ACTU Submission to the Productivity Commission Public Infrastructure Inquiry

Australian Unions
Join. For a better life.

Contents

Introduction

The ACTU asks that the Commission give consideration to this submission notwithstanding that it has been lodged after the published deadline.

Australian unions have an important interest in developing policy solutions to the problem of inadequate infrastructure projects. There are a range of barriers to the construction of major projects that should be investigated and addressed – ranging from the role of the public and private sectors (including superannuation funds) in funding projects; the respective role of the Commonwealth and State/territory governments in infrastructure provision and regulation; to the lessons that can be learned from past PPP arrangements. We had intended to provide a response to the Commission's draft report on these and other issues.

Unfortunately, a substantial minority of initial submissions to this inquiry chose to attack the wages and conditions of workers in the construction industry, and in some cases the current industrial relations legislation. Rather than wait until after the Commission has issued its draft report to respond to these attacks, we believe that it will assist the Commission to be provided with contrary arguments and evidence at this earlier stage in its deliberations. We limit this submission to addressing the issues related to labour costs and regulation raised in the issues paper and other organisations' initial submissions.

Some employer groups' submissions contain a general recitation of previously aired grievances against aspects of the industrial relations system. In the submissions to this Inquiry, this is done generally with little or no evidence provided to substantiate the allegation that the system is inhibiting the construction of infrastructure projects. As such they do not bear on the questions before the Commission in this Inquiry. As a result, we have largely avoided engaging with these assertions in this submission, but can do so (as we have done in other contexts) if that will assist the Commission.

We note that questions have been raised about the method of procuring labour for construction projects. Relevant affiliates have advised the ACTU that the method of engagement varies enormously based on the nature of the project, its timing and location, the skills required, and the business model of the contractors involved. This suggests that there is significant flexibility in current arrangements, and mitigates against any suggestion that recruitment arrangements are a barrier to project delivery. Again, we will be happy to elaborate on this point in conjunction with our affiliate unions if it would assist the Commission.

Summary

In this submission, we demonstrate the following:

- There is no case to be made that industrial regulation, wages, labour productivity, or industrial disputation are significant factors impeding project delivery in Australia;
- Construction industry wages growth has been solid, but sustainable and responsible - not as extreme as suggested by some employer groups;
- Real hourly labour income has not grown as rapidly as labour productivity, and so the labour share of income in the industry has fallen;
- To the extent that periods of poor productivity performance have coincided with strong wages growth, it has not been during the operation of the current industrial relations legislation;
- The claim of a 9.4% improvement in labour productivity due to the ABCC is derived from EconTech's discredited 2007 report and is used as a modelling assumption in subsequent reports – it is not a 'finding' of those reports;
- The claim of a 21.1% improvement in labour productivity due to the ABCC is based on methodology that also suggests there has been productivity "over performance" in a range of industries (such as retail trade) that have nothing to do with the ABCC and there are a range of further problems with this estimate;
- The rate of industrial disputation in the construction industry remains extremely low relative to its historic levels;
- Australian nominal unit labour costs in construction have not risen as rapidly as those in the UK, the US, or the OECD average;
- Australian real unit labour costs in construction have fallen, while those of many comparator countries (like the UK and US) have risen; and
- An increase in the cost of constructing Australian projects, denominated in USD, is due to appreciation of the exchange rate, not rapid growth in domestic costs.

Construction industry wages and productivity

In this section, we demonstrate the following:

- Construction industry wages growth has been solid, but sustainable and responsible – it has not been extreme, as suggested by some employer groups;
- Real hourly labour income has not grown as rapidly as labour productivity, and so the labour share of income in the industry has fallen; and
- To the extent that periods of poor productivity performance have coincided with strong wages growth, it has not been during the operation of the current industrial relations legislation.

Measures of wages growth in construction

The Issues Paper notes that "wage increases have generally occurred at a faster pace than in other sectors of the economy". While this is true, Figure 3 of the Issues Paper shows that this was most evident in the mid-2000s. During this period there was rapid growth in the demand for the skills of construction workers, associated with the mining investment boom. Many employer groups (including in their submissions to this Inquiry) have complained of skill shortages in the industry; a rising price for labour in the presence of inadequate supply relative to demand should not be a surprising phenomenon – it is the mechanism by which additional labour supply can be induced.

The paper suggests that above-average wages growth in construction means the industry has "faced considerable labour cost pressures." It is not clear why this should have policy implications. The WPI shows the growth in nominal labour costs for a fixed basket of labour; it does not show the change in the cost of labour needed to produce a given quantity of output. The average hourly cost of employing labour in the construction industry has risen less rapidly than the value of the average hourly output of a construction worker (as is shown later in this section). "Cost pressures" have been experienced, but these have been more than offset by rises in productivity.

A number of employer groups' submissions to this Inquiry make striking claims about the pace of wages growth in construction over the past decade. Perhaps most striking is Chart 4 in the Minerals Council of Australia's submission. This chart suggests that "resource and energy sector project construction wages" rose by a compound annual growth rate (CAGR) of 9.2% over the period 2011-12. The source is cited as Independent Project Analysis (IPA) – no further information is provided.[1]

The ABS does not publish information on growth in "resource and energy sector project construction wages." However, the rate of growth in the Minerals Council's chart far exceeds any ABS measure of wages growth in the

[1] It is inappropriate to compare the IPA construction figure to the WPI, as the Minerals Council's Chart 4 does. The WPI controls for compositional change in the labour force, while it does not appear that the IPA figures do so. The Construction WPI rose by a CAGR of 4.2% between 2001-12. This is the appropriate comparator to the all-industries WPI.

broader construction industry. Table 1 shows nine different measures of construction wages growth derived from ABS sources. None of them has a CAGR between 2001-12 of anything near 9.2%. The average annualised wage increase per construction industry employee in federal enterprise agreements current between 2001 and 2012 was 4.8%.[2] Of course, it is possible and perhaps likely that wages in the section of the industry to which the Minerals Council refers grew faster than the overall average for the industry. By the same token, there will be sections of the industry in which wages grew less rapidly than the overall average.

Table 1: Measures of construction industry nominal wages growth

		2001	2012	2013	CAGR 01-12	Growth 12-13
ABS 6302, *Average Weekly Earnings*	Average weekly ordinary time earnings, full-time adults	$715.10	$1,361.90	$1,436.00	6.0%	5.4%
	Average weekly earnings, full-time adults	$781.70	$1,578.60	$1,637.50	6.6%	3.7%
	Average weekly earnings, all employees	$694.90	$1,352.50	$1,450.60	6.2%	7.3%
ABS 6345, *Wage Price Index*	Total hourly rate of pay excluding bonuses	71.30	111.70	115.40	4.2%	3.3%
	Ordinary time hourly rate of pay, excluding bonuses	71.20	111.70	115.50	4.2%	3.4%
Calculations using ABS 5204/5260.0.55.002 as per Figure 5	Nominal hourly labour income per hour	$20.58	$40.43	$40.92	6.3%	1.2%
ABS 6310, *Employee Earnings, Benefits and Trade Union Membership*	Mean weekly earnings in main job, full-time	$850.00	$1,420.00	-	4.8%	-
	Mean weekly earnings in main job, all employees	$794.00	$1,338.00	-	4.9%	-
ABS 6306, *Employee Earnings and Hours*	Average weekly total cash earnings, all employees*	$815.70*	$1,439.60	-	5.8%	-

*Note: ABS 6306 is conducted every two years. The earlier year shown in the table is 2002, not 2001. The 2002 figure does not include salary sacrificed earnings; the 2012 figure does include this. This measure thus overstates earnings growth.

Publicly available, consistent data on earnings in the sub-divisions of the construction industry is only available from 2008.[3] This shows that the CAGR between May 2008 and May 2012 ranged from 4% to 6.2%.

Table 2: Average hourly cash earnings in construction industry sub-divisions

	2008	2012	CAGR
Building construction	$33.30	$38.90	4.0%
Heavy and civil engineering construction	$37.10	$47.20	6.2%
Construction services	$28.80	$34.50	4.6%

Source: ABS 6306, *Employee Earnings and Hours*.

Wages growth has been solid in the construction industry, but sustainable and responsible. It has not been extreme as suggested by some employer groups. It has lagged behind productivity growth and the labour share has thus fallen.

[2] Department of Employment 2013, *Trends in Federal Enterprise Bargaining.* Available from: http://employment.gov.au/trends-federal-enterprise-bargaining [Accessed 24 January 2014].

[3] The 2006 release of ABS EEH contains average hourly cash earnings data, but the industries are classified according to the ANZSIC 1993 instead of the ANZSIC 2006. Earlier releases also have this problem, and they do not take salary sacrificing into account.

Productivity growth

The years in which the Work Choices legislation was in operation were not years of strong productivity growth, either for the total economy or for the construction industry. We don't claim that the poor productivity performance of the mid-2000s was caused by IR arrangements, nor that the subsequent improvement is due to the repeal of Work Choices. Rather, we say there are far bigger economic forces at work affecting the rate of productivity growth, like the mining boom, the investment in electricity generation capacity, and droughts. The rate of productivity growth in construction and the total economy is shown below.

