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<td>Department of Economics and Finance, La Trobe University</td>
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ANALYSIS
Secret Econometric Business: Watching FuelWatch and the ACCC

Sinclair Davidson

Abstract

This paper appraises the econometric study of Western Australia’s FuelWatch scheme that the ACCC has used to advocate to the Federal Government the petrol price regulation scheme known as ‘Fuel Watch’. It is argued that the ACCC’s econometric analysis is fundamentally flawed.

Introduction

The Australian people are being enticed towards a FuelWatch scheme because you have told them it will bring down the price of petrol. You base that on the premise of an econometric model. The model was devised, tabulated and constructed in your office and nobody but the people inside your office have had anything to do with it.

Senator Barnaby Joyce, Senate Estimates, 5 June 2008.

This paper argues that the national FuelWatch scheme has not been adequately analysed by the Australian Competition and Consumer Commission (ACCC). The econometric analysis that has been undertaken is incomplete, the upshot being that the ACCC has favoured a scheme to fix prices, retard competition and thereby harm consumers, on the basis of analysis and information that either does not exist, or is not in the public domain.

Background

A ‘FuelWatch’ scheme was introduced in Western Australia in January 2001. This followed the October 2000 recommendations of a WA parliamentary select committee, in its report Getting a Fair Deal for Western Australian Motorists. The purpose of the scheme has been to provide certainty to consumers as to petrol prices for a fixed period of time. In practice, WA service stations have been required to notify FuelWatch of their prices for the next day. On the following day, beginning at 6am, the service station fuel prices are fixed for 24

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School of Economics, Finance and Marketing, RMIT University, and the Institute of Public Affairs, sinclair.davidson@rmit.edu.au .This paper is revised from a submission to the Senate Economics Committee Inquiry into the Fuel Watch legislation. I would like to thank Informed Sources for providing the data used in the analysis. The views expressed here do not necessarily reflect the views and opinions of Informed Sources. I would like to thank Chris Berg, Kate Herbert, an anonymous referee, and William Coleman for comments and suggestions that have substantially improved the paper.
hours — this is known as the 24-hour rule. The 24-hour rule was amended to close a loophole in August 2001.

The WA FuelWatch scheme has been investigated on a number of occasions. The ACCC argued in its December 2002 *Terminal gate pricing arrangements in Australia and other fuel pricing arrangements in Western Australia* that ‘it is hard to conclude that the Western Australian fuel pricing arrangements have been successful to date’ (p.47). The ACCC also expressed concerns that the WA FuelWatch scheme had had a detrimental effect on competition. In October 2006, the ACCC was able to advise the Senate that additional investigations into the WA FuelWatch scheme had occurred (Senate Estimates Hansard, 19 October 2006: E20). These reports included a May 2005 Northern Territory report, the 2005 National Competition Council assessment report, and an April 2006 Queensland government report. Graeme Samuel approvingly quoted from the National Competition Council report that the Council ‘considers that Western Australia is yet to conclusively demonstrate that its petrol pricing restrictions provide a net public benefit, and [the Council’s] concerns were heightened by fines imposed on a retailer in July 2005 for lowering price(s). Such an outcome does not appear to promote competition and consumer interests’ (Ibid: E21).

The ACCC CEO Brian Cassidy also had his doubts — as these doubts are important for the later argument, they are detailed in full:

We are doubtful, at the very least, about just what impact the Western Australian arrangements have had on price levels in Western Australia. The arrangements came into place in 2001. If you compare Perth prices against Sydney and Melbourne, between 2001 and 2003–04, there was a marginal improvement in Perth prices relative to Sydney prices and there was an actual deterioration in Perth prices relative to Melbourne prices. Around 2003–04, two things happened. Firstly, Coles and the joint venture Woolworths-Caltex sites started to enter the Western Australian market … Secondly, Western Australia for some time has had reasonably restrictive fuel standards. Around 2003–04, the Commonwealth introduced national fuel standards, which are not as restrictive as the Western Australian standards but they nonetheless came into force, although the more restrictive Western Australian standards still apply in Western Australia. So it meant there was a levelling up to some extent, if you like, in the price impact of the fuel standards between Western Australia and other states.

If you look at that price comparison I was talking about it is interesting to note that it is really only after 2003–04 that there has been some improvement in Perth prices as against both Sydney and Melbourne prices. Given the Western Australian arrangements have been in place since 2001, you are then left to wonder whether that improvement, which
has occurred from about 2003–04 onwards, is a product of the Western Australian arrangements or whether it is a product of these other factors. If you say it is a product of the Western Australian arrangements, then the next question is why did it take two or three years for those arrangements to actually start to impact on the price relativities between, say, Perth and Sydney and Melbourne? (Ibid: E19–E20).

The doubts that the ACCC harboured about the WA FuelWatch scheme related to whether the policy actually had led to decreased prices in isolation of the confounding effects of the entry of Coles and Woolworths into the market along with a change in fuel standards. These are serious and legitimate doubts about the efficacy of the FuelWatch scheme. The ACCC had long had doubts about whether the FuelWatch scheme actually reduced prices and had undertaken extensive analysis of petrol pricing in its 2002 report (the analysis ran for several pages but did not include any econometric or regression analysis). It is clear that as late as October 2006 the ACCC was not in favour of the WA FuelWatch scheme being extended to other parts of Australia.

In December 2007, the ACCC released Petrol Prices and Australian Consumers, its report into petrol pricing in Australia. While the ACCC expressed some concern about transparency in retail petrol markets, it did indicate that ‘there is a significant degree of price competition at the retail level’ (ACCC 2007: 15), and ‘the existence of price cycles does not provide any evidence of a lack of retail competition’ (Ibid: 16). Importantly, the ACCC also indicated ‘that in the time available it was not possible to fully review all the options with regard to their administrative implications, effects on competition or their likelihood of delivering the objective of increased price transparency’ (Ibid: 18). Nowhere in the 2007 report did the ACCC actually recommend a national FuelWatch scheme be adopted. However, the report did include an Appendix (Appendix S) that contained an econometric analysis of the WA FuelWatch scheme that implied, according to the ACCC, that ‘there has been some reduction in average price margins [in Perth] relative to the eastern capitals in the time following the introduction of FuelWatch’ (ACCC 2007: 257; emphasis added).

Within six months of the release of the 2007 report, the ACCC had reversed its previous position that the Western Australian FuelWatch scheme was not worth extending to other parts of Australia. On 4 June 2008, a Treasury official told the Senate Estimates Committee: ‘In discussions with the government, the chairman of the ACCC recommended that we should introduce a Fuelwatch

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2 At the Senate estimates, Graeme Samuel commented: 'If the commissioners that sat on that inquiry had found through that econometric modelling that Perth motorists had suffered harm as a result of the introduction of FuelWatch, we would never have recommended it to the Australian government in our report' (Senate Estimates Hansard, 5 June 2008: E16; emphasis added). The ACCC did recommend FuelWatch to the Australian government; but not in its 2007 report ‘Petrol Prices and Australian Consumers’.
scheme’ (Senate Estimates Hansard, 4 June 2008: E85). When challenged on this reversal, Graeme Samuel paraphrased John Maynard Keynes: ‘When I find evidence that I was wrong, I change my mind. What would you do?’ (Senate Estimates Hansard, 5 June 2008: E57). But what might be that evidence? Not economic modelling: when asked by Senator Helen Coonan as to whether any economic modelling had been done on the notion of consumer empowerment, Graeme Samuel answered, ‘No’ (Ibid: E65). However, econometric analysis had been widely cited as demonstrating that the FuelWatch scheme has led to lower prices in Western Australia. At Senate estimates, Senator Barnaby Joyce put it to Brian Cassidy that ‘The whole premise of FuelWatch is based on this econometric analysis. That is why it is the crux of our questioning.’ Cassidy replied, ‘Yes’ (Ibid: E42). It seems quite clear that the federal government relied on the ACCC when making the decision to implement a national FuelWatch scheme and, in particular, relied on the fact that the ACCC had undertaken a rigorous econometric analysis.3

**But what econometric analysis?**

On 29 May 2008, the ACCC released a document containing details of ‘further FuelWatch econometric analysis’. This document reports the results of an unnamed econometric testing procedure, and does not report any of the diagnostic statistics such as standard errors or p-values that one might expect in any econometric analysis. The ACCC provides a description of its analysis ‘known as endogenous selection of structural break points’ (ACCC 2008: 3). This analysis apparently identified a number of dates of interest (March 2000, May 2000, February 2004 and September 2005). It is not clear, however, what historical significance attached to these dates. This later ACCC document also moved the policy goalposts by claiming that ‘there is no evidence that the introduction of FuelWatch in Western Australia led to any increase in prices and it appears to have resulted in a small price decrease overall’ (Ibid: 4). Of course, the claim being made about FuelWatch was that it would *reduce* petrol prices, not increase them. When asked about this analysis at the Senate estimates committee one week later, the ACCC still did not name the econometric test that had actually been performed, but did reveal that all the structural breaks were significant at the five per cent level.

In short, the only solid empirical evidence the ACCC has to support its recommendation to implement a national FuelWatch scheme is located in Appendix S of the *Petrol Prices and Australian Consumers* report.

3 Furthermore, the Minister for Competition Policy and Consumer Affairs, Chris Bowen, told the Parliament on 28 May 2008, ‘The ACCC recommended that more work be done on FuelWatch. I understand that the government had had the benefit of that analysis and that process and that the opposition has not … The chairman of the ACCC is more than happy to work them through the analysis that the ACCC has done, work them through the econometric analysis and work them through the proposals’ (Hansard 28 May 2008: 52).
Appendix S of the ACCC’s *Petrol Prices and Australian Consumers* report

For the Appendix S analysis the ACCC collected average weekly, average monthly and weekly minimum data for the period 1 August 1998 to 8 June 2007. They then calculated the following Price Margin (PM) measure:

\[
PM_t = (RP - MP_{95} - NT - FQP)_{\text{Perth}} - (RP - MP_{95} - NT - FQP)_{\text{Average of eastern capitals}}
\]  

(1)

where

- \(RP\) = retail price
- \(MP_{95}\) = Mogas95 price lagged by one week
- \(NT\) = net tax
- \(FQP\) = fuel quality premium.

The ACCC defend this measure on the basis that it removes factors that are beyond the control of FuelWatch, Mogas95 price being the base supply price of petrol (the average daily price of unleaded petrol from refineries traded in Singapore) lagged one week. Yet it is difficult to understand why this figure has been subtracted from the retail price, as it is likely to be constant across Australia. Unfortunately, the ACCC analysis gives no indication as to whether this figure does vary across the various states. It is also unfortunate that the ACCC did not take transport costs into account. These costs are likely to vary across states, and their omission is likely to have biased the results. Similarly, it is not clear whether the net taxes figure varies across states. The mandated fuel quality does vary across states, but the ACCC analysis gives no indication as to what those figures or variations might be. Brian Cassidy told the Senate that the fuel-quality standards were higher in WA relative to the other states, and this adjustment is appropriate for that reason. Overall, however, the measure of interest is not transparent.

The ACCC analysis then investigates whether the data exhibit a structural change after the introduction of FuelWatch. It appears that the ACCC estimated the following equation:

\[
PM_t = \alpha + \beta FW_t + \epsilon_t
\]  

(2)

where

- \(\alpha\) = constant representing the average Price Margin before the FuelWatch scheme was introduced
- \(\beta\) = the average impact of the FuelWatch scheme
- \(FW_t\) is a dummy variable = 1 after 2 January 2001 and = 0 before 2 January 2001.

\[4\] The ACCC did not provide any summary data or description of that data.
The ACCC estimates three versions of the equation, one for each of the three time series versions of Price Margin. They report the results in their Table S2 (reproduced below from ACCC 2007 report: 377).

<table>
<thead>
<tr>
<th>Series</th>
<th>Average (August 1998 to December 2000)</th>
<th>Average (January 2001 to June 2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly average</td>
<td>0.83 (0.002)</td>
<td>-1.92 (0.000)</td>
</tr>
<tr>
<td>Monthly average</td>
<td>0.88 (0.001)</td>
<td>-1.86 (0.000)</td>
</tr>
<tr>
<td>Weekly minimum</td>
<td>0.30 (0.277)</td>
<td>-0.90 (0.003)</td>
</tr>
</tbody>
</table>

- Coefficient given with p-value in brackets. Diagnostic testing indicated serial correlation so Newey West standard errors used.

Source: ACCC estimates

To understand this table, look at the “weekly average” row. The number 0.83 indicates that there was, on average, a 0.83 cent per litre (cpl) difference between the Perth Price Margin and that of the average of the eastern capitals before FuelWatch was introduced. This figure corresponds to the β-term in the equation (2). The number in parenthesis (0.002) indicates that the 0.83cpl difference is statistically significantly different from zero. The figure –1.92 represents the impact FuelWatch had on the Price Margin; this is the β-term in equation (2). This implies that the Perth net price fell, on average, by 1.92cpl relative to the average of the eastern capitals following the introduction of FuelWatch. The number in parenthesis (0.000) indicates that the –1.92cpl difference is statistically significantly different from zero.

This analysis is consistent with the claim that the WA FuelWatch scheme led to lower prices following its introduction in 2001. Although the ACCC does discuss some important caveats to this analysis, it does not report whether it considered any other factors that could have resulted in a change in relative prices between Perth and the eastern capitals. As shown above, the ACCC had previously suspected that the entry of Coles into the WA market had had an effect, whereas FuelWatch did not. Brian Cassidy told Senate estimates: ‘It is interesting that in the econometric work that was done for our report last year we did find a price effect as a result of the Coles entry, but (a) it was relatively small, and (b) it was less than the price effect of FuelWatch’ (Senate Estimates, 5 June 2008: E7). But it is especially difficult to understand why this particular analysis was not included in Appendix S — this is the most obvious alternative explanation for what had happened in WA, yet they clearly did not see the need to report this analysis in Appendix S.

The Data Dispute and Peer Review

The ACCC declined to make its Appendix S data available for analysis by others, and provided a somewhat confused explanation for its refusal to do so. There are two points worth stressing here. First, Graeme Samuel suggested that the
data belongs solely to Informed Sources, and that independent analysts could replicate the ACCC analysis if Informed Sources chose to release the data. But that argument is not consistent with evidence given by other ACCC officials, and I show below that the ACCC data sets do not belong to Informed Sources. Second, the ACCC’s statements regarding peer review might leave an observer wondering if it ever had any intention of allowing its analysis to be peer reviewed.

Graeme Samuel told the Senate:

We were asked by Informed Sources the other day *whether the data we had* could be made available. We advised Informed Sources that, of course, *it is their proprietary data*, they can make it available to whoever they want, whenever they want, in whatever form they want and the parties to whom they make that data available can then do whatever they like with it. That is not under our control. That is a matter for Informed Sources. *It is their data.*

(Senate Estimates Hansard, 5 June 2008: E32; emphasis added)

Informed Sources, however, do not own the entire dataset that the ACCC use. Informed Sources only own the price series. In other words, it is not possible for Informed Sources to make the ACCC data set available to the public. This was acknowledged by another ACCC officer: ‘The other adjustment we made was for fuel premiums. That is not available to people. That is also confidential data so people would need to go [to] the refineries to get that. We could not release that without the refineries’ agreement. That is their data’ (Ibid: E34). In other words, the data do not all belong to Informed Sources.

It looks almost as if the ACCC has worked hard to avoid any peer review, especially relating to any data release. As an ACCC officer told the Senate:

I might add that a peer review would normally involve the peer getting access to the original data and running their own tests on it. That is what a peer review would normally involve. We have provided the results for people to do that. The tests that we ran are known to other econometricians. As Treasury has also verified, they are standard. As

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5 Informed Sources (www.informedsources.com) is a market research company that collects, inter alia, data on petrol prices.

