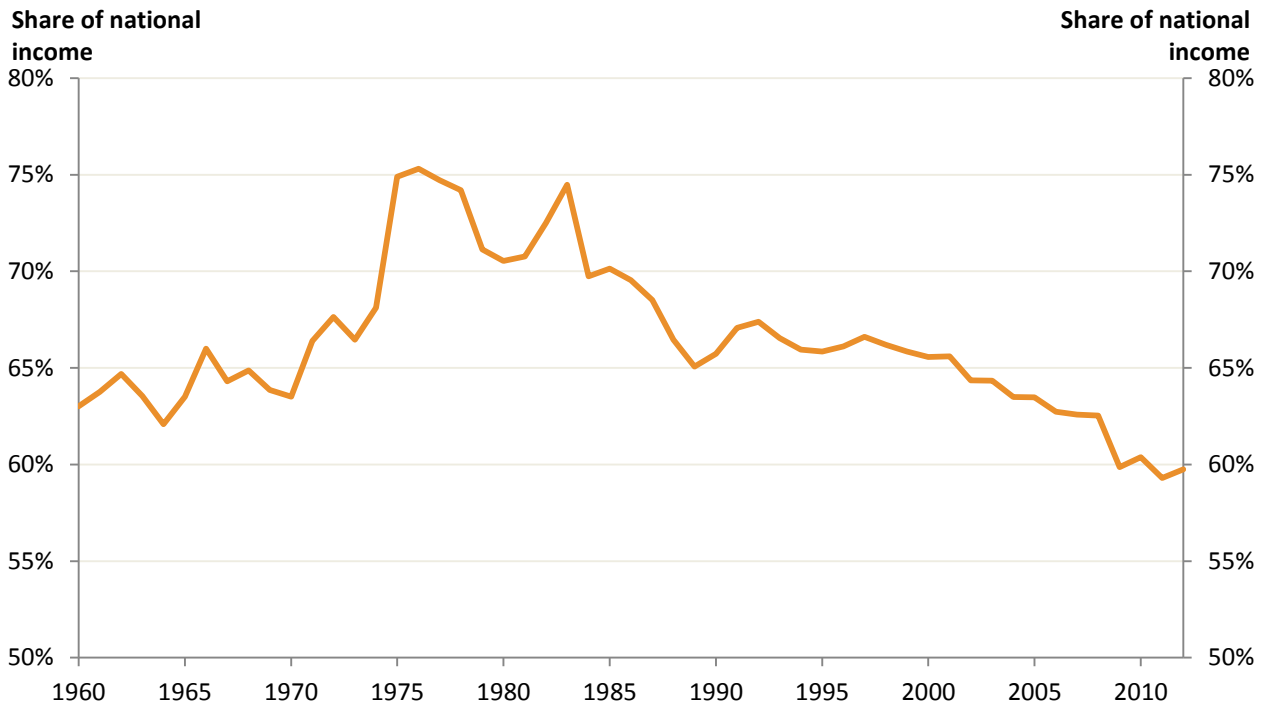
Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, Butlin 1977. Chart shows total labour compensation, including employers' social contributions and the imputed labour income of the self-employed, as a proportion of total factor income.

Developments since 1990 are the focus of this paper, but it is worth first examining developments in the 1970s and 1980s to provide background and context to the stable labour share of the '90s and the decoupling of the 2000s.

Table 1: Decoupling in Australia

Average annual change						
	1960s	1970s	1980s	1990s	2000s	2010s
Productivity	2.1%	1.9%	1.2%	2.1%	1.4%	1.3%
Real hourly labour compensation (GDP deflator)	2.2%	2.9%	0.4%	2.1%	0.5%	0.7%
Real median full-time earnings (consumer prices)	-	-	-0.2%	1.7%	1.0%	-
Total change over the decade						
Change in labour's share of income (pps)	0.5%	7.0%	-4.8%	-0.2%	-5.2%	-0.6%

Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, ABS 6306, ABS 6401, ABS 6467, Butlin 1977.

a. The 1970s – The 'overhang'

In the 1960s, the labour income share in Australia was basically stable – productivity and labour income rose at the same pace. Between 1970 and 1975, hourly labour income rose by around 33%[3] while productivity grew by only 12.6%; this meant that labour income rose by around ten percentage points as a share of national income (see Figure 2).[4] This decoupling in the opposite direction than the decoupling experienced in the 2000s. Over the same period in the early- to mid-1970s, the number of unemployed people in Australia rose from 78 000 to 278 000, a rise in the unemployment rate from 1.4% to 4.6% (ABS 2007a). The orthodox view of the time drew a causal connection between these two developments. While the debate about the causes of unemployment in the 1970s is not central to this paper, it is worth reviewing the common view of economists at the time.

The dominant view was that Australia suffered from a "real wage overhang" that had generated classical unemployment, as opposed to Keynesian unemployment arising from deficient aggregate demand (Corden 1979). Gregory (1986, p. S53) suggested that the existence and deleterious impact of this overhang was "generally accepted among Australian economists." Isaac (2012, p.98) describes the inflationary spiral of the 1970s as a "wage/price, wage/wage, price/wage inflation process with a vengeance".

Advised by then-Treasury Secretary John Stone, the Fraser Government pinned much of the blame for the 1970s stagflation on the "real wage overhang". The 1977 Budget said:

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[3] Gregory (2000, p.7) estimates that "about one-third of the real wage increase [of the mid-1970s] took the form of establishing equal pay for women".

[4] Measuring the extent of the overhang is made difficult by the large movements in gross mixed income as a proportion of factor income during the 1970s. It is likely that the standard method of imputing the labour component of gross mixed income overstates the rise in labour income over the period - see Covick (1979).

…an integral part of Australia's high inflation-high unemployment economic environment was the increase in the real wage that had earlier taken place, during 1974 in particular. Running as it did far ahead of productivity, and shifting factor shares, this dislocation of the normal relationships previously obtaining in the Australian economy has been preserved throughout the recession and... has contributed significantly both to its onset and its prolongation (quoted in Covick 1979, p.1).

Some economists have suggested that the orthodox view of the elevated labour share of the 1970s did not place sufficient emphasis on the role of aggregate demand in creating unemployment; it is claimed that the pro-cyclical nature of productivity means that deficient aggregate demand could explain both a rise in the labour share and a rise in the unemployment rate (Mitchell and Watts 1997, Carlson, Mitchell and Watts 2001). Covick (1979, pp. 9-10) suggested that the rise in the labour share in the 1970s reflected, at least in part, a structural shift in the economy towards what he termed "100 per cent wage share industries" such as not-for-profit organisations, public administration, defence, churches, and much of the education and health industries.

Some have revised their view of the 1970s developments. Gregory (2000, pp.5-6) states that the "emphasis on the real wage increase as the sole explanation of the increase in the underlying unemployment rate now seems inadequate" and that the real wage increases of the 1973-75 period "do not seem sufficiently large, relative to past increases, to have brought about such a significant increase in the underlying rate of unemployment". Bean and Layard (1986, p.S3) examined the rise in unemployment across the OECD in the 1970s and take issue with what they see as "the artificial dichotomy between explanations relying on excessively high real wages and those relying on deficient aggregate demand"; they suggest that "an explanation of current unemployment levels in terms of an excessive level of real wages is at best incomplete". In the view of Isaac (2012, p. 100), "making a distinction between Keynesian and Classical unemployment is not meaningful in the circumstances".

The truth or otherwise of the claim that excessive real wage rises were the cause of unemployment in the 1970s is largely immaterial to this paper. The key point is that the rise in the labour income share (and fall in the capital share) was the diagnostic tool used to identify the 'overhang'.[5] The fact that real wages growth outstripped productivity growth, thus changing factor shares of income, was seen to be an

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[5] Rising real unit labour costs were sometimes used as the indicator of an 'overhang'. Real unit labour costs include payroll taxes, whereas the labour income share does not. If payroll taxes are constant, a rise in the labour income share is equivalent to a rise in real unit labour costs.

imbalance in need of correction. It is this imbalance that remerged in the 2000s, but in the opposite direction.

b. The 1980s – The Accord

The belief that a "real wage overhang" was contributing to elevated unemployment led both major political parties to adopt policies that sought to suppress the growth in real wages over an extended period, thus allowing productivity growth to erode the 'overhang' and restore the labour income share to something closer to its 1960s level (Gregory 2000; Mitchell 1998). The Fraser Government initially sought to achieve constant real wages through its policy of indexation pursued via the Arbitration Commission[6]; the Hawke Government took a different approach and negotiated the Prices and Incomes Accord with the Australian Council of Trade Unions. As part of the Accord, unions agreed to restrain their claims for wage increases in return for changes to public policy that aimed to increase workers' standard of living through other means (the 'social wage') (Harcourt 2001). Chapman (1998, p. 625) claims that "there is little doubt that the Accord influenced tax and social security policy".

The Accord was seen by both the ACTU and the ALP "to be a necessary part of economic policy, with the inflation and unemployment experiences of the preceding fifteen years or so being grounds for a different approach" (Chapman 1998, p.626). Cook (1991, p.1) suggested that "adopting an incomes policy was like jumping out of a second-storey window: nobody in his right mind would do it unless the stairs were on fire... The stairs were aflame in Australia in 1983, when the Hawke Government won office". The idea was that reductions in the pace of nominal wage growth that were secured through means other than tight fiscal or monetary policy would mean "higher employment outcomes at any given level of inflation" (Chapman 1998, p. 629).

In the period of the Accord prior to the introduction of enterprise bargaining (ie. the mid-to-late 1980s), real wages were flat, but productivity was also somewhat sluggish; employment grew rapidly. The 'overhang' slowly eroded and the labour income share fell. By 1989, the labour share was back at its late-1960s level.

c. The 1990s – Stable shares

In the early 1990s, Australia moved to a less centralised form of wage setting, with a greater role for bargaining at the enterprise level. The move towards enterprise bargaining was intended to bring about higher levels of productivity growth, which was intended to facilitate greater real wages growth.

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[6] The Fraser Government did not support full indexation at all times throughout its term in office.

In the 1990s, productivity growth was rapid, rising by an average of 2.1% per year after rising by just 1.2% on average in the 1980s.[7] Most importantly, the gains from this growth were evenly shared between labour and capital – hourly labour income rose at an average of 2.1% in real terms, matching the growth in productivity. The labour and capital shares of national income were remarkably constant throughout the decade.