Figure 1: Labour productivity
Index: 2002-03=100

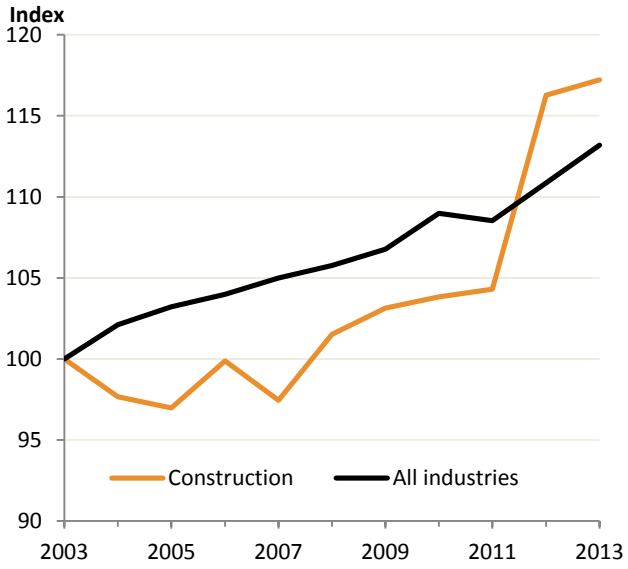
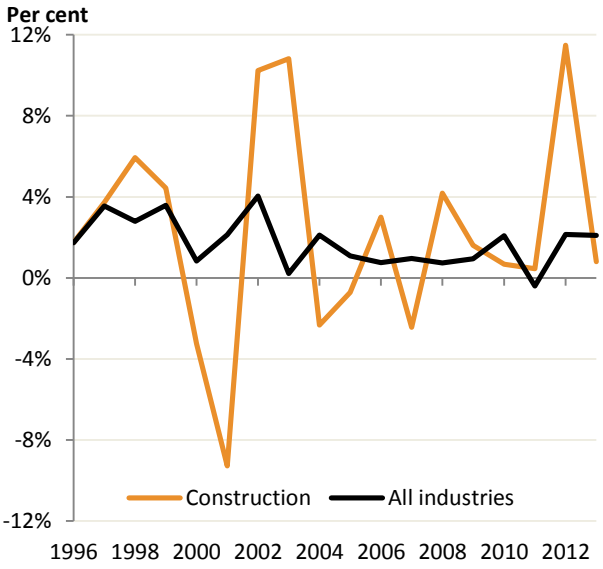


Figure 2: Labour productivity growth



Source: Calculations based on ABS 5204, *Australian System of National Accounts, 2012-13*, Table 15.

Labour productivity growth in construction during the Work Choices period was relatively modest. It has since improved.

The strongest growth in construction industry productivity in a decade occurred in 2011-12. This came after changes in personnel had been made to the ABCC that some alleged had undermined its effectiveness. John Lloyd, who was the Australian Building and Construction Commissioner from the time of the ABCC's creation, stated in 2011 that:

> *The tasks and role of the ABCC have been transformed. It now parades as the all-encompassing regulator… The ABCC could now be renamed the TBCC – the Trendy Building and Construction Commission.*[4]

In the financial year following Mr Lloyd's comments (2011-12), the construction industry recorded 11.5% labour productivity growth. This is the largest one-year growth rate in construction labour productivity recorded in the National Accounts. The fastest growth recorded during Mr Lloyd's tenure as Commissioner was 4.2%, in 2007-08.

[4] John Lloyd 2011, 'Building Industry Thuggery – Storm Clouds on the Horizon,' Address to the HR Nicholls Society, Available online: http://archive.hrnicholls.com.au/archives/vol31/2011lloyd.pdf. [Accessed 20 January 2014].

Of course, there are many factors that drive changes in the rate of productivity growth. We do not claim that changes in industrial relations arrangements are foremost among them. However, some employer groups do (at least implicitly) make that claim.

Australian Industry Group, in its submission to this Inquiry, also stated that the reforms associated with the ABCC "have been substantially eroded over the past four years," ie. 2009 to 2013. Given this, it seems inappropriate to ascribe the relatively strong productivity performance of the industry in 2011-12 to the presence of the ABCC.

The labour share of income in construction

The share of factor income going to labour is a key means of assessing trends in labour costs relative to productivity. As Parham notes, the labour income share "is equivalent to the real unit cost of labour, which is the real cost of an hour of labour (the real wage) divided by the real product of an hour of labour (labour productivity)".[5] A decline in the labour share or real unit labour cost (RULC) means that labour productivity has grown faster than the hourly cost of labour.

The discussion of construction industry factor shares in the Issues Paper is incomplete and potentially misleading. The Issues Paper (at Figure 4) is intended to show the labour and capital shares of income in the construction industry. The text on p.21 refers to Figure 4 and states "the capital share of income generated in the sector has also fallen (consistent with rising real wages)." However, the figure does not show the labour and capital shares of income, properly defined and measured.

Figure 4 of the Issues Paper is captioned "labour and gross operating surplus share of income." However, we believe the line labelled "gross operating surplus" includes both GOS and gross mixed income (GMI), the income accruing to the owners of unincorporated enterprises. The problem with this is that GMI includes the return to both the labour and capital of the owners of unincorporated enterprises. Figure 4 in the issues paper therefore does not show the labour and capital shares in the industry. Instead, it compares the total compensation of employees (TCE) to a series that combines the capital income of incorporated enterprises and the labour and capital income of unincorporated enterprises. This is not an appropriate metric with which to gauge the labour and capital income shares in the industry.

If there is a trend towards incorporation among businesses over time, as there has been, then it would be expected that GMI would decline as a share of factor income. Both GOS and TCE would be expected to mechanically rise as a result, as the mixed income that was formerly allocated to GMI is now divided between labour income (TCE) and capital income (GOS). In this situation, a flat *wages* share (TCE as a proportion of factor

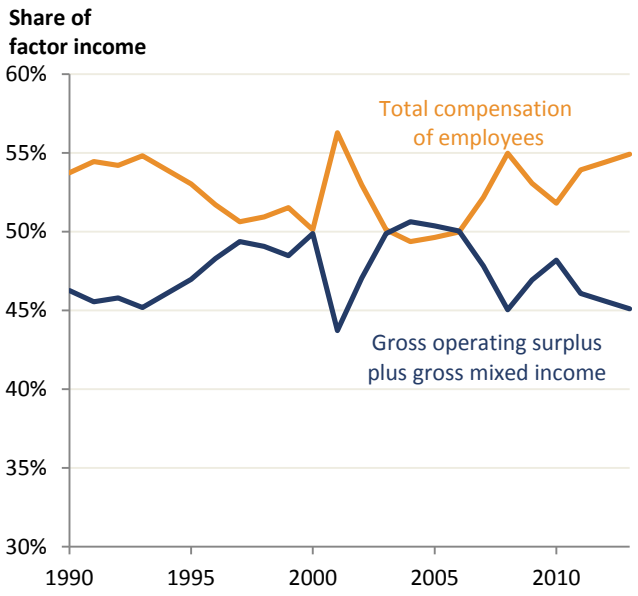
[5] Parham, D. 2013, 'Labour's Share of Growth in Income and Prosperity', Visiting Researcher Paper, Productivity Commission, Canberra, p.59.

income) would suggest a declining *labour* share, when the labour income of the owners of unincorporated enterprises is taken into account. This is a serious problem. As Parham notes, the "division between capital and labour income requires an allocation of proprietors' income."[6] It is not adequate to treat the entirety of GMI as capital income, as appears to have been done in Figure 4 of the Issues Paper.

The ABS produces estimates of the labour and capital shares of factor income in market sector industries, including construction. These estimates impute the proportion of GMI that is attributable to labour, and the proportion that is attributable to capital. These labour and capital portions of GMI are then added to TCE and GOS to give conceptually sound estimates of the labour and capital shares. The ABS estimates are published annually in ABS 5260.0.55.002, *Estimates of Industry Multifactor Productivity*. These ABS estimates are used by Parham in his recent Productivity Commission Visiting Researcher Paper.[7]

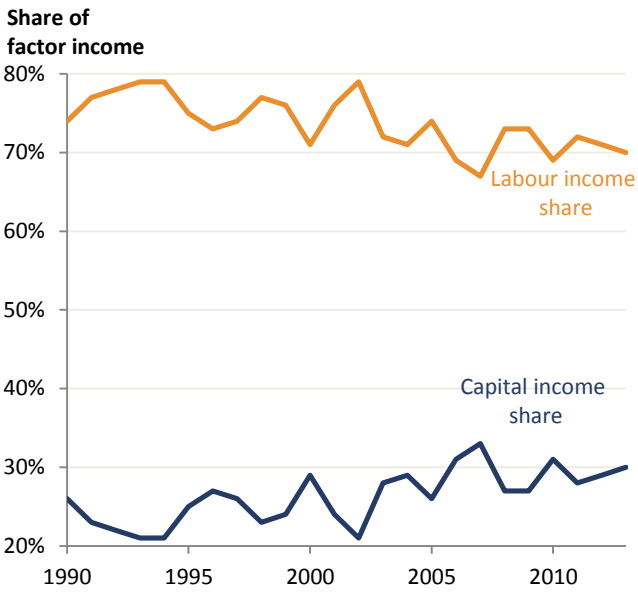
We have replicated Figure 4 from the Issues Paper as Figure 3, below. The ABS estimates of the comprehensive labour and capital shares are shown in Figure 4. Two key differences between the figures are apparent. The estimate of the comprehensive labour share is much higher than the simple wages share (70% vs 55% of factor income). However, the trend is quite different. The comprehensive labour share has been falling, while the simpler wages share has been rising. It is the comprehensive measure that provides the more accurate picture of trends in factor shares in the industry.

Figure 3: Employee compensation and GOS+GMI shares of factor income in Construction



Source: ABS 5204, *Australian System of National Accounts, 2012-13*, Table 46.

Figure 4: Labour and capital shares of factor income in Construction



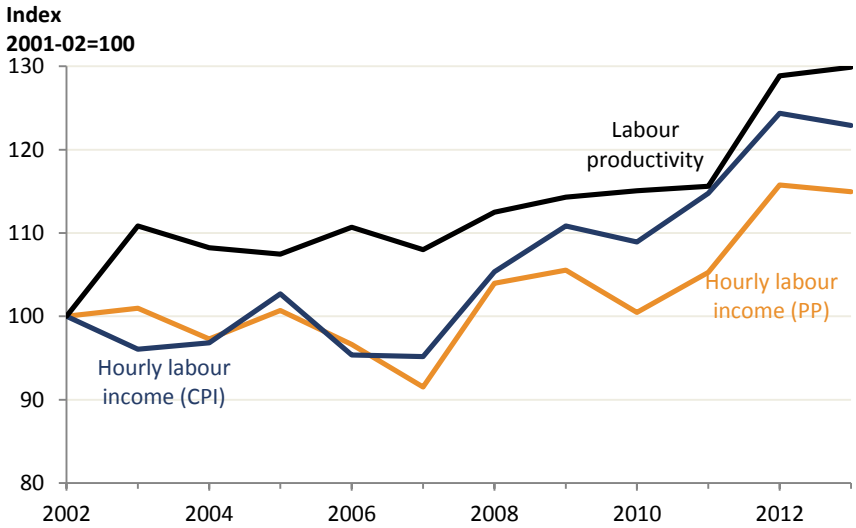
Source: ABS 5260.0.55.002, *Estimates of Industry Multifactor Productivity*, Table 14.

