Submission to Senate Inquiry into the Building and Construction Industry Improvement Amendment (Transition to Fair Work) Bill 2009

Professor David Peetz Centre for Work, Organisations and Wellbeing Griffith Business School Griffith University

July 2009

1. Introduction

This submission focuses on productivity in the building and construction industry and its relationship to legislative reform.

The submission is structured as follows.

Part 2, the bulk of the submission, comprises a research paper co-authored by Dr Cameron Allan and Mr Andrew Dungan and myself. It is based on a paper delivered to the 23rd conference of the Association for Industrial Relations Academics of Australia and New Zealand in Newcastle in February 2009. It aims to assess the merits of the data on which the debate over productivity in the building and construction industry was cast, and its implications for the Bill current before the Parliament.

Part 3 updates the preceding material for developments since February 2009.

Part 4 contains conclusions and recommendations in relation to the Bill.

2. 'Anomalies', Damned 'Anomalies' and Statistics: Construction Industry Productivity in Australia¹

The Australian Building and Construction Commission (ABCC) was established by the Howard government in 2005 under special legislation enabling the use of coercive powers to regulate union activity,. This legislation provides for six months jail for people refusing to cooperate with ABCC inquiries. Only the Australian Security Intelligence Organisation (ASIO), responsible for ensuring national security, has similar coercive powers regarding the questioning of persons who assist in relation to a terrorism offence. The ABCC, by contrast, can apply these ASIO-style powers to investigate an employee's breach of an award. Unlike hearings by public tribunals, such as industrial commissions or Fair Work Australia, the ABCC conducts its interrogations in secret.

Arguments to retain the ABCC were based on economic data suggesting productivity and economic welfare benefits from maintaining a separate regulatory regime in the industry. In 2007, the ABCC released a report by private consultants, Econtech, which claimed that the ABCC and the Building and Construction Industry Improvement (BCII) Act had brought significant reforms to the building and construction industry resulting in improvements in labour productivity. That report continues to be the basis on which claims about increased productivity in the building and construction industry arising from the ABCC are made, and is relied on in, for example, the submission by the Australian Chamber of Commerce and Industry to this Inquiry (Australian Chamber of Commerce and Industry 2009).

Productivity and construction unions

The 2007 report followed on from an earlier Econtech report in 2003 that had been undertaken for the then Department of Employment and Workplace Relations (DEWR), to compare average costs in the domestic and commercial construction sectors. That earlier report claimed to show that 'building tasks such as laying a concrete slab, building a brick wall, painting and carpentry work cost an average of 10% more for commercial buildings than domestic residential housing' (Econtech 2007a, i; Econtech 2003). The claim was based on analysis of data from Rawlinson's, a quantity surveyor that collects and publishes data on such costs, in

¹ From a research paper by Cameron Allan, Andrew Dungan and David Peetz. The views in this paper are those of the authors and do not necessarily reflect the views of their employers or the Queensland government.

effect by contacting firms and contractors and asking them the cost of a specific task. The comparison was made between costs in the largely non-union domestic (housing) construction sector, and the more unionised commercial construction sector. The logic behind the comparison was that costs would be higher in the commercial sector because of the union presence there, and the difference in costs reflected the impact of unions in creating inefficient work practices and reducing productivity. Thus the 10% cost gap was attributed to the presence of unions in the commercial sector.

This methodology was criticised, eg by Toner (2003), as naively assuming unions were the only potential source of the cost differences. Other structural factors could also explain them, including greater on-site complexity (it is more costly to affix a plasterboard wall on the tenth floor of a high rise than on a ground floor cottage), higher capital intensity and higher profit margins in the commercial sector. Econtech countered that if the gap declined then it would reflect not structural explanations but changes in work practices associated with the activities of the ABCC (Econtech 2007a, p i). So 'Toner's theory was disproved by Econtech's 2007 update of the cost gap analysis' (Econtech 2007b). Toner argued that ABS data (Cat No 8772.0) showed that labour productivity was markedly *higher* in engineering and non-residential construction than in residential construction. Toner also pointed out that 'in three out of four studies of [construction industry] labour productivity, Australia is on par with the US and generally performing better than Japan, Singapore, Germany and France'.

The earlier studies cited by Toner would seem at odds with the adversarial philosophy behind the ABCC approach of seeking to suppress union activity in the commercial building sector. Nor does the existing economic literature offer strong support to that approach. Ever since Freeman and Medoff's seminal study *What Do Unions Do?* (1984), which supported the argument that unions may enhance productivity through both 'monopoly response' (higher union wages force firms to introduce more productive technology) and 'voice' effects (unions reduce the costs associated with quits and increase tenure by enabling employees to seek improvements in the workplace), the once accepted wisdom that unions normally harmed productivity has been turned upside down. There was empirical support for Freeman and Medoff's claims in subsequent US data (Allen 1985, Ben-Ner & Estrin 1986, Phipps & Sheen 1994), along with some critics (Addison & Barnett 1982, Drago & Wooden 1992). The British evidence was initially negative (Edwards 1987), but by the 1990s these effects had disappeared (Addison & Belfield 2004), perhaps because of different behaviour by unions and management, different industrial

relations contexts, or measurement difficulties. The evidence that unions reduce quits and increase job tenure is more consistent (Addison & Belfield 2004, Richard Freeman 2005). Twenty years after the publication of *What Do Unions Do?*, the general consensus amongst those who had reviewed the literature was that there was no consistent relationship evident between unions and productivity, with a wide variety of results but the direct impact of unions on productivity tending towards zero (Addison & Belfield 2004, Freeman 2004, Hirsch 2004, Kaufman 2004). Similarly, studies which, in effect, contrasted unionised collective bargaining with non-union individual contracting showed no advantage for individual contracting over union bargaining (Fry, Jarvis & Loundes 2002, Gilson & Wagar 1997, Hull & Read 2003, Peetz 2005).

There is one consistent positive relationship that comes through in the literature: 'what matters is not unionism per se but the interaction of unions with management, which can differ across industries, firms, and even establishments' (R B Freeman 2005:657), as 'union plants with cooperative labor relations and high-performance HRM practices have above-average productivity, whereas union plants with adversarial relations and traditional "job control" HRM practices have below-average productivity' (Kaufman 2005 citing Hirsch 2004). A seminal study by Black and Lynch (2001) showed that amongst workplaces that promoted joint decision making and incentive-based pay, unionised workplaces had higher productivity than nonunion workplaces, whereas in workplaces without any innovations, the reverse was the case. In Australia, the intensity of collaboration between management and workers (via unions) has a positive effect on workplace performance (Alexander & The highly adversarial practices of the ABCC, which take a Green 1992). confrontational approach not only to unions but also to employers who enjoy collaborative relations with unions, would not be expected to promote enhanced productivity unless there were some large restrictive work practices awaiting removal. While there is old overseas evidence on the harmful effects of restrictive practices (eg Elbaum & Wilkinson 1979), there were major changes to such practices in Australia in the 1980s and early 1990s as a result of industrial relations reforms, so there can be no presumption that such practices were still important by the middle of the current decade.