A Productivity Commission Staff Research Paper examined the evidence and came to the same conclusion – "income and productivity gains of the 1990s were distributed evenly between labour and capital. The labour (and therefore capital) share in total income remained broadly constant over the 1990s at the economy-wide level" (Parham, et al. 2000, p. 65). The paper suggests that "the 1960s experience was similar to the 1990s experience. Underlying the stable labour income share, there was strong real wage growth, accompanied by strong labour productivity growth" (Parham, et al. 2000, p. 45).

The first decade since the 1960s in which the labour and capital shares of national income were more or less constant was also a decade with the fastest average productivity growth since the 1960s. While there are many factors at play in influencing the rate of economy-wide productivity growth, the fact that workers and capital owners benefited equally from productivity growth in the 1990s may have contributed to the elevated rate of growth in that decade. There is a greater incentive to actively participate in productivity-enhancing changes when you have a reasonable belief that you will benefit from them.

However, the stability of the labour and capital shares of national income seen in the 1990s appears to have been a fleeting phenomenon.

d. 2000-present: Decoupling in Australia

Wages decoupled from productivity in the 2000s. Between 2000 and 2012, productivity rose by an average 1.3% per year, while real hourly labour income rose by only 0.6% per year on average. This meant that labour's share of national income fell over the decade, and fell quite sharply. In 2000, the labour share was 65.6% - this had fallen to 59.7% by 2012. The labour share recorded in 2011 was the lowest for at least fifty years.

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[7] See Quiggin (1997; 2001) and Hancock (2005; 2011) for scepticism about the productivity surge of the 1990s and its causes. As this paper is concerned with the distribution of the gains from productivity growth, the factors generating that growth are not central.

Figure 3 and Figure 4 reprise the information from Figure 1 and Figure 2, but only the period since 1990 is shown. The difference between the decades is clear – productivity and hourly labour income rose in tandem in the 1990s, but there was decoupling and a falling labour share from around 2000.

Figure 3: Decoupling in Australia

**Figure 4: The labour income share**
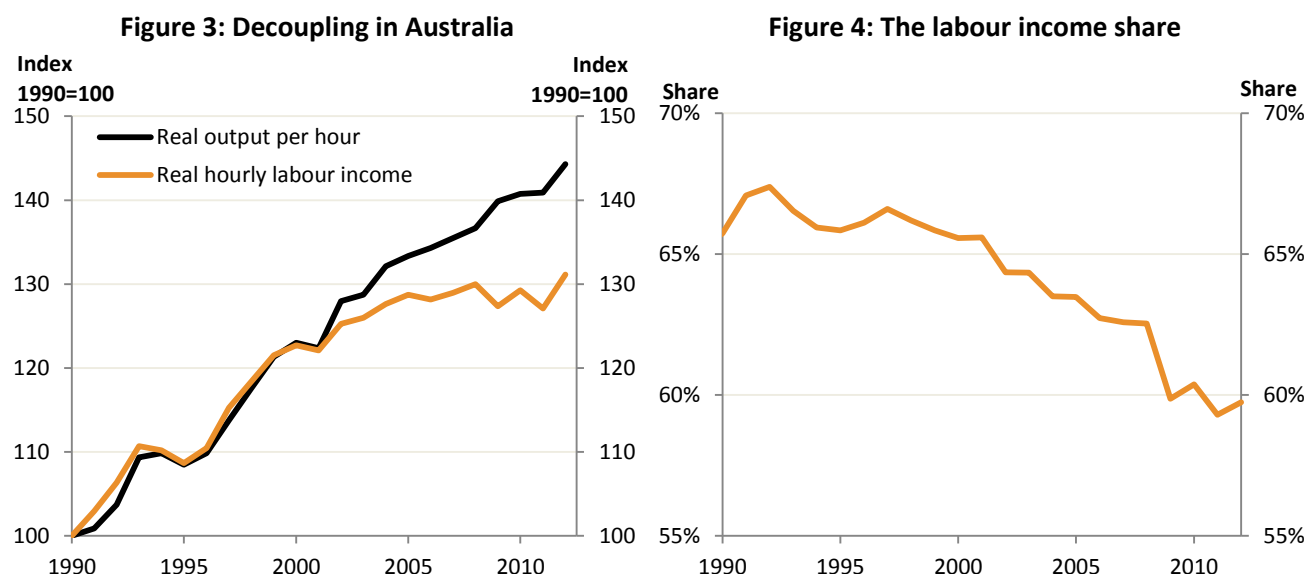
Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001.

The figures above accord with other analyses of the change in the labour share in Australia. Figure 5 shows the ACTU's estimate of the labour share, converted to an index and set to equal 100 in 1990, compared with estimates by the OECD and The Conference Board (TCB). The ABS measure of total-economy real unit labour costs (RULCs) is also included. A fall in RULCs is equivalent to a fall in the labour share if real non-compensation labour costs (such as payroll tax) do not change. Stable RULCs imply a stable labour share of income.

In all four series, the level in 2000 was little changed from the level in 1990. All the estimates show a fall of between 8 and 10 per cent in the period 2000-2012.[8] These estimates all have slight differences in data sources and methodology, but the results are strikingly similar – hourly labour income and productivity rose at around the same pace in the 1990s, before decoupling in the 2000s.

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[8] The latest OECD estimate is for 2011.

Figure 5: The change in the Australian labour share and real unit labour costs since 1990
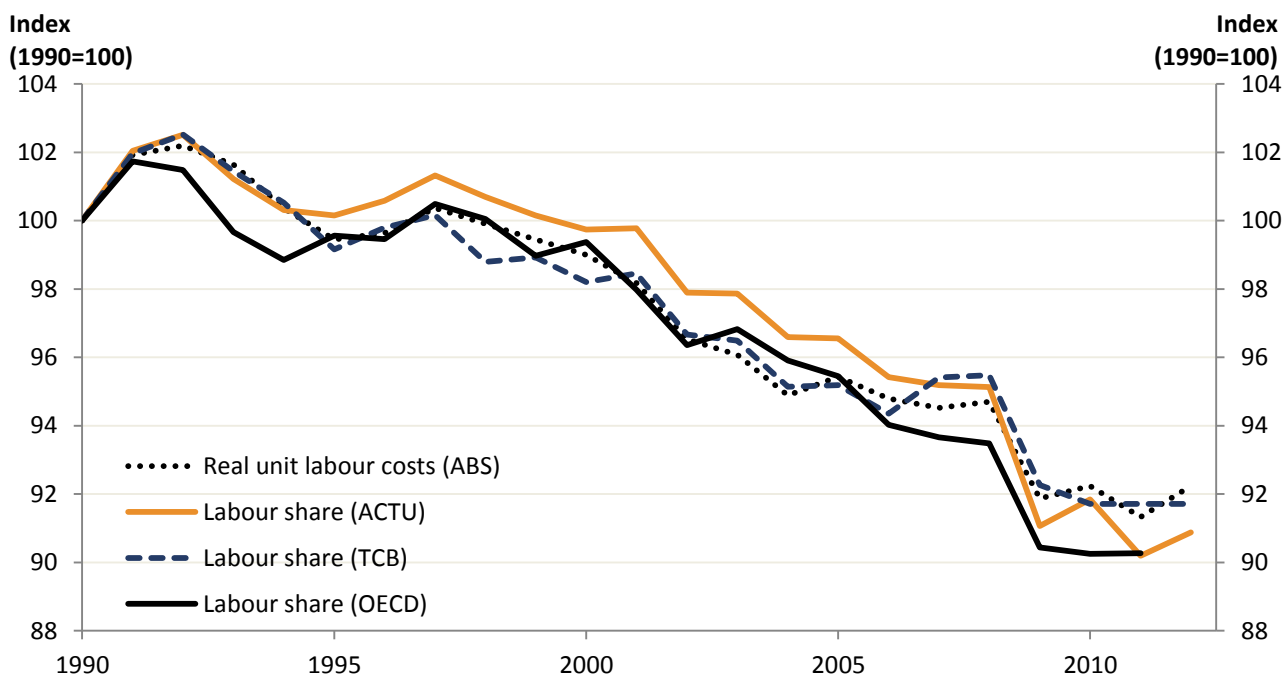
Source: ABS RULCs from ABS 5204. ACTU labour share is an ACTU calculation based on ABS 5204, ABS 6291.0.55.001. OECD labour share is from OECD.Stat. The Conference Board labour share is from the Total Economy Database.

The ABS (2011b) has also produced estimates of the factor shares of income in market-sector industries that show a similar trend to the estimates in this paper and elsewhere. Its estimates, which it labels 'experimental', use a method for imputing the labour portion of gross mixed income that differs from the standard method used in this paper.[9] This means that the ABS estimates of the labour income share differ to those used in this paper and in OECD (2012a) and Pessoa and Van Reenen (2012), but the trends (the change in shares) are remarkably similar across the two imputation methods.

The figures below show the ABS and ACTU estimates of the labour shares in the market sector[10], using two different definitions of that sector, over the period 1990-2011. Although the levels differ, the trend is similar, particularly in the 2000s.
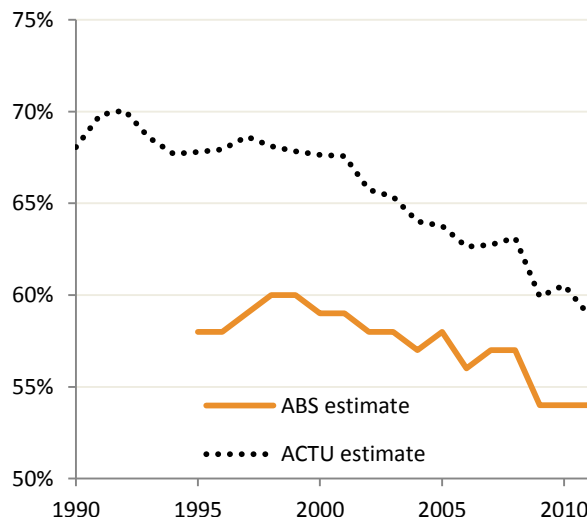
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[9] The differences between the standard imputation method and the method used by the ABS are discussed in Appendix A.
[10] The ABS has not published estimates of the economy-wide labour share.