6 Informed Sources did release their data to some individuals and not others. At the Senate Inquiry into FuelWatch in Melbourne, Graeme Samuel described this as being ‘offensive’ (Senate Hansard, 7 August 2008: E7).

7 This became clear when the ACCC gave evidence to the Senate Inquiry into FuelWatch in Melbourne. Stephen King told the Senate: ‘Professor Davidson has the Informed Sources data, but, as I understand, in his analysis did not adjust that data for taxes and subsidies and did not adjust that data for fuel premium, fuel quality standard-premium’ (emphasis added) (Senate Hansard, 7 August 2008: E10).
long as the owners of the data are prepared to release it, people can go in and apply the standard tests.

(Ibid: E33; emphasis added). The very next speaker in Hansard is Graeme Samuel saying: ‘If Informed Sources wants to release the data that they gave to us to anyone else — they gave it to us under subpoena — they are entirely free to do so.’ Graeme Samuel adds to this perspective:

… I am not in a position to be able to say that we would make our data and our methodology available to anyone out in the public arena. We are not prepared to make all this available for any economic modeller or any economic student to simply go through and then to engage the already heavily worked staff of the ACCC in debate on these issues.

(Ibid: E42, emphasis added). Notice that what was Informed Sources data is now the ACCCs data. The subsequent exchange between Senator Barnaby Joyce and Graeme Samuel is worth quoting in full.

Senator Joyce: Let us cut to the chase: what you are saying is that you will not allow independent reviewing of that modelling work?

Mr Samuel: I would have thought that I did not say that. I said that Treasury had undertaken its own robust analysis. But if there is an economic consulting firm that wants to do its own analysis of the impact of FuelWatch in Perth then they can approach Informed Sources. Not that it is our right to do so anyhow, but we have said to Informed Sources, ‘You are absolutely free to make whatever data you want available to whomever you want on whatever terms and conditions you want to make it, so they are entitled to do their own research and use whatever test they want to use and whatever methodology they want to use. I am sure that there are some economic consulting firms that will find someone prepared to give them a brief to do that.

The extent of Treasury’s ‘own robust analysis’ had been revealed to the Senate Estimates Committee the previous day when Senator Helen Coonan asked for a description of the review that the Treasury had actually done as part of their ‘robust analysis’. A Treasury official replied:

The ACCC sent us the data set that they created to be used as part of the econometric analysis. That was in the form of a starter software that allows you to run these programs. I, myself, actually use Eview[es] and was not able to do that so, …, I referred to one of my colleagues … who has the expertise of this software and I asked him to basically run exactly the same regresional(sic) equation that was provided in the ACCC’s analysis and to check to make sure the results were identical and that it provided statistically significant results. He confirmed all of that”
(Senate Estimates Hansard, 4 June 2008: E90–91; emphasis added).

In other words, the Treasury’s ‘robust analysis’ consisted of them re-estimating the ACCC model, using the ACCC data, and using the same software to determine the same result. Treasury, however, did not undertake a similar robust analysis of the 29 May press release. They told the Senate Estimates committee that they received that analysis on 29 May — the day it was released to the public at large.

Replication

Given that the ACCC would not release its own dataset for analysis, Informed Sources provided its petrol price dataset, including average daily (simple average across the sites monitored by Informed Sources), average weekly (simple average of the average daily prices for that week) and average monthly (simple average of the daily prices for that month) prices for Perth, Adelaide, Melbourne, Sydney and Brisbane, to selected academics and consultancy groups. The selected academics included Don Harding of La Trobe University and me. This is the same data that Informed Sources had provided to the ACCC. That dataset does not include the Fuel Quality Premia, Mogas95 prices or the net taxes used by the ACCC in its analysis. I was able to calculate a similar measure to the ACCC measure but I was not able to replicate the ACCC measure. I calculate a Relative Price measure where the Average of the eastern state capital average prices is subtracted from the Perth average price. In order to confirm the ACCC analysis I estimate the following equation:

\[
\text{Relative Price}_t = \alpha + \beta_1 \text{FW}_{t} + \varepsilon_t
\]  

(3)

where

\[
\text{Relative Price}_t = \text{Average Price}_{\text{Perth}} - \text{Average Price}_{\text{Eastern Capitals}} \text{ at time } t
\]

\[
\alpha \text{ = a constant representing the average Relative Price before the FuelWatch scheme was introduced}
\]

\[
\beta_1 \text{ = the average impact of the FuelWatch scheme}
\]

\[
\text{FW}_{t} \text{ is a dummy variable = 1 after 2 January 2001 and = 0 before 2 January 2001.}
\]

The table below shows the result of this exercise.

**Table 1: FuelWatch structural break test for relative prices (August 1998–June 2007)**

<table>
<thead>
<tr>
<th></th>
<th>Constant</th>
<th>FuelWatch</th>
<th>Adj-R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly Average</td>
<td>3.0246</td>
<td>-0.8529</td>
<td>0.0430</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0002)</td>
<td></td>
</tr>
<tr>
<td>Monthly Average</td>
<td>3.0207</td>
<td>-0.8515</td>
<td>0.0763</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0077)</td>
<td></td>
</tr>
</tbody>
</table>

Numbers in parenthesis are p-values. Standard errors are Newey-West corrected.
The results are consistent with the original ACCC analysis. Before the introduction of Fuelwatch, it appears that the petrol price in Perth was about 3cpl higher than in the eastern capitals. After the introduction of Fuelwatch, it appears that petrol prices in Perth fell by 0.85cpl relative to the eastern capitals.

The ACCC argue that: “Of potentially greater concern is the possibility that something else entirely has driven the improvement in the relative price margin.” The ACCC, however, did not investigate the most obvious other factor — the entry of Coles into the WA fuel market in March 2004. Using the Informed Sources dataset, I investigated that possibility.

I calculate the following equation:

\[ \text{Relative Price}_t = \alpha + \beta_1 \text{FW}_t + \beta_2 \text{Coles}_t + \epsilon_t \]  

where

\[
\begin{align*}
\text{Relative Price}_t &= \text{Average Price}_\text{Perth} - \text{Average Price}_\text{Eastern Capitals} \text{ at time } t \\
\alpha &= \text{a constant representing the average Relative Price before the FuelWatch scheme was introduced} \\
\beta_1 &= \text{the average impact of the FuelWatch scheme} \\
\text{FW}_t &= 1 \text{ after 2 January 2001 and } = 0 \text{ before 2 January 2001} \\
\beta_2 &= \text{the average impact of the entry of Coles} \\
\text{Coles}_t &= \text{a dummy variable } = 1 \text{ after March 2004 and } = 0 \text{ before March 2004}
\end{align*}
\]

Consistent with the ACCC analysis, I use the time period August 1998 to June 2007 for the empirical analysis. Results are shown in Table 2.

<table>
<thead>
<tr>
<th></th>
<th>Constant</th>
<th>FuelWatch</th>
<th>Coles</th>
<th>Adj-R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly Average</td>
<td>3.0246</td>
<td>0.0121</td>
<td>-1.7403</td>
<td>0.2137</td>
</tr>
<tr>
<td>Monthly Average</td>
<td>3.0207</td>
<td>0.0024</td>
<td>-1.7077</td>
<td>0.3890</td>
</tr>
</tbody>
</table>

Numbers in parenthesis are p-values. Standard errors are Newey-West corrected.

The results are now very different from the ACCC analysis. The dummy variable associated with FuelWatch is now not statistically significant. The Coles variable is highly statistically significant and indicates that greater competition in the form of Coles entering the market caused the relative price of fuel to fall by about 1.7cpl. In addition, the adjusted R² are now much higher than before. This result is consistent with the ACCC initial expectation regarding the WA petrol market. As Brian Cassidy told the Senate estimates committee on 5 June 2008: ‘At the time, I readily agree with you — I did not actually say it in evidence — my feelings were that it was probably the entry of Coles that had the major impact on prices in WA, but I have been subsequently proven wrong’ (Senate Estimates Hansard, 5 June 2008: E7). The irony, of course, is that Brian Cassidy
was not ‘proven wrong’: the ACCC did not report any analysis comparing FuelWatch and the entry of Coles into the WA market in its 2007 report. The analysis here supports his initial views.

The Harding Critique: Real Margins not Nominal Margins

Don Harding of the School of Business at La Trobe University released a comprehensive econometric critique of the ACCC Appendix S analysis (Harding 2008a; 2008b). He argues that the ACCC relied on a nominal price margin when it should have used a real price margin. Specifically, Harding is able to show that once the data are corrected for inflation, ‘it is not possible, based on this data, to say as the ACCC did that the WA FuelWatch scheme did not act to increase the real retail margin for petrol in Perth.’

In the analysis above, like the ACCC, I too have relied on nominal relative prices. Therefore in order to check the robustness of my results I calculate the inflation adjusted average petrol prices in each of the capital cities in constant May 2008 dollars, then recalculate the relative price margin and then re-estimate equations (3) and (4). Consumer Price Index data are published by the Australian Bureau of Statistics on a quarterly basis. I use the quarterly figure for each month within the quarter, but also use the average quarterly petrol price reported by the Australian Automobile Association to provide a further check to the analysis. Results are shown in Table 3.


<table>
<thead>
<tr>
<th></th>
<th>Constant</th>
<th>FuelWatch</th>
<th>Coles</th>
<th>Adj-R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly Average</td>
<td>5.4407</td>
<td>-0.8041</td>
<td>0.0268</td>
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<td>Monthly Average</td>
<td>5.4407</td>
<td>0.6184</td>
<td>-2.8451</td>
<td>0.4641</td>
</tr>
<tr>
<td>Quarterly Average</td>
<td>4.8883</td>
<td>-0.7123</td>
<td>1.2154</td>
<td>0.0801</td>
</tr>
</tbody>
</table>

Overall, the results are consistent with my previous analysis. The introduction of the FuelWatch scheme into WA had a small effect, if any, while the arrival of Coles had a large effect on petrol prices in Perth relative to the eastern states. It is worth noting that in two of the equations the FuelWatch coefficient is positive (although only statistically significant in one instance), which indicates that, everything else being equal, FuelWatch actually caused prices to rise in Perth relative to the eastern capitals. Not too much should be made of that result, however, as the significance level (p = 0.0967) is very poor.

The net result of the empirical analysis I have conducted is that the ACCC has underestimated the impact of the Coles entry into the WA market. What is particularly troubling is that the ACCC did not report any analysis along these
lines in their 2007 report, although they assure the Senate Estimates committee that (a) they had undertaken that analysis and (b) that the Coles effect was small. I have argued the Coles effect is not small and it dominates the FuelWatch effect.

**Margins Reduced Everywhere!**

The ACCC investigated the differential between Perth and eastern capital cities and found that FuelWatch had reduced the price differential. In this section I argue against that conclusion by *reductio ad absurdum*.

I calculate, using the weekly Informed Sources price data, the differential between Sydney and Melbourne and subject that price differential to the ACCC test; that is, the introduction of FuelWatch to WA, and also the introduction of Coles into WA. Results are shown in Table 4.

**Table 4: FuelWatch and Coles structural break test for relative prices (August 1998–June 2007). Dependent variable is (Price_{Sydney} – Price_{Melbourne})**

<table>
<thead>
<tr>
<th></th>
<th>Constant</th>
<th>FuelWatch</th>
<th>Coles</th>
<th>Adj-R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly Average</td>
<td>1.6786</td>
<td>-1.0446</td>
<td>0.2742</td>
<td>0.0579</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0002)</td>
<td>(0.0003)</td>
<td></td>
</tr>
<tr>
<td>Weekly Average</td>
<td>1.6786</td>
<td>-1.1809</td>
<td>0.2742</td>
<td>0.0567</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0003)</td>
<td>(0.4521)</td>
<td></td>
</tr>
</tbody>
</table>

Numbers in parenthesis are p-values. Standard errors are Newey-West corrected.

The ACCC-type test tells us that the introduction of FuelWatch into the WA market had the effect of reducing the petrol price differential between Sydney and Melbourne. That result is clearly absurd. It is pleasing, however, that the entry by Coles into the WA market had no effect on the Sydney–Melbourne price differential. That, of course, is the result that we would expect.

**Consumer Empowerment?**

The ACCC subsequently shifted the policy goalposts to arguing that saving a few cents per litre was not the objective of the policy at all. According to Graeme Samuel: ‘It is not about 1.9c or 0.7c or whatever econometric modelling might be able to show’ (Senate Estimates Hansard, 5 June 2008: E16); rather the FuelWatch scheme would empower consumers. Graeme Samuel has described FuelWatch as ‘a consumer empowerment exercise. It is designed to empower consumers to take advantage of a competitive marketplace’ (Ibid).

We are invited to believe that fixing prices constitutes a ‘competitive marketplace’. This is, of course, entirely counterintuitive. As Chris Bowen wrote in the *Sydney Morning Herald*: ‘I was intrigued that the body whose charter is to promote competition in Australia was telling Australia’s first Competition Minister that a scheme to limit changes in petrol prices should now be considered to promote competition in the fuel market’ (SMH, 4 June 2008; emphasis added). Chris Bowen’s scepticism was well-placed and we know that he was convinced by the ACCC’s econometric analysis that has been critiqued above. In essence, the ACCC was trading off fixed prices against asymmetric information. The difficulty the
ACCC have is that it did not say how big the asymmetric information problem is in the petrol market, nor do the ACCC provide any argument or evidence to suggest that the economic gains from reducing asymmetric information are greater than the economic costs of price fixing. Asymmetric information is a theoretical problem — in the real world markets evolve solutions to deal with that problem (albeit imperfectly). By contrast, price fixing is a real-world problem. So much so that price fixing is illegal under the Trade Practices Act. After much prompting by Senator Helen Coonan, the ACCC admitted that if petrol retailers colluded to create their own FuelWatch-type scheme whereby prices were fixed for 24 hours ‘then that is rather more likely to be a breach of the Trade Practices Act’ (Senate Estimates, 5 June 2008: E81).

**Conclusion**

The ACCC has not produced a rigorous assessment of FuelWatch. Furthermore, the ACCC discouraged external assessment of their analysis. It made use of ‘secret data’, ‘secret econometric tests’, ‘secret analysis’, and ‘secret recommendations’ to government to propose a national FuelWatch scheme. Ultimately, the Australian population are being invited to believe that the national adoption of FuelWatch is good public policy simply because the ACCC asserts it to be good policy. Yet there is no corroborating evidence to support the ACCC’s assertion. Indeed, all the empirical evidence in the public domain rejects the ACCC’s position.

We argue FuelWatch will reduce the level of price competition in the petrol market. The present significant degree of price competition in the retail petrol market is likely to be translated into non-price competition. Non-price competition is likely to make petrol pricing less transparent rather than more transparent. That loss in transparency disadvantages those consumers who would prefer a lower price to an enhanced Loyalty Scheme. Thus, the unintended consequences of the FuelWatch scheme will be to increase existing barriers to entry, increase market power of existing retailers, and disadvantage those consumers who buy their petrol at the bottom of the pricing cycle. In order to protect the ‘integrity’ of the FuelWatch system, the ACCC would have to prohibit competition for petrol in both pricing and promotional terms. This highlights the fundamental problem with FuelWatch.

**References**


APEC Moves Behind-the-Border: Evidence that Structural Reform Will Hasten Income Convergence in the Asia-Pacific Region

Robert A. Buckle* and Amy A. Cruickshank**

Abstract

This paper provides empirical estimates of the impact of domestic regulations and structural policies on income convergence in APEC economies since 1989. It is concluded that structural policies can reduce the ‘half-life’ of complete income convergence from about a century to a matter of a single generation. It also analyses the recent shift in focus of APEC to place greater emphasis on structural policies in promoting regional economic integration.