The release of the 2007 report

Econtech was an economic consultancy based in Canberra.² It most visibly entered the debate on industrial relations reform in July 2007 when it produced a report for major employers, that was used in advertising, even before it was released

² It has more recently been taken over by KPMG, and is now known as KPMG Econtech, but for consistency it is referred to here as Econtech throughout.

(Workplace Express 2007), to support a campaign against abolition of WorkChoices. That report received considerable positive media coverage but, there was also scepticism and criticism because of major problems with the report itself (eg Coorey 2007a, b; Gittins 2007, Peetz 2007, Streketee 2007).

Around the same time, Econtech produced a report for the ABCC, an 'Economic Analysis of Building Industry Productivity'. Econtech's 2007 report to the ABCC purported to provide an 'up to date assessment of the cost gap', using the same methodology as the 2003 report to DEWR. This 2007 report was trumpeted as demonstrating the economic gains resulting from the ABCC (eg Lewis 2007). The ABCC issued a media release stating that its report 'reveals that the activities of the ABCC have dramatically improved the productivity of the building and construction industry'. (Office of the Australian Building and Construction Commissioner 2007).

As mentioned, the 2007 findings were primarily based on an analysis of cost data from Rawlinson's. The report claimed:

After averaging 10.7 per cent in the 10 years to the end of 2002, the cost gap has recently closed dramatically to be only 1.7 per cent at 1 January 2007. This is not consistent with claims that the cost gap was due to structural factors. Rather, closing of the cost gap has coincided with the operation of the ABCC and its predecessor the Taskforce.

Econtech argued that the 9.4% productivity lift in commercial building was 'due to improved work practices associated with the activities of the ABCC.' (Econtech 2007b) This was depicted in a chart, the features of which are shown by the unbroken line in Figure 1. The numbers behind it are, as Econtech say, 'dramatic'. If due to the activities of the ABCC, they imply that perhaps in the first three months of ABCC activities (from October 2005 to January 2006), the cost differential between domestic and commercial construction fell by up to 2.9 percentage points (20 percent). Over the next year, the cost differential fell by 9.7 points (85% of the 2006 gap). Over fifteen months (if this is to be attributed to the ABCC), the cost differential had allegedly fallen by 12.6 percentage points, from 14.3% to 1.7%.

Across construction as a whole, compared to the average over the 1994-2003 period (also shown in Figure 1), the labour productivity gap, between what productivity could be and what it was, allegedly was down to an average of just 1.8 percentage points from 11.2 percentage points, a drop of 9.4 percentage points or 84% (Econtech 2007a, pi). This was a change so large in such a short time as to beggar

belief. Econtech then plugged its estimated productivity gains into its MM600+ economic model:

from the recent closing of the cost gap between commercial building and domestic housing, the estimated gain in construction industry labour productivity attributed to the activities of the ABCC and industrial relations reforms is 9.4 per cent (Econtech 2007a, p37, emphasis added).

Figure 1: Information in charts Purporting to Depict Average Cost Differences between Commercial Building and Domestic Residential Building for the Same Tasks for 5 states, 2007 & 2008 Econtech Reports



1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008

It needs to be emphasised that this number of 9.4 per cent is derived solely from the estimated 'closing of the cost gap between commercial building and domestic housing'. The source of this is noted in nine places in the 2007 Econtech Report (Table 1, p iv; p v; p vi; Table 5.3, p27; p28; p33 (paras 1 & 2); and p37). There is no other source from which a figure of exactly 9.4 per cent is derived. While Econtech refers to other, less significant sources (discussed later) as implying numbers of a comparable magnitude to this, none of them add up to 9.4 per cent.

Source: Econtech Reports 2007 & 2008

This modelling based on the 9.4 per cent productivity gain leads it to summarise the 'economy wide effects of the impact of ABCC' by unequivocally asserting that

consumer prices are lower (by 1.2 per cent), and Australian GDP is higher (by 1.5 per cent) than would have been *if the ABCC had not existed*.' (Econtech 2007b emphasis added; also Econtech 2007a, p i)

In addition, 'higher labour productivity reduces the price of dwellings by around 3%' (Econtech 2007a p42) and 'the higher construction productivity leads to an increase in consumer living standards (the annual economic welfare gain) of about \$3.1 billion' (p46).

A month later, the methodology was critiqued by Mitchell (2007). He argued Econtech 'provides no transparency in their published work and replication of their results is impossible'. Using ABS implicit price deflator data he found non-residential construction prices grew at a slightly slower rate than residential and non-residential building and 'found no evidence to support the hypothesis that a sudden 'event'...has altered the time series behaviour of the...data.' (Mitchell 2007). Econtech (2007b) challenged this. However, another reason Mitchell was unable to replicate Econtech's findings was that Econtech had not accurately used Rawlinson's data.

Problems with the 2007 Report

In an attempt to verify the Econtech report, we went back to the original source data of Rawlinson's. We obtained data for January in the years 1993, 1995, 2001, 2002 and 2004 to 2008. We replicated the stated Econtech methodology, obtaining data on the following eight tasks in domestic residential and commercial construction: reinforced concrete 25 mpa suspended slab ne 150mm thick; class 3 formwork sofit of suspended slab 100/200mm thick; clay brickwork wall or skin of hollow wall 110mm thick; carpentry wall framing plates 75 x 38mm; doors, timber, hollow core, std 2040 x 820 x35 hardboard for painting; steel roofing corrugated, zinc coated 0.42mm; plasterboard flush finished, 10mm thick to timber wall framing; and painting, woodwork, acrylic, primer, one undercoat, two gloss,

We identified the ratio of commercial to domestic costs for each item for each year in each mainland capital city (Sydney, Melbourne, Brisbane, Perth, Adelaide). There are, it appears, what Econtech describe as 'slight differences in the precise definitions' of tasks used by us and Econtech, but Econtech advise that these differences 'are not material' and led to a discrepancy of merely 0.1% in estimates of movements in the cost differential in 2008 (email communication, 31/10/08). So, for all practical purposes, we used the same data as Econtech. We calculated an

average cost differential for each capital, and a national weighted average which used the weights Econtech provided, based on each state's 'average contribution to national contribution activity'.³

Our results based on the original Rawlinson's data were wildly different to those of Econtech. National level comparisons are shown in Figure 2. Critically, for the eight tasks selected by Econtech, we found only a small drop of 1.3 percentage points in the cost differential between 2006 and 2007, which was pretty much the normal size of the movement from one year to the next. (Between 1994 and 2005, the average absolute movement on Econtech's estimates was 1.3 per cent, so a movement of that size was entirely unremarkable.) This fall was only *one seventh* the size of the movement claimed by Econtech.

Figure 2: Comparison of Econtech data and state-weighted original Rawlinson data, eight items, Australia, 1995-2007.