[6] Ibid., p.38.
[7] Ibid.

The labour share of income in the construction industry in 2012-13, properly measured, was 70%. This was down from 71% the year before, 72% the year before that, and 77% in 2004-05. The average during the 1990s was 76%. As the labour and capital shares sum to 100%, a decline in the labour share implies a rise in the capital share.

The decline in the labour share has occurred because hourly labour income has not kept pace with labour productivity (gross value added per hour worked) in the construction industry. This is shown below. Productivity and hourly labour income are converted to indexes, set to equal 100 in 2001-02.[8]

Figure 5: Growth in construction industry productivity and hourly labour income since 2002



Source: Labour productivity is from ABS 5204 *Australian System of National Accounts, 2012-13*, Table 15. Nominal hourly labour income is obtained by multiplying the ABS estimate of the industry labour income share from ABS 5260.0.55.002, *Estimates of Industry Multifactor Productivity*, Table 14 by nominal gross value added in the industry, from ABS 5204, Table 5. Hours worked in the construction industry are from ABS 5204, Table 15. The CPI is from ABS 6401, *Consumer Price Index,* Table 1. Construction industry output prices are derived using the change in the ratio of nominal to chain volume industry GVA from ABS 5204, Table 5.

The orange line in Figure 5 shows hourly labour income deflated by producers' output prices ('PP') in the construction industry. This is the real producer wage. The deviation of this series from labour productivity is exactly equivalent to the decline in the labour income share. We have also shown hourly labour income deflated by the CPI - the real consumer wage. It is the real producer wage that matters to firms, while it is the real consumer wage that matters to workers.

The real consumer wage has risen faster than the real producer wage in the industry. This means that workers have been partially 'compensated' for the decline in the labour share by the fact that the CPI has not risen as fast as the price of the industry's output. Looked at from another angle, this also means that firms in the construction industry have been able to afford to pay a higher real consumer wage from a given real producer wage.

The key point to note from Figure 5 is that, whichever price deflator is used, hourly labour income has grown less rapidly than labour productivity in the construction industry since 2002. The divergence between output prices

[8] This is used as a baseline, as the EconTech/Independent Economics reports regarding productivity in the industry define the "pre-Taskforce/ABCC" era as the period up to and including 2002.

and consumer prices has partially, but not fully, compensated workers for the fall in the labour income share in the construction industry. During the operation of the *Fair Work Act,* labour income (however deflated) has continued to lag behind productivity growth in the industry, although the growth of both has increased relative to the earlier period.

Table 3: Compound annual growth rates in construction hourly labour income and labour productivity

	Hourly labour income (PP)	Hourly labour income (CPI)	GVA per hour
2002 to 2009	0.8%	1.5%	1.9%
2009 to 2013	2.2%	2.6%	3.2%
2002 to 2013	1.3%	1.9%	2.4%

Source: As per Figure 5. Years refer to the financial year ending in June, eg. 2009 is 2008-09.

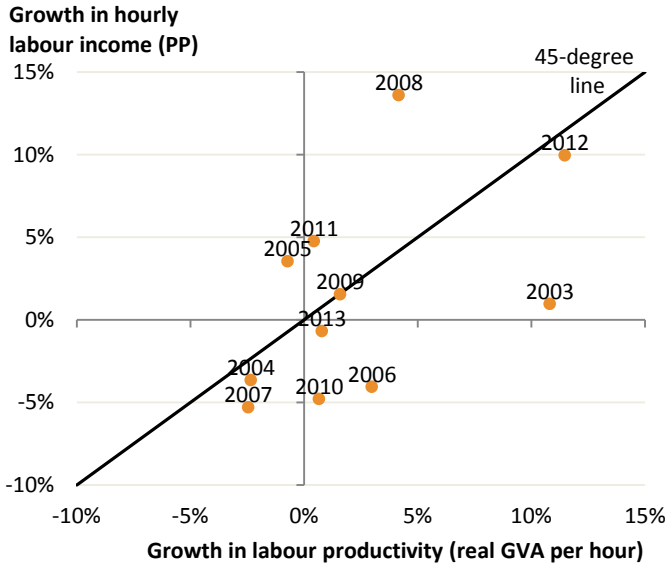
Employer groups' submissions regarding labour costs must be evaluated against this backdrop. Labour income has lagged labour productivity growth and thus the labour income share in the industry has fallen. Claims about excessive labour costs growth should be treated with scepticism.[9]

The correlation between wages and productivity growth

The Issues Paper (p.20) claims that "paradoxically, the periods of greatest wage growth have coincided with periods of the weakest productivity growth." We do not believe this to be the case.

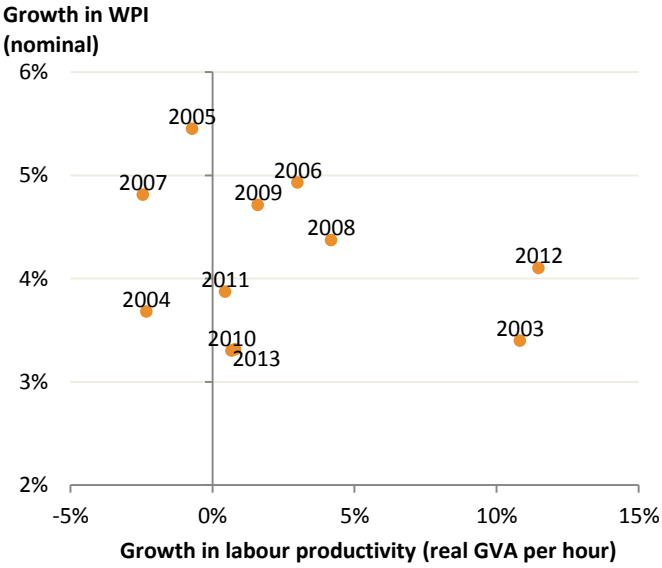
[9] These figures pertain to the construction industry as a whole, rather than the industry subdivisions with which this Inquiry is concerned. This is due to data limitations. However, we note that the Issues Paper and other organisations' submissions use industry-level data where more specific information is not available.

Figure 6: Growth in labour productivity and the real hourly producer wage in Construction



Source: As per figure 3.

Figure 7: Growth in nominal output per hour and the Wage Price Index in Construction



Source: Labour productivity is as per figure 3. The WPI is from ABS 6345.0, *Wage Price Index, Australia, Sep 2013*, Table 5a.

Figure 6 compares the annual growth in labour productivity since 2002-03 with the growth in the real producer wage over the same period. There are years in which the real producer wage grew faster than productivity. These are the years that lie above the 45-degree line in Figure 6 – 2005, 2008 and 2011.[10] We note that in two of those three years, the ABCC was in existence. In most years since 2002, the real producer wage has grown less rapidly than productivity.

An alternative measure is shown in Figure 7. Here, the Wage Price Index (WPI) is shown on the vertical axis, as this is the measure of wages growth emphasised in the Issues Paper.[11] This is compared to the growth in real GVA per hour worked. There have been three years since 2002 in which labour productivity in the industry has fallen – 2004, 2005, and 2007. In 2004, growth in the WPI was relatively low. In 2005 and 2007, growth in the (nominal) WPI was relatively high. However, during this time the ABCC was in effect; in 2007, Work Choices was the operative industrial relations legislation. These are the regulatory arrangements to which some employer groups wish to return, yet they coincided with the largest disjuncture between WPI and productivity growth in the industry. By contrast, labour productivity in the industry grew by 11.5% in 2011-12 while the nominal WPI rose by a relatively modest 4.1%.

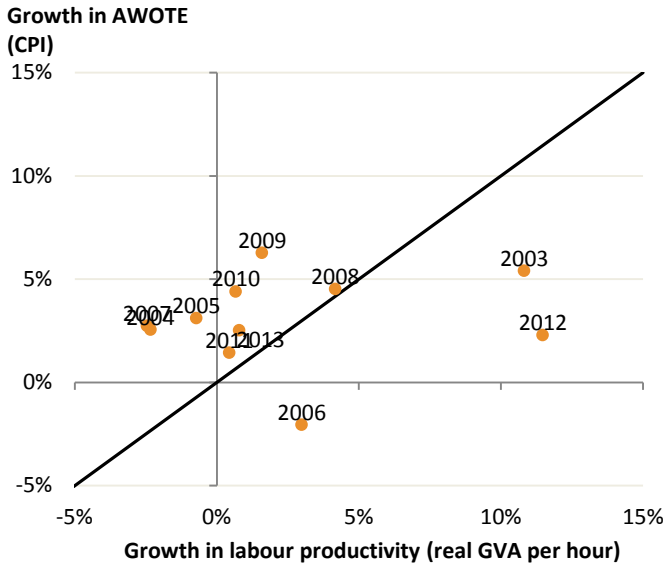
The same conclusion is reached using a third measure of wages growth – the growth in average weekly ordinary time earnings of full-time adults (AWOTE) in the construction industry. The figures below show this measure compared with labour productivity growth in the industry in each year since 2002-03. Figure 8 shows the growth

[10] '2005' refers to 2004-05; '2008' is 2007-08, etc.

[11] Given that the WPI shows the change in the nominal hourly cost of employing a 'basket' of labour of fixed composition, it would not be expected that WPI growth would track productivity growth to the same extent as the hourly real producer wage derived from the National Accounts.

in real AWOTE, deflated by the CPI; Figure 9 shows the growth in real AWOTE deflated by producers' output prices.

Figure 8: Growth in labour productivity and real AWOTE (consumer prices) in Construction



Source: Labour productivity and CPI are as per Figure 5. AWOTE is from ABS 6203, *Average Weekly Earnings, Australia, May 2013,* Table 2.

Figure 9: Growth in labour productivity and real AWOTE (producer prices) in Construction

Source: Labour productivity and the imputed measure of producers' output prices are as per Figure 5. AWOTE is as per Figure 8

To the extent that poor productivity performance has coincided with strong wages growth, it has not been during the operation of the current industrial relations legislation.