Figure 6: Labour income share in the market sector (12 industries)[11]
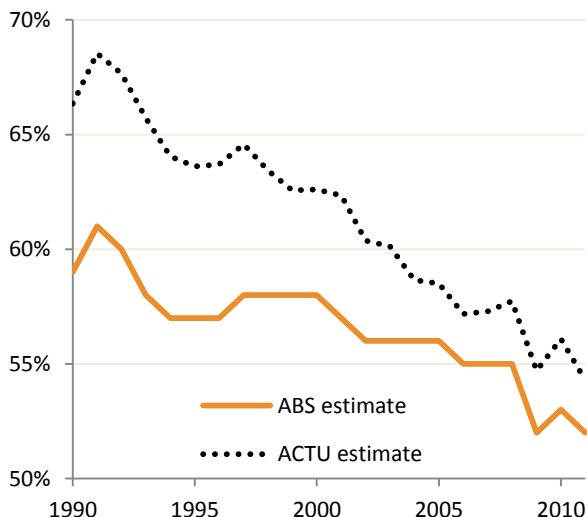
Figure 7: Labour income share in the market sector (16 industries)[12]

Whichever measure is used, labour income share was more-or-less stable in the 1990s and fell in the 2000s.

Decoupling in the OECD

Australia's experience of a falling labour share in recent decades is not unique. Kristal (2010, p. 736) found that there have been "two common long-term trends in rich countries since the end of World War II: an increase in labour's share during the 1960s and 1970s (or earlier), followed by a decrease since the early 1980s." This observation is uncontroversial. The IMF (2007, p. 167) found that "there has been a clear decline [in the labour share] since the early 1980s across the advanced economies". In an examination of the period between 1990 and the late-2000s, the OECD (2012a, p. 116) found "very large falls in the labour share were observed in some Scandinavian countries (Finland and Sweden), a number of eastern European countries (Hungary, Poland and Slovenia), many English-speaking countries (Australia, Canada and Ireland) and Italy."

The fall in the labour share has been more severe in Australia than in most other advanced economies. Figure 8 shows the OECD estimate of Australia's labour share, compared to the unweighted average of the OECD-15. The shaded area represents the highest and lowest labour share of the OECD-15 countries in

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[11] The 12 industries are: Agriculture, Forestry and Fishing; Mining; Manufacturing; Electricity, Gas, Water and Waste Services; Construction; Wholesale Trade; Retail Trade; Accommodation and Food Services; Transport, Postal and Warehousing; Information, Media and Telecommunications; Financial and Insurance Services; and Arts and Recreation Services.

[12] The 16 industries are the 12 industries above, plus: Rental, Hiring and Real Estate Services, Professional, Scientific and Technical Services, Administrative and Support Services; and Other Services.

each year. The fall in Australia in the 2000s was particularly large by OECD standards; by 2010, Australia had the lowest labour share in the OECD-15.[13] Note that the change in the labour share (whether it is constant, falling, or rising) is more important than the level.

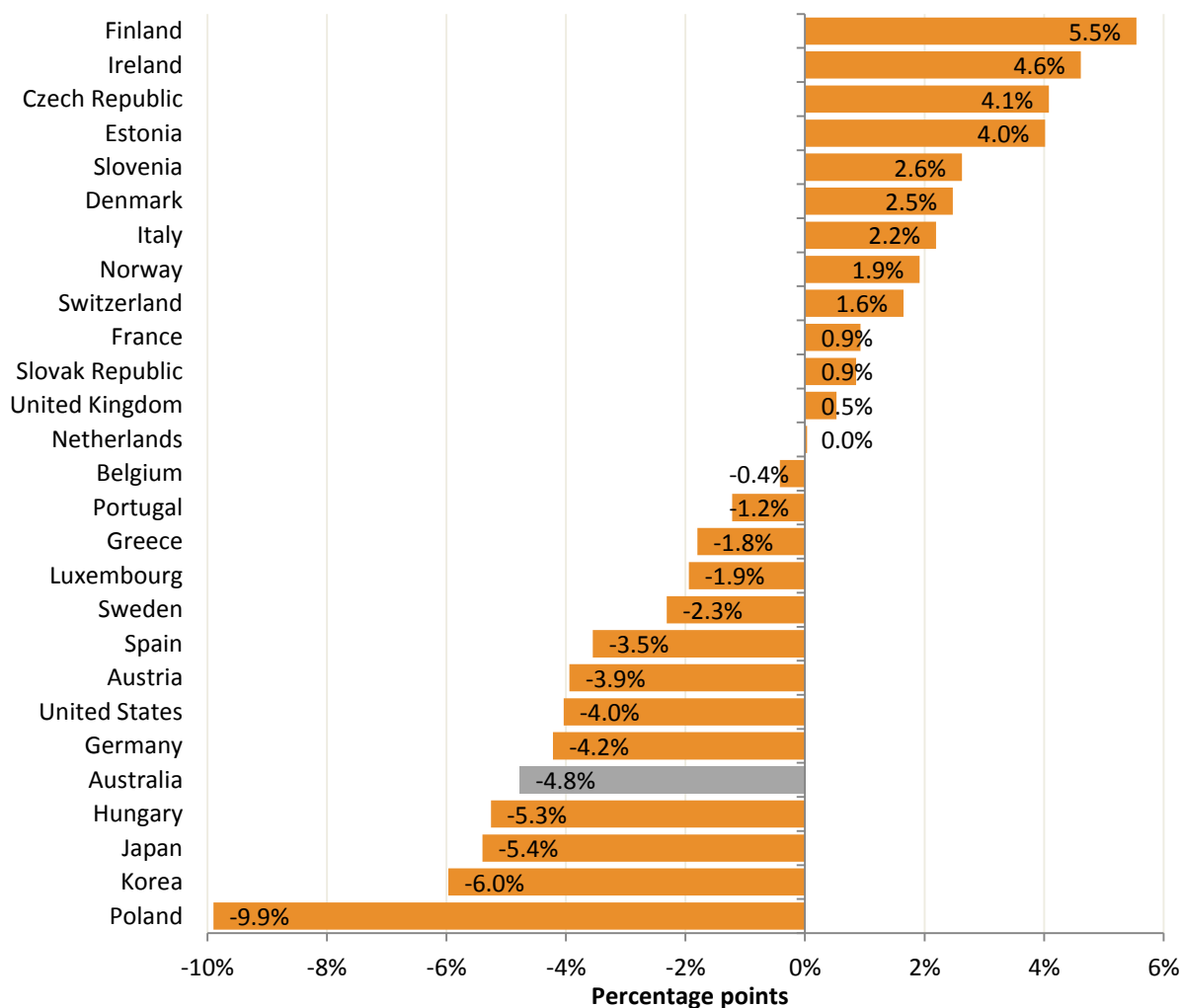**Figure 8: The labour share in Australia and the OECD-15 since 1970**
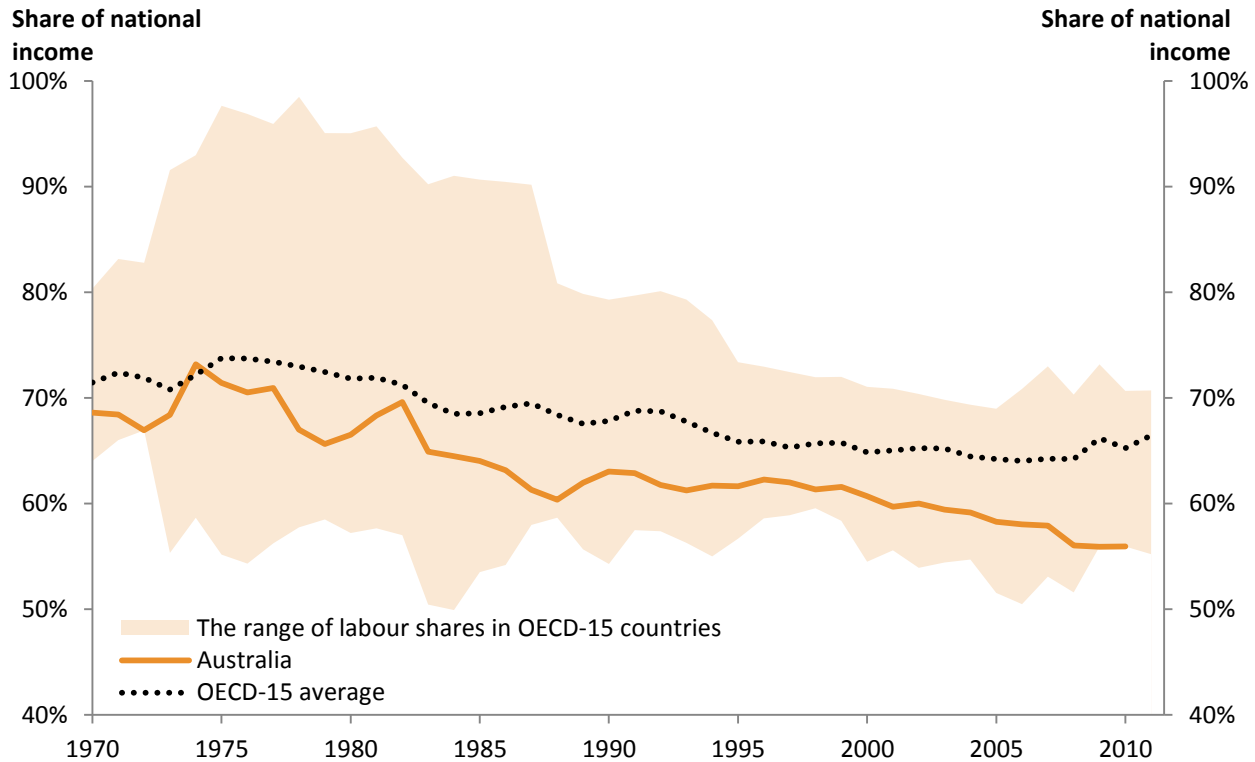
Source: OECD Stat. The OECD-15 are Australia, Austria, Belgium, Denmark, Finland, France, Iceland, Ireland, the Netherlands, Norway, Sweden, the UK, the US and Canada

The fall in Australia's labour share in the 2000s was larger than the fall in any other OECD-15 country. It was the fifth largest fall of any of the 27 advanced economies for which OECD has complete data. The change in the labour share over the decade in those 27 countries is shown in Figure 9. Notably, Norway (which is also a commodity exporter) saw its labour share rise over the decade. Norway has experienced an even larger shock to its terms of trade than Australia (Garton and Gruen 2012).