Australia, 8 items

Source: Econtech Report 2007; Rawlinson's data

For 2006, we detected a fall of just 1.5 points, barely half the 2.9 point fall claimed by Econtech and, again, within a fairly normal range. So, over the period January 2005-

³ The weights provided by Econtech were: NSW – 34%, VIC – 24%, QLD -23%, WA -13%, SA -5%. As these only added to 99% we then made a pro-rata adjustment to each.

January 2007, the actual fall in the cost differential was not 12.6 percentage points, but 2.8 points.

Notably, the cost differential in 2007 was still 11.7%. This was actually slightly higher than the gap of 10.8% in January 2002, before even the establishment of the Building Industry Task Force. In fact, the cost differential was higher in 2007 than in each of the early years for which we had collected data: 1993 (8.6%), 1995 (9.8%), 2001 (10.6 percent) and 2002.

We also noticed that the errors in the Econtech data were observable in all states, and in most years, with the exception of 2001 and, to a lesser extent, 2005. Nationally and in each state Econtech appeared to exaggerate the cost differential in their peak year, 2004.

Presenting the 2008 revision

On 1 July 2008, the ABCC requested Econtech to update its report (Lloyd 2008). It was finalised on 30 July 2008 and released on 1 August. By then, the ABCC had been made aware of the 2007 report's inaccuracies rendering invalid the key conclusions about major changes in the cost differential. Indeed, the data in Econtech's 2008 report were totally different to the data in the 2007 report. The extent of the difference can be seen by comparing the dotted and dashed lines in Figure 1. The huge drop in the cost differential in 2007, that appeared in the 2007 report, disappeared from the 2008 report. Instead, the cost differential falls slightly by 2007 but then, without comment, rises by 0.4 points to 2008.

The ABCC issued a media release and 'backgrounder' similar in tone to those of the previous year, called 'Productivity in the Construction Industry Continues to Improve'. The media release claimed that the 2008 report 'reaffirms the ABCC's role in improving productivity in the construction industry' (Office of the Australian Building and Construction Commissioner 2008). Commissioner John Lloyd said 'It is encouraging to find that *all* indicators are pointing to increased productivity across the construction industry'. (emphasis added)

Despite the wholesale overturning of the cost comparisons data that formed the basis for the 2007 report, exactly the same conclusions were reached about the impact on GDP and consumer prices as in the 2007 report. Econtech estimated that the 'economy-wide impacts of the ABCC activities' were that: GDP is 1.5% higher

than it otherwise would be; the CPI is 1.2% lower than it otherwise would be; the price of dwellings are 2.5% lower than they otherwise would be; and improved consumer living standards reflected in an annual economic welfare gain of \$5.1 billion.⁴ (Office of the Australian Building and Construction Commissioner 2008; see also Econtech 2008 p27)

Econtech was able to produce the same macroeconomic outcomes from the 2008 analysis as in the 2007 analysis because it chose to assume the same productivity outcome in 2008 as in the 2007 report, despite the stark reversal of the evidence. It stated that 'this report also assumes an ABCC-related gain in construction industry labour productivity of 9.4 per cent for the purposes of the economy-wide modelling'. (Econtech 2008, p18) Recall that in 2007 the 9.4% productivity assumption was based on 'the recent closing of the cost gap between commercial building and domestic housing' (Econtech 2007a, p37). In 2008, it was discovered that this closing of the productivity gap was a mirage but Econtech still hung onto the 9.4% productivity assumption.

Econtech dealt with the major revisions in the reports simply by describing them as anomalies:

Econtech has reviewed its previous use of the Rawlinsons data to remove anomalies. For the original 2007 Econtech Report, some data was inadvertently juxtaposed in manually extracting it from Rawlinson's annual hard copy publications. The use of all Rawlinsons data has been carefully checked and is now correct. (Econtech 2008, p8)

There was no mention anywhere of the magnitude of the impact of these 'anomalies'. Media reports were uncritical (eg Norington 2008).

Narrowing the tasks and time period

Econtech made other adjustments to methodology. One involved removing two of the eight tasks. In its only concession to a major critic, it said 'we agree with Mitchell (2007) that corrugated zinc roof and single skin face brick walls are best excluded from the estimation'.

In Panel 1 of Figure 3, we plot new estimates of the cost differential, based on just the six items chosen by Econtech for their 2008 report. The Econtech estimates in

⁴ The reason the last figure was higher than previously claimed was because a later base year, with higher nominal GDP, was used.

their 2008 report closely track our own figures based on Rawlinsons. This is also the case in state level data. The discrepancies are very small and likely explained by the slight differences in definitions.

Figure 3: Comparison of Econtech data and state-weighted original Rawlinson data, six items (excluding zinc roofs and brick walls) and five items (also excluding formwork), Australia, 1995-2008







Source: Econtech Reports 2007 & 2008; Rawlinson's data

Panel 1 of Figure 3 shows no gains in costs in 2008 (though we estimate a flatlining to 2008, whereas Econtech estimate a slight deterioration, based presumably on the slight differences in definitions). The situation was broadly similar across the states, with small deteriorations in Perth, Melbourne and Brisbane and small improvements in Sydney and Adelaide. Notably, *the cost differential was worse in 2008 than in any year prior to 2004 for which we had data.* Thus, there was no evidence of any gains from the existence of the ABCC.

What is even more notable is that the Econtech data no longer went back to this earlier period. Whereas, in the 2007 report, much was made of the comparison between the most recent cost differential and the average over the decade before 2002, the data before 2004 were missing from the 2008 report, presumably because they, would now be embarrassing if included in the 2008 report.

The exclusion of the pre-2004 data is explained as being to:

remove the effects of an apparent break in some of the data series from 2003 to 2004. For example, in Queensland at the time of this apparent series break, the reported unit cost of formwork to a suspended slab spiked from \$53.25 to \$97, which is out of character with the historical behaviour of this time series, which shows steady, moderate increases. More generally, there appears to be a discontinuity in some of the data collected up to 2003 and the data collected from 2004 onwards.

We note that the change in the base year to 2004 has no impact on the disappearance of an ABCC effect between January 2006 and January 2008. But we also investigated this 'break in the series'. The term refers to situations where the way something was measured changes, so that an observation one year cannot be directly compared to an observation in the previous year. A 'spike' might signify a break in the series – or a genuine increase in the price.

That said, let us accept at face value that a spike means a change in measurement. For how many series does this apply? Figure 4 shows the cost differentials for each task. There is only one series for which any spike is apparent in 2004, that for formwork. So we develop a five-task index using the same principles as previously. The result is in Panel 2 of Figure 3.



Figure 4 Testing for series breaks in cost differentials by task, 1993-2008

Source: Rawlinson's data

The data showed a slightly less adverse picture post 2002 than did the index with six tasks. Still, the national cost differential in 2008 (at 14.2%) was virtually the same as it was before the introduction of the building industry task force, slightly lower than in 2002 (14.7%) and 2001 (14.5%) and slightly higher than 1995 (14.01%). There was no indication of any gains from the ABCC, with the cost differential slightly higher in 2008 than in 2007 (13.6%).