The Evolution of APEC Priorities

The promotion of sustainable economic growth and improved living standards in the Asia-Pacific region through enhanced trade and economic integration lies at the heart of APEC’s mission. Although significant tariff peaks still exist in some areas in APEC, such as food and primary production, significant progress in tariff reduction in the APEC region has been achieved (average tariffs have decreased from 16.6 per cent in 1988 to 6.4 per cent in 2004).

While APEC’s focus has traditionally been on trade and investment liberalisation, it has more recently turned its attention also to the role played by ‘behind-the-border’ policies in enabling or impeding regional economic integration, also commonly referred to as ‘structural policies’ or ‘structural barriers’.

In 2004 APEC Leaders recognised that structural reform is essential for realising the full benefits of trade and investment liberalisation and achieving sustainable improvements in living standards by endorsing the Leaders’ Agenda

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1 Founded in 1989, APEC (Asia Pacific Economic Cooperation) is a grouping of ‘economies’ on the Asia-Pacific Rim. It currently has 21 members: Australia; Brunei Darussalam; Canada; Chile; People’s Republic of China; Hong Kong, China; Republic of Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; Republic of the Philippines; Russia; Singapore; Thailand; Chinese Taipei; United States; and Viet Nam.

2 In 1996, in all countries except Australia and New Zealand, MFN average applied tariffs for agriculture are higher than for the whole economy (OECD 2001).

3 Behind-the-border policies refer to domestic measures which enable or impede the efficient operation of markets and the capacity of businesses to operate. These can take the shape of domestic regulatory systems, competition frameworks, and governance structures.
to Implement Structural Reform (LAISR). There was an increased emphasis on LAISR in Australia’s 2007 host year. During 2007, the mode of operations of the APEC Economic Committee was reformed to focus on the five LAISR priority areas and to inject greater impetus to structural reform in the region. In August 2008 Australia hosted the first APEC ministerial meeting wholly dedicated to structural reform. The 16th APEC Leaders’ Summit, held in Lima on 23 November, strongly endorsed structural reform.

This paper provides empirical evidence for the strong impact structural policies can have on income convergence of APEC economies.

Section 2 of the paper reviews the theoretical and empirical literature on economic growth and income convergence, and the role of structural policies in impeding or promoting growth and convergence. Estimates of income convergence amongst APEC economies and the effect on income convergence of structural policies are presented in section 3. Section 4 reviews APEC’s role in promoting improved structural policies in the Asia-Pacific region. Concluding remarks are provided in section 5.

Economic Growth and Income Convergence in the Asia-Pacific Region

Economic growth models provide a framework for thinking about how economic growth processes and income convergence take place, and how behind-the-border policy settings can influence the process. Traditional and modern economic growth theories suggest that we would expect to find lower-income economies growing faster than higher-income economies, thereby bringing about the convergence of per-capita incomes between economies over time.

Convergence in the neoclassical growth model is driven by capital flowing from places where it is abundant (high-income economies) to where it is scarce (low-income economies) to achieve the highest possible returns. In this way, economic integration can bring about growth and income convergence. However, empirical evidence suggests that capital flows from high-income to low-income economies are very modest and much less than predicted by the neoclassical growth model (Lucas 1990). Migration, trade and specialisation are other mechanisms that could drive growth and income convergence (see Sinn 2007; Frankel and Romer 1999).

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5 This was foreshadowed by a preliminary conference in December 2006 on ‘Reshaping APEC for the Asia-Pacific Century: Priorities and Strategies’. The program and papers prepared for the APEC Study Centre Network Preliminary Conference are available here: http://www.apec.org.au/event2.asp?event=40.
7 A fuller discussion of economic growth and income convergence mechanisms is provided in Buckle and Cruickshank (2007).
Endogenous growth models emphasise the spill-over of ideas and technological knowledge as a key mechanism driving growth and income convergence. The transfer of scientific knowledge may occur through foreign direct investment (FDI) in low-income economies, bringing with it the skills of investors, or through international trade. Economies may ‘learn by exporting’ through interacting with foreign customers and learning how to meet higher product standards, or through technology embodied in imports. Keller (2004) surveys the literature on the extent of international technology diffusion and the channels through which technology is spread. He concludes that there is no evidence that international learning is inevitable, or that it is easier for relatively undeveloped economies. Evidence suggests that importing is associated with technological spill-overs, but evidence of benefits associated with exporting is weaker. The literature suggests that there can be spill-overs from FDI but they vary between economies, regions, sectors, and firm structures. Similar conclusions are drawn in the surveys by Greenaway and Kneller (2007) and Wagner (2007).

In addition to ‘static gains’ from trade (arising from economies exploiting their comparative advantage and economies of scale), there are also potential ‘dynamic gains’ from trade. Dynamic gains from trade refer to trade-related improvements in an economy’s productivity growth rate that arise from increased integration in the global economy. A recent OECD (2007) study identified three interconnected channels through which trade may increase productivity: by increasing investment; aiding technological diffusion; and promoting the competitive impetus to innovate. The empirical evidence on dynamic gains from trade is mixed. Research has not established a robust link between trade policy and long-run productivity growth rates. However, there is a strong correlation between increasing shares of trade in gross domestic product (GDP) and GDP growth.

Traditional and modern growth theories imply that there are potential benefits from ‘economic openness’ for all economies, not simply the lower-income economies, through specialisation, better allocation of skills and other resources, the dynamic interaction of learning, and the two-way spill-over of knowledge. Outward-orientation and strong growth performances have resulted in impressive economic growth in some low-income economies in the APEC region in recent years. Notable examples include China and Vietnam and, earlier, Korea and Singapore. However, progress across the APEC region has been patchy and evidence suggests that convergence mechanisms may not be operating as well as expected in some economies due to barriers at and behind the border. Furthermore, recent thinking suggests that what it takes to achieve growth at lower income levels may be different from what it takes to sustain growth at higher levels of income, and over the long term (World Bank 2007a; Rodrik 2003; Gill and Kharas 2007). This raises the question of not only how to lift performance in the slower-growing economies but also whether, and how, the
recent impressive growth performances of some economies in the region can be sustained in the future.

Results from growth regressions suggest that deregulation in countries that start from a position of heavy regulation will result in improved economic performance. Djankov et al. (2005) found, after controlling for other factors, that economies with better regulations, as measured by the World Bank’s Ease of Doing Business indicator, grow faster. In particular, they concluded that improving from the worst quartile of business regulations to the best implies a 2.3 per cent increase in annual GDP growth. Improving from the worst quartile to the third quartile implies a 1.1 per cent increase in annual GDP growth. Erickson (2006) updated this work using the 2006 Ease of Doing Business data and an expanded sample of economies. Erickson was not able to reject the basic message of Djankov et al. that economies with better regulations grow faster, although his estimates of the gains were smaller (concluding that economies would achieve a 1.4 per cent growth increase from moving from the worst quartile to the best, and 0.6 per cent increase from moving from the worst quartile to the third quartile).

Alesina et al. (2005) show that the effect of product-market deregulation in OECD countries since the 1970s had significant effects on investment in utilities, transport and communications. By using indices of product-market regulation and by estimating the effects of these regulations on the rate of growth catch-up at the industry level in OECD economies, Nicoletti and Scarpetta (2003) show that product-market regulation tended to slow down catch-up growth in manufacturing and services. Their evidence also suggests that entry-limiting regulation may hinder the adoption of new technologies, possibly by reducing competitive pressures, technology spill-overs, or the entry of new high-technology firms.

Using a different approach, which captures general equilibrium adjustments and links various economies in the region, Dee (2005) evaluates the economic payoffs from structural policy reform in the East Asian region. This study includes nine APEC economies: China, Japan, Korea, Indonesia, Malaysia, Philippines, Singapore, Thailand and Australia. Dee examines the impact of three scenarios: a regional preferential trade agreement (including trade liberalisation and the elimination of regulations that discriminate against foreigners); the successful completion of the Doha round of World Trade Organisation (WTO) negotiations; and unilateral regulatory reform. Dee’s estimates show that preferential trade liberalisation and preferential reform of regulations would add US$16.6 billion per annum and US$2 billion per annum respectively to regional income. The successful completion of the Doha round would result in much larger gains of over US$30 billion per annum. However, by far the largest
gains result from unilateral regulatory reform, which is estimated to result in gains of over US$100 billion per annum for the region.

On a cautionary note, the studies referred to in this section do need to be treated with some care given the difficulties in quantifying the extent of domestic regulatory restrictiveness, and hence measuring the gains from reforming. However, reviews of the evidence, such as the paper by Crafts (2006), suggest that the quality of regulation can impact significantly on productivity growth. Crafts also reviews other evidence of the effects of regulations on productivity and growth, including the transmission channels, and concludes that there is solid evidence that product-market regulation reduces productivity growth, particularly through creating barriers to entry, and this is more damaging in the context of new technological opportunities.

This review of international evidence suggests that in order to promote regional economic integration and productivity growth, it is appropriate that APEC promotes sound microeconomic structural policies, in addition to its traditional focus on trade and investment policies, and macroeconomic and financial policies. This is also supported by insights from the experiences of economies that have undertaken comprehensive or even partial structural reforms that suggest policy coherence is important. Policy coherence is achieved when economic policies support, or at least do not undermine, the effectiveness of other policies in attaining overall policy objectives, such as improved economic performance and higher standards of living. For example, openness to trade and FDI leads to opportunities, not guarantees, which may not be realised if structural policies do not support competition and efficiency. Similarly, gains from structural reforms increase significantly in an economy that can leverage global opportunities (APEC Policy Support Unit 2008).

Chile’s pro-competitive reform is an example of how policy can be designed to enhance the beneficial effects of trade policy reform. During the period after the late 1970s, Chile gradually removed high import tariffs and moved toward a low-level uniform import tariff (Corbo 1997). In order to avoid the negative impact of a uniform tariff on domestic competition, from the 1990s Chile introduced a more liberal investment regime and started to negotiate preferential trade agreements (PTAs) with many trade partners in a strategy of ‘additive regionalism’, thus allowing a significant number of foreign firms to fully compete with domestic producers.

In the next section we undertake a simple test of whether structural policies impact on income convergence in APEC economies by estimating a standard cross-economy convergence model for the region using a method along the lines of Baumol (1986) and Barro (1991).
Testing Income Convergence amongst APEC Economies

If incomes of APEC economies were converging we would expect to see a negative correlation between initial income levels and the subsequent growth rate of incomes, since low-income economies would be growing faster than high-income economies. Figure 1 plots the real average per-capita income level of APEC economies in 1989 against the real average annual growth rate of per-capita income for the period 1989 to 2007. The figure is suggestive of convergence in the region. However, progress is patchy and there is a cluster of economies with low initial incomes that are not ‘catching up’.

Figure 1: Convergence of APEC economies’ incomes, 1989–2007

The diversity of APEC economies, in terms of their income and productivity levels, recent economic growth, and business environments, means it is an interesting case to evaluate income convergence issues. Some low-income economies in the APEC region are growing rapidly (such as China and Vietnam), some moderately (such as Mexico and Peru), and some quite slowly (such as PNG and the Philippines), despite marked reductions in tariffs across the region. The business and economic environment also varies markedly across the region. As shown in Figure 2, the ranking of APEC economies in cross-country studies of the business and economic environment ranges from first to fifty-first out of 55 economies in terms of economic competitiveness and first to one-hundred-and-fortieth out of 181 economies in the ease of doing business (World Competitiveness Online 2008; World Bank Ease of Doing Business Database 2009).
It is possible to test empirically whether convergence is occurring in the APEC region, irrespective of economies' structural policies. Per-capita income convergence is a property derived from the neoclassical growth model. Letting $y^*$ denote the steady state level of per-capita income and $y(t)$ the level of per-capita income at time $t$, the growth rate of per-capita income around the steady state can be approximated by the following differential equation:

$$
\frac{d \ln(y(t))}{dt} = \beta \left( \ln(y^*) - \ln(y(t)) \right),
$$

where $\beta > 0$.

This equation states that the further away an economy is from its steady-state level of per-capita income the faster its growth rate of per-capita income, where $\beta$ measures the speed of convergence to the steady state. This is known as unconditional $\beta$-convergence — the property that poor economies will tend to grow faster than rich economies that have the same steady-state level of per-capita income. Equation (1) implies that:

\[ \text{Figure 2: Ease of doing business, and world competitiveness indices, APEC economies} \]
where $y(0)$ is income per capita in the initial period. Subtracting $\ln(y(0))$ from both sides of equation (2) yields:

$$\ln(y(t)) - \ln(y(0)) = (1 - e^{-\beta t}) \ln(y^*) - (1 - e^{-\beta t}) \ln(y(0))$$

(3)

Based on equation (3), various researchers have estimated the following cross-economy regression:

$$\frac{1}{t} \ln \left[ \frac{y(t)}{y(0)} \right] = a + b \ln(y(0)) + \epsilon_i$$

(4)

where $t$ is the annualised growth rate of per-capita income in economy $i$ between time 0 and $t$, $y(0)_i$ is the level of per-capita income in time 0, and $\hat{b} = \frac{- \left(1 - e^{-\beta t} \right)}{t}$. Regression (4) is an approximation and has the limitation that if extrapolated over a long time period, per-capita incomes will eventually begin diverging as countries with low initial incomes and higher annual growth rates overtake countries with higher initial incomes.

If per-capita income convergence (often described as ‘catch-up’) was occurring, then we would expect to see a negative relationship between initial per-capita income levels and subsequent growth rates (that is, we would expect the $b$ coefficient in regression (4) to be negative). There is some debate in the literature about whether it is appropriate to weight observations according to the size of the economy (that is, to place greater weight on China than Chile). Since we are interested in convergence between economies with different policy settings, we have given equal weight to each of the cross-sectional observations in this paper.

The results of regression (4) are summarised in columns (a) to (d) of Table 1. Looking at the 16 years prior to the formation of APEC (1972–88), there is no evidence of per-capita income convergence in APEC or the rest of the world. However, in the period since APEC was formed in 1989, there is evidence of convergence in the APEC region. The estimates suggest that the annual average rate of convergence in the APEC region over the period 1989–2007 is 0.73 per cent. This means that the estimated ‘half-life’ (the time taken to close half of the gap between income levels of high- and low-income economies) for APEC is

8 From (3) and (4), the annual rate of convergence is calculated as follows: $\hat{b} = \frac{- \left(1 - e^{-\beta t} \right)}{t}$, therefore $\hat{\beta} = -\frac{\ln(1 + \hat{b})}{t}$. 
96 years. These results are based on real per-capita incomes expressed in US dollars from the United Nations Statistic Database. If per-capita income is measured in purchasing power parity (PPP) terms (to account for differences in the relative prices of goods and services in different economies) then the estimated speed of convergence is slightly faster. For the period 1989–2007, the annual average rate of convergence in the APEC region (for the 18 APEC economies for which data are available) is 0.85 per cent. This means that the estimated half-life is 81 years.\(^9\)

While there has been convergence on average of per-capita income levels of APEC economies, Figure 1 indicates that the process is characterised by some low-income economies achieving very high growth, some merely matching the growth of higher-income economies, and some economies falling behind. The theoretical literature and previous empirical studies suggest that differences in structural policies between countries could go some way toward explaining these differences in economic performance.