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[13] The OECD-15 are Australia, Austria, Belgium, Denmark, Finland, France, Iceland, Ireland, the Netherlands, Norway, Sweden, the UK, the US and Canada.

Figure 9: Change in the labour share in OECD countries between 2000 and 2010

Country	Value
Finland	5.5%
Ireland	4.6%
Czech Republic	4.1%
Estonia	4.0%
Slovenia	2.6%
Denmark	2.5%
Italy	2.2%
Norway	1.9%
Switzerland	1.6%
France	0.9%
Slovak Republic	0.9%
United Kingdom	0.5%
Netherlands	0.0%
Belgium	-0.4%
Portugal	-1.2%
Greece	-1.8%
Luxembourg	-1.9%
Sweden	-2.3%
Spain	-3.5%
Austria	-3.9%
United States	-4.0%
Germany	-4.2%
Australia	-4.8%
Hungary	-5.3%
Japan	-5.4%
Korea	-6.0%
Poland	-9.9%

Percentage points

Source: OECD Stat.

The fall in Australia's labour share has been large by the standards of the advanced economies. To the extent that falling labour shares (and thus decoupling) are driven by factors such as economic globalisation, it's possible that these factors are having a greater effect on Australia. Another possibility is that the bargaining power of labour relative to capital in Australia has been reduced by a greater degree than in other OECD countries.

Decoupling and the mining boom

Is the mining boom the culprit for Australian decoupling? The mining industry's share of nominal output has doubled since 2000. Mining is a capital-intensive activity and has a relatively low labour income share; with activity shifting towards the sector, it would be expected that labour's share of national income would fall even if nothing else changed in the economy (McKissack, Chang, Ewing & Rahman 2008, p.11).

One (relatively crude) way to assess the impact of mining on the labour share of income is to subtract mining output and labour income from the aggregates and thus examine the 'non-mining' economy. Across the whole economy, the labour share fell by 5.8 percentage points between 2000 and 2012; while in the non-mining economy, the labour share fell by 3.2 percentage points.[14] Most of the decline in the labour share has therefore been due to developments outside the mining industry.

Figure 10 and Figure 11 show that when the mining industry is taken out of the picture, labour income has still decoupled from productivity in the 2000s and the labour share has still fallen.

Figure 10: Decoupling in the non-mining economy
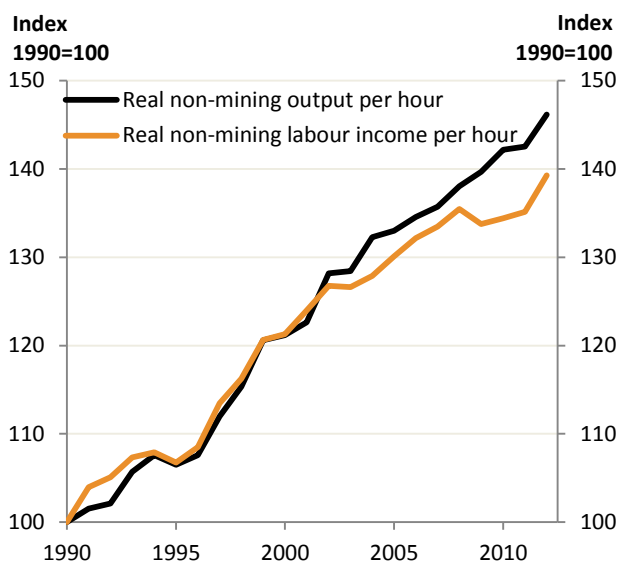
Figure 11: The labour share with and without mining
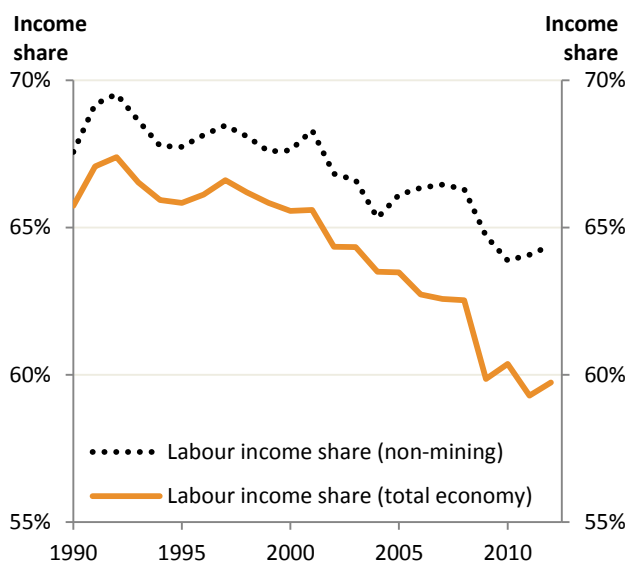
Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001. Non-mining output and labour income are deflated using an index of producer prices for the non-mining sector.

A shift-share analysis can also be done to measure the extent to which the fall in the labour share is due to a shift in economic activity towards low-labour share industries such as mining. The fall in the labour share in the 2000s can be decomposed into two separate components: the fall in the labour share *within* individual industries; and the *shift* in economic activity towards industries with lower labour shares (the between-industry component) (OECD 2012a, p. 118). This is written as:

$$Change\ in\ labour\ share = F_t - F_{t-1} = \sum_i \bar{s}_i \left(f_{it} - f_{it-1}\right) + \sum_i \bar{f}_i \left(s_{it} - s_{it-1}\right)$$

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[14] The labour share in the "non-mining economy" refers to total labour income, minus mining labour income, as a proportion of total factor income, less mining TFI.

Where: F is the economy-wide labour share; f is the labour share in a particular industry (i); s is an industry's share of economy-wide total factor income; t is the current time period; and a bar represents an average between the start and end date. The first term is a weighted average of within-industry changes in the labour share, while the second term is the contribution of structural change to the fall in the labour share.

The result is:

$$Change\ in\ labour\ share = 59.7\% - 65.6\% = -5.8\text{ppts} = -4.2\text{ppts} - 1.6\text{ppts}^{15}$$

Between 2000 and 2012, the labour income share fell by 5.8 percentage points. Falls in labour's share *within particular industries* accounted for 4.2 percentage points of this fall, or 72% of the total fall. Structural change, meaning the shift in economic activity towards low-labour share industries like mining, accounted for only 1.6 percentage points of the fall since 2000. This analysis accords with that of the OECD (2012a, p. 119), which found that within-industry changes accounted for around two-thirds of the total fall in the Australian labour share in the period 1990 to 2007. Only a small portion of the fall in the labour share can be ascribed to a shift in economic activity towards low-labour share industries such as mining.

It's clear that the mining boom has contributed to the fall in the labour share in the 2000s, but that it accounts for a small part of it. Decoupling in Australia is a much broader story than the mining boom. The labour share has fallen sharply in a number of industries that have little to do with the commodity boom, including the Retail Trade industry (down 11.4 percentage points between 2000 and 2012), the Accommodation and Food Services industry (-16.8 points), and the Transport, Postal and Warehousing industry (-10.2 points).

Decoupling in Australia cannot be dismissed as merely the result of the structural shift towards mining and related activity in the 2000s.

Conclusion

The economic policy debate in recent years has been dominated by periodic suggestions from business groups and others that Australia is experiencing, or is about to experience, a 'wages breakout'. Such a breakout would presumably entail hourly real producer wages rising faster than productivity for a prolonged period, such that the labour share of national income would rise. This is how the existence of the 'real wage overhang' was identified in the 1970s. This paper thoroughly demonstrates that not only has

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[15] 'Ppts' means 'percentage points'.

such a 'breakout' or 'overhang' not occurred, but we have experienced the opposite phenomenon: decoupling of wages and productivity, with a fall in the labour share. The fall in the labour share has been broad based; it is not merely the result of a shift towards low-labour share industries such as mining. We would now need to experience a prolonged period of real wage growth greater than productivity growth merely to restore the labour share of the 1990s.

This fact alone should put to rest the suggestions that Australian wages growth has been unsustainably high. Suggestions that Australia has a 'labour costs' problem are not only ill-founded, but are diametrically opposed to the facts. Australian labour costs may appear high when converted to a foreign currency at market exchange rates, but it is disingenuous to implicitly blame domestic labour market institutions for the large shock to the Australian exchange rate in recent years.

Other things being equal, the decoupling of wages and productivity will also result in higher household income inequality. A shift in national income from labour to capital mechanically increases inequality, as capital income is much more heavily concentrated among high-income households than labour income (ABS 2011a). To offset the effects of this upward redistribution, governments should consider making the tax system more progressive. The OECD (2012a, p. 148) suggests that the tax and transfer systems can be used to offset the rise in inequality that results from the fall in the labour income share; "the growing share of income going to top earners suggests that this group now has a greater capacity to pay taxes than before". This is an eminently sensible suggestion.

Appendix A: Imputing the labour income of the self-employed

Superficially, labour's share is straightforward to measure: divide total compensation of workers by national income. But this recipe glosses over several tricky issues. In particular, who is a worker? Should CEOs and business owners be included? What is included in compensation? Should the corporate officers' stock options count as labour earnings? Is the return to investment in human capital counted as labour or capital income? (Krueger 1999, p. 45)

In the Australian policy debate, reference is often made to the 'wages share' of national income. This is the total compensation of employees as a proportion of total factor income. This simple measure is reported in both the annual and quarterly National Accounts. The problem with it is that it takes no account of the labour income of the self-employed. It also does not distinguish between the compensation of 'typical' employees and that of high-paid executives. This appendix discusses the adjustments made to take account of the issue of self-employment; the issue of high-paid employees is considered in Appendix D.