Despite all this, Econtech claimed:

significant improvements in labour productivity since the introduction of the ABCC (in conjunction with the supporting regulatory framework)...Using Rawlinson's data to 2008 on the evolution of the cost gap between non-residential and residential building for the same building tasks, the relative productivity gain for non-residential construction is conservatively estimated at 7.3 per cent. (Econtech 2008, p9)

This estimate is made by comparing the estimated cost differential in 2008 (15.2%) with that in the peak year, 2004 (19.0%). This change of 3.9% is then roughly doubled, on the bold assumption that the only possible source of these alleged gains is labour costs, which make up just 53% of total costs for the tasks.

This is a classic case of selecting the base year that produces the best result: the very poor performance during the period of the ABCC is ignored, and data from prior to 2004 are conveniently suppressed, avoiding consideration of the fact that the cost differential was not significantly less than it had been five or ten years ago.

The productivity crystal ball

With the collapse of the cost data, the main basis for continuing to boast of productivity improvements were some 'case studies' and a comparison between actual and predicted productivity in the construction industry. The 'case studies' (which were identical in the 2007 and 2008 reports) comprised one undertaken by the Institute of Public Affairs, an anti-union lobbyist and 'think tank' (Murray 2004), and which accordingly must be treated with due scepticism, and two by Econtech which boiled down to the qualitative claims of two lading construction companies and data on reduced working days lost due to industrial action. Here and elsewhere, Econtech appears to confuse reduced industrial action with higher labour productivity. The former is not proof of the latter. Labour productivity is the amount of real output per unit of labour input, eg the number of houses built per hour worked. Industrial action normally means no output is produced during the period of action,

but it also normally means no labour is used or paid for during this period. It thus normally has no impact on output per unit of labour input. Likewise, reductions in industrial action do not in themselves signify increases in labour productivity. While employers have sometimes retrospectively paid 'strike pay', this has been illegal since 1996, and a retrospective payment for time that was not worked would not constitute an element of the labour productivity equation anyway. If reduced industrial action has led to increased productivity, this should be visible in the productivity data.

As mentioned, the other basis for the productivity claim was a comparison between actual and 'predicted' productivity in the construction industry (using national productivity growth as the sole predictor for construction productivity growth). Yet there is no particular reason to presume that one can accurately predict what productivity will be in the construction sector on the basis of what productivity is in the rest of the economy. In fact, over the period from 1986 to 2002 (the period covering the data that are used to generate the prediction), only 20 per cent of the variance in annual construction industry productivity growth can be explained by variation in annual national productivity growth. For a time series this is a very low r^2 and would not normally be used by econometricians as the basis for making accurate predictions about future productivity growth.

Moreover, according to Econtech, construction industry productivity began to rise above its 'predicted' level back in 1997. By 1999, three years before even the Building Industry Task Force, construction industry productivity was exceeding Econtech's 'predictions' by almost as much as in 2007, making the claim of an ABCC effect appear very hollow. Productivity slumped in 2001 – only to resume its 1999 level in 2003 – because of a major downturn in the construction industry. It is no coincidence that labour productivity falls during such a downturn – it is almost an arithmetic inevitability, given the way that productivity is calculated, and the well known tendency towards labour hoarding during a downturn (Addison & Siebert 1979; Norris 2000). Likewise productivity rises during boom phases of the business cycle.⁵ But the close relationship between GDP growth and productivity highlights the dangers involved in using national accounts aggregates to draw conclusions about the magnitude of effects from factors influencing labour productivity in particular industries.

⁵ In itself, the boom of recent years has artificially added to productivity growth, just as the forthcoming downturn in the industry is expected to artificially reduce productivity growth: predicted falls of 2.4 per cent and 3.6 in construction employment in 2009-10 and 2010-11 respectively, and of 7.9 and 4.3 per cent in construction output (Access Economics 2009) imply falls of 5.6 per cent and 0.7 per cent in construction industry productivity in 2009-10 and 2010-11 respectively.

Cross-industry productivity and profit comparisons

It is instructive to consider what ABS labour productivity data show for the building and construction industry, in comparison to other industries (Australian Bureau of Statistics Cat. No. 5204.0). If there has been a 9.4 per cent increase in productivity attributable to the ABCC, it should be clearly evident in the ABS data, which should show construction industry productivity growth well above that in other industries.

Figure 5 depicts annual national accounts data on developments in value added per hour worked by industry. It shows that, in the period since 2003, labour productivity in construction has fluctuated (as is normally the case), but that by June 2008 it was *only 1.7 per cent higher* than in June 2003. Moreover, labour productivity growth per hour worked in construction was the *third lowest* of the 13 industries for which productivity data are published. This is not what one would expect if the ABCC had led to a 9.4 per cent boost in productivity above what would have happened in the industry anyway.



Figure 5 Gross value added per hour worked, by industry, 2003-2008

Source: ABS 5204.0 Australian System of National Accounts, 2007-08, Table 15. Labour Productivity and Input, Hours worked and Gross Value Added (GVA) per hour worked - by Industry

Although those arguing that the ABCC has generated great productivity gains often refer to data over such a five year period, in fact the ABCC has only been in existence since October 2005. However, the chart also shows no evidence of a 9.4 per cent boost to productivity since that date. Unfortunately the national accounts productivity data are only published by reference to June, and as mentioned productivity data from year to year bounce around quite a lot. Since June 2006, labour productivity growth in construction has totalled 1.8 percent (an annual rate of 0.9 per cent), ranking construction eighth out of 13 industries, just below the middle one. If we change the base date to June 2005, labour productivity growth in construction fourth out of 13 industries, somewhat above the middle one. Neither suggests the ABCC has created a 9.4 per cent boost to productivity in construction *above what would otherwise have occurred* in the context of a booming industry.

In fact it is difficult to discern any ABCC productivity effect in these figures, especially as it is hard to believe that the boost would be concentrated in the first eight months of ABCC operation when it was necessarily less active than it was in the two years subsequent. The most sensible way to interpret the industry level labour productivity data is to say that: there are significant variation from year to year in industry labour productivity growth, most of which appear due to industry circumstances rather than policy interventions; if the ABCC had created a 9.4 per cent boost to labour productivity above what would otherwise have occurred, it would be large enough to be reflected in a major spike of that magnitude above and beyond the normal year to year movements; and there is no evidence of such a spike and hence no evidence in the national accounts of a 9.4 per cent construction industry labour productivity boost attributable to the ABCC.

Figure 6 looks at recently released experimental ABS data on capital and labour income shares by industry (Australian Bureau of Statistics Cat. No. 5260.0.55.002). It shows that, since 2004-05, there has been a major increase in the share of industry income going to capital. The five percentage point increase in the capital share is the second highest growth of all industries (behind mining). Equally, the share of industry income going to labour in construction has fallen by 5 percentage points.

The transfer of income has accelerated as the ABCC has become more active. In the past two years, the 5 percentage point growth in capital's share of construction industry income was easily the highest amongst any industry, and so the fall in construction income going to labour was the greatest amongst any industry. Labour's share of income in the construction industry in 2007-08 was the lowest ever recorded.