It is possible to test empirically whether economies are not catching up because of poor structural policies by estimating a conditional convergence model that controls for the quality of the economies’ structural policy settings.\(^{10}\) As mentioned previously, cross-country rankings of the business environment and competitiveness provide an indicator of the quality of structural policies. The World Bank’s Ease of Doing Business (EoDB) study endeavours to capture the direct costs of doing business (for example, costs of opening a business, accessing finance, and so on). The World Competitiveness Yearbook (WCY) is a comprehensive measure and takes into account ‘economic performance’ (for example, international trade and investment), ‘government efficiency’ (for example, fiscal policy), ‘business efficiency’ (for example, labour market policy) and ‘infrastructure’. We present results that use both the EoDB and WCY rankings. The cross-economy regression model is:\(^{11}\)

\[
\frac{1}{t} \ln \left( \frac{y(t)}{y(0)} \right) = a + b \ln(y(0)) + cSP + \varepsilon_i, \tag{5}
\]

\(^9\) The GNI per-capita purchasing power parity (PPP) data come from the World Development Indicators Database. The sample of 18 economies excludes Russia, Brunei Darussalam and Chinese Taipei due to data gaps.

\(^{10}\) Another approach would be to look at the relationship between structural policy settings and economic growth performance, irrespective of initial income levels. Since higher-income economies tend to have better rankings on average in studies of the business environment than lower-income economies, and also tend to grow slower on average (as we would expect from convergence models), then we find no statistically significant relationship for APEC economies between structural policy settings on their own and economic growth.

\(^{11}\) An alternative to this model to test whether economies are not catching up because of poor structural policies would be to regress the residuals from regression (1) on the measure of structural policies; however, we believe specification (2) is more appropriate because we consider that initial income and structural policies are likely to be jointly determined.
where SP is a measure of the quality of structural policies for each economy (here we use economies’ rankings in the EoDB Survey and the WCY as a proxy for the quality of structural policies). SP is the average ranking in these indexes for the years in which data are available.\(^{12}\)

The results of regression (5) are summarised in columns (e) to (g) in Table 1. There is evidence that structural policies seem to explain why some economies are not catching up. Economies with poor structural policies (proxied by high rankings in the cross-country measures of business competitiveness) tend to have lower annual growth rates on average. Also notice that when convergence is conditional on structural policy settings there is stronger evidence of income convergence. Using a narrower measure of the quality of structural policies, the Ease of Doing Business Index, the average annual rate of convergence is 1.57 per cent relative to 0.73 per cent in the unconditional convergence model. Using a broader measure of the quality of structural policies, the World Competitiveness Yearbook, the annual average rate of convergence is slightly higher at 1.74 per cent.\(^{13}\)

Since the two measures of the quality of structural policies pick up different aspects of the business and economic environment, including both measures in the regression produces stronger results. While multi-collinearity may be a problem in this regression since the two measures of structural policies are quite highly correlated, the F-statistic suggests that overall they improve the fit of the model (at five per cent level of significance).\(^{14}\)

These results suggest that structural policies can reduce the half-life of complete income convergence from about a century to a matter of a single generation. To test how confident that we can be in the half-life computations, we compute a 95 per cent confidence interval, and find that the results based on the unconditional convergence regression (d) are quite variable. We can be 95 per cent confident that the time to close half of the gap between the income levels of high- and low-income economies is between 50 to 563 years; whereas we can be much more confident in the results from the regression that controls for structural policies (regression g). When convergence is conditional on structural policy settings, we can be 95 per cent confident that the time to close

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\(^{12}\) Russia and Chinese Taipei are excluded from all regressions due to data gaps. WCY rankings are available for 2004–08, and include APEC economies except for Brunei Darussalam, PNG, and Vietnam. Consistent EoDB rankings are available for 2008–09 and include APEC economies except for Brunei Darussalam.

\(^{13}\) The results in columns (e) to (g) of Table 1 use a smaller sample size than the results presented in column (d) since the WCY and EoDB Study do not cover all of the economies included in the sample for regression 1. However, running regression 1 with the smaller sample of economies gives you a similar result regarding income convergence — an annual average rate of convergence of 0.849 per cent (15 economies) and 0.63 per cent (18 economies).

\(^{14}\) The partial correlation coefficient between the WCY rankings and the EoDB rankings for the 15 APEC economies in the sample is 0.75.
half of the gap between the income levels of high- and low-income economies is between 19 to 59 years.

Table 1: Per capita income convergence: 1972–88 and 1989–2007

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>(a) World</td>
<td>0.0003 (0.8488)</td>
<td>-0.0193 (0.0004)</td>
</tr>
<tr>
<td>(b) APEC</td>
<td>-0.0044 (0.1542)</td>
<td>-0.0010 (0.0064)</td>
</tr>
<tr>
<td>(c) World</td>
<td>-0.0007 (0.6781)</td>
<td>-0.0003 (0.0316)</td>
</tr>
<tr>
<td>(d) APEC</td>
<td>-0.0068 (0.0198)</td>
<td>-0.0003 (0.0316)</td>
</tr>
<tr>
<td>(e) APEC</td>
<td>-0.0138 (0.0037)</td>
<td>-0.0153 (0.0005)</td>
</tr>
<tr>
<td>(f) APEC</td>
<td>-0.0138 (0.0037)</td>
<td>-0.0153 (0.0005)</td>
</tr>
<tr>
<td>(g) APEC</td>
<td>-0.0068 (0.0198)</td>
<td>-0.0153 (0.0005)</td>
</tr>
</tbody>
</table>

Note: Probability values are in parentheses. Regression results presented in columns (a) and (c) include economies from the rest of the world, excluding APEC economies, where data are available for the period 1972–2007 from the United Nations Statistical Database. As a result of data gaps, regression results in columns (b), (d), and (e)–(g) exclude Russia and Chinese Taipei; columns (f) and (g) exclude Brunei Darussalam, Peru, PNG and Vietnam; and column (e) excludes Brunei Darussalam.

Role of APEC in Encouraging Structural Change

The review of international evidence in Section 2 and the results presented in Section 3 suggest that, in order to promote regional economic integration and productivity growth, it is appropriate that APEC promotes sound microeconomic structural policies, in addition to its traditional focus on trade and investment policies and its somewhat more recent focus on macroeconomic and financial policies.

The linkages between the three mutually reinforcing elements of trade and investment policies, structural policies, and macroeconomic and financial policies are depicted in Figure 3. This figure represents the mandates of APEC’s three main policy committees: the APEC Committee on Trade and Investment (CTI), the Economic Committee (EC), and the Finance Ministers’ Process (FMP). The greater emphasis that APEC is now placing on structural policies, coordinated and led by the Economic Committee, provides it with a more coherent economic policy agenda.
Figure 3: Three elements of APEC’s economic agenda

APEC provides Australia, New Zealand and other member economies with a forum to pursue measures promoting a stronger, more integrated and flexible regional economy. From the perspective of Australia and New Zealand, APEC has the additional advantage of including a number of economies that are economically important to them.

There are a number of other international and regional organisations that promote structural policy change, such as the Organisation for Economic Cooperation and Development (OECD) and the World Bank. APEC aims to draw on the work of these other organisations, but it also ‘adds value’ in a number of ways. APEC’s cooperative, voluntary and informal manner of operations means that it is a good place to discuss economic policy challenges facing the Asia-Pacific region in an informal and non-adversarial environment. APEC promotes structural reform by providing a forum for senior officials across the region to discuss economic policy challenges, share experiences, build capability, and discuss good practices.

15 APEC draws on the work of other organisations by, for example, collaboratively developing tools such as the ‘APEC-OECD Integrated Checklist on Regulatory Reform’, by inviting participation from the OECD and World Bank in APEC seminars and workshops, by drawing on the research these organisations have undertaken (such as the World Bank’s EoDB indicators), and contracting research work from specialists from these organisations.
As mentioned previously, one of the interesting features of APEC is that it is a grouping of economies with quite different characteristics, and at different stages of development. While this raises some challenges, it also means that there is considerable scope for the sharing and learning from each others’ experiences. Since cooperation which leads to mutual benefit does not require negotiation, APEC can contribute to improvements in members’ domestic policies by fostering meaningful dialogue on structural policy issues. APEC also has a unique linkage to perspectives from the business community through the APEC Business Advisory Council (ABAC).

While the benefits of structural policy change are becoming increasingly clear, reforms often involve quite fundamental changes to how markets operate, and so can face resistance from groups that have a vested interest in the status quo. Reform can also involve transitional dislocations. Hence there are potentially significant social and political tensions and challenges involved in undertaking structural reform. APEC’s approach to promoting structural policy reform has three main dimensions: policy dialogue, capacity building and awareness raising. These are each explained in turn below.

Structural policy reforms can be supported by discussing and drawing on examples of good practices from other economies. APEC facilitates the discussion and sharing of experiences through holding policy discussions, workshops and seminars, and developing good practice guidance in areas such as regulation, competition policy and corporate governance. For example, in February 2008 APEC held the first ever high-level one-day policy dialogue amongst APEC senior officials on structural reform. The EC also holds regular information-sharing discussions at its meetings styled on OECD roundtable discussions; recent examples include discussions on how to balance accountability and innovation in the public sector, and the attributes of a robust regulatory reform framework.

Economies need the financial resources and technical expertise to drive structural change. There are several ways this can be achieved. For example, the World Development Report (World Bank 2005) suggests that economies may wish to start strengthening capacity by improving the expertise of the civil service and the quality of information available to guide and administer reforms. It also highlights the importance of economies improving processes for ongoing learning from within economies and from the experiences of other economies. APEC provides a forum for economies to learn from each others’ experiences, and holds regular workshops and training courses to build capacity to support structural reform; recent examples include workshops held by the EC in 2008 on e-governance, and government performance and results management.

For reforms to be successful, it is important that the costs and benefits of policy approaches are well communicated and understood by key stakeholders. Practical steps suggested by the World Development Report (World Bank 2005)
to improve communications include raising public awareness about structural reform, mobilising a broader range of support, and maintaining momentum by, for example, establishing institutions to sustain the reform progress. APEC helps communicate the costs and benefits of policy approaches and keep structural reform issues at the fore. One way it does this is through its annual publication to APEC Leaders, the APEC Economic Policy Report.\textsuperscript{16}

**Conclusion**

APEC’s focus has shifted recently to place greater emphasis on behind-the-border structural policies in promoting regional economic integration, in addition to APEC’s traditional focus on at-the-border trade and investment liberalisation and facilitation, and macroeconomic and financial policies. International research and country reform experiences, such as in Australia, Chile and New Zealand, suggest that policy coherence is an important ingredient to the success of economic reforms. Results presented in this paper suggest that behind-the-border policy settings, including the quality of regulations and costs of doing business, impact on the rate of economic growth convergence in the APEC region. We conclude therefore that APEC’s recent emphasis on improving the quality of behind-the-border policies, most notably through the work of APEC’s Economic Committee and the implementation of LAISR, complements APEC’s traditional emphasis on trade and financial policy issues and provides a more coherent economic agenda and a more coherent approach to its goals of regional economic integration and economic growth.

**References**


\textsuperscript{16} The APEC Economic Policy Report is available from: http://www.apec.org/apec/apec_groups/economic_committee.html


World Bank 2007a, ‘10 years after the crisis, special focus: Sustainable development in east Asia’s urban fringe’, East Asia and Pacific Update.

Setting access prices: A critique of the ACCC’s approach in telecommunications

Henry Ergas¹

Abstract

Any access-system prices in multi-service networks must meet two constraints. Firstly, ‘the multi-service adding-up constraint’; that is, the sum of the regulated access charges across the range of services provided by the network must be no less than the amount which would the cover the costs of the network. Secondly, an inter-temporal or time-consistency constraint, under which the present value of the expected path of access charges over time must be no less than the initial cost. This paper argues that neither constraint is met by the access prices the ACCC has set in telecommunications.

Third-party access regimes, which impose on an incumbent an obligation to provide third parties with access to designated services and facilities at regulated terms and conditions, have become widespread in Australian infrastructure industries since the Hilmer Report (Independent Committee of Inquiry into Competition Policy in Australia 1993) and the subsequent implementation of National Competition Policy in 1995. A key component of these regimes is the setting of regulated access prices, and the desirability or otherwise of the regimes is likely to depend on just how efficiently these prices are set. In effect, even if there were a market failure (presumably associated with monopoly power) that third-party access was intended to cure, whether the resulting cure increases social welfare must depend on just how severe ‘government failure’ will be in the implementation of that cure.

The central proposition of this paper is that in telecommunications regulated access prices have been characterised by serious inefficiencies. There has, in other words, been substantial ‘government failure’ in the regulatory regime.

Evaluating the extent of the resulting ‘government failure’ is complex. While it is readily accepted that access prices should ensure recovery of the costs access providers efficiently incur (Productivity Commission 2001 and 2002), ‘costs’ are not, from the standpoint of the economist’s subjectivist view, a simple construct

¹ Concept Economics, HenryErgas@concepteconomics.com.au. I am very grateful to Eric Ralph and Alexis Hardin for their help in the preparation of this article. I also acknowledge my debt to Telstra, as my appreciation and understanding of these issues has originated in my consultancies. Finally, I am grateful to the Editor, for several helpful comments on the initial draft. The views expressed here are, of course, strictly my own.
that is readily capable of objective verification (Buchanan 1969/1998: 43). The problems of cost verification are all the more difficult in infrastructure industries, where the bulk of costs are sunk and involve capital assets for which there are no, or few, secondary markets. Moreover, in telecommunications, all of these problems are accentuated by the presence of pervasive economies of scale and scope, by the sheer technical complexity of telecommunications networks and by rapid technological change. Finally, any evaluation of regulatory decisions is hindered by the fact that those decisions are often themselves complex and opaque, and may involve data not all of which is in the public domain.

Those difficulties notwithstanding, this article presents a critical evaluation of telecommunications access pricing, as it has been determined by the Australian Competition and Consumer Commission (ACCC). The focus is not on how those prices compare to ‘costs’ but, rather, on how well they compare to some de minimis benchmarks that can be readily derived both from the economic theory of access pricing and from the ‘thought experiment’ on which the ACCC has relied in its approach to telecommunications costing.

Specifically, I examine the degree to which access pricing decisions have been consistent with an adding-up criterion, in which prices, aggregated across regulated services and over time, must recover total costs. I find that this criterion is not met, both with respect to the structure of prices at any point in time and with respect to the path of prices over time.

The structure of this paper is as follows. I begin by explaining some key features of the institutional context and the powers it vests in the ACCC. I then discuss the approach the ACCC has used to cost telecommunications services and derive from it two crucial consistency tests: the first relates to whether costs ‘add up’ as between the full set of regulated services, and the second to cost recovery over time. On that basis, I briefly consider some factors which may explain the observed outcomes and then conclude with some recommended changes to the regime.

The legal framework

Third-party access rights are provided for in Australia under both economy-wide instruments and through legislation specific to particular industries. The economy-wide regime is set out in Part IIIA of the Trade Practices Act, which was enacted in 1995 subsequent to the Independent Committee of Inquiry into Competition Policy in Australia (the ‘Hilmer Report’ of 1993). Importantly, a separate access regime for telecommunications is set out in Part XIC of the Trade Practices Act, which came into effect in July 1997 and differs in significant respects from Part IIIA.²

² There are also specific access regimes for natural gas and for electricity. However, unlike the telecommunications regime, these broadly operate within the Part IIIA framework.
While there are significant differences between these access regimes, there are some broad ‘architectural’ similarities. In Australian access regimes, the precise scope of mandated third-party access is typically determined not by statute but by an essentially administrative process which includes or excludes individual services from a requirement to provide access. What is determined by statute are the mechanisms involved in that process as well as the broad criteria that process must consider, so that it is through these (as well as through the attitude adopted by the administrative decision-makers) that the degree to which the regime is ‘conservative’ (that is, restrictive) in granting access is determined.

In Part IIIA and in Part XIC, services covered by the regime are said to be ‘declared’. However, the criteria and relevant process for declaration differ and there are more stringent checks and balances against declaration in the former regime than in the latter.3

The main result of these differences is that far more services have been declared under Part XIC than under Part IIIA. Moreover, Part XIC declarations have involved a number of services that are close substitutes and some that are simply intended for resale. Both of these outcomes would not be possible under Part IIIA. Finally, very few services have had declaration revoked or subsequently limited under Part XIC.