Total factor income is divided into three components: the compensation of employees; gross operating surplus and gross mixed income (ABS 2012a). The latter component represents the incomes of unincorporated enterprises. The ABS (2012a, p. 299) explains that this includes both a return on capital and a return on labour, hence the name:

> *The term 'mixed income' is used because the surplus arising from the productive activities of unincorporated enterprises can comprise returns to the capital of the proprietors (representing operating surplus), and an element akin to wages and salaries accruing to the proprietors or other members of the household as payment for their labour input to the enterprise (even though they may not receive explicit payment for their work).*

Consider a small retail shop that is unincorporated, in which the owner works 40 hours a week. The owner's income, including gross profits and the income received in respect of their hours of work, will be recorded in the national accounts as gross mixed income. If that business then becomes incorporated, the situation changes – the labour income of the proprietor is now recorded as part of the total compensation of employees, while his or her return on invested capital is recorded as gross operating surplus. If labour's share of total income is measured just using the total compensation of employees as a proportion of total factor income, then this business becoming incorporated will result in a rise in the labour share (the 'profits

share' will also rise). This is despite the fact that no shift in the balance of labour income and capital income has occurred; all that has changed is a change in the legal nature of the firm's identity.

Gross mixed income has fallen from around a quarter of total income in the early 1960s to 8.9% in 2011-12, as shown in Figure 12. To measure labour's share of total income, some account needs to be taken of the labour income of the proprietors of unincorporated enterprises. In other words, the labour component of gross mixed income needs to be calculated.

Figure 12: The components of total factor income
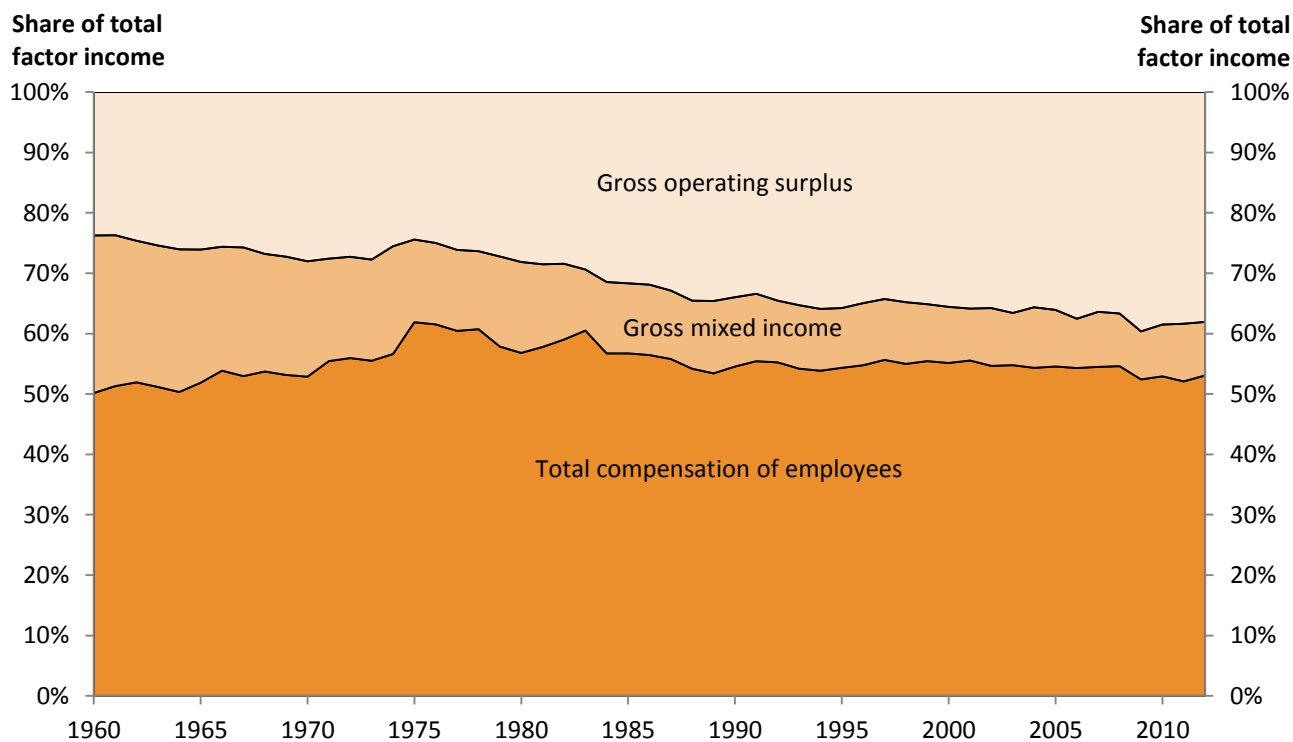
Source: ACTU calculations based on ABS 5204.

The problem is that the labour and capital components of gross mixed income are not identified separately for the purposes of the national accounts. Some method of imputation is therefore needed to calculate the labour component of GMI. This paper uses a standard imputation method.

Under the standard method, it is assumed that proprietors of unincorporated businesses receive hourly labour income that is equal to the average compensation of wage and salary earners. The OECD (2012a, p. 116) uses this method; it notes "there is a wide consensus" that this standard assumption is appropriate. The IMF (2007, p. 182) also uses this approach, as do Pessoa and Van Reenen (2012), Mishel and Gee (2012), and Kristal (2010, p.732). Parham, et al. (2000) use this approach for the market sector.

This method uses the following simple formula:

$$Labour\ income = Total\ compensation\ of\ employees + Labour\ income\ of\ self\ employed$$

$$= \frac{Total\ compensation\ of\ employees}{Hours\ worked\ by\ employees} \times Total\ hours\ worked$$

$$= Total\ compensation\ of\ employees \times \left(\frac{Total\ hours\ worked}{Hours\ worked\ by\ employees}\right)$$

The final term (the ratio of total hours worked to hours worked by employees) is termed the 'self-employment ratio'. Some international studies of the labour share use the ratio of total employed persons to the number of wage and salary earners, rather than the ratio based on hours worked. This is the 'heads basis' for calculating the labour share, as against the 'hours basis' that is standard. For the main period in question in this paper – 1990 to 2012 – the two methods yield little difference in results. The story remains that the labour share was more or less stable in the 1990s, and has fallen around five percentage points since 2000. The two self-employment ratios are compared in Figure 13; the labour income shares calculated using the two different ratios are shown in Figure 14. The self-employment ratios have converged due to a convergence in the average hours worked by employees and the self-employed.

Figure 13: Self-employment ratio
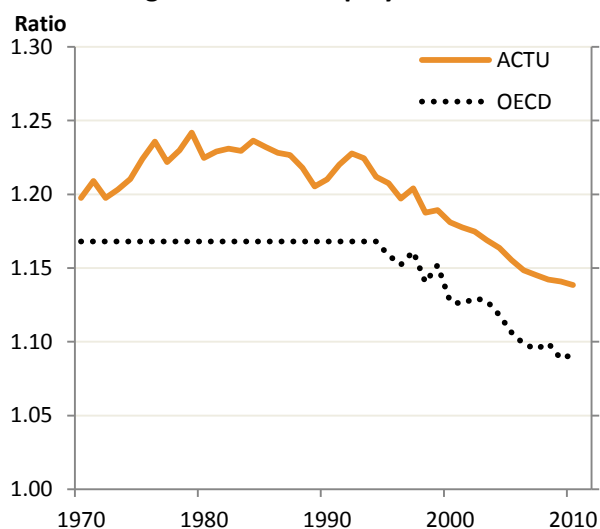

Figure 14: Labour income shares
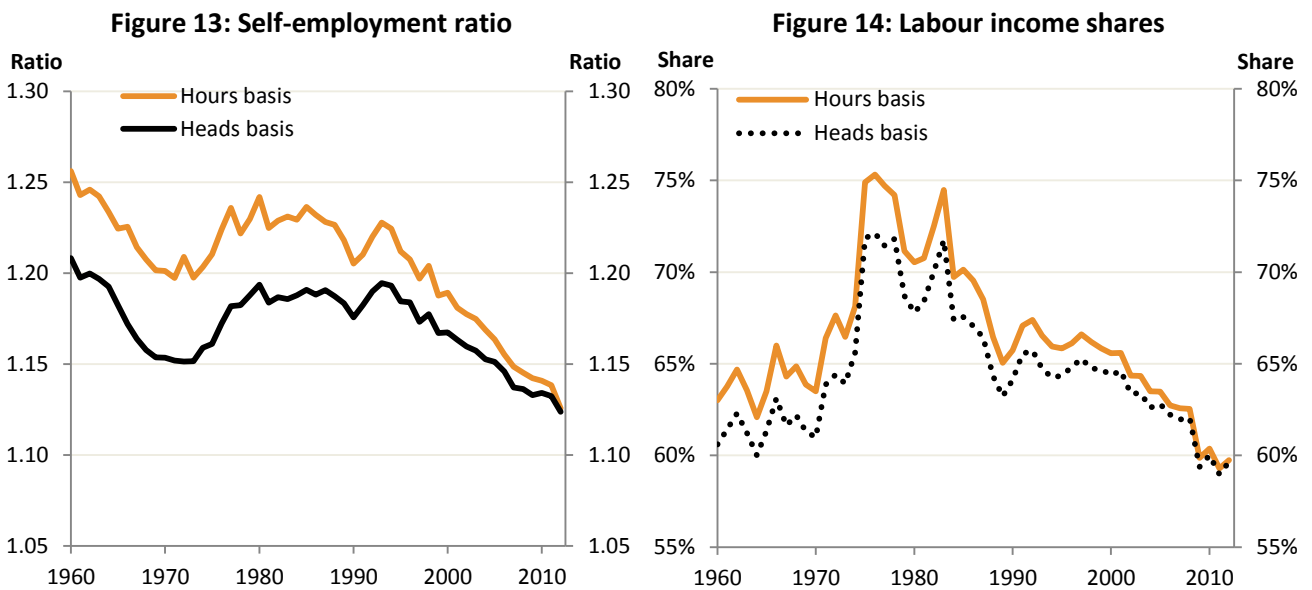
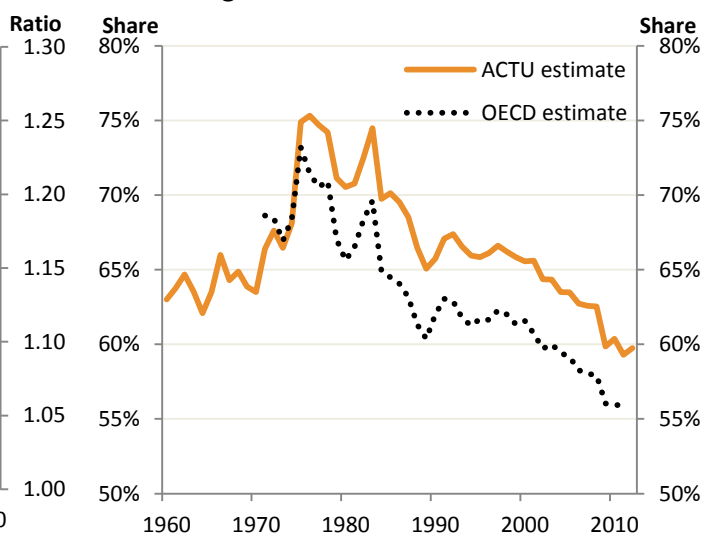Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, Butlin 1977.