This is not, of course, to attribute all of the shift in factor shares to the activities of the ABCC. The construction industry was going through a major boom, which would have added to the share of income going to capital, just as it added to productivity in the industry. However, what is notable is just how exceptional the performance of the construction industry is in this area. The percentage increase in the profit share in construction stands out from other industries, particularly in 2006-07 and 2007-08, the two full years of ABCC operation.

Figure 6 Labour and capital shares in construction and other industries, 2004-05 to 2007-08



Source: ABS Cat. No. 5260.0.55.002 Experimental Estimates of Industry Multifactor Productivity, Australia: Detailed Productivity Estimates. Table 10: Income shares for value added based estimates of MFP.

In short, while there is scant evidence of a large ABCC impact on productivity, of the order claimed by the ABCC, Econtech and employer bodies, there is more

persuasive evidence for suggesting that the ABCC might have been associated with a transfer of income shares from labour to capital.

3. Recent developments in data

In March 2009, its previous reports having been subject to significant criticism, including by Justice Wilcox, who said that its 2007 report was 'deeply flawed...It ought to be totally disregarded' (Wilcox 2009, p46), Econtech promised that 'to help inform public policy deliberations in this area, Econtech intends to produce a 2009 update of its report and submit it to Ministers'. In May 2009 a report was produced, commissioned this time by Master Builders Australia. The 2009 report bore striking resemblance to Econtech's 2008 report. Indeed a majority of the 2009 executive summary was identical to the executive summary of the 2008 report, and many of the changes that were made were simply differences in tense or changes arising from rewriting 'the 'ABCC' as 'industrial relations reform'. For the first time, however, Econtech admitted that the 2007 report 'contained an error in compiling a single data series'. It was a movement from its 2008 concession of 'anomalies' in the 2007 report, although perhaps one step forward and one step backwards, as the plurality of anomalies had become a singular error in a single data series, whereas in fact there had been at least 25 errors amongst 42 data points at the six state and national level data series that were the foundation for the calculations of national economic benefits, including errors in at least 11 of the 12 data points in the critical two years from 2006.

Once again, the Rawlinson's data (and the ABS data) were less supportive of the claims made by Econtech than the previous data. And once again, Econtech ignored this inconvenient outcome and continued to model the economic effects of 'industrial relations reform' as deriving from a 9.4 per cent boost in productivity in the building and construction industry. So once again, the economic 'benefits' of industrial relations reform were exactly the same as they had been in 2007 when the erroneous data were used.

The only differences of substance from the 2008 to the 2009 report were: the incorporation of another year's data from Rawlinson's; the partial incorporation of another year's productivity data from the ABS; and the use of material from two submissions by employers to the Wilcox Inquiry who were unsurprisingly supportive of the retention of the ABCC powers.

The Rawlinson's data showed a 0.5 percentage point deterioration in the cost differential between commercial and domestic residential building by January 2009, making a total 0.9 point deterioration over two years. Amongst the three full years of data since the ABCC was established, only one (to January 2007) showed an improvement in the cost difference. Again, Econtech hid the data for the pre-2004 period. However, Figure 7 below shows what the data would have indicated if

Econtech had employed data back to 1995, as it did in its first report, combining our pre-2004 data with Econtech's for the six items used by Econtech. The dashed line represents the pre-2004 average,⁶ which was the benchmark used in the first Econtech report for estimating the impact of the ABCC and other reforms on productivity. As can be seen, the six items used by Econtech showed an average cost difference 1.6 per cent worse than the pre-2004 benchmark.

Figure 7AverageCostDifferencesbetweenCommercialBuilding andDomestic Residential Building for the Same 6 Tasks, Australia, 1995-2009



Source: Econtech 2009 Report, Rawlinsons data (pre-2004)

As mentioned earlier, Econtech in its 2008 report (in contradiction of its 2007 report) argued against comparisons with the pre-2004 period because of a "break" in the series for some components – in practice, the only series for which such a claim might be remotely plausible was that for formwork. Figure 8 makes the same comparisons with the pre-2004 period as are made in figure 7, but this time restricted to the five items excluding formwork (as per panel (b) of Figure 3, earlier). The

⁶ This average is calculated from our own data. However, using the average relativity calculated by Econtech for its 2007 report (after adjusting for the different number of items) makes no significant difference. As can be seen in the chart, our pre-2004 average is just 0.1 percentage points below the figure for 2001. In Econtech's 2007 report (p22), their pre-2004 average was equal to their figure for 2001.

picture is less adverse than for the six-item index, but it still indicates a relative cost outcome by January 2009 some 0.3 per cent worse than in the average pre-2004 period.

Figure 8 Average Cost Differences between Commercial Building and Domestic Residential Building for the Same 5 Tasks, Australia, 1995-2009



Source: Rawlinson's data

By Econtech's methodology (which involves nearly doubling the cost gap reduction to produce a productivity effect, on the basis that labour costs represent 53 per cent of total costs), these numbers would mean that the ABCC had led to a reduction in commercial building construction productivity of between 0.6 per cent (five-item index) and 3.0 per cent (six-item index) and hence a fall in total construction industry productivity of between 0.3 per cent and 1.7 per cent. Feeding these numbers into the MM600+ model would presumably yield a pro-rata increase in the CPI of between 0.04 per cent and 0.2 per cent, a fall in GDP of between 0.05 per cent 0.3 per cent and a national welfare loss of between \$0.2 billion and \$1.0 billion due to the activities of the ABCC (Table 1).

Table 1Estimates of National economic effects of construction industryreforms, based on 2007 Econtech methodology

	Original Econtech estimates, average 1994- 2003 versus latest year (based on erroneous data)	Revised estimates, average 1994- 2003 versus latest year, applying 2007 Econtech methodology to correct data	
		5-item index	6-item index
Change in cost gap			
between commercial			
building and domestic			
residential building ^a	-9.0%	+0.3%	+1.6%
productivity ^a	+9.4%	-0.3%	-1.7%
CPI	-1.2%	+0.04%	+0.2%
Real Consumption	+0.8%	-0.03%	-0.1%
GDP	+1.5%	-0.05%	-0.3%
Annual economic welfare gain(+) / loss(-)	\$ 5.5 billion ^b	-\$ 0.2 billion	-\$1.0 billion

^a The relationship between, on the one hand, the change in the cost gap between commercial building and domestic residential building, and, on the other hand, the productivity gains for the construction industry, are shown in Tables 5.2 and 5.3 of the 2007 Econtech Report.

^b Welfare gain figures are expressed in 2007/08 dollars as per the 2009 Econtech report. This was reported as \$3.1 billion in 1998/99 terms in the 2007 report, but is the same share of GDP in each of 2007, 2008 and 2009. All other estimates in the first data column were identical in each of the 2007, 2008 and 2009 Econtech reports.

Source: calculated from Econtech Reports, Rawlinson's data.