Once a service is declared, the ACCC can, in the event of dispute between an access seeker and an access provider, use powers of mandatory arbitration to determine the terms and conditions of access to that service. Under both Part IIIA and Part XIC, an access provider also has the scope to submit an Undertaking setting out the terms and conditions on which it will provide a service. If the Undertaking is accepted, the ACCC must arbitrate an access dispute in a manner consistent with that Undertaking. The Undertaking, in other words, provides access providers and access seekers with a degree of certainty as to the terms and conditions of access.

In practice, the Undertaking mechanism under Part XIC has not been effective, in the sense that Undertakings are rarely accepted for key services. To date, only two Undertakings offered by Telstra have been accepted, one that merely copied the indicative prices issued by the ACCC immediately prior to the Undertaking being lodged, while another had very short duration (and was

3 Thus, in Part IIIA, the criteria for declaration involve a list of hurdles, each of which must be met, while Part XIC simply involves a number of loosely-specified criteria which can be traded off. Additionally, declaration decisions under Part IIIA are made on the recommendation of the National Competition Council, which plays no part in regulating declared services. Those decisions are then subject to review by a Minister and, if appealed, by the Australian Competition Tribunal (‘ACT’). In contrast, under Part XIC, declaration decisions are made by the ACCC, which then regulates access to the service. In that sense, the regulator is in a position to expand the scope of its own control. Moreover, those decisions are not subject to review on the merits.
accepted on the basis of that fact). All the other Undertakings offered by Telstra have been rejected, as have the Undertakings offered by SingTel Optus and by Vodafone. There is a right to appeal to the Australian Competition Tribunal for review on the merits of decisions in respect of Undertakings. All such appeals by Telstra, Optus and Vodafone have failed.

When an Undertaking is not in place, the ACCC must arbitrate disputes taking account of a list of considerations set out in the legislation. Here, too, Part XIC differs from the other access regimes. These differences go both to the substance of the factors the ACCC must take into account and to the relevant process.

With respect to the factors, Part IIIA was initially relatively non-prescriptive regarding the determination of the terms and conditions of access to services brought within the scope of the access regime — indeed, its broad structure was similar to that of Part XIC.

Thus, many of the provisions which the ACCC was initially required to take into account in setting access charges under Part IIIA were very general in character and hence capable of wide interpretation, much like the analogous provisions in Part XIC. Under s44X (the section of Part IIIA which defines the relevant criteria but to which other sections, discussed below, have now been added), the ‘legitimate business interests’ of the service provider must be considered, as well as the interests of those with a right to use the service. The section also requires some assessment of the competitive benefit of access, such that the ACCC must consider the ‘public interest in having competition in markets’. Consideration must also to be given to ‘the direct costs of access’. These considerations are substantially similar to the ‘laundry list’ of factors set out, for the determination of access disputes, in s152CR of Part XIC.

Additionally, the legislation did not assign weights to the criteria in the section; it simply obliged the ACCC to have regard to each and every factor. As a result, the ACCC could simply trade one factor off against another, thereby determining disputes much as it thought fit.

This situation has changed as significant modifications have been made to Part IIIA and, specifically, to s44X (changes which have not been replicated in Part XIC). The most important change is the insertion of ‘pricing principles’ which the ACCC must take into account. One of these principles requires that the regulated price be sufficient to at least cover the efficient costs of providing access, including a return commensurate with regulatory and commercial risk.

4 Telstra’s 2003 Public Switched Telephone Network Originating and Terminating Access (PSTN OTA) undertaking was accepted primarily because ‘Telstra’s proposed disaggregated PSTN O/T rates result in headline rates only marginally above Commission’s model price terms’ (see ACCC 2004a: 2). Telstra’s 2003 LCS undertaking was accepted, inter alia, ‘given … the fact that the LCS undertakings will only apply for six months’ (Ibid).
In contrast, under Part XIC, there is no explicit requirement for access prices to cover costs.

Regarding the process by which access charges are set when an access Undertaking is not in place, the most significant difference is that Part XIC does not provide for a right of review on the merits of ACCC arbitration decisions, while Part IIIA and its associated regimes generally do. Effectively, if an Undertaking is not in place, there are few constraints on the manner in which the ACCC can set access charges under Part XIC.

The manner in which the pricing discretion vested in the ACCC has been implemented reflects an additional important feature that differentiates the telecommunications access regime from its counterparts, and particularly those in the energy industries.

In energy, regulators generally set an overall price or revenue cap for a fixed period of time, typically five years. That overall cap then sets a constraint within which the regulated entity determines the level of individual regulated prices; that is, the price structure.

In contrast, under the telecommunications regime the regulator determines prices for individual services from time to time, with redeterminations being triggered by access disputes. As a result, a particular access charge — say the access for the wholesale version of the line-rental services — may be determined several times in the course of a few years, if bilateral access disputes with respect to that service are brought to the ACCC for arbitration. Moreover, that price may be set without regard to how other prices for regulated access services have been determined, except to the extent to which the ACCC chooses to take account of those other prices in its final determination.

The process of setting access prices in telecommunications is therefore inherently more discretionary, messier and more vulnerable to changing and potentially inconsistent regulatory decision-making than is the case in the other Australian access regimes.

**The ACCC’s measure of costs**

Ultimately, every form of access pricing involves some consideration of the costs of supply. Regulators face a choice in this respect between alternative cost bases.

Faced with that choice, the ACCC has relied not on historical costs (that is, the outlays actually incurred in acquiring and operating assets) but, rather, on current costs. While the term ‘current cost accounting’ covers several differing methodologies (see Ma and Mathews 1979: 478ff.), common to these methodologies is that cost estimates are based on current input prices and technologies (and expectations about future input prices and technologies) rather
than on amounts actually outlaid in the past. They are in this sense ‘forward’ rather than ‘backward’ looking.

At a conceptual level, forward-looking approaches can be seen as involving a particular kind of ‘fair bargain’ between the regulated firm and the regulator. In this bargain:

1. The firm agrees to undertake an investment; in exchange for which
2. The regulator agrees to provide the firm with an income in each future period which reflects the current cost of its assets in that period, as well as an efficient level of operating expenses; where, if the participation constraint is to be met,
3. The expectation of that current cost income stream is equal, in present value terms, to the cost of the investment and of its associated flow of operating expenses.

Whether this version of the regulatory contract is likely to be economically efficient is a contentious issue, but there are good reasons for believing it is not. Rather, it can be argued that when eliciting efficient investment is important, a simpler, more readily verified form of regulatory contract, such as one based on historical costs, would seem preferable.\(^5\) That said, it is still sensible to take this regulatory contract at face value and look at how it has been implemented.

In doing so, it is useful to start from the thought experiment that underlies the particular forward-looking costing methodology on which the ACCC has mainly relied. That methodology involves estimating the Total Service Long Run Incremental Cost (TSLRIC) of service provision.\(^6\)

In essence, TSLRIC (and its close cousin, Total Element Long Run Incremental Cost (TELRIC))\(^7\) has three core elements: the relevant increment that is costed is defined as the total volume of the service at issue (for instance, the total telephony traffic carried over the network); the decision at issue is taken to be whether the increment is supplied over the longer run — so that the capital stock is fully variable, and hence is included in the cost pool; and the concern is with the resources that would be needed to provide this service with current technology and management practices, as against those that may have been inherited from earlier periods.

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\(^5\) See Wright et al. 2006, who conclude that given stochastic costs, forward-looking access prices retard investment and are generally dominated by access prices determined by historical cost whenever investment is desired. A contrary view, though not one that is formally demonstrated, can be found in Baumol and Sidak 1995.

\(^6\) The only comprehensive guide that I know of to TSLRIC is Ergas 1998.

\(^7\) The ACCC claims that its approach to forward-looking costing in telecommunications involves TSLRIC. Technically, this is not correct, as it is really a variant of TELRIC. However, I will follow the ACCC in referring to it as TSLRIC.
While implementation of TSLRIC is highly complex, its economic essence is not. What this cost concept seeks to reproduce is the minimum stream of payments a regulator would need to commit to so as to induce an access provider to build and operate a new, fully efficient, wholesale-only network capable of providing the access service. It is ‘as if’ a Telstra-specific bomb (similar to the neutron bomb of the 1980s, but limited in its impact to the Telstra network) had been detonated, and the regulator put out to tender the right to construct and operate a replacement network. Assuming the tender was effectively competitive, the required compensation to the new builder would reflect the ideal TSLRIC estimate.

In practice, that compensation is not provided as a lump sum but through a set of charges for a range of services. Moreover, as noted above, those charges are subject to periodic redetermination, usually on a service-by-service basis. As a result, if the payments over time are to indeed reflect the costs of the hypothetical, wholesale-only, new-build network, two interrelated sets of constraints must be met.

The first is a multi-service adding-up constraint. The sum of the regulated access charges across the range of services provided by the network must be no less than the amount which would the cover the costs of the network.

The second is an inter-temporal constraint, under which the expected path of access charges over time must be no less, in present value terms, than the initial cost. Clearly, were this condition not expected to be met, no investor would enter voluntarily into the ‘regulatory bargain’. This is no different from the familiar concept of time-consistency in economic policy.\(^8\)

In the remainder of this paper, I examine the ACCC’s telecommunications access pricing decisions relative to these two constraints.

The adding-up constraint

Telecommunications networks are characterised by extensive economies of scope (that is, cost savings that result from providing many different services jointly). Those economies arise from the fact that many services are provided over a common set of assets, most notably the links that run from customers’ premises to points of traffic aggregation (such as routers, multiplexers and switching systems) and shared traffic-management facilities (including switching and network-management systems). Reflecting those economies, the incremental costs of any particular service tend to be low relative to average costs (that is,

\(^8\) Time-inconsistency arises when a policy that is optimal (from the point of view of the regulator) ex ante turns out not to be the optimal policy ex post. If the policymaker cannot commit to a policy, it may then find itself wanting to change its policy ex post (say, after a firm has made its investment decision), regardless of what it said ex ante. Such an approach to policy is said to be time-inconsistent (Kyland and Prescott 1977).
the unit cost of all traffic considered jointly). As the ACCC itself has stressed, were access charges set only on the basis of incremental costs, total costs would never be recovered and long-run supply would be compromised.

Forward-looking costing systems deal with this through cost-allocation rules that attribute to each service responsibility for recovering some share of joint and common costs. Those rules work on the basis of ‘cost drivers’, which (at the network level) involve the attribution of the costs of individual network elements to services on the basis of each service’s share of each network element’s use. A key feature of these rules is that the resulting allocations ‘add up’. A failure to ‘add up’ obviously implies a shortfall between total costs and the revenues that would be generated were each service sold, by the hypothetical operator, at a price that reflected its allocated cost responsibility. Any regulatory outcome that thus failed to ‘add up’ would breach the participation constraint that underpins the TSLRIC thought experiment (that is, would not induce the construction of a new network capable of providing the set of services).

In practice, the ACCC’s setting of telecommunications access prices has failed to respect the multi-service adding-up constraint. This is for two reasons. First, prices for individual services have been set below attributed costs without the resulting shortfall being added to the amount to be recovered from other services. Second, price structures have been set in such a way that arbitrage between services would impede full cost recovery from ever being achieved. I deal with each of these in turn in the discussion below. As that discussion requires some familiarity with the nomenclature of telecommunications, sets out a list of the various telecommunications services that are referred to in this paper, along with their standard abbreviations and a brief description of what each service involves.

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9 Strictly speaking, average costs are not generally uniquely defined for a multi-product technology. Here, the term is used to refer to the unit cost estimate generated by the unique cost allocations of a particular TSLRIC model.

10 The importance of recovering common costs is recognised by the ACCC in ACCC 1997: 39 and 41; and footnote 41.
### Table 1: Key Telecommunications Terms and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSL</td>
<td>Asymmetric Digital Subscriber Line</td>
<td>A broadband technology offering high-speed internet access. ‘Asymmetric’ means data is transmitted ‘downstream’ to the customer faster than it is sent ‘upstream’ to the service provider.</td>
</tr>
<tr>
<td>CAN</td>
<td>Customer Access Network</td>
<td>Enables the connection of customer equipment to switching equipment in a telecommunications network. It consists of a network of conduits and pipes with a mixture of cables.</td>
</tr>
<tr>
<td>LCO</td>
<td>Local Call Over-ride</td>
<td>Access seekers can provide local carriage service over Telstra’s network either by using the Local Carriage Service, or by using the PSTN OTA service (see below). The latter involves ‘over-riding’ the default routing of the call by inserting a long-distance code in front of the called number and hence is referred to as ‘Local Call Over-ride’.</td>
</tr>
<tr>
<td>LCS</td>
<td>Local Call Service</td>
<td>A service for local call resale. It provides for the carriage of telephone calls from customer equipment at an end-user’s premises to separately located customer equipment of an end-user in the same standard charging zone.</td>
</tr>
<tr>
<td>LSS</td>
<td>Line Sharing Service</td>
<td>Enables a Telstra competitor to use the high-frequency part of the phone line to provide ADSL using its own equipment, while Telstra still provides the normal voice service.</td>
</tr>
<tr>
<td>PSTN</td>
<td>Public Switched Telephone Network</td>
<td>The global collection of interconnects originally designed to support circuit-switched voice communication. The PSTN provides the traditional Plain Old Telephone Service (POTS) to residences and many other establishments. Parts of the PSTN are also utilized for xDSL, VoIP and other Internet-based network technologies.</td>
</tr>
<tr>
<td>PSTN OTA</td>
<td>Public Switched Telephone Network</td>
<td>The PSTN originating and terminating access services respectively allow access seekers to buy the carriage of telephone calls from a calling end-user to a point of interconnection (POI) with the access seeker’s network, and the carriage of telephone calls from a POI to a receiving end-user. The two services allow telecommunications companies to provide services such as national long-distance calls, international calls and calls between fixed and mobile networks.</td>
</tr>
<tr>
<td>TELRIC</td>
<td>Total Element Long Run Incremental Cost</td>
<td>The incremental cost of supplying a specific element of a network. It is defined as a forward-looking long-run cost.</td>
</tr>
<tr>
<td>TSLRIC</td>
<td>Total Service Long Run Incremental Cost</td>
<td>The incremental cost of supplying an entire service (such as telephony). It is defined as a forward-looking long-run cost.</td>
</tr>
<tr>
<td>ULLS</td>
<td>Unconditioned Local Loop Service</td>
<td>Allows Telstra’s competitors access to the copper wire, without dial tone or carriage service, between an end-user customer and a telephone exchange. Competitors use the ULLS with their own equipment in exchanges to provide a range of services, including traditional voice services and high-speed internet access, to the end-user.</td>
</tr>
</tbody>
</table>
Local calls and adding up

That the ACCC’s price setting has resulted in regulated access prices being set below attributed costs is readily illustrated using the Local Call Service (LCS). That service is a ‘resale’ version of a retail service — local calling — that is directly price capped. Specifically, under the price-capping arrangements, the retail price for an un-timed local call is capped at 22 cents, excluding Goods and Services Tax (GST), with such an untimed service to be available nationally at an essentially uniform price.\(^\text{11}\)

The capped retail price for untimed local calls has generally been regarded both by Telstra and by the ACCC as being below the average cost of a local call, where that average cost is determined by attributing to local calls some responsibility for the joint and common costs of the network. Given that, the ACCC has had two options:

- It could set wholesale (that is, access) charges on the basis of attributed costs, so that the wholesale charge might exceed the capped retail price; or alternatively,
- It could set the wholesale charges on the basis of the capped retail price. To the extent to which this would result in those charges being below a relevant benchmark of costs, the issue of where the cost shortfall would be recovered by the hypothetical operator would need to be addressed so as to retain consistency with the underlying costing approach.