The Independent Economics/EconTech reports

A series of reports have been produced by Independent Economics, formerly known as EconTech. The recent reports were commissioned by Master Builders Australia, while earlier iterations were commissioned by the ABCC. A number of employer groups' refer to the findings of these reports, both in their submissions to this inquiry[12] and their public advocacy more generally, to support their claims regarding the effect of the ABCC's introduction and repeal on productivity growth in construction.

In this section, we demonstrate the following:

- The claim of a 9.4% improvement in labour productivity due to the ABCC is derived from EconTech's discredited 2007 report and is used as a modelling assumption in subsequent reports;
- The claim of a 21.1% improvement in labour productivity due to the ABCC is based on methodology that also suggests there has been productivity "over performance" in a range of industries (such as retail trade) that have nothing to do with the ABCC;
- The construction industry productivity "over performance" is not statistically significant; and
- The "over performance" disappears when mining industry productivity is added to the model; and
- The "over performance" largely disappears when a larger sample is used.

The effect of the Taskforce/ABCC on labour productivity growth: the 9.4% figure

It has been alleged that the EconTech reports found that the ABCC lifted labour productivity in the industry by 9.4 per cent relative to where it would have been in the absence of the ABCC. For instance, the Minister in his second reading speech of the *Building and Construction Industry (Improving Productivity) Bill 2013* stated:

> *A 2013 Independent Economics report on the state of the sector during this period found that building and construction industry productivity grew by more than nine per cent.*[13]

Master Builders Australia has also relied on this alleged finding:

> *To underline the benefits brought about by the work of the ABCC, it is now well known that Master Builders in 2013 commissioned an independent economic analysis of productivity in the building and construction industry... I just want to say that the report does say that there has been significant gain in*

[12] For example, see the submission of the Housing Industry Association (p.10).
[13] Minister Pyne 2013, 'Building and Construction Industry (Improving Productivity) Bill 2013, Second Reading Speech', House of Representatives, Hansard, Commonwealth of Australia, 14 November 2013. Available online: http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/aec24641-694d-4aba-adb3-c0e00179d7a4/0030/hansard_frag.pdf;fileType=application%2Fpdf . [Accessed 21 January 2014].

building and construction productivity and that it has improved workplace practices. Some of the numbers I would like to quote are, in fact, labour productivity having improved by 9.4 per cent…[14]

The report to which the Minister and HIA referred contains no such finding. The report employed a Computable General Equilibrium (CGE) model of the Australian economy to estimate the macroeconomic effects of increased productivity in the construction sector. The 9.4% figure is not an estimate generated by the model – it is an assumption used in the modelling process, as is made clear on page 28 of the report:

… in line with earlier reports, for modelling purposes we conservatively assume a smaller gain of 9.4 per cent.[15]

It also was not a finding of the 2012 report, as is made clear on page iv. of that report:

*Earlier reports found that the data continued to support an estimated gain in construction industry productivity, as a result of the ABCC and related industrial relations reforms, of 9.4 per cent.*16

It was not a finding of the 2010 report, as is made clear on page 23 of that report:

*…the most recent data indicates that, on balance, the modelling assumption made in the Previous Reports remain reasonable. That is, the ABCC and related industrial relations reforms have added in the vicinity of 9.4 per cent to labour productivity in the construction industry. Hence, consistent with the Previous Reports, this report bases its modelling of economy-wide impacts on a gain in construction industry labour productivity of 9.4 per cent.*17

It was not a finding of the 2008 report, as outlined on pp.iii-iv of that report:

…on balance it is reasonable to conclude the latest evidence indicates that the ABCC and related industrial relations reforms have added about 10 per cent to labour productivity in the construction industry. This is consistent with the 2007 Econtech Report, which used a gain of 9.4 per cent. Hence this report also

---

[14] Wilhelm Harnisch, CEO of Master Builders Australia, Evidence to the Senate Education and Employment Legislation Committee Inquiry into the Building and Construction Industry (Improving Productivity) Bill and (Consequential and Transitional Provisions) Bill 2013, 26 November 2013. Available online: http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;db=COMMITTEES;id=committees%2Fcommsen%2F9e3fc680-c88f-4cd9-a67b-8e957f4059f1%2F0003;query=Id%3A%22committees%2Fcommsen%2F9e3fc680-c88f-4cd9-a67b-8e957f4059f1%2F0000%22 . [Accessed 21 January 2014].

[15] Independent Economics 2013, 'Economic Analysis of Building and Construction Industry Productivity: 2013 Update', Report for Master Builders Australia, 26 August. Available online: http://www.independenteconomics.com.au/information/Reports/BCI%20productivity_2013_final.pdf . [Accessed 21 January 2014].

[16] Independent Economics 2012, 'Economic Analysis of Building and Construction Industry Productivity: 2012 Update', Report for Master Builders Australia, 27 February. Available online: http://www.masterbuilders.com.au/Content/ViewAttachment.aspx?id=1054&attachmentNo=123 . [Accessed 21 January 2014].

[17] KPMG EconTech 2010, 'Economic Analysis of Building and Construction Industry Productivity: 2010 Report', Report for Master Builders, 26 July. Available online: http://www.masterbuilders.com.au/Content/ViewAttachment.aspx?id=1054&attachmentNo=55. [Accessed 21 January 2014].

*assumes an ABCC-related gain in construction industry labour productivity of 9.4 per cent for the purposes of economy-wide modelling.*18

The 2007 report, Table 1 is the source of the 9.4% figure.[19] It purports to show the change in the labour productivity gap between domestic residential building and the total construction industry between the 1994-2003 period and 2007. The EconTech table is shown below.

Labour Productivity Gaps Compared with Domestic Residential Construction (per cent)

	Average 1994-2003	2007	Change
Total non-residential construction	15.0	2.4	12.6
Non-residential building	*21.0*	*3.4*	*17.6*
Engineering construction	*10.5*	*1.7*	*8.8*
Total residential building	6.3	1.0	5.3
Domestic residential building	*0.0*	*0.0*	*0.0*
Multi-unit residential building	*21.0*	*3.4*	*17.6*
Total construction	**11.2**	**1.8**	**9.4**

Source: Econtech estimates.

EconTech first estimates the "cost gap" between commercial building and domestic residential building. It then uses this information and unspecified "additional information and assumptions" to arrive at the figures in Table 1. The credibility of the 2007 EconTech report has been seriously challenged, including by Professor David Peetz and co-authors, in a paper published in the Journal of Industrial Relations.[20] The Hon. Murray Wilcox QC found in his inquiry into the ABCC and associated regulation that the 2007 report "is deeply flawed" and "ought to be totally disregarded."[21] It is this report from which the 9.4% figure is derived. It should not be relied upon by the Commission.

The effect of the Taskforce/ABCC on labour productivity growth: the 21.1% figure

Another key claim in the Independent Economics report is that labour productivity in the industry is 21.1% higher than it would have been in the absence of the ABCC. This claim relies upon the analysis embodied in chart 2.1 on page 15, reproduced as Figure 10, below.

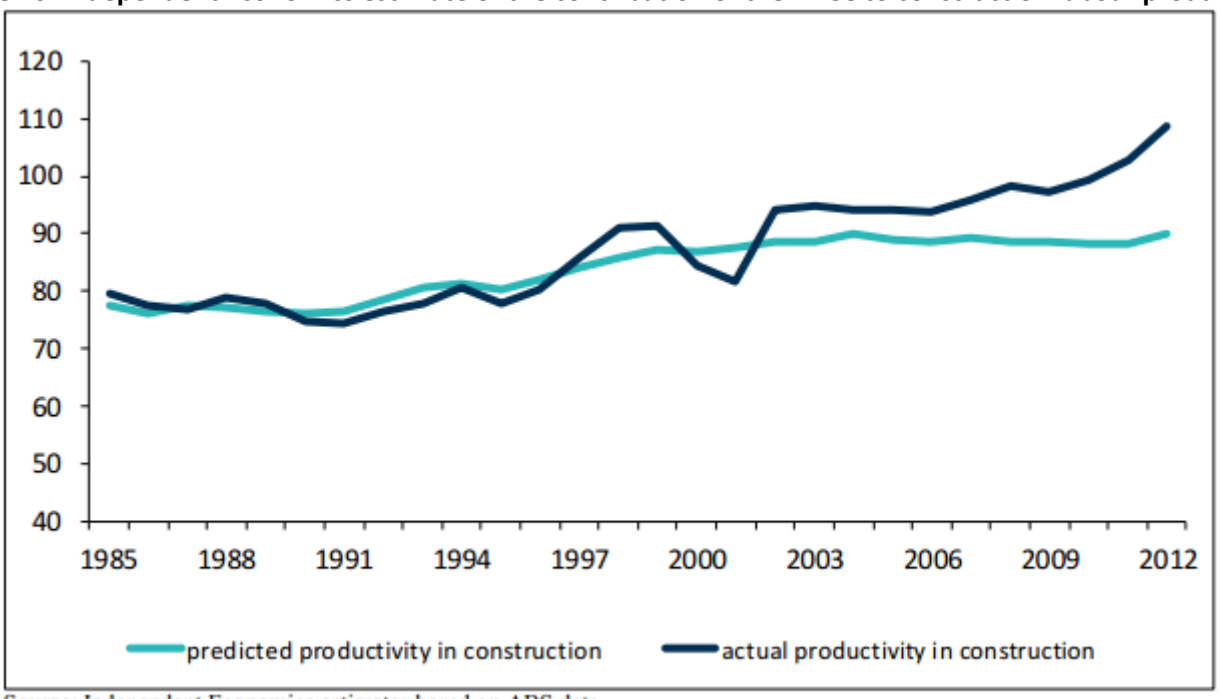
[18] EconTech 2008, 'Economic Analysis of Building and Construction Industry Productivity: 2008 Report', Report for the Office of the Australian Building and Construction Commissioner, 30 July. Available online: http://www.propertyoz.com.au/library/ABCC%20Econtech%20Report%20August2008.pdf. [Accessed 21 January 2014].