My point here is not to argue that these were the actual costs associated with the ABCC – the normal year to year movement in the Rawlinson's series, and the impact of varying the number of items in the index, is enough to tell us that it would be foolhardy to attribute small movements in the apparent cost differential to the effects of the ABCC one way or the other. These numbers merely represent the losses attributable to the ABCC which would have been estimated by Econtech if they had applied their own methodology to correct, updated data. Rather than conceding this, Econtech simply deleted the pre-2004 data and established a new benchmark that produced more comfortable numbers – and then proceeded to ignore the fact that these numbers nonetheless contradicted the basis for the 9.4 per cent claimed productivity gain. Nowhere in the 2009 report is there any number, or mathematical combination of numbers, that produces a 9.4 per cent productivity gain. Instead, the 9.4 per cent is simply recycled again from the 2007 report which Justice Wilcox said should be 'totally disregarded' (Wilcox 2009).

The justification for using this number is that these other sources relied on by Econtech imply gains of sufficient size to suggest that 'the ABCC and related industrial relations reforms have added *in the vicinity of* 9.4 per cent to labour

productivity in the construction industry' (KPMG Econtech 2009, p3, emphasis added). These sources are the 'case studies' and 'predictions' of industry productivity mentioned above and commentary on Productivity Commission data on multi-factor productivity, plus new 'case studies' comprising claims in submissions made by three construction companies to the Wilcox Inquiry. None produce a figure of 9.4 per cent.

The first of these submissions, by BHP Billiton (prepared by its lawyers), referred to industrial action at BHP sites (which, as noted, is not a direct measure of productivity) but made no explicit claims about productivity other than reciting findings from old Royal Commissions. The second, by Grocon, is a one page submission that simply asserts higher productivity on the basis of reduced industrial disputation.

The third, by John Holland group, is said by Econtech to support the view that 'the post Cole Royal Commission reforms had delivered a productivity dividend of 10% to the entire industry – an improvement equating to 1% of GDP' (emphasis in original). This relies on an estimate by the company's general manager of human resources. Yet 72 per cent of this estimate was based on claimed revenue savings due to reduced industrial action (not productivity), and over 99 percent of this was due to claimed reductions in *unreported* industrial action (that is, it assumes, without any systematic data, that unreported industrial action is responsible for 104 times more days lost than is recorded by the ABS – a claim which no-one has previously made). Almost all (91 per cent) of the remainder of the 'productivity estimate' was alleged savings from reduced 'coercion of subcontractors' - measured by the claimed (but unsourced) difference between wages paid to employees of sub-contractors on, and no on, a project agreement. Whatever this measures, it relates to wages, not productivity. Labour productivity is measured as the ratio of output to the quantity of labour input, not wage costs. Indeed, the only component in the John Holland estimate that might relate to productivity - 'non-working delegates' - represented not 10 per cent of industry productivity but, on Holland estimates, 0.02 per cent of industry productivity. In short, the John Holland productivity estimates are meaningless.

As in previous years (but not mentioned in the previous part),⁷ Econtech also refers to an old Productivity Commission (PC) report containing data on multi-factor productivity (MFP) from 1974-75 to 2005-06. Econtech said:

⁷ This was not referred to in the previous part as it covered a period that ended as the ABCC was being established, and so seemed irrelevant, but is discussed here because Econtech still relies on it two years later.

productivity in the construction industry was fairly flat through the 1980s and 1990s...However, construction industry productivity then strengthened considerably to achieve a higher level for the four years from 2002-03 to 2005-06. The Productivity Commission data shows construction industry productivity rose by 13.6 per cent in the four years to 2005/06. This confirms the strong construction industry productivity performance of recent years

Curiously, for a report that is meant to have 'updated' previous data, no such update is applied to the PC data on MFP, to which the most recent two years of data have been added by the PC (Productivity Commission 2009). If four years to 2005-06 was a suitable comparator in the first Econtech report, then the relevant period is now the six years to 2007-08, in which MFP growth was 14.8 per cent. But this is hardly a powerful endorsement of the effects of the ABCC and its predecessor, as MFP growth over the six year period ending 2002-03 was higher – at 18.0 per cent. Indeed, over the six year period to 1998-99, MFP growth was also higher, at 15.6 per cent, while it was 16.0 per cent over the six years to 1980-81 (Productivity Commission 2009). So there is nothing remarkable about the MFP growth over the six year period to 2007-08.

That said, including 2002-03 in the calculations is itself debatable, given that the Building Industry Task Force was only established part way through that year and would have had little initial impact. If the ABCC and Building Industry Task Force had a large impact, most of it would be felt in the years after 2002-03. As Econtech repeatedly says, 'the Taskforce was established in October 2002 but it is reasonable to expect a lag before its activities started to make an impact' (Econtech 2007a, p23; Econtech 2008, p9; KPMG Econtech 2009, p15). Over the five years to 2007-08, MFP growth totalled a mere 3.1 per cent. This compared with 10.8 per cent over the immediately preceding five years to 2002-03, and 10.5 per cent of the previous five year period to 1997-98.

Similarly, over the five years to 2007-08, growth of *labour* productivity (the focus of Econtech's conclusions) in construction totalled 1.6 per cent, compared to 10.5 per cent over the immediately preceding five years to 2002-03, and 10.6 per cent of the previous five year period to 1997-98. These data are shown in Figure 9. Amongst the seven mostly five-year periods shown, the current 'reform' period had the second lowest labour productivity growth and the third lowest MFP growth. On this basis, one might conclude that the ABCC and its predecessor had led to declines in MFP and labour productivity growth. In reality, a more appropriate conclusion would be that there is no discernible benefit from the ABCC or building industry reform on multi-factor productivity in construction. There is certainly no evidence of a 9.4 per cent boost to productivity arising from the activities of the ABCC.

Figure 9 Growth in labour productivity and MFP, construction industry, five year periods, 1974-75 to 2007-08



Source: Productivity Commission 2009

4. Conclusion and recommendations

The great gains for construction industry arising, it was said, from the near equalisation of costs in the commercial and domestic residential sectors that was attributed to the ABCC have disappeared, like a mirage on the horizon. If there have been any savings made through higher productivity in the commercial sector, they have not been passed on into lower relative costs, which would suggest that they have been taken as higher profits rather than lower prices. Much more likely, however, is that there are no productivity gains attributable to the ABCC, just as there are no savings in relative costs. The boost to GDP, savings to the CPI and national welfare gains in each of the Econtech reports, estimated as they were 'from the recent closing of the cost gap between commercial building and domestic housing', have lost their basis in the 'closing of the cost gap'. If there are any economic effects from the operation of the ABCC, they are more likely to be increasing profits than increasing productivity. The literature suggests that the unionised building and construction industry would benefit from more cooperative union-management relations. The role of the ABCC has been to penalise cooperative relations, and so it should come as no surprise that previous policy makers' productivity expectations have not been met.