Some regulators, faced with this choice, have chosen the former approach — on the basis that this places access seekers in a position that is competitively neutral with the access provider, as both incur a cost shortfall in supplying the price-capped services. The ACCC, however, has opted for the latter, which it has implemented by setting the wholesale price on the basis of subtracting from the capped retail price the cost of those activities that a wholesale-only provider would avoid (a price determination methodology generally referred to as ‘retail minus’). As a result, to the extent to which there is a shortfall between the capped price and costs, that shortfall will remain and need to be recovered elsewhere.

\(^\text{11}\) Telstra Carrier Charges — Price Control Arrangements, Notification and Disallowance, Determination No. 1 of 2005, later amended by Telstra Carrier Charges — Price Control Arrangements, Notification and Disallowance, Determination No. 1 of 2005 (Amendment No 1 of 2006), clause 16 ‘Untimed local calls’. The effect of the requirements set out in the price determination in ensuring that call charges for an untimed local call are the same in all areas is discussed in ACCC (2005a, p. 111ff.).
The extent of the shortfall can be estimated by reviewing the ACCC’s setting of LCS prices for 1999/00 and 2000/01, when it still disclosed detailed information on its cost estimates and methodology. The relevant estimates for those years are set out in Table 2, noting that the data required to make similar calculations for more recent years has not been disclosed by the ACCC.

### Table 2: ACCC local call estimates and under-recovery of costs

<table>
<thead>
<tr>
<th></th>
<th>1999/00</th>
<th>2000/01 (GST exclusive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total costs allocated</td>
<td>21.54 cents</td>
<td>21.21 cents</td>
</tr>
<tr>
<td>to local calls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wholesale local-call</td>
<td>19.26 cents</td>
<td>17.51 cents</td>
</tr>
<tr>
<td>price</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under-recovery per call</td>
<td>2.28 cents</td>
<td>3.7 cents</td>
</tr>
<tr>
<td>Number of local calls</td>
<td>11,566 million</td>
<td>11,987 million</td>
</tr>
<tr>
<td>Under-recovery of costs</td>
<td>$264 million</td>
<td>$443 million</td>
</tr>
</tbody>
</table>

Three points help explain the Table.

First, the ACCC, when it calculates the cost of PSTN services, allocates costs to all types of PSTN traffic, including local calls. For the years here at issue, the Commission allocated PSTN costs of 21.54 cents to each local call in 1999/00 and 21.21 cents to each local call in 2000/01 (see Table 2, first row).

Second, despite that cost allocation, the ACCC, in setting the price for LCS, used a retail-minus approach which involved starting with the retail price of local calls and then deducting the ‘avoidable’ local-call retail costs. For 1999/00 through to 2002 the ACCC used an estimate of 2.74 cents per call for retail costs and adjusted this to 2.49 cents when the GST was introduced on 1 July 2000. As a result, in 1999/00 the LCS price was 19.26 cents per call and in 2000/01 was 17.51 cents per call (see Table 2, second row).

Third, there was consequently an under-recovery of costs for each local call, that under-recovery being of 2.28 cents per local call in 1999/00 and of 3.70 cents per local call in 2000/01 (see Table 2, third row). The aggregate under-recovery was of $264 million in 1999/00 and of $443 million in 2000/01. Additionally, the quantum of that under-recovery would have continued to increase up to 2002/03, as local-call minutes increased more rapidly than all call minutes until then.

That shortfall is essentially a common cost that the hypothetical builder of the new, wholesale-only network would have had to recover from other services. Consistency with the thought experiment therefore suggests that the shortfall should have been allocated to other access services, notably PSTN Originating and Terminating Access (OTA), and within that, largely to terminating switched

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12 The sum of those allocated costs equals total costs, so that total cost recovery in the relevant thought experiment requires that each service be priced in such a way as to recover the share of costs allocated to it.
access. Had that been done, total revenues from the hypothetical network would indeed have equalled total costs, both being evaluated using total call minutes. But the ACCC failed to make any such allocation — rather, it simply ignored the inconsistency in its price-setting.¹⁴

As a result, a cumulative shortfall that (capitalised to the present) probably amounts to close to $1 billion, was simply placed upon Telstra, which was left with access charges plainly below the relevant costs as determined by the ACCC’s costing methodology.

Regulated price structures and the adding-up constraint

Further failures to respect ‘adding-up’ constraints have arisen from substitution between declared services caused by inconsistencies in their relative prices.

The approach the ACCC has adopted to declaration has resulted in access charges needing to be determined for a wide range of services that are close, and in some cases very close, substitutes. Errors in setting relative prices for these services will have two consequences:

• They will distort production choices, as access seekers replace inputs that are ‘over-priced’ with those that are ‘under-priced’. This is a first-order welfare loss (meaning, in this case, a distortion that potentially affects all of output, rather than merely having an effect at the margin); and
• When the ‘under-priced’ services are priced below costs (or make a contribution to common costs that is insufficient to allow all of those costs to be covered), the shift in access-seeker demand to these services will prevent full cost recovery (or worsen what would in any event have been losses).

Thus, access seekers can provide local carriage service over Telstra’s network either by using the Local Carriage Service, or by using the PSTN OTA service. The latter involves ‘over-riding’ the default routing of the call by inserting a long-distance code in front of the called number and hence is referred to as ‘Local Call Over-ride’ (LCO).

¹³ OTA involves the origination and termination of switched calls over Telstra’s PSTN (for example, from a calling customer preselected to Optus to a called customer who is preselected to Telstra, where both are connected to Telstra’s Customer Access Network). In general, it is efficient to place higher mark-ups on terminating than on originating access, as it is more difficult for terminating access to be bypassed.

¹⁴ It is important to note that had the ACCC allocated the shortfall to other wholesale services, this would not mean that the shortfall would have been largely or entirely borne by access seekers. Rather, because the shortfall would have been allocated over all minutes of use, each user of the network, including Telstra, would have faced the same unit charge per end-minute-of-use. In contrast, under the ACCC’s approach (of simply ignoring the shortfall), the deficit would only fall on Telstra. This is the natural consequence of the definition of the relevant increment. In the ACCC’s approach, that increment is the total traffic carried over the PSTN. As a result, common costs are unitised over that total. Analytically, the shortfall is merely a common cost to the PSTN as a whole and hence would be spread over all the traffic making use of that network.
From a technical perspective, LCO is a highly inefficient way of providing local carriage service as it requires between 1.5 and 2 times the resources actually needed to complete a local call. The additional amount is a pure waste of society’s resources.

That waste notwithstanding, LCO accounts for a non-negligible share of total local calling minutes. This is because the ACCC prices LCS on an untimed basis, while pricing PSTN OTA (and hence LCO) on a timed basis (that is, access seekers are charged per minute of use). As a result, it is highly profitable for access seekers to use LCO, rather than LCS, for short-held calls. As local calls generated by businesses tend to be of below-average duration, this can be done by modifying the software businesses have on their PABXs (the private exchanges that manage their traffic) to insert an over-ride code into local calls.

LCO has two effects on the economics of the local carriage service. The first is that it results in the technical inefficiency discussed above. The second is that it aggravates the shortfall Telstra incurs in the supply of local calls.

That shortfall, discussed above, is aggravated because removing short-held local calls from the stock of local calls in and of itself saves very few costs. In effect, the costs of the inter-exchange network (the part of the network that goes between, and includes, local exchanges) tend to be almost completely insensitive to even substantial variations in traffic volumes. Moreover, in reality, LCO does not remove those calls but merely re-routes them through the inter-exchange network, potentially increasing the actual costs that Telstra bears (though Telstra’s loss is partially offset by the LCO payment). On balance, revenues are reduced while no costs are avoided, reducing the extent of cost recovery even further.

Even more serious distortions have arisen as between the ULLS, WLR and LSS services, which are all access line services. Simplifying somewhat, these services are broadly alternative ways of providing the same set of end-user services, including telephony and ADSL.

The ACCC has set prices for these services in a manner that creates enormous scope for inefficient substitution. Underpinning these distortions is the fact that (1) retail prices for line-rental services are capped and (2) Telstra is required to use a local switch at least twice (although a quarter or so of local calls would otherwise only use a local switch once), and additionally requires transmission resources to and from the access seeker’s Point of Interconnection. The Point of Interconnection is the point at which the call exits the Telstra network and is handed over to the access seeker’s network, where it is ‘turned around’ and handed straight back to the Telstra network for termination.

For example, using the Hatfield model for seven U.S. States, the percentage of the dominant local exchange carrier’s total costs that is traffic-sensitive can be calculated as ranging from 15.0 per cent (for Georgia) to 21.1 per cent (for New York). However, increasing traffic by 30 per cent above the default level specified in the model increases total costs in each of the States by less than 1 per cent. The cost savings associated with a similar reduction in traffic levels would be no greater.
offer specified line-rental services at the same price in all parts of Australia (see
Australian Competition Tribunal in Telstra Corporation Ltd (No 3) [2007] ACompT
3 (17 May 2007) at paras. 218–224). These regulatory constraints, applied at the
retail level, then create issues for the setting of access charges.

Whether charges for line-rental service cover costs is controversial. It is likely
that non-traffic-sensitive costs account for 80 per cent or more of total PSTN
costs. Were those costs to be covered by line-rental charges, those charges would
need to be substantially higher than they currently are, at least going by Telstra’s
estimates of network costs. However, what is clear is that the geographically
averaged line-rental charge that is applied in non-metropolitan areas is
significantly below the costs of providing line-rental service in those areas, with
the gap being especially large in areas of sparse population settlement.

As with LCS, the ACCC has therefore faced a choice in terms of how it set
access charges for WLR:

• It could set WLR charges on the basis of cost, which would have resulted in
  those charges exceeding retail line-rental charges in rural and remote areas;
or alternatively,
• It could use a ‘retail-minus’ methodology, which would mean that charges
  would be well below costs, most clearly so in rural and remote areas.

The ACCC has chosen the latter approach.

At the same time, the ACCC has set charges for LSS on the basis of assuming
that WLR charges, at least on average, entirely cover network costs, so that all
that LSS charges need to cover are some incremental costs.\(^{17}\) Since these costs
are assumed to be the same in all areas, the resulting LSS charge is geographically
uniform.

Finally, the ULLS charge has been set so as to recover network costs in each
area. Specifically, ULLS charges have been set by ‘Bands’, with Band 1 covering
the CBDs, Band 2 being the main metropolitan areas (excluding the CBDs), Band
3 being outer metropolitan areas and non-metropolitan population centres (such
as regional centres), and Band 4 covering rural and remote areas.

As a result:

• WLR and LSS charges are set on a geographically *averaged* basis, with the
  sum of these charges being well below costs in non-metropolitan areas;
• ULLS charges are set on a geographically *de-averaged* basis, and hence tend
to be well above charges for WLR and LSS in non-metropolitan areas.

\(^{17}\) Originally, those incremental costs were the ‘LSS-specific’ costs — that is, the fixed set-up costs of
providing and managing LSS. However, the ACCC subsequently changed its view on this and shifted
to only allowing the LSS to recover a contribution to the averaged costs of managing all wholesale ADSL
services — averaged costs that (given the number of ADSL services now in use) are very small.
This ‘mix and match’ pricing methodology invites ‘cherry picking’, in which demand swings to the inputs that are relatively under-priced.

The ‘cherry-picking’ opportunities arise from the juxtaposition of geographically de-averaged charges for some declared services with geographically averaged charges for others that are substitutes for those that are geographically de-averaged. This juxtaposition makes it possible to use the declared services for which charges are geographically de-averaged in those areas where costs are low, while using the declared services for which charges are geographically averaged in those areas where costs are high.

Thus, for ULLS, which allows an access seeker to provide both voice and data services, the geographically de-averaged prices mean that (at the time of writing) access seekers can use Telstra’s CAN at an access price of $6 per month in CBD areas and $14 per month in other metropolitan areas (2007/08 prices). The ACCC has not made any determination for ULLS prices in rural areas, and has not disclosed any recent estimate of ULLS costs in those areas. However, it has previously suggested that the price of ULLS in rural areas would be $100 per month (see, for example, ACCC 2003: 84, Table 10.4) and research undertaken by the Productivity Commission suggests that costs in those areas are substantially higher.18

Whether the ULLS price in rural areas should be $100 or $200 per month is, however, in many respects irrelevant. In effect, the ACCC has set the charges for Telstra’s CAN in rural areas on a geographically averaged basis. Thus, at the time of writing, access seekers can provide voice services in rural areas using the wholesale line-rental service for $23.12 per month for residential customers and $25.84 for business customers.19 At the same time, they can provide data service to those same customers using the (also geographically averaged) LSS service. The ACCC’s most recent decision on LSS sets a geographically averaged price of just $2.50 per month.20 The effective input price access seekers face for the CAN in non-metropolitan areas is therefore capped at some $26 per month for residential customers and $29 per month for business customers. These charges are obviously far below TSLRIC-based costs in those areas, even on the ACCC’s estimates.

As a result, the ACCC’s wholesale pricing allows the access provider to recover from access seekers no more than the cost of the CAN in low-cost areas and well below the cost of the CAN from access seekers in rural areas. No other access

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18 See Productivity Commission 2000. This research indicates that line costs in low-density areas of Australia are six to 14 times higher than in the rest of Australia. Given the line density in rural areas of Australia and based on the ACCC’s own cost estimates in other areas of Australia this suggests that monthly CAN costs in rural areas are in the order of $140 to $209 per line.
19 See ACCC 2006.
20 See ACCC 2007c.
prices (not even those for services such as terminating access that face highly inelastic demand, so that they could be marked up to recover the resulting shortfall) have been increased to compensate. Total recovery must therefore fall short of total costs, as the multi-service adding-up constraint is breached.

**Time inconsistency**

Turning now to the issue of pricing over time, time inconsistency arises when a regulator will have incentives *ex post* to reverse commitments it may have wanted to make *ex ante*.

For example, given that many of Telstra’s costs result from past investment that are now sunk, *ex post* the regulator may want to discount some of those costs, thereby reducing user charges. As Telstra’s obligations to provide service prevent it from ‘walking’, the temptation for a regulator to gain public standing and political legitimacy by being seen to be tough, and by forcing down prices, can be very strong. However, those gains come at a steep long-run cost: as the regulated firm comes to expect such time-inconsistent conduct by the regulator, it either refuses to put new assets at risk or demands a higher risk premium for doing so. As a result, prices must ultimately rise, the quality and range of service must suffer, or both.

Most regulators therefore try to avoid acting in ways that are time inconsistent. Indeed, the ACCC itself, in its approach to regulating electricity transmission, has stressed the risks of time inconsistency and sought to make credible commitments to avoid it.\(^{21}\) This has not, however, been its approach in telecommunications, as can be seen from a consideration of the manner in which the ACCC has determined depreciation and the PSTN capital charge.

The capital costs determined in a TSLRIC model are essentially a lump of costs, and those costs need to be spread over time. One approach to doing so is to ‘levelise’ the capital charge; that is, set it such that its value is equal in each year of the asset’s life.\(^{22}\) Adopting this approach, the annual capital charge would be calculated as:

\[
C_i = \frac{r}{1-(1+r)^n} \sum_{t=1}^{n} \frac{w_t \times r + d_t}{(1+r)^t}
\]

where:

- \(C_i\) is the levelised capital charge
- \(r\) is the WACC
- \(n\) is the useful life of the asset
- \(w\) is the written-down value of the asset

\(^{21}\) ACCC 2004b: 38ff.

\(^{22}\) See Ergas 1998 on the issues this involves.
d is economic depreciation.