[19] EconTech 2007, 'Economic Analysis of Building and Construction Industry Productivity: 2007 Report', Report for the Office of the Australian Building and Construction Commissioner, 30 July. Available from: http://pandora.nla.gov.au/pan/79365/20071114-1739/www.abcc.gov.au/NR/rdonlyres/C68D472F-CCB9-4C98-B06D-C033C87C7EFF/0/EcontechproductivityreportJuly2007.pdf. [Accessed 21 January 2014].

[20] Allan, C, Dungan, A & Peetz, D, 'Anomalies', Damned 'Anomalies' and Statistics: Construction Industry Productivity in Australia, *Journal of Industrial Relations*, vol. 52, no.1., February 2010, pp. 61-79.

[21] Wilcox, J 2009, *Transition to Fair Work Australia for the Building and Construction Industry Final Report*. Available online: http://services.thomson.com.au/cpdnews/docs/Workforce/_20090304WilcoxReport.pdf. [Accessed 21 January 2014].

Figure 10: Independent Economics estimate of the contribution of the ABCC to construction labour productivity



Source: Independent Economics estimates based on ABS data

Independent Economics explains the chart as follows:

> *The historical productivity performance of the construction industry is assessed using data for the period prior to the establishment of the Taskforce/ABCC (from 1985 to 2002). For this period, regression analysis was used to establish the trend in productivity in the construction industry, relative to the trend in productivity for the economy as a whole.*[22]

The model used to generate the 'predicted productivity' line is not made explicit in the report. Nevertheless, the ACTU has attempted to replicate the report's analysis. The approach appears to involve estimating a linear regression model using data for the period 1985-86 to 2001-02, with the level of construction industry productivity as the dependent variable and the level of productivity for the total economy as the explanatory variable[23]:

$$LP_{cons_t} = \alpha + \beta LP_{total_t} + e_t \qquad \text{(Equation 1)}$$

Where LP_{cons_t} = construction gross value added per hour worked in year 't'

LP_{total_t} = GDP per hour worked

e = the error term

Independent Economics use the estimated coefficients from this regression to calculate what the level of labour productivity in the construction industry would have been in the ABCC period if the relationship between

[22] Independent Economics 2013, 'Economic Analysis of Building and Construction Industry Productivity: 2013 Update', Report for Master Builders Australia, 26 August, p.15.

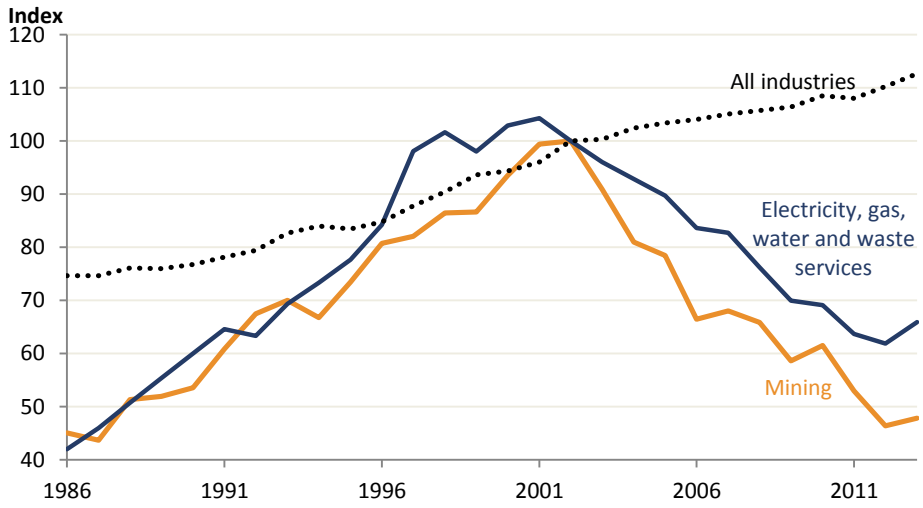
[23] When we estimate this equation, we find a value for α=40.8 and β=0.4. Both are significant at the 1% level. R^2=0.56.

construction productivity and total economy productivity had remained unchanged from the earlier period. This is shown in the chart as 'predicted productivity in construction'. It compares this to the actual level of labour productivity in the industry. The difference between the two lines is ascribed to the influence of the ABCC.

This approach is deeply flawed. Construction industry labour productivity grew faster, relative to the all industries average, in the ABCC period than it had done in the earlier period not because construction productivity grew particularly rapidly, but because the all industries average growth rate fell.

Around the time the ABCC came into operation, the Australian economy began experiencing the largest increase in its terms of trade in the nation's history, driven by a sharp appreciation in commodity prices. This had a negative effect on Australia's measured productivity outcomes, as is well known to the Commission. This occurred because higher commodity prices meant firms found it profitable to extract lower grade and more difficult resources (which take more labour and capital per unit), and because new projects use up inputs for several years before generating output. Investment in utilities (in the form of electricity generation and transmission capacity and water desalination facilities) also detracted from productivity growth. The scale of the fall in measured labour productivity in these two industries is apparent in Figure 11.

Figure 11: Level of labour productivity in utilities, mining, and the total economy (Index: 2001-02=100)



Source: ACTU calculations based on ABS 5204, Table 15.

The special factors in these two industries have the effect of dragging down the economy-wide level of measured labour productivity (GDP per hour worked) relative to where it otherwise would have been. This affects the relationship between productivity growth in other industries, like construction, and the total economy figure.

Consider the Retail Trade industry. Between the period 1985-86 and 2001-02, labour productivity in the industry rose by 37.7%, quite close to the economy wide average of 34%. If you projected retail industry productivity for the period after 2002 based on this relationship in the earlier period, you would expect that retail industry

productivity would grow approximately in line with the total economy figure. However, in the period since 20002 the mining and utilities industries have dragged down the total economy average rate of productivity growth without affecting the retail industry figure.[24] As a result, the retail industry has 'outperformed' relative to what would be expected based on a regression of the sort used by Independent Economics. Retail productivity rose by 26.5% between 2001-02 and 2012-13, while the total economy figure rose by 12.7%.

This has occurred in most industries. 12 out of the 19 ANZSIC industries 'outperformed' relative to the labour productivity level that would be predicted for the industry based on a regression of the sort used by Independent Economics. Industries as varied as agriculture, accommodation and food, retail, manufacturing, and construction, all experienced a productivity 'outperformance' after 2002. This is not necessarily due to any factor related to these industries themselves, but is rather due to the decline in the rate of productivity growth in the total economy, which was in large part due to mining and utilities. We have conducted a regression analysis of each industry using what we believe to be the methodology employed by Independent Economics. The results for six industries are illustrated in the figures below. You can see that our estimate of the 'predicted' productivity in construction very closely resembles that of Independent Economics, which suggests we have successfully replicated their methodology.[25]

[24] There may have been some indirect effects via the effect on the retail industry's composition through the elevated exchange rate, which in turn was caused by the terms of trade shock. We ignore such effects here.
[25] Any differences appear to be because we are using the 2012-13 data, which includes revisions for earlier years.