These findings strongly support the argument that the ABCC has failed to boost productivity and hence national economic welfare. The ABCC has existed at considerable cost to civil liberties in the industry, for which there does not appear to have been a national economic justification. There have been other possible costs as well. Despite the creation of the Federal Safety Commissioner, to promote and improve occupational health and safety (OHS) in the building and construction industry, there were 36 fatalities in the construction industry in 2007-08. This was twice as many as occurred in 2004-05, immediately before the ABCC commenced operations in late 2005. Although construction employment as a share of total employment has been growing with the boom in the industry, the growth in construction's share of notified fatalities has well exceeded this, as shown in Figure 10. After the establishment of the ABCC, construction became the industry with the highest number of deaths. Although safety is not within the direct ambit of the ABCC, there is considerable research showing that observance with occupational safety requirements and injury rates tend to be lower where unions are weaker (Reilly, Paci & Holl 1995, Seligman, et al. 1988, Weil 1999, 1992), so this trend is not surprising. But nor should it be encouraged to continue.



Figure 10 Construction industry, share of total employment and of total fatalities, 2003-4 to 2007-8

Source: Australian Safety and Compensation Council 2008

It is important that the proposed Fair Work - Building Industry Inspectorate use its powers equally, including any coercive powers. This would require a different corporate culture in the Fair Work - Building Industry Inspectorate to that presently operating within the ABCC, one that seeks to promote cooperation not only between employers and employees but also between employers and employee representatives, and which is equally tough in its enforcement of breaches by employers (not just of employers who cooperate with unions) as by unions. Few would persuasively argue that the ABCC has been impartial in its application of the law.

Should we expect that the only people to be breaching the law in the building and construction industry are unions, and those employers who cooperate with them? Recent investigations by the Workplace Ombudsman have found high levels of employer non-compliance with legal requirements in several sectors through national compliance campaigns, with breaches detected amongst 37 per cent of employers in long distance freight, 23 per cent in short distance freight, 62 per cent in road passenger transport, 34 per cent in taverns and bars, 24 per cent in clubs, and, 41 per cent amongst industries that were heavy employers of young people (mainly

retail trade and accommodation and food services) (Workplace Ombudsman 2009a, 2008, 2009b). There is no reason to believe the building and construction industry would have no problems of employer compliance and indeed an exercise by the Sydney Office of the Workplace Ombudsman found 31 per cent non-compliance in the NSW construction industry, even though inspections were restricted to head offices and no building worksites, where breaches could be expected, were visited (Workplace Ombudsman 2009c). Yet most actions taken by the ABCC against employers are for cooperation with unions that are seen to be in breach of the law, rather than for unfair treatment of employees.

Not only will the new Fair Work - Building Industry Inspectorate need to enforce the law on both sides of the street, it will also need to have a culture that makes this happen. Part of ensuring this happens involves making sure appropriate administrative arrangements are in place. It will be essential that specialist division officers are supervised in a way that ensures they act impartially. Any staff transferred from ABCC to the Fair Work - Building Industry Inspectorate must accept an impartial, non-partisan culture and not bring the culture of the ABCC. The senior positions in the specialist division, including the Divisional Manager and other senior SES-level staff, should be openly and competitively advertised. But there are also improvements to the Bill that can be made to increase the likelihood that the new Fair Work - Building Industry Inspectorate will act in an impartial and fair manner. Accordingly, I recommend the following provision be inserted into the Bill:

The Inspectorate must perform its functions and exercise its powers in a manner that:

- (a) is fair, just and impartial; and
- (b) is open and transparent; and
- (c) takes account of equity, good conscience and the merits of the matter; and
- (d) promotes harmonious and cooperative workplace relations.

This proposed provision is modelled on sections 577 and 578 of the *Fair Work Act 2009*, amended to take account of the different role of the Inspectorate. It would most appropriately be located after clause 10 (Functions) in the Bill.

I note that Professor George Williams and Ms Nicola McGarrity, in their submission, argue that:

The safeguards proposed in this Bill represent an important range of improvements to the primary Act. The safeguards are of a kind recommended in our article and in our subsequent submission to the Wilcox Inquiry into the Transition of the Australian Building and Construction Commission to a Specialist Division of Fair Work Australia. We support each and every one of the safeguards and recognise that they amount to an impressive, and much needed, set of improvements. In particular, conditioning use of coercive powers upon the approval of a presidential member of the Administrative Appeals Tribunal will remove both the possibility and the perception that the powers may be used for inappropriate, even ideological, purposes. Other improvements such as the imposition of a sunset clause, and an expanded role for the Commonwealth Ombudsman are also highly desirable.

The Bill should therefore be enacted in order to bring about much needed improvements to the primary Act.

However, we note that even with these safeguards the coercive powers provided for in the primary Act are not justified. The safeguards do not, for example, overcome the fact that the coercive powers can be used in an overly-broad set of circumstances, such as in regard to non-suspects and children in the investigation of minor or petty breaches of industrial law and industrial instruments. The coercive powers are not justified in this industrial setting. The preferable course would be to remove the powers entirely and to have a strong and effective enforcement and investigation regime that applies across all industries.

I agree with their analysis and endorse their recommendations.

REFERENCES

- Access Economics. "Construction industry: Economic drivers and output." Report prepared for CFMEU Construction Division. Melbourne: Access Economics, 27 July 2009.
- Addison, J.T., and A.H. Barnett. "The Impact of Unions on Productivity." *British Journal of Industrial Relations* 20, 1982.
- Addison, John, and Clive Belfield. "Union Voice." *Journal of Labor Research* 25, 2004: 563-96.
- Addison, John T, and W Stanley Siebert. *The Market for Labor: An Analytical Treatment*. Santa Monica: Goodyear, 1979.
- Alexander, Michael J, and Roy Green. "Workplace productivity and joint consultation." *Australian Bulletin of Labour* 18, no. 2, 1992: 95-118.
- Allen, S G. The effects of unionism on productivity in privately and publicly owned hospitals and nursing homes. NBER working paper no 1649. Cambridge, MA: National Bureau of Economic Research, 1985.
- Australian Bureau of Statistics. Australian System of National Accounts, 2007-08, Table 15. Labour Productivity and Input, Hours worked and Gross Value Added (GVA) per hour worked - by Industry. Canberra: ABS, Cat. No. 5204.0
 - ——. "Census of Private Construction Activity, Australia, 1996-97." Canberra 8772.0.
- Australian Chamber of Commerce and Industry. *Inquiry into the Building and Construction Industry Improvement Amendment (Transition to Fair Work) Bill 2009: ACCI Submission.* Melbourne: ACCI, 2009.
- Australian Safety and Compensation Council. *Notified Fatalities: Statistical Report, June 2007 to June 2008.* Canberra: Department of Education, Employment and Workplace Relations, 2008.
- Ben-Ner, A, and S Estrin. "What Happens When Unions Run Firms?" Discussion Paper No. 217. London: Centre for Labour Economics, London School of Economics, April 1986.
- Black, Sandra E., and Lisa M. Lynch. "How to compete: the impact of workplace practices and information technology on productivity." *The Review of Economics and Statistics* 83, no. 3, 2001: 434–45.
- Coorey, Phillip. "Grim forecast of economy under Labor." *Sydney Morning Herald*, 22 June 2007a.
- Drago, R , and M Wooden. The Links Between Economic Performance and Industrial Relations: Evidence from AWIRS. Industrial Relations and Workplace Productivity, Industrial Relations Research Series No 2, 53-98. Canberra: Department of Industrial Relations/ AGPS, 1992.
- Econtech. *Economic Analysis of Building and Construction Industry Productivity*. Report prepared for the Office of the Australian Building and Construction Commissioner. Canberra: Econtech Pty Ltd, 2007a.
 - —. Economic Analysis of Building and Construction Industry Productivity: 2008 Report. Report prepared for the Office of the Australian Building and Construction Commissioner. Canberra: Econtech Pty Ltd, 2008.
 - —. Economic Analysis of the Building and Construction Sector Report by Econtech Pty Ltd (with assistance from Ernst & Young): Report Overview. Attachment to