The issue of choosing between these approaches to determining the stream of costs first arose in the context of Telstra’s PSTN Undertaking for 1997/98. In assessing that Undertaking, the ACCC commissioned NERA to estimate the TSLRIC of PSTN access.

NERA’s view, which was clearly expressed in its report to the ACCC (NERA 1999), was that the depreciation profile used in the calculation of TSLRIC must reflect economic depreciation. If the depreciation profile that is actually used fails to mirror the economic depreciation profile, this will lead to a failure to recover the cost of investment over time.

NERA expressly rejected the use of an annuity approach to depreciation, stating that it is even less appropriate than straight-line depreciation because a constant annualised capital cost (depreciation plus cost of capital) means that depreciation increases each year; that is, it is actually back-loaded. While it is possible to tilt the annuity to allow for price and output declines, NERA argued that it requires a large tilt to achieve a declining depreciation profile over time.

Despite NERA’s findings, the ACCC requested NERA to calculate results based on an annuity function. For call conveyance costs, NERA found that using an annuity function had a significant effect on the results: charges for the Undertaking period were 20 per cent lower than the results obtained using proxy economic depreciation profiles (NERA 1999: 63).

In its Final Report on the Assessment of Telstra’s Undertaking (ACCC 1999: 60), the ACCC failed to rely on any of the NERA results that used economic depreciation profiles, instead relying solely on the annuity-based results, which were undertaken only as a sensitivity analysis by NERA and only at the suggestion of the ACCC (see NERA 1999: 63, footnotes 48 and 49).

The ACCC has, since that first Undertaking assessment, continued to rely on the tilted annuity for estimating the TSLRIC of both PSTN OTA and ULLS. In the case of ULLS, the effect of the tilted annuity formula is to steeply back-load the time profile of cost recovery. This is inconsistent with the profile of economic depreciation, as it fails to take into account other factors that impact on the value of the asset over time, such as wear and tear.

However, even putting the contrast with economic depreciation aside, the central problem is that the ACCC has never brought the deferred costs to account.

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23 The NERA report defines economic depreciation for any period as the change in the value of the asset during the period. The economic value of an asset at a particular point in time is the present value of expected future revenues derived from the output of the asset less the present value of the operating costs associated with running the asset.

24 This too was noted by NERA, which emphasised that even where asset prices are not falling over time, declining output and rising operating costs may still require a declining (that is, front-loaded) depreciation schedule — see NERA 1999: 11. See also the discussion of this point in Ergas 1998.
Rather, at each assessment it has brought the counter back to zero, thus setting prices in a sequence of regulatory redeterminations ‘as if’ the deferred costs could be simply written off.

The consequences of this approach can be seen from Figure 1, which compares actual ULLS charges (displayed as a charge per ULLS line in nominal dollars on the Y-axis), as determined by the ACCC, with the charges that would have prevailed had the ACCC respected the time profile of cost recovery as implied by its initial cost modelling.

**Figure 1: ACCC Decisions on Monthly Band 2 ULLS Charges, 2002 to 2007**


Specifically, the line in Figure 1 provides an indication of what ULLS prices would have been had a time-consistent tilted annuity been applied to the Commission’s initial pricing decision on ULLS. The points traced out by that line are the sequence of charges required for the ‘fair bargain’ to be paid out. The line slopes up as the ACCC’s decision had deferred costs to future years, through the steep back-loading of the depreciation charge.

However, what the ACCC has done is not to set prices on the basis of that ‘fair bargain’. Rather, in part by constantly restarting the clock, the ACCC has reduced its estimate of the TSLRIC of ULLS in Band 2 areas from $35/service/month to just $13.90/service/month (see bars in Figure 1).

What is striking is not only the extent of the overall reduction (and hence of the departure from the pattern of prices implied by the tilted annuity) but also its pattern. In effect, as estimated by the ACCC, costs largely decrease, often sharply, but there are only exceptionally moderate rises. However, if depreciation
in a forward-looking cost model is set on an actuarially fair basis, the changes in costs at re-estimation should follow a normal distribution (so long as cost shocks are independent), as it should be as likely that the initial estimate of depreciation (which reflects the anticipated change in asset values) will be an underestimate as it is that it will be an overestimate. This contrasts with the pattern of the successive ACCC estimates.\(^{25}\)

The author’s explanation of this outcome is that what the ACCC has done is to ignore the price path implied by its back-loaded depreciation profile, while successively reducing the estimate of the levelised cost. These reductions are equivalent to writing off the amount that (through the back-loading of the annuity) had implicitly been deferred to each period from previous periods.

The extent of the resulting cost-recovery shortfall is large in absolute terms. It can be quantified in terms of the loss that would be borne by the hypothetical, wholesale-only, access provider, operating a continuously fully optimised network. That amount, taken as a loss compounded from 2002 to the present at an interest rate of 10 per cent, approaches $22 billion.

**Outcomes**

Overall, the ACCC’s setting of telecommunications access prices does not seem to meet basic consistency tests that are inherent in its own cost standard. The resulting tensions have been aggravated by the fact that repeated application of the ACCC’s approach has resulted in price declines that are strikingly large, both in absolute terms and relative to experience overseas.

Thus, in real (inflation-adjusted) terms, regulated access charges declined:

- For LSS, an annual rate of 28.2 per cent over the period from September 2002 to September 2007;
- For ULLS, an annual rate of 12.7 per cent over the period from April 2002 to September 2007; and
- For PSTN OTA, an annual rate of 7.1 per cent over the period from September 1997 to September 2007;

It is difficult to believe that costs could have declined at rates close to the rates mandated by the ACCC. Even on the ACCC’s own estimate, total factor productivity in Telstra’s fixed network has been increasing at an annual average rate of 5.4 per cent, and (in trend terms) of less than two per cent.\(^{26}\) Moreover,

\(^{25}\) Of course, it is not impossible that a ‘technology surprise’ would have occurred that reduced costs by some 60 per cent. However, there is no evidence of such a surprise nor has the ACCC ever claimed such a surprise has occurred. A reduction in ULLS-specific costs (that is, the incremental costs associated with making the ULLS service available to access seekers) also occurred over the period, but it accounts for a small share of the observed reduction in prices.

\(^{26}\) The ACCC’s estimate of 5.4 per cent is heavily influenced by what appears to be a data error in respect of a single year (2000/01). When a trend is fitted, excluding that year, the resulting rate is 1.6 per cent,
even with that total factor productivity growth, input prices (for important 
items such as copper and trenching) have been rising in nominal terms, as the 
China boom has increased world demand for those inputs. Simulations with 
Telstra’s forward-looking cost model suggest that each one per cent increase in 
the price of copper-based network elements increases the average cost of ULLS 
by 0.24 per cent: between July 2002 and July 2006 copper prices increased by 
386 per cent. At the same time, prices for the other key inputs (notably labour 
and fuel) have also increased, in both nominal and real terms. As a result, the 
expected trend would be for nominal access charges based on replacement costs 
to be rising — not decreasing at dramatic rates (since these input price rises have 
exceeded reasonable estimates of total factor productivity growth).

Underscoring this point is the fact that the ACCC’s initial access charges — from which these very large declines have occurred — were derived from 
estimates of costs for a fully optimised network: that is, for a network that had already achieved all the efficiencies that could be secured. As a result, 
productivity growth for this ‘ideal’ network would likely be significantly slower 
than that achievable in the actual network, as some of the productivity growth 
in the latter will be ‘catching up’ to best practice (that is, to the technological 
frontier). This makes it even more unlikely that the declines mandated by the 
ACCC reflect trends in costs.

Why has this happened? There is not the space here to explore this question 
systematically, but four explanations are worth noting.

First, particularly in the early years, there was a widespread belief that Telstra, 
like other former monopolies, was far from efficient, and that social welfare 
would be improved, or at least not compromised, by an aggressive attitude to 
the setting of access prices. Moreover, the ACCC may well have believed, and 
continue to believe, that any costs associated with setting access prices on the 
low side were outweighed by gains that could come from kick-starting 
competition, though there is, in the author’s opinion, little evidence that would 
back that assessment.

Second, the ACCC, like other regulatory bodies, seeks public legitimacy, 
which is presumably more readily secured when prices to consumers are being 
cut, and drastically so, than when they are being increased. The fact that 
telecommunications has become ever more important and visible to consumers 
(be they residential consumers or businesses) has likely accentuated this effect. 
Moreover, especially prior to full privatisation, the cost of unjustified access-price

which is close to the author’s own best estimate, which is around 2 per cent. The ACCC estimates are 
in ACCC 2005a.

27 Prices for electronics have been falling, but electronics accounts for a small share of the cost of a 
ULLS network. The main cost items in such a network are copper, trenching, maintenance labour and 
fuel.
reductions fell on taxpayers, a large and dispersed group, while the benefits flowed to groups that were far more concentrated, namely access seekers (at least in the short term), the ACCC (through enhanced legitimacy) and the government of the day (which could point to the success of its policies, and use that success to promote its goal of privatisation).

Third, and related, telecommunications is an exclusive Commonwealth responsibility under section 51(v) of the Constitution.\textsuperscript{28} As a result, the process which has occurred in the energy industries, where individual States have sought to protect from what they have seen as undue regulatory discretionary the financial integrity of their energy industries, has not operated to hem in the powers vested in the ACCC.

Lastly, the appeal mechanisms in the telecommunications access regime are deeply unsatisfactory (see Ergas 2008), and have been much less effective than in the energy industries in providing checks and balances in respect of regulatory discretion.

\textbf{What can be done about it?}

Individual instances of regulated price setting will always be complex and contentious. This will be all the more the case in telecommunications, given its technical complexity and the rate at which telecommunications technology advances. Further complications arise from the wide range of services the ACCC has sought to regulate, a range that includes many services that are substitutes, as well as several for which retail prices are also directly regulated. Given those circumstances, there will always be arguments about any particular instance of regulatory price setting.

Nonetheless, there are a few steps (discussed in greater detail in Ergas 2008) that could greatly improve the process of regulatory price setting.

First, too many telecommunications services are regulated. Greatly reducing that number, to one or, at most, a very few bottleneck services (for example, the local loop), would eliminate some of the complexities that have bedevilled the process.

Second, clearer pricing principles are needed to guide the ACCC, with a requirement for reasonable cost recovery being central among them. Ideally, those principles would (as occurs in energy) be translated into rules for the regulator by a rule-making entity that was entirely separate from the regulator itself.

\textsuperscript{28} Section 51(v) of the Australian Constitution provides that ‘The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to:- (v.) Postal, telegraphic, telephonic, and other like services.’
Third, to the extent to which several services continue to be regulated, the regime should shift from controlling individual prices to setting an aggregate price or revenue cap. This would make it easier to respect adding-up constraints and to avoid creating inefficient arbitrage opportunities. While retail price regulation will always create complex challenges for the regulation of wholesale prices, the ACCC could have completely avoided the adding-up problems it fell into had it moved to a single wholesale price cap (as this author advocated long ago), since such a cap would have allowed revenue losses on retail price-constrained services to be made up for through higher wholesale prices on inelastic services.

Fourth, such a cap should be set for a lengthy period, so as to reduce the risk of time inconsistency. Particularly as significant new investment is sought in a high-speed broadband network, anything other than a long regulatory period — probably as long as the life of the asset — is merely likely to introduce undesirable regulatory risk.

Last but not least, greater transparency would help. As the ACCC has regulated more and more, it has, at least in this author’s view, tended to disclose less and less. A requirement for full transparency of the ACCC’s calculations (including the detailed workings), where that can be provided without compromising commercial confidentiality, would help make the process more accountable.

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How does one review a dictionary? Reading and commenting on every entry would be a huge task, unrewarding for both the reviewer and the reader. Focusing on those subjects where the reviewer has expertise would too easily degenerate into an exercise in nitpicking, unfair to the work as a whole and its intended purpose. But focusing on subjects where the reviewer does not have expertise (that is, is closest to the typical user) leads to the opposite danger: giving the tick of approval to readable and plausible entries which may contain the most outlandish rubbish. Finally, reviewing the work ‘as a whole’ without discussion of any particular entries is an invitation to empty pontification.

A similar dilemma must have beset the editors of this work. Their stated goal is to bring together ‘the world’s most influential economists writing in their own voice on their areas of expertise’. Yet in many cases, the most influential economists could not be available. Furthermore, experts by definition are on the cutting edge of controversial research that has not yet been codified into bland textbook form. Yet sadly, they retain all of their human frailties and passions. Writing a summary of their chosen field might just present them with a forum to push their own controversial hobbyhorses, rather than provide a balanced overview of their subject. Yet the opposite strategy of employing ‘disinterested’ writers would guarantee both less expertise and a less marketable product. Ah well. What kind of a life would it be for economists without tradeoffs?

While this editor’s dilemma, thankfully, was not my problem, the reviewer’s was. My imperfect response was a mixed strategy: a browse through my own specialty of labour demand, followed by a random walk through topics I was more or less interested in and ignorant about.

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1 In 2008, Palgrave Macmillan published The New Palgrave Dictionary of Economics, 2nd edition, edited by Steven N. Durlauf and Lawrence E. Blume. While some classic articles from the 1987 [edition] were retained, around 80% of the text was either entirely new or substantially rewritten to reflect the depth of change within the discipline between the editions.'
http://www.dictionaryofeconomics.com/help/faq?_Toc198623695

2 School of Economics, College of Business and Economics, Australian National University, Declan.Trott@anu.edu.au
This strategy got off to a rude start. ‘Labour demand’ (JEL class J23) is a completely empty set. Admittedly it is not the hottest new topic, but one would think in 1,850 entries it would rate a mention. It is true that there is an entry for derived demand but the word ‘labour’ appears only twice.

Moving on to minimum wages, I was reassured to find not just an entry but signs of controversy — the article had been revised. This happy glow rapidly faded on scanning the bibliography — mostly pre 1990s, briefly mentioning Card and Kreuger and Neumark and Washer’s criticism, but not Card and Kreuger’s reply (also in the AER, 2000), the 1998 OECD Employment Outlook cross-country analysis, or Neumark and Washer’s comprehensive literature review of 2006. It was also rather disturbing to see the naked words ‘I believe’ in this entry — this is a dictionary, isn’t it, and I thought we were pretending to be a science?

So much for my narrow area of expertise. Now for the vast and boundless plains of my ignorance.

It seemed fair to start with Palgrave’s default sample article Growth and Institutions by Daron Acemoglu — clearly a case where the top of the field was available. The article was clear and well written, and didn’t say anything obviously outrageous. But out of 14 references, fully half were to the author’s own work, and only one of the remainder was written post 2000. Similarly, on rent seeking we are informed that ‘The term … was introduced by Ann O. Krueger (1974), but the relevant theory had already been developed by Gordon Tullock (1967).’ And of a short bibliography of four articles, three were by … Gordon Tullock. Would anyone like to guess who the author was? By comparison, Manning on monopsony, Howitt & Weil on economic growth, and Clark on the Malthusian economy were paragons of modesty.

After that, it got a little messy. There are yawning gaps in some subject areas and an embarrassment of riches in others. There is no single summary of business cycles, but the reader may choose between separate entries for measurement, real, international real, political, monetary (sticky prices and wages), monetary (imperfect information), and welfare costs. Unemployment focuses narrowly on a comparison of the U.S. and Europe over the last few decades, despite the existence of a separate entry for unemployment and hours of work, cross country differences. On a more esoteric level, one Roberto Scanzieri has written on both reswitching of technique and reverse capital deepening. As far as I could tell, these deal with almost identical subjects, but for some reason only the reswitching article mentions Sraffa and Robinson.

The more I read, the more confused I became about what the dictionary was actually trying to do. Who is supposed to read it? The ‘new generation of economists’, according to the website, but are they supposed in high school, undergraduates, postgraduates, or postdocs struggling for tenure? What are its
closest substitutes? Textbooks, handbooks, JEL or JEP-style review articles, or Wikipedia and other free online resources such as Econlib?