Figure 12: Labour productivity in Agriculture, Forestry and Fishing

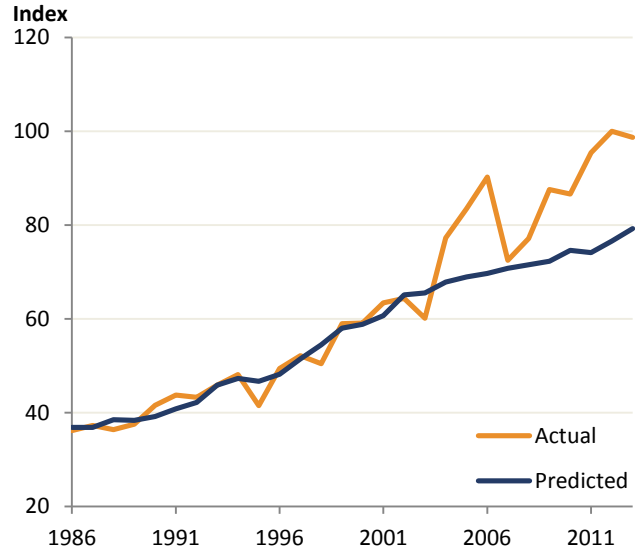


Figure 13: Labour productivity in Manufacturing

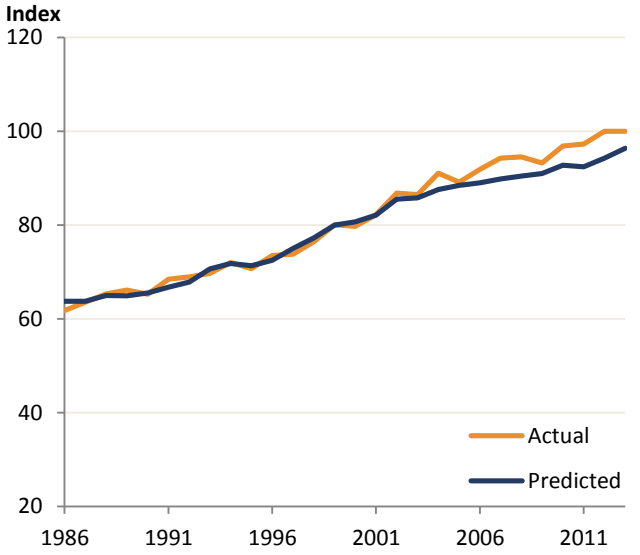


Figure 14: Labour productivity in Construction

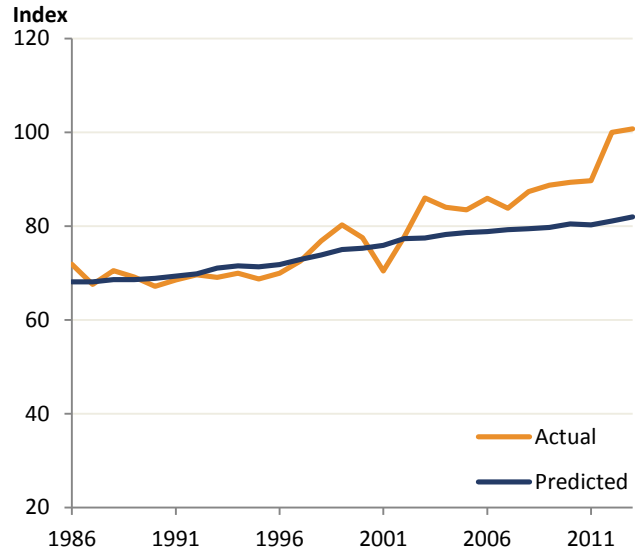


Figure 15: Labour productivity in Wholesale Trade

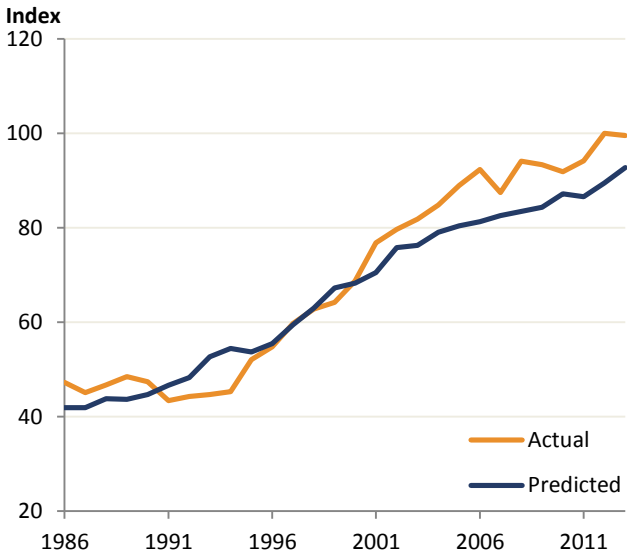


Figure 16: Labour productivity in Retail Trade

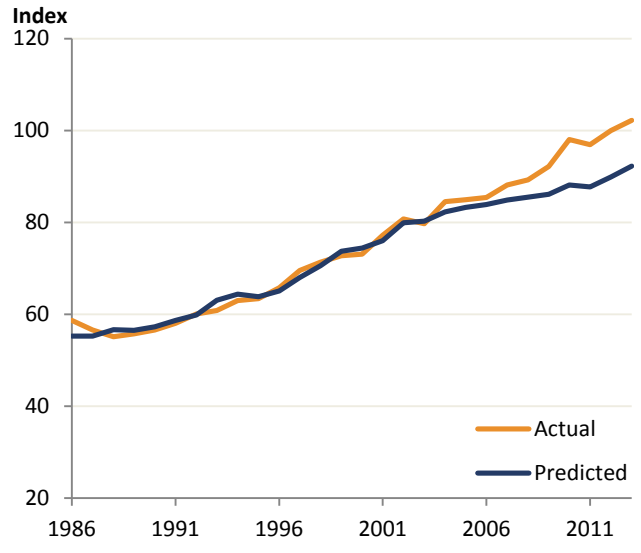
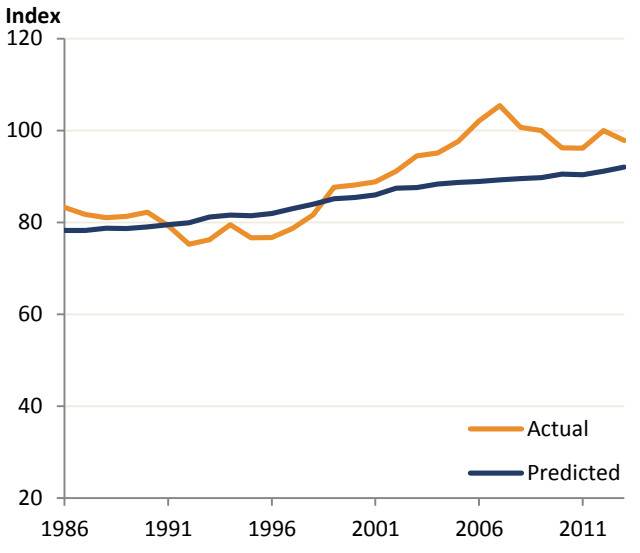


Figure 17: Labour productivity in Accommodation and Food Services



Source: Actual productivity growth figures from ABS 5204, Table 15. 'Predicted' productivity growth figures based on estimation of the model $LP_{i,t} = \alpha + \beta LP_{total,t} + e_t$ for each industry 'i', using data for the period 1985-86 to 2001-02, as per Equation 1.

The approach taken by Independent Economics would ascribe the gap between the actual level of labour productivity and the 'predicted' level in each of these industries to the presence of the ABCC. This is obviously spurious.

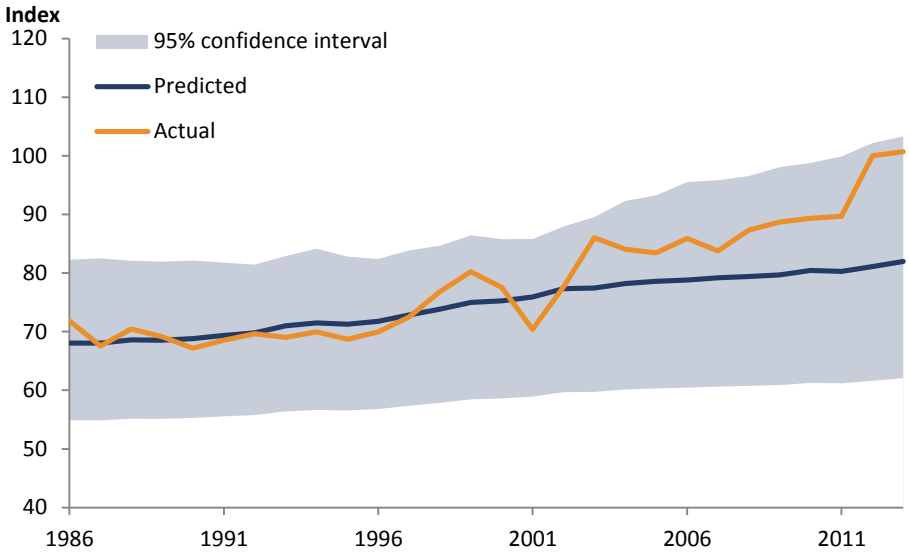
For it to be accepted that the outperformance of the construction industry is due to the ABCC, it must be accepted either:

- that the ABCC exerted an influence on productivity in a range of industries other than construction; or
- that some economy-wide factor like mining affected the relationship between predicted and actual productivity in all industries other than construction; or
- that the ABCC lifted productivity in construction while some other factor served to lift productivity relative to its predicted level in a majority of other industries at exactly the same time while not affecting construction.

None of these is plausible. The simplistic assertion that the gap between 'predicted' and 'actual' productivity in Independent Economics' chart 2.1 can be ascribed solely to the ABCC should be dismissed. The claim that labour productivity in the industry is 21.1% higher than it otherwise would have been should therefore be disregarded.

Using our replication of Independent Economics' chart 2.1, we have constructed 95% confidence intervals around the 'predicted' level of labour productivity in the construction industry. These intervals are shown in Figure 18. It is apparent that the actual level of construction industry labour productivity for each year lies within the 95% confidence interval.

Figure 18: Replication of Independent Economics' Chart 2.1 with 95% confidence intervals

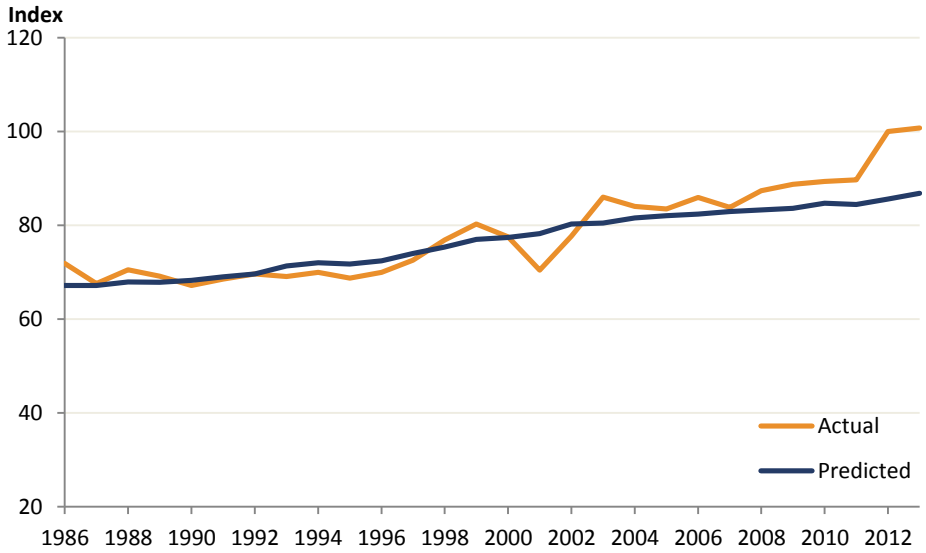


Source: Actual productivity growth figures from ABS 5204, table 15. 'Predicted' productivity growth figures based on estimation of Equation 1. The intervals are based on an estimated β coefficient of 0.4, plus or minus 0.19.

Based on the above, the difference between the actual and predicted levels of labour productivity in construction is not statistically significant. That is, even if it were accepted that the difference between actual and predicted productivity is due to the ABCC (which we have demonstrated is spurious), then it would still not be possible to conclude that there is a statistically meaningful difference between the two.

We have also re-estimated Independent Economics' regression (Equation 1) using data for the period 1985-86 to 2004-05, rather than to 2001-02. Independent Economics state that they use 2002 as a baseline as this is when the Taskforce was established. This alternative estimation uses 2005 as a baseline, as this is when the ABCC was established. Re-estimating the regression using data from this extended period reduces the apparent degree of 'overperformance' in the industry's labour productivity. It is also apparent that the bulk of the 'overperformance' that remains occurred in 2011-12. The Independent Economics report itself claims that this is "driven by a compositional shift within the building and construction industry towards engineering construction, which is less labour intensive".[26] It is therefore apparent that the 'overperformance' of the industry's labour productivity almost entirely disappears when 2005 rather than 2002 is used as the baseline for analysis.

Figure 19: 'Predicted' construction industry labour productivity using 85-86 to 04-05 data



Source: Actual productivity growth figures from ABS 5204, table 15. 'Predicted' productivity growth figures based on estimation of Equation 1, using data for the period 1985-86 to 2004-05.