While the OECD uses the standard imputation method that is also used in this paper, it uses a slightly different self-employment ratio. This explains the fact that the OECD's labour income share estimate differs slightly from the one used in this paper. The OECD uses a fixed self-employment ratio for the period 1970 to 1995, as shown in Figure 15. While the ACTU and OECD estimates of the labour share differ, the direction of change in each has been the same since the late-1970s. The OECD labour share, as shown in Figure 16, fell in the 1980s, was stable in the 1990s, and fell in the 2000s.

Figure 15: Self-employment ratios

Figure 16: Labour income shares

Source: OECD Stat and ACTU calculations based on ABS 5204, ABS 6291.0.55.001, Butlin 1977.

The standard imputation method produces a labour income share that is almost certainly an overstatement. There have been years in which the amount of labour income, calculated using the standard method, is greater than the sum of the total compensation of employees plus gross mixed income. This was a particular problem in the mid-to-late 1970s. This problem has long been recognised in Australia and elsewhere (Covick 1979; Haley 1968).

However, there is no reason to believe that the direction and rate of change in the labour income share, as opposed to its level, is incorrectly estimated by using the standard imputation method, at least for recent decades. Alternative means of accounting for gross mixed income also suggest that the labour income share has fallen (and there has thus been decoupling) since around 2000.

The ABS uses an alternative imputation method for the market-sector industries as part of its 'experimental' estimates of multifactor productivity (ABS 2011b). The ABS begins by assuming that the self-employed receive the same average hourly compensation as wage and salary earners, as per the standard method. It also derives an estimate of the total capital income of the self-employed, by taking an estimate of the capital stock owned by the unincorporated sector and assuming that the rate of return on this capital is equal to the average rate of return in the incorporated sector. The estimates of capital and labour income are added together, and the result is 'scaled down' so that it is equal to actual gross mixed income (ABS 2007, pp.103-104). The ABS does not publish an estimate of this sort for the total economy. Rather, it publishes labour share estimates for some industries, and for the market sector as a whole.

The results obtained using the ABS variant on the standard imputation method show broadly the same trend as those obtained using the standard method. For example, the ABS estimate of the labour share in the market sector (12 industries) was more or less flat during the 1990s, and fell in the 2000s. This accords with the results obtained using the standard method, both by the OECD and in this paper. The results are compared in Figure 17. Recall that "more attention should be paid to movements in the labour income share, than to its levels" (Parham, et al. 2000, p. 36).

Figure 17: Estimates of the labour income share in the market sector
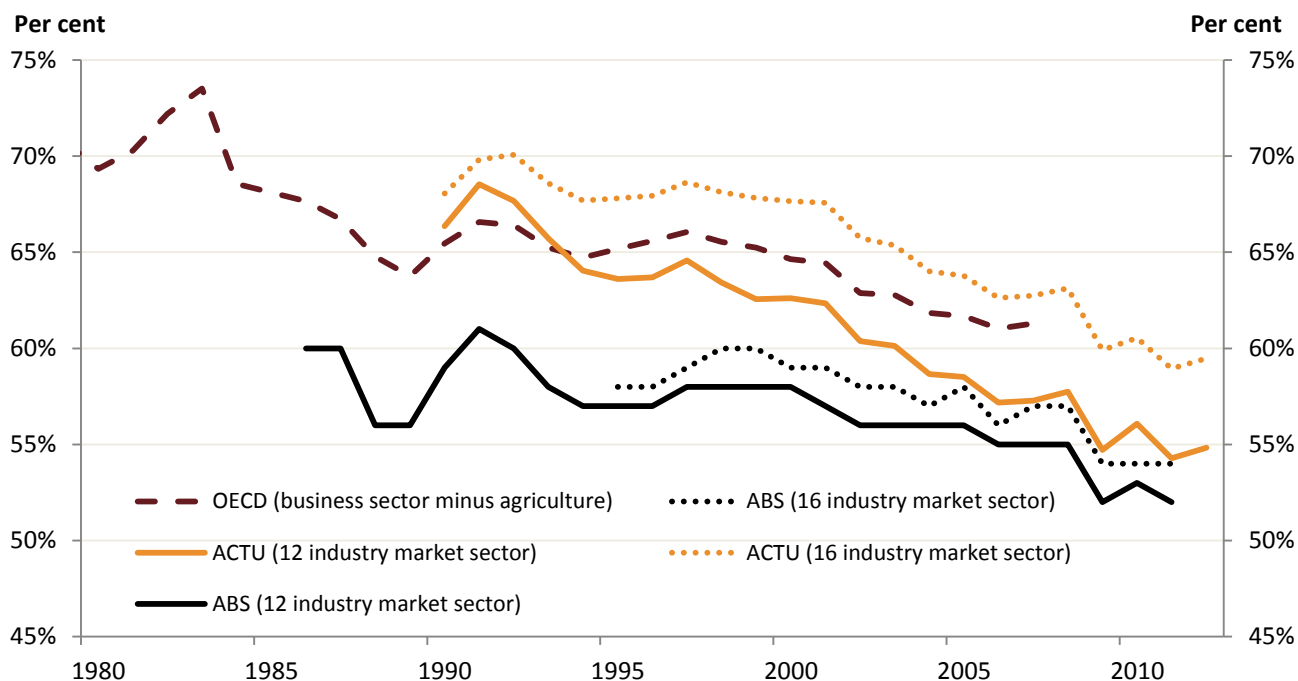
Source: OECD estimate is from OECD Stat.[16] ABS estimates are from ABS 5260.0.55.002. ACTU estimates are calculations based on ABS 5204, ABS 6291.0.55.001.

Covick (1981, p. 21) suggested that "no single method for dealing with income from unincorporated enterprises for factor share analysis purposes can be regarded as completely satisfactory." That remains the case. The fact that the labour and capital components of gross mixed income are not disaggregated in the national accounts means that some imputation must be performed, and this imputation introduces an extra degree of uncertainty into the estimates of factor shares. However, the direction and rate of change in those factor shares in recent decades appears to be roughly similar using alternative imputation methods.

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[16] The OECD labour income share for the business sector includes industries C to K in version three of the International Standard Industrial Classification.

Appendix B: Output measures

This paper measures the divergence between output per hour (labour productivity) and labour income per hour. That raises the question of which measure is used for output. The typical choice would be gross domestic product (GDP). This paper instead uses total factor income (TFI) as a measure of total output. This is done so as to maintain the equivalence between decoupling (a divergence between hourly labour income and productivity) and a fall in the labour income share, which uses TFI as the denominator.
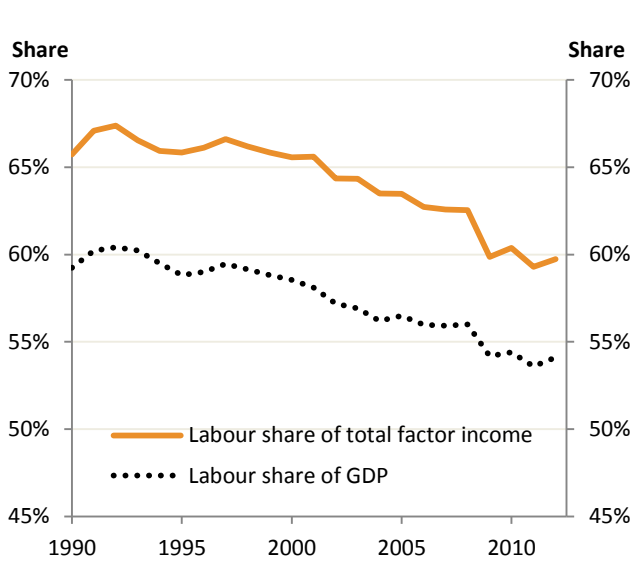
The choice of TFI rather than GDP is largely unimportant; the two measures move more or less in tandem. GDP at purchasers' prices is equal to TFI plus taxes less subsidies on production and imports (ABS 2012a, p.100). Figure 20 shows the level of TFI and GDP in real terms, deflated using the GDP implicit price deflator, since 1960. The use of GDP rather than TFI would not alter the conclusions of this paper. Figure 18 shows that the two output measures track each other closely, and that the extent of decoupling is virtually identical whichever measure is used. Similarly, Figure 19 shows labour income as a share of nominal TFI and as a share of nominal GDP; the extent and direction of change is virtually identical.