Media Release 01903, Hon Tony Abbot MP, 'Building And Construction : Economic Gains From Workplace Reforms'. Canberra: Econtecn Pty Ltd, 2003.

- ———. "Economic Study of ABCC stands up to Criticism." *Media release*. Canberra: Econtech Pty Ltd, 24 August 2007b.
- Edwards, P. K. Managing the factory: A survey of general managers, Warwick studies in industrial relations. Oxford, UK: Basil Blackwell, 1987.
- Elbaum, B., and F. Wilkinson. "Industrial Relations and Uneven Development: A Comparative Study of the American and British Steel Industries." *Cambridge Journal of Economics* 3, 1979.
- Freeman, R B. Can unions close the unfilled demand for representation and participation in *the US?* Unpublished paper: Harvard University and NBER., 2005.
- Freeman, Richard. "What Do Unions Do ? The 2004 M-Brane Stringtwister Edition." *Journal* of Labor Research 26, no. 4, 2005: 642-68.
- Freeman, Richard B., and James L. Medoff. What Do Unions Do? New York: Basic Books, 1984.
- Fry, T R L, K Jarvis, and J Loundes. *Are IR Reformers better performers?* Melbourne Institute Working Paper No 18/02. Melbourne: Melbourne Institute of Applied Economic and Social Research, 2002.
- Gilson, C, and T Wagar. "The impact of the New Zealand Employment Contracts Act on individual contracting: Measuring organisational performance." *California Western International Law Review* 28, 1997: 221-31.
- Gittins, Ross. "Opinions about Labor dressed up as the truth." *Sydney Morning Herald*, 1 September 2007.
- Hirsch, Barry T. "What Do Unions Do For Economic Performance?" Journal of Labor Research 25, no. 4, 2004: 415-55.
- Hull, D, and V Read. *Simply the Best: Workplaces in Australia.* Working Paper 88. Sydney: ACIRRT, University of Sydney, 2003.
- Kaufman, Bruce. "What Do Unions Do? Evaluation and Commentary." Journal of Labor Research 26, no. 4, 2005: 555-96.
- KPMG Econtech. *Economic Analysis of Building and Construction Industry Productivity:* 2009 Report. Report prepared for Master Builders Australia. Canberra: Econtech Pty Ltd, 2009.
- Lewis, Steve. "Building unions crackdown brings \$15bn." Perth Now (Sunday Times), 25 July 2007.
- Lloyd, John. "evidence to October Estimates hearing." Canberra: Senate Employment, Workplace Relations and Education committee, 23 October 2008.
- Mitchell, William. An examination of the cost differentials methodology used in 'Economic Analysis of Building and Construction Industry Productivity' - the Econtech Report. Newcastle: Centre of Full Employment and Equity, University of Newcastle, 2007.
- Murray, G. "Think tanks, economic liberalism and industrial relations." Paper presented at the New Economies: New Industrial Relations, Noosa, February 2004 2004.
- Norington, Brad. "Building watchdog trumpets record on boosting productivity." *Australian*, 8 August 2008.
- Norris, Keith. *Economics of Australian Labour Markets*. 5th ed. Sydney: Pearson Education, 2000.
- Office of the Australian Building and Construction Commissioner. "ABCC improves productivity in the building and construction industry." *Media release*. Melbourne: ABCC, 25 July 2007.
 - —. "Construction Industry Productivity: 2008 Report Card." *Media release*. Melbourne: ABCC, 1 August 2008.

- Peetz, David. "Hollow shells: The alleged link between individual contracting and productivity." *Journal of Australian Political Economy* 56, 2005: 32-55.
 - ——. Supplementary Submission to the South Australian Industrial Relations Commission Inquiry into the WorkChoices legislation: comments on economic modelling. Adelaide: SAIRC, 2007.
- Phipps, A J, and J R Sheen. "Unionisation, industrial relations and labour productivity in Australia: A pooled time-series/cross-section analysis of TFP growth." *Labour Economics and Productivity* 6, 1994: 54-65.
- Productivity Commission. "Industry Productivity Estimates 1974-75 to 2007-08." Melbourne: on-line spreadsheet 2009.
- Reilly, Barry, Pierella Paci, and Peter Holl. "Unions, safety committees and workplace injuries." *British Journal of Industrial Relations* 33, no. 2, 1995: 275-88.
- Seligman, Paul J, William Karl Sieber, David H Pedersen, David S Sundin, and Todd M Frazier. "Compliance with OSHA Record-keeping Requirements." *American Journal of Public Health* 78, no. 9, 1988: 1218-19.
- Streketee, Mike. "It's business as usual in duping game." Australian, 23 August 2007.
- Toner, Phillip. *An Evaluation of 'Economic Analysis of the Building and Construction Sector*. Newcastle: Employment Studies Centre, University of Newcastle, 2003.
- Weil, David. "Are Mandated Health and Safety Committees Substitutes for or Supplements to Labor Unions?" *Industrial and Labor Relations Review* 52, no. 3, 1999: 339-60.
- Wilcox, Murray. Transition to Fair Work Australia for the Building and Construction Industry: Report. Canberra: Report to Minister for Employment and Workplace Relations, 2009.
- Workplace Express. "Employers launch "non-political" ad campaign in support of Work Choices." 8 August 2007.
- Workplace Ombudsman. "National Hospitality Campaign." Canberra, March 2009a, http://www.fwo.gov.au/Audits-and-campaigns/Documents/National-Hospitality-Campaign-March-2009.pdf.
 - —. "National Road Transport Campaign." Canberra, November 2008, http://www.fwo.gov.au/Audits-and-campaigns/Documents/National-Road-Transport-Campaign-November-2008.pdf.
 - –. "National Young Workers Campaign." Canberra, January 2009b, http://www.fwo.gov.au/Audits-and-campaigns/Documents/National-Young-Workers-Campaign.pdf.
 - -. "NSW Construction Industry targeted campaign." Sydney, April 2009c, http://www.fwo.gov.au/Audits-and-campaigns/Documents/National-Road-Transport-Campaign-November-2008.pdf.