We have also expanded Independent Economics' analysis by adding an additional explanatory variable into what we believe to be their model. The level of gross value added per hour worked in the mining industry is included as a regressor. This is shown below as equation 2.

$$LP_{cons_t} = \alpha + \beta_1 LP_{total_t} + \beta_2 LP_{mining_t} + e_t \qquad \text{(Equation 2)}$$

Where LP_{cons_t} = construction industry gross value added per hour worked in year 't'

LP_{total_t} = GDP per hour worked

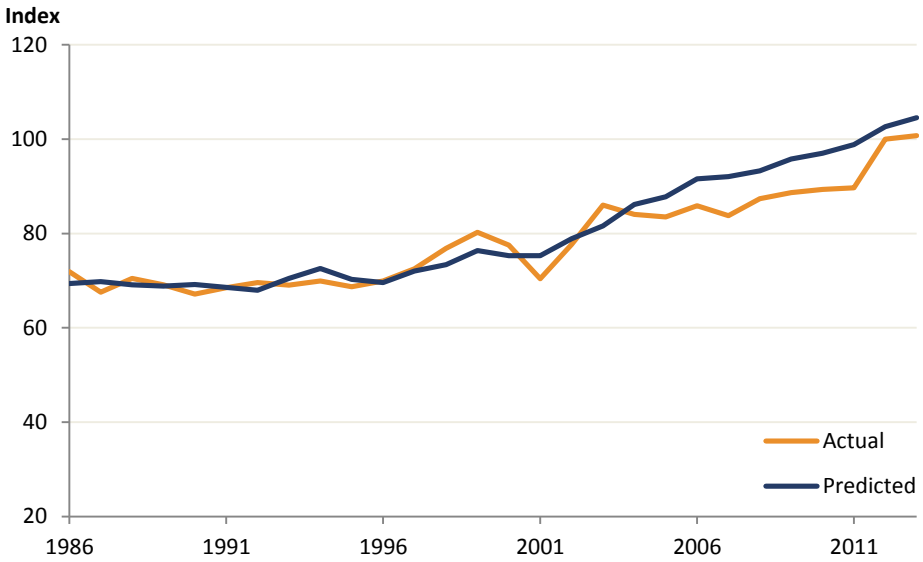
[26] Op cit., p.15.

LP_{mining_t} = mining industry gross value added per hour worked

e = the error term

When this model is estimated, we find that the actual level of labour productivity in the construction industry is slightly lower than would have been expected based on the historical trend in the period 1985-86 to 2001-02. This is shown in Figure 20. This adds weight to our contention that the improvement in construction industry productivity relative to its modelled level is not due to factors in the industry itself, but rather mining-related effects on the economy-wide average level of productivity.

Figure 20: Actual vs 'predicted' construction industry labour productivity using Equation 2



Source: Actual productivity growth figures from ABS 5204, table 15. 'Predicted' productivity growth figures based on estimation of Equation 2.

The assertions in Independent Economics' 2013 report are based on a flawed methodology. This methodology ascribes all the difference between actual and 'predicted' labour productivity in construction over the period 2002-2012 to the presence of the ABCC. This approach ignores other factors at work in the economy. It ignores the fact that the majority of industries experienced a productivity 'outperformance' over the same period, measured in the same way. It ignores the fact that the difference between the actual and 'predicted' levels of construction productivity is not statistically significant. It uses 2002, rather than 2005 (when the ABCC was established) as a baseline, which exaggerates the result. The 'over performance' disappears when mining industry productivity is added to the model as an additional explanatory variable. Claims about the effect of the ABCC on productivity that are based on calculations using this methodology should not be accepted as factual.

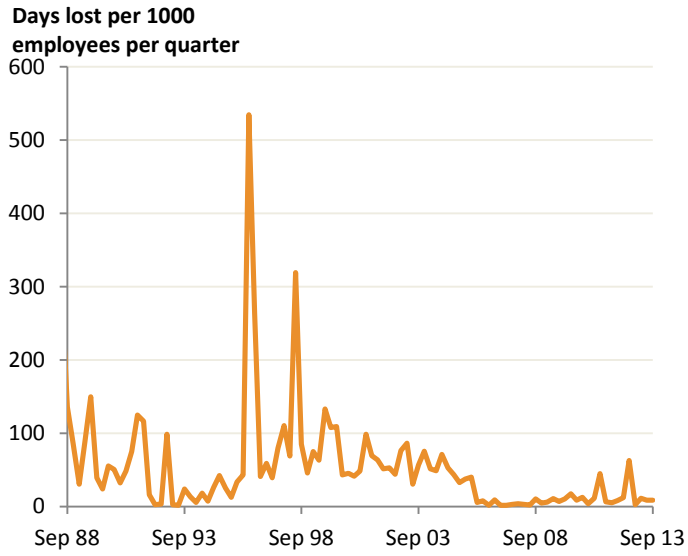
Industrial disputation in the construction industry

In this section we show:

- The rate of industrial disputation in the construction industry remains extremely low relative to its historic levels.

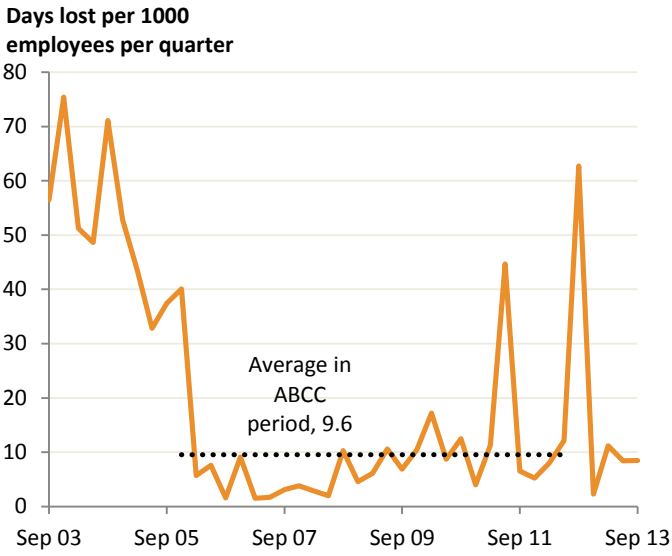
During the ABCC's operation, there was an average of 9.6 working days lost to disputes per 1000 employees per quarter in the construction industry. In the five quarters since the abolition of the ABCC for which the ABS has released data, the rate of disputation in the industry has been below the ABCC-era average three times (in December 2012, June 2013, and September 2013) and above it twice (in September 2012 and March 2013). The rate of disputation in the industry does not appear to have materially increased in the post-ABCC era.

Figure 21: Construction industry industrial disputes



Source: ABS 6321.0.55.001, *Industrial Disputes,* Table 2b.

Figure 22: Construction industry industrial disputes over the past ten years



Source: ABS 6321.0.55.001, *Industrial Disputes,* Table 2b.

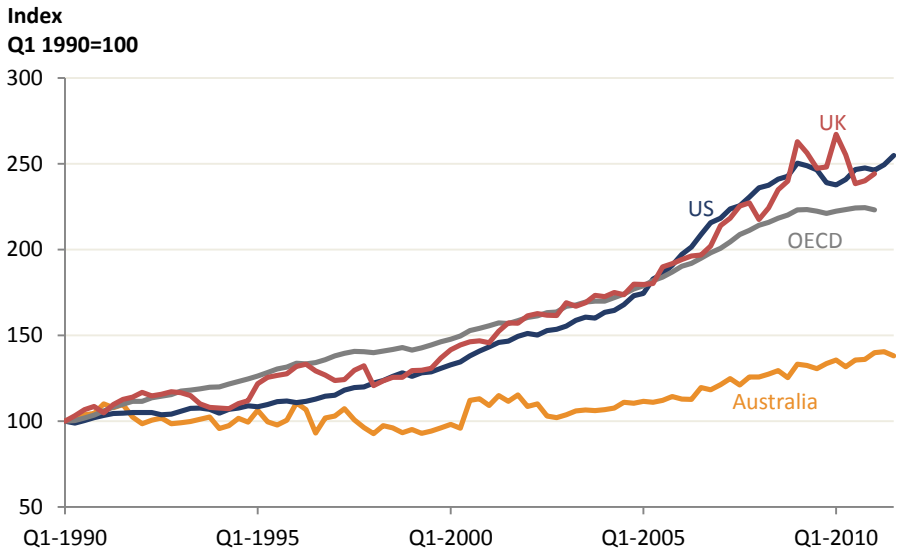
International comparisons of labour costs and productivity

In this section we show:

- Australian nominal unit labour costs in construction have not risen as rapidly as those in the UK, the US, or the OECD average;
- Australian real unit labour costs in construction have fallen, while those of many comparator countries (like the UK and US) have risen; and
- An increase in the cost of constructing Australian projects, denominated in USD, is due to appreciation of the exchange rate, not rapid growth in domestic costs.

Many employer groups' submissions to this inquiry claim that Australian labour costs have risen faster than those of comparable countries. OECD data on construction industry unit labour costs do not support this assertion. Figure 23 shows the OECD measure of construction unit labour costs, ie. the average cost of labour per unit of output, in Australia, the US, the UK, and the OECD average. Australian unit labour costs in construction have lagged significantly behind those of these three comparators.

Figure 23: Construction industry unit labour costs - index



Source: Calculations based on OECD, Quarterly benchmarked unit labour cost indicators – by economic activity. Available from: http://stats.oecd.org/Index.aspx?DataSetCode=ULC_QUA.

Table 4 is derived from the same source, but shows the compound annual growth rate in construction industry ULCs in all countries for which the OECD has data. In the 2000s, Australian construction ULCs grew less rapidly than those in a range of comparator countries, including New Zealand, the US, and the UK.