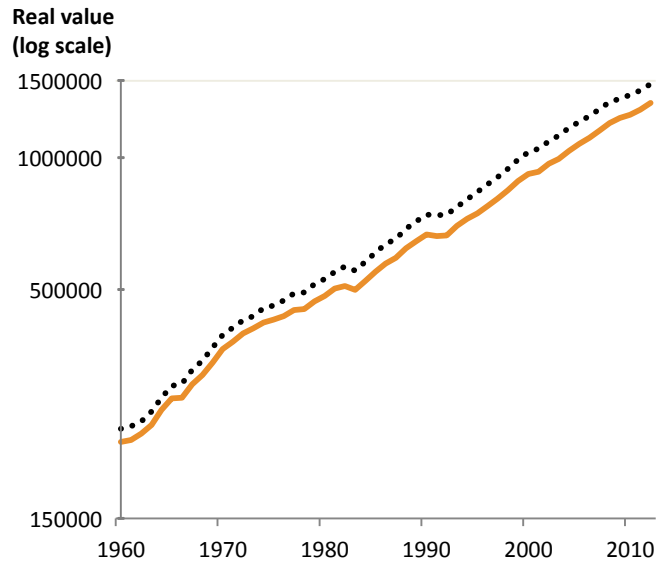**Figure 18: Decoupling in Australia with two measures of output**
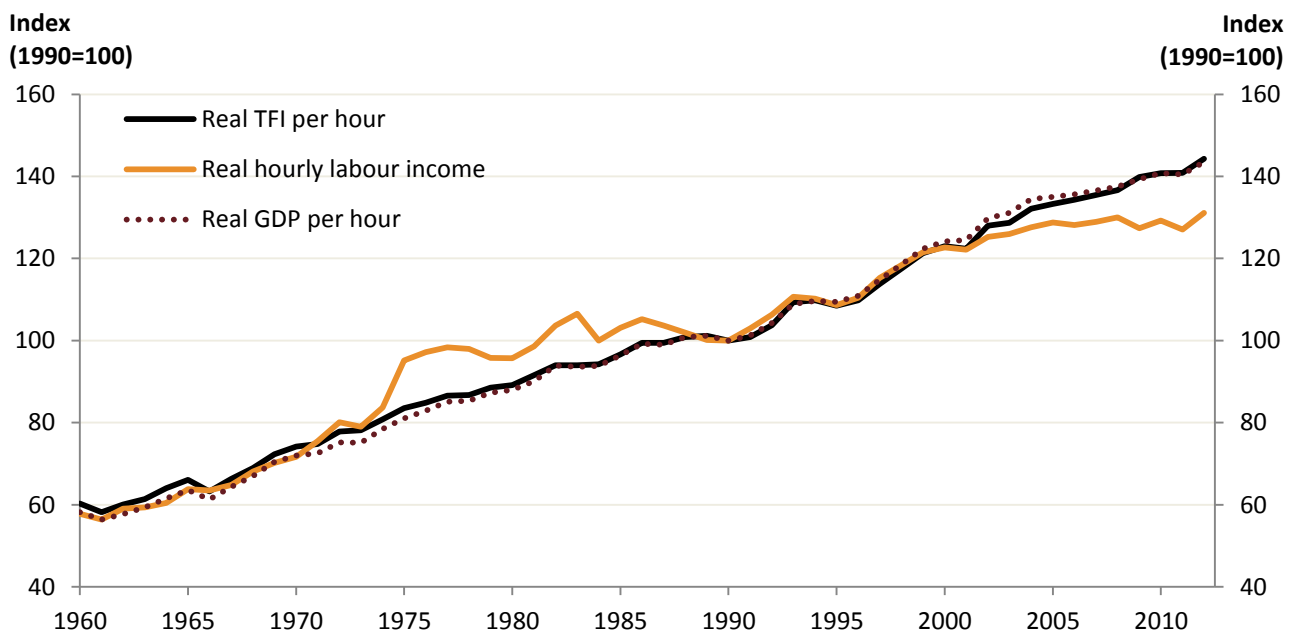
Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, Butlin 1977. All measures are deflated using the GDP implicit price deflator.

Figure 19: Labour shares of GDP and TFI

Figure 20: Real TFI and real GDP

Share

70%

65%

60%

55%

50%

Labour share of total factor income

Labour share of GDP

45%

1990   1995   2000   2005   2010

Share

70%

65%

60%

55%

50%

45%

Real value
(log scale)

1500000

1000000

500000

150000

1960   1970   1980   1990   2000   2010

Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, Butlin 1977.

# Appendix C: Gross decoupling and the role of price indices

This paper focuses on the decoupling of hourly labour income from productivity, with both measures deflated using producer prices. This is known as 'net decoupling' (Pessoa and Van Reenen 2012; Mishel and Gee 2012). Because net decoupling is equivalent to a fall in labour's share of income, this provides an indication of the distribution of the gains from productivity growth between labour and capital. However, hourly labour income deflated by producer prices does not necessarily give an accurate sense of the change in workers' purchasing power over time. To measure this, labour income should be deflated using consumer prices rather than producer prices.

Using consumer prices as the deflator does not alter the conclusion in this paper about the extent to which hourly labour income has decoupled from productivity since 1990. In the 1990s, the GDP deflator rose more slowly than consumer prices, but the reverse has been true in the past decade. The net effect is that the two measures have risen by virtually identical amounts in total since 1990. The GDP deflator has risen by a compound average annual rate of 2.79% over the period, while consumer prices have risen by 2.72% per year. Note that in this paper, references to 'consumer prices' are to the Consumer Price Index up until 1998 and the ABS' employee Living Cost Index (LCI) thereafter.[17] The figures below show that over the long run, the growth in the two measures is virtually identical.

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[17] In 1998, the CPI shifted from an outlays approach to an acquisitions approach. The ABS subsequently introduced a range of indexes, constructed using an outlays approach, to measure changes in the cost of living for particular household types, including employee households. The ABS (2012d) has stated that the CPI "is not the conceptually ideal measure for assessing the changes in the purchasing power of the disposable incomes of households" and that the LCIs represent "the conceptually preferred measure for assessing the impact of changes in prices on the disposable incomes of households."

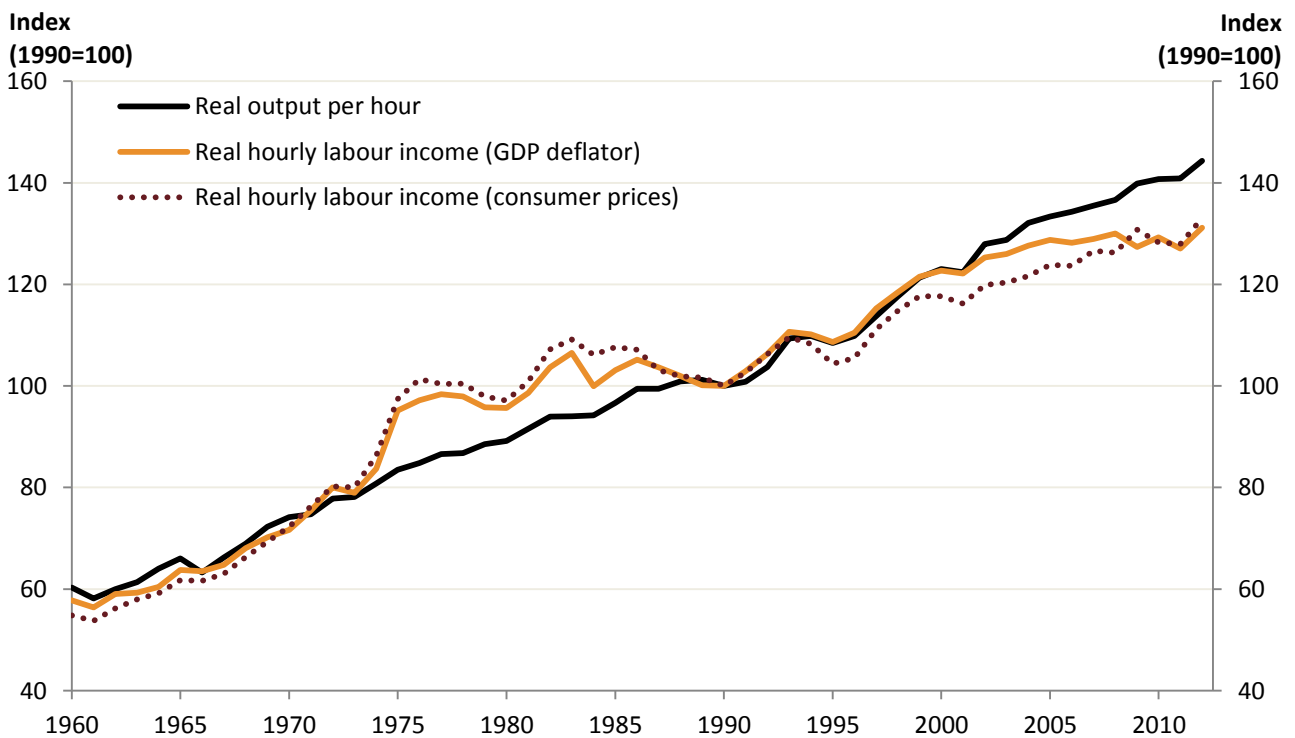**Figure 21: GDP deflator and consumer prices since 1960**

Index (log scale)

GDP deflator
Consumer prices
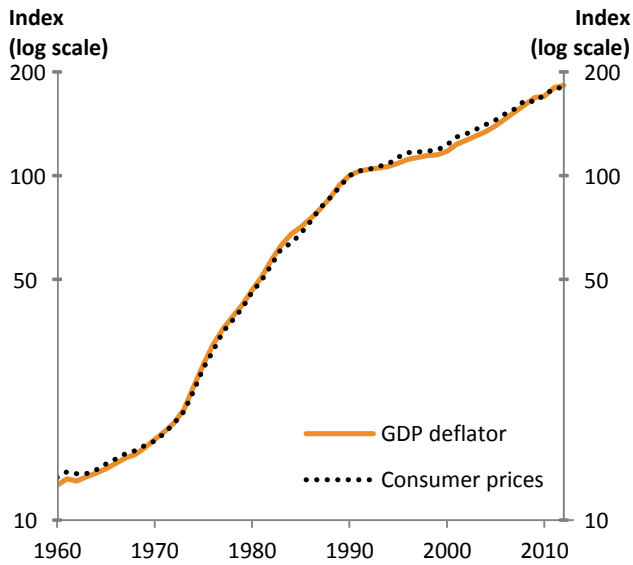
Figure 22: GDP deflator and consumer prices since 1990

Index (log scale)

GDP deflator
Consumer prices
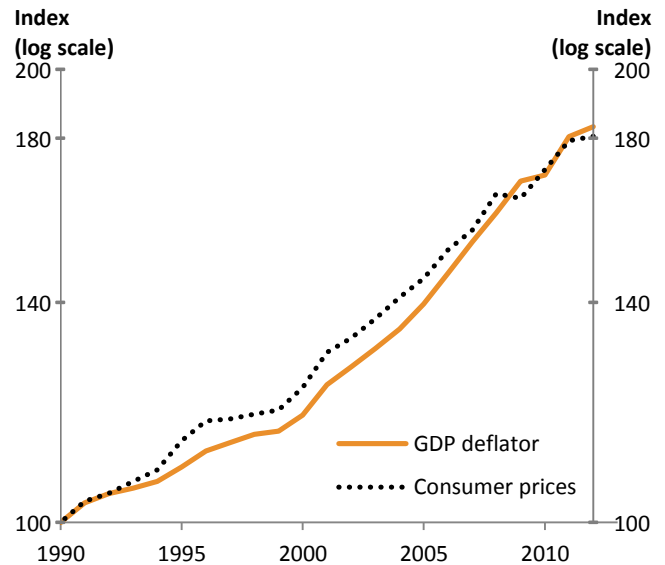
Source: ACTU calculations based on ABS 5204, ABS 6467, ABS 6401.