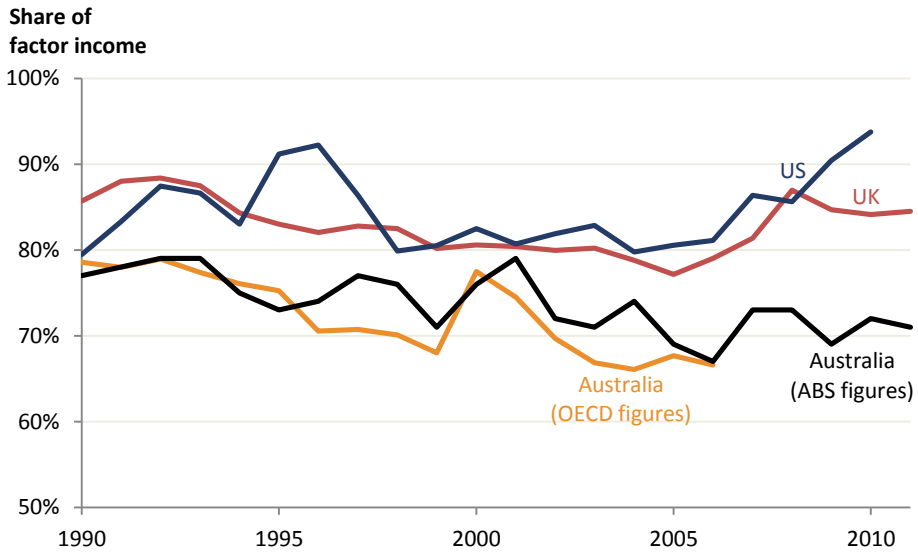
Table 4: Compound annual growth rate in construction industry unit labour costs – OECD countries

	1990s	2000s
Australia	-0.2%	3.3%
Austria	1.7%	2.6%
Belgium	3.0%	1.5%
Canada	1.9%	3.1%
Denmark	3.6%	5.5%
Finland	2.8%	3.9%
France	1.9%	4.3%
Germany	4.1%	1.6%
Italy	4.8%	4.6%
Japan	4.5%	-0.2%
Netherlands	4.0%	4.6%
New Zealand	1.4%	6.1%
Norway	2.7%	8.3%
Spain	5.6%	3.1%
United Kingdom	3.5%	6.6%
United States	2.9%	6.0%
G7	3.7%	4.2%
OECD - Europe	4.4%	4.2%
OECD - Total	4.0%	4.2%

Source: Calculations based on OECD, Quarterly benchmarked unit labour cost indicators – by economic activity. Available from: http://stats.oecd.org/Index.aspx?DataSetCode=ULC_QUA. The table contains all OECD countries and groupings for which OECD Stat has data in 1990, 2000, and 2010.

As shown in an earlier section of this submission, Australian hourly labour income has grown less rapidly than productivity in the construction industry, which means that labour's income share in the industry has fallen. This is not the case in many comparator countries. The construction labour income share, which is equivalent to real unit labour costs, has fallen in Australia while rising slightly in the UK and US. This is shown in Figure 24. The OECD figures for Australia do not include anything more recent than 2006 – we have added the ABS estimate of the construction labour share to illustrate the more recent trend.

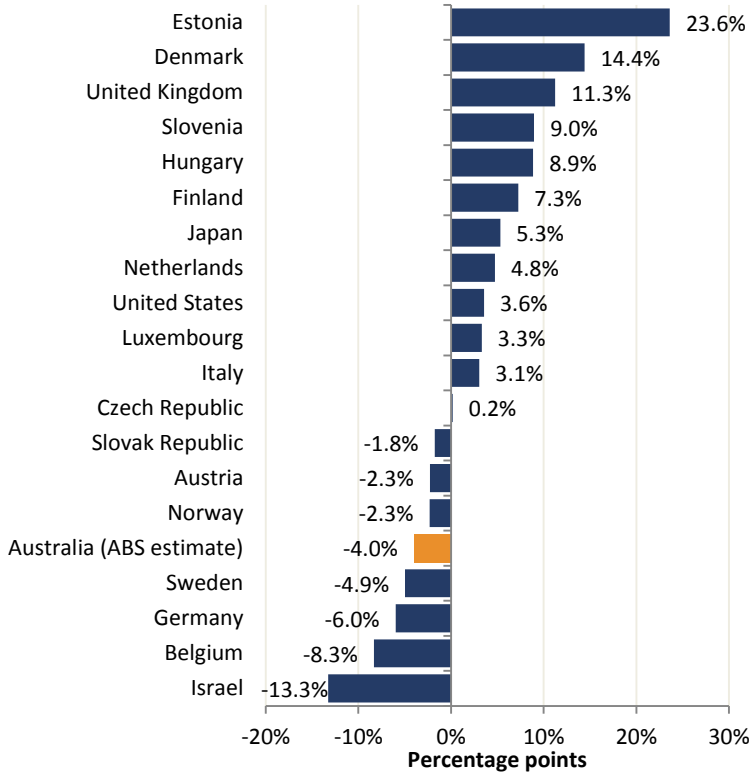
Figure 24: Labour income share (real unit labour cost) in construction



Source: OECD, Unit Labour Costs – Annual indicators: Labour Income Share (Real ULC). Available from: http://stats.oecd.org/Index.aspx?DataSetCode=ULC_ANN. ABS estimates from ABS 5260.0.55.002, *Estimates of Industry Multifactor Productivity*, Table 14. In this chart 1990 refers to 1990-91, and so on.

Australia is one of relatively few OECD countries in which the labour share/RULCs fell in construction in the 2000s. Figure 25 shows the estimate for each OECD country for which OECD Stat has data.[27]

Figure 25: Change in labour share/RULC in construction: 2000 to 2010



Source: Calculations based on Source: OECD, Unit Labour Costs – Annual indicators: Labour Income Share (Real ULC). Available from: http://stats.oecd.org/Index.aspx?DataSetCode=ULC_ANN. ABS estimates from ABS 5260.0.55.002, *Estimates of Industry Multifactor Productivity*, Table 14. In this chart 1990 refers to 1990-91, and so on.

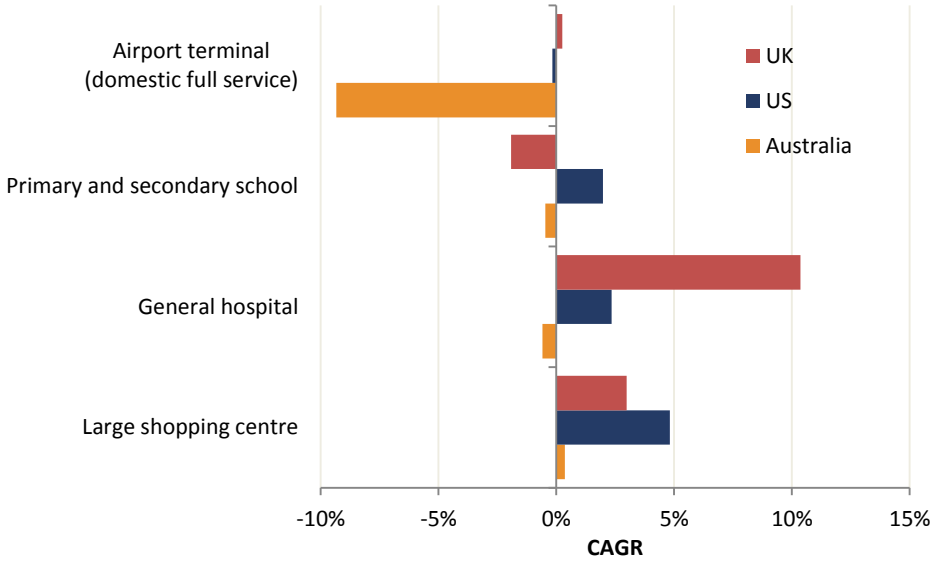
Some employer groups have used figures that compare the cost of constructing particular types of projects in Australia and other countries to support their assertion that Australia is a high-cost location. For example, the Business Council of Australia has claimed that "cost premiums are… evident for some infrastructure projects" relative to the US, with hospitals (62%), schools (26%), airports (90%) and shopping centres (43%) costing more per square metre to construct in Australia.[28]

These estimates, which are derived from the Turner & Townsend *International Construction Costs Survey,* are based on a comparison of costs in US dollars, converted at market exchange rates. Such comparisons can see Australian relative costs rise when either our domestic costs (in AUD) rise faster than costs elsewhere; or when the Australian dollar appreciates against the USD. If Australian costs (in AUD) rise at the same pace as those in the US, but the AUD appreciates dramatically, then the cost of construction in Australia (in USD) will rise. Rick Best of Bond University has criticised this method of comparing international costs, with particular reference to the BCA report.[29]

[27] Note that the decline in Australian construction RULCs between 2000 and 2006, on the OECD's figures, was 10.9 percentage points; we use the ABS estimate of the complete decade.
[28] Business Council of Australia 2012, *Pipeline or Pipe Dream? Securing Australia's Investment Future,* BCA, Melbourne, p.29.
[29] Best, R. 2012, 'International Comparisons of Costs and Productivity in Construction: A Bad Example', *Australasian Journal of Construction Economics and Building,* vol. 12, no. 3, pp.82-88.

Any rise in Australian construction costs (in USD) relative to the US has occurred because of the appreciation in the exchange rate, not a high rate of domestic costs growth. Figure 26 shows the CAGR in construction costs in the four project types highlighted by the BCA over the period 2008 to 2013, in nominal terms and in domestic currency. The cost of constructing three of these four types of project in Australia has fallen. In each instance the US costs have far outpaced Australian costs. In all but one, Australian costs have grown less rapidly than those in the UK.

Figure 26: Growth in construction costs per square metre between 2008 and 2013 – nominal, domestic currency



Source: Calculations based on Turner & Townsend, *International Construction Cost Survey,* 2013 and 2010 editions. Available from: http://www.turnerandtownsend.com/publications.html.

The cost of constructing projects in Australia has risen in USD terms because the Australian dollar has appreciated. Employer groups have not made their argument about the appropriate policy response to such appreciation explicit. The implicit argument seems to be that Australian costs (in AUD) should fall in equal and opposite proportion to the nominal exchange rate, to maintain a constant cost (in USD). This would be impractical, incompatible with our decentralised bargaining system, unfair to workers, and would undermine the macroeconomic benefits of a floating exchange rate.

ACTU
australian council of trade unions

level 6 365 queen street
melbourne victoria 3000
t 03 9664 7333
f 03 9600 0050
w actu.org.au

D No. 04/2014

Australian
Unions
Join. For a
better life.