Using consumer rather than producer prices as the deflator for labour income affects the timing of decoupling, but not the total extent of decoupling since 1990. This is shown in Figure 23.

Figure 23: Decoupling using producer prices and consumer prices

Index (1990=100)

Real output per hour
Real hourly labour income (GDP deflator)
Real hourly labour income (consumer prices)

Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, Butlin 1977, ABS 6467, ABS 6401.

Figure 23 shows that the total extent of decoupling since 1990 is largely unaffected by using consumer prices rather than producer prices. However, there is another dimension to the question of whether the

typical workers' purchasing power has kept pace with productivity growth. This additional dimension is the change in earnings inequality. If average hourly wages have increased faster than the median, then 'net decoupling' charts like those used in this paper will understate the extent of the divergence between productivity and the typical worker's purchasing power.

Pessoa and Van Reenen (2012) and Mishel and Gee (2012) refer to the divergence between median hourly earnings (in consumer price terms) and productivity growth as 'gross decoupling'. Data constraints, specifically the lack of an Australian time-series for the median hourly earnings of all employees since 1990, mean that a complete analysis of gross decoupling in Australia is not possible. It is nevertheless possible to use an imperfect substitute for the median hourly wage to roughly gauge the extent of gross decoupling. This is done in Figure 24.

Real median full-time weekly earnings, deflated by consumer prices, grew more or less in line with productivity during the early-to-mid 1990s, before decoupling thereafter. This measure rose slightly more rapidly than the real hourly producer wage (the orange line) in the mid-2000s, due to the improvement in labour's terms of trade that is discussed above. To the extent that the data allow an examination of gross decoupling in Australia, it appears that the trends are roughly similar to those obtained using the net decoupling measure, although it is quite possible that the inclusion of the hourly earnings of non-full time workers would mean that gross decoupling has been more severe.

Figure 24: Decoupling in Australia - median full-time earnings
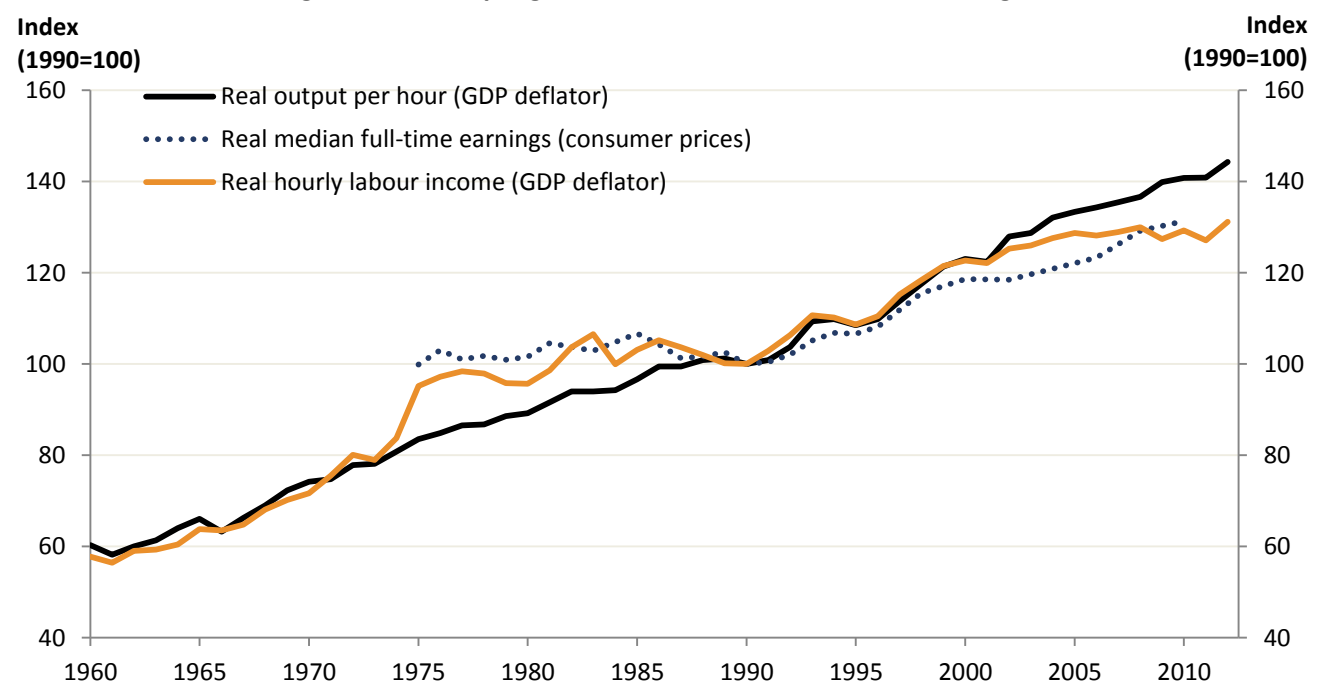
Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, ABS 6306, ABS 6401, ABS 6467, Butlin 1977.

Appendix D: Decoupling without the top 1%

Total labour income includes the remuneration of high-paid executives. The fact that these executives' salaries are included in labour income puts the argument about decoupling "to a stronger test… given the proliferation of such high-earning salaried professionals, it is a wonder that labour's share is not a record high" (Kristal 2010, p. 754).

It is well known that the top income earners' share of total income has risen in many advanced economies (Atkinson, Piketty & Saez 2011; OECD 2008). Australia is no exception to this trend, with the income share of the top 1% having risen from around 5% in the early 1980s to around 9% in the late 2000s (Atkinson & Leigh 2006, updated data). This raises the possibility that the labour share of the bottom 99% may have fallen further than the overall labour share. This question is evaluated using the methodology set out in OECD (2012b).

Since the 1970s, the labour income of the top 1% as a share of total income has indeed risen. This means that the fall in the overall labour share masks an even bigger fall in the labour share of the bottom 99% over the past thirty years. However, the labour income of the top 1% has fallen slightly since the mid-90s as a share of total income. This means that the drop in the labour share since 1990 is more or less the same whether the top 1% is included or not. This is shown in Figure 25. The gap between the two lines in Figure 25 is equal to the labour share of the top 1%, which is shown in Figure 26.

Figure 25: Total labour share and the share of the bottom 99%
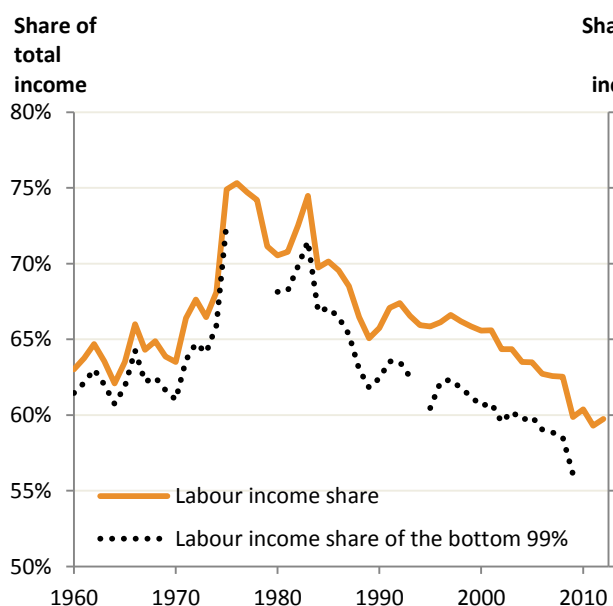
Figure 26: The labour income of the top 1% as a share of total factor income
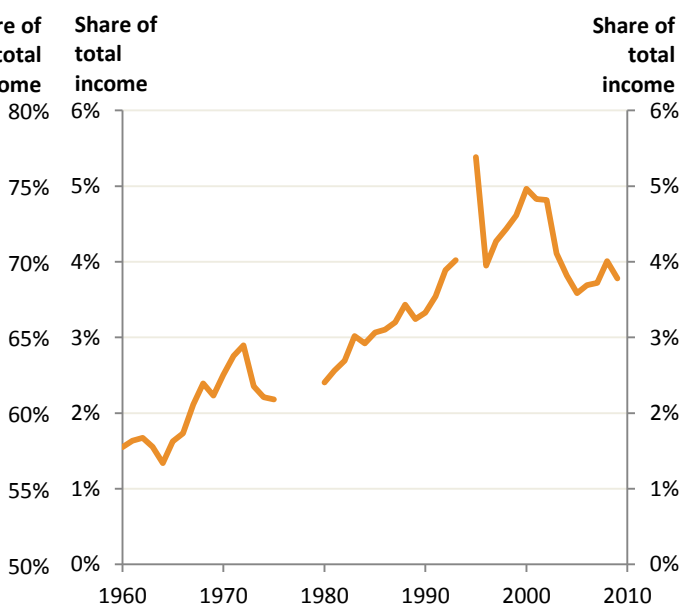
Source: ACTU calculations based on ABS 5204, ABS 6291.0.55.001, World Top Incomes Database, Atkinson & Leigh (2006).

The magnitude of the decoupling of labour income and productivity in the 2000s is largely unaffected by the inclusion or exclusion of the labour income of the top 1%. However, a consequence of decoupling is that the share of income that goes to capital has risen. The ownership of capital is highly concentrated, and the top 1%'s share of capital income has risen sharply in recent years (OECD 2012b). This means that decoupling has resulted in a redistribution of income towards top income earners as a result of the change in the balance between labour and capital in national income.

It is also possible that the method used to identify the 'labour' income of the top 1% means that some remuneration paid in the form of capital transfers (stocks, etc.) is not included as labour income, but does properly represent a payment for labour services provided. If these payments were included in labour income, it is possible than the labour share of the bottom 99% may have fallen further than the analysis above suggests.

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