As a very broad average, the level is postgraduate or advanced undergraduate. Anyone below this level would literally need a dictionary to read the dictionary: it is generally assumed that the reader knows a fair amount of economic and mathematical terminology. ‘A random economic system is called ergodic if it tends in probability to a limiting form that is independent of the initial conditions.’ ‘The asset demand vector of every agent [in the CAPM] can be expressed as a linear combination of a set of basis vectors which may be thought of as portfolios or mutual funds … [beta is] the slope of the regression line relating the return on the asset to the return on the market portfolio.’

Yet occasionally, an author will feel the need to go right back to basics. Temin’s description of the Great Depression focuses on footwear: ‘Shoes in particular were a problem. Families typically could not afford to replace shoes that had worn out, and so they were patched and patched again. Some families even restricted the activities of their children to save the wear and tear on their shoes.’ This is not simply a function of the subject matter: the contemporary political economy of Stalinism is highly theoretical: ‘This article describes the economic working arrangements put in place in the Soviet Union in the early 1930s by Stalin from the vantage point of Mises’ and Hayek’s scepticism about the feasibility of socialism.’

In newspaper parlance, the New Palgrave erects no clear firewall between news and opinion. Heckscher–Ohlin trade theory and consumer surplus, for example, have the detachment and safe, middle-of-the-road contents that the word ‘dictionary’ conjures up. Some bend over backwards to avoid any controversy at all — we are told that ‘empirical work has not yet produced a consensus’ on the Ricardian equivalence theorem without even being referred to an example of this work. Excess volatility tests and consumption-based asset pricing models (empirical performance) duplicate both subject matter and conclusion (or lack thereof): in the words of the former, ‘for whatever reason, prices of financial assets do not behave as the theory of consumption-based asset pricing predicts’.

By comparison, Easterly on globalisation read like an editorial or blog entry. Opinion seemed to flow more freely on personalities than on issues, with Hicks and List judged exhaustively if (mostly) positively. This was true even in non-biographical entries, with the imperative that ‘Kaldor is to be admired’ being delivered in the middle of the discussion on stylized facts.

‘Dictionary’ is clearly a misnomer. Anyone who does not know the first thing (and preferably a great deal more) about the subject they are looking up will be lost. Even ‘encyclopedia’ is a little misleading, with its connotations of organised, comprehensive coverage and consistent house style (monopolistic competition,
derived demand and moral hazard even lack abstracts). ‘Compendium’, perhaps, or ‘treasury’, or even ‘menagerie’.

Substitutes? The articles are well beyond textbook summaries, but not quite as comprehensive as those in the various subject handbooks. Yet they are less focused and up to date than review articles of the sort specialized in by the JEL or JEP. Frankly, the closest match to the New Palgrave is, in fact, Wikipedia.

Many of the individual articles are excellent. It would be hard to match ‘If Hayek was in the right place at the right time, it was usually with the wrong ideas, at least from the perspective of most of his contemporaries’ or ‘Economists have found it surprisingly hard to nail down the obvious intuition that in some rough unspecified way tea and coffee are substitutes, and bacon and eggs complements. Not that they can't do it. Quite the opposite, they have all too many ways of doing it …’ as pithy summaries of their subject matter.

Yet my impression of the product as a whole is of inconsistency, to put it unkindly; idiosyncracy, if one wishes to be more neutral; or a glorious mess, to be kind. As usual, it all comes down to opportunity cost. If you have access to the New Palgrave, use it. You might find a gem. If you have to spend your own money, or even if there is a significant tradeoff in terms of library acquisitions, I just don’t see enough value added over Wikipedia and other free online resources on the one hand, and handbooks and journals on the other.

**Martin Richardson**

Oddly, one of the drawbacks of this book is its open-mindedness. That this can be excessive is made clear in Michael Frayn’s wonderful description of a man with an open mind:

> It was open at the front, and it was open at the back. Opinions, beliefs, philosophies entered, sojourned briefly, and were pushed out at the other end by the press of incoming convictions and systems … He was a profoundly modest man, and in his modesty he knew that since he had evidently been wrong so often in the past, he was in no position now to cast stones at any idea, however wretched, or to refuse to take it in and give it shelter. His intelligence, unhampered by any critical processes, was quick and agile …

While Kim Fellner’s intention is to investigate Starbucks from the broadly anti-globalisation perspective of an old-time unionist, the problem she runs into is that Starbucks seems to come out pretty well on all fronts. The author grapples with her problem very honestly: Starbucks is unambiguously a ‘good’ employer, in terms of the wages and benefits it offers its employees, so why is it pilloried by the Left? She is very clear that Starbucks’ corporate culture is deliberately employee-friendly, offering health benefits and superior terms to its employees, many of whom are essentially casual. She documents how Starbucks has launched programs to increase returns to its coffee-growers and notes that, by triggering the entire gourmet coffee boom in the U.S., it has initiated what is probably the greatest source of benefit to poor coffee farmers in recent decades. She even tracks a recent run-in between Starbucks and Ethiopia over a trade-marking dispute and makes it clear that Starbucks was far from the evil party in this dispute that it was portrayed to be by Oxfam and by the makers of the documentary *Black Gold*. It was interesting to read that it is estimated that, in Ethiopia, approximately 25 per cent of the per-pound payment received for coffee exports makes its way back to farmers, in contrast to, for example, 95 per

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cent in Brazil (p.181). Increasing the payment to Ethiopia through trademark payments might do very little for coffee farmers and a lot for corrupt officials.

However, Ms Fellner clearly feels pressure to convict Starbucks of something and she ends up giving shelter to some pretty wretched ideas in the endeavour to do so.

In particular, the author is quite blinkered about the nature of trade unions, maintaining a naïve perspective on their operations and motivations. While she is appropriately cynical about the social conscience of Starbucks’ management, all such cynicism disappears in the discussion of organised labour (and I should note the irritating use throughout of the word ‘organise’ as a synonym for the activities of unionists. But I suppose that labour can be organised in the same way that crime can be and, as a description of successive Teamster heads, for example, from Jimmy Hoffa onwards, maybe it’s not such a bad term). But in this book every labour leader is driven solely by concern for the well-being of their members or, in some devout cases, for the global proletariat: naked protectionist devices such as labour standards are justified in terms of helping foreign workers (although how this is achieved by putting them out of work is, as always, not explained.)

Another wretched idea at which deserved stones remain uncast is the ‘Small is Beautiful’ shibboleth. It leads to statements like this: ‘and does bigness preclude goodness? There are no easy answers’ (p.10) when, in fact, there is an easy answer: no. Similarly, the author recounts an interview with the owner of a small coffee shop: ‘my firm belief is that every business should be owner-owned [sic!] and operated and that the government should be supporting and subsidizing businesses to do that’ (p.125) but fails to comment on this unmitigated and self-interested nonsense. The tremendous recent success of Vietnam as a coffee producer is assailed as a, ‘disaster for small farmers’ (p.54). Well, not, presumably, for small farmers in Vietnam. And how does this asymmetry sit with the hopelessly naïve workers-of-the-world unionist rhetoric cited so approvingly: ‘we need to work towards a culture where you are as sensitive to those far away whom you do not know as you are to the person working next to you’ (p.161)? Finally, the knee jerking in opposition to enterprise size must surely bang into the other knee jerking in opposition to middlemen: ‘each transaction takes a little cut out of the per-pound price. The fewer transactions made, the more money the farmer keeps …’ (p.58). This is not only poor economics but it does seem to suggest (wrongly) that consolidation — that is, larger-sized enterprises — should be favoured.

One curious thing about this book is that the answers to many of the author’s questions are contained in the book already, but she fails to make the necessary links, or place sufficient stress on some of the facts she uncovers. An example: in a number of places we are confronted with the evils of the ‘value chain’ — a
common lament amongst proponents of ‘fair trade’. This is the observation that, of the price of coffee sold to a consumer, a farmer might receive only a tiny fraction — less than half than one per cent in some studies. But this is explained directly in an interview in the book (p.181) where it is estimated that the 23,000 specialty coffee outlets in the U.S. — one-third of which are Starbucks — have invested something over US$9 billion in their operations. That is, the value chain is exactly that: a reflection of the value added at each step of the processing. This sort of ‘disconnect’ is a consequence of the book’s rather scattergun approach. It is very much a product of its time — it could have emerged directly from the swamps of the blogosphere, that low-cost market for the unsolicited opinions of the informed and uninformed alike — and, as such, would seem an unlikely book for modern (as in pre-postmodern) academics who still believe that some perspectives (scientific) should, in fact, be ‘privileged’ over others (anecdotal).

But in the welter of sound bites and interviews that are reported here, the author really makes very little effort to weigh up and assess the conflicting perspectives and arguments. This is particularly curious given that the sole justification I can think of for this book is as the record of one casual observer’s view of the specialty coffee market; accordingly, the author surely has a licence to draw inferences and conclusions rather than just presenting the ‘facts’. This is not a book written by someone from the coffee industry or a specialist sectoral analyst so it is not the book to read if you wish to discover the way the world coffee market works. Nor is it a careful study of the management strategy and practices of Starbucks. Rather, we are given a lot of information about the author’s background to explain the evolution of her politics so that we can see ‘where she is coming from’ and the book then lays out her personal reflections on Starbucks. This background includes family history, where Mom’s third-degree price discrimination (charging wealthy women more than poor women) is hailed as a ‘Robin Hood approach to dress-making’ (p.207) and as the origin, along with Karl Marx, of our author’s strong social conscience.

For me, the most interesting and valuable part of this book came in the explicit discussion in Chapter 11 of the ‘counterculture’ and why it is unhappy with Starbucks. In particular, there are a number of insights into what might be called the political economy of protests: when are confrontation and direct action useful to a protest organisation’s goals? While there is a great irony in all of this — captured perfectly in the satire at http://www.urbanreflex.com/monopoly.html — it is nevertheless interesting to read an explicit discussion of what is called ‘target selection’: ‘historically, unions often tried to raise the bar by first negotiating with a better employer, using the new gains as a standard for subsequent negotiations. But … when it came to companies in the global economy, placing the highest demands on those who already did the most threatened to put them at a competitive disadvantage, especially if their less
decent competitors were left unchallenged” (p.231). Unfortunately, once again the author is ‘open-minded’ on this, concluding only that, ‘it does raise questions about where and how we expend our energies and whom we choose to pillory’ (p.235). Well, yes, but it’d be nice to have some answers, or even the expression of clear opinions, too.

The author almost seems to recognise the vagueness that the book generally presents when, four pages from the end, she starts a section with, ““so, what do you really think about Starbucks?” my friends [and, she might add, my readers] ask’ (p.240). Her answer is that, ‘Starbucks is the Bill Clinton of corporations’. Now, this has to be seen through the author’s eyes, of course: to many on the left Clinton represented a great but flawed hope — ‘endearing and exasperating … wants to be good and do good … very smart … but occasionally … does something dumb that damages its reputation and belies its espoused values’ (p.240). This is an untimely analogy that was doubtless written before Hillary Clinton’s campaign revealed so much more of Bill Clinton’s character. Nevertheless, it does sum up the essentially non-committal position of the whole book pretty succinctly.

I wanted to dislike this book before I had read the first page. The twee subtitle, the author’s self-declared background as a ‘longtime progressive organizer and communicator’ and the notion that something as essentially trivial as Starbucks should lead to any wrestling with one’s conscience — all these had me expecting the worst. In the end, however, I admired the author’s endearing honesty but was exasperated by her lack of commitment. While it was generally pretty smart about matters, occasionally it embraced dumb ideas and poor economics that damaged its credibility. The author did not appear to have read her own manuscript, posing questions anew that she’d already answered. All up, it’s the … the … something of books — I’m sure there’s a perfect metaphor for this somewhere.
Robin Archer, *Why is there no Labor Party in the United States?* 
(Princeton University Press, 2007)

Gregory Melleuish

The decade of the 1890s saw the establishment of a labour party in Australia and the failure of a similar type of political party to emerge in the United States. In many ways, the existence or otherwise of a labour party is emblematic of the difference between the political culture of Australia, Britain and New Zealand and that of the United States, although it could be argued that it is less fundamental than the contrast between the Westminster system and the American emphasis on the rigid separation of powers.

Robin Archer addresses a fundamental question — Why is there no Labor party in America? — through a comparison of late-nineteenth century Australia and the United States. He believes that this is not an easy question to answer. He rejects what might be called essentialist arguments based on a notion of American exceptionalism, preferring instead to test a number of possible concrete reasons that might explain why America did not establish a political party based on Labour and the trade unions.

Archer’s method is to compare America and Australia in the late-nineteenth century over a number of areas relating to labour politics. His basic assumption is that America and Australia were very similar societies: both were settler societies; both advocated liberty and democracy. As Australia did develop a labour party and America did not, then a comparison between the two should establish not only what they had in common but also where there were crucial differences. It is these differences that should provide the answer as to why America did not take the Labour party path.

Archer goes through a number of factors that have been traditionally used to explain the absence of a labour party in America. These include the presence of racism amongst American workers, the prevalence of liberal values, and institutional matters such as elections and the nature of the constitution. Using Australia as a comparison, he points out that such factors also operated in an Australia that saw the birth of a labour party.

He considers three factors as significant because there were considerable differences between America and Australia. These are:

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• The level of repression in America
• The importance of religious factors
• The more dogmatic socialist position taken by some in the American labour movement.

But, as Archer points out, a consideration of these factors only takes the investigation to the next level. Why was it the case that that American labour groups were more dogmatic in their socialism; why were the Americans more prone to violent repression, and why were religious issues more important in America than Australia?

This comes back to the whole issue of the different political history of the two countries. Australia and America are not as alike as Archer would like us to believe. There are some differences that complicate comparisons. The first is that America, as an English settlement, began life in the early seventeenth century while the Australian colonies had a much shorter history. Australia commenced life as a penal colony in 1788 but it was not really until the 1850s, and the gold rushes, that the colonies became viable entities. In the 1890s most colonial leaders in Australia were either immigrants or the children of primarily British immigrants.

By the 1890s America was a vast, complex country that had undergone a civil war while the Australian colonies were small both in number and population. While America had shared with pre-modern England a rather violent heritage that had led to what Kevin Phillips\(^2\) has termed ‘the Cousins’ wars’ — the English Civil War, the American Revolution and the American Civil War — the Australian colonies shared with modern Britain a nineteenth-century desire to be respectable.

By the 1890s the two countries had undergone different experiences and possessed quite distinctive cultures. While they had much in common, they were also different and one should be cautious about any sort of mechanical comparison. Particular histories are important in such matters.

Consider the issue of religion, which Archer links to that of political parties. Americans had a deep religious identity and this identity was related to their political party identification. Being a Republican or a Democrat mattered for many Americans. This, according to Archer, impeded their willingness to move from being members of trade unions to using the trade union as the basis of a political party. In Australia, religious identity in relation to politics was relatively weak, except in the particular case of Catholicism, where religious and ethnic identities were tied together. There was a tendency for Catholics to identify with Protectionist economic policies, but, as the case of Patrick Glynn indicates, one could be both a free-trader and a Catholic. In the early 1890s Labour did not

have a definite view on the fiscal question and the early W. M. Hughes was a
free-trader.

In 1890, political parties — and hence identification with a particular political
party — were relatively new in Australia. After the 1850s, conservatism had
been routed and nearly everyone had become a liberal. The safe course of action
for a conservative politician was to take the label ‘liberal conservative’. Only in
the 1880s did new lines of demarcation begin to be drawn again within liberalism.
When a political labour movement came along in the early 1890s parties were
not very strong and party identification was weak. Politicians still believed in
an ideal of independence, as expressed in the trustee theory of representation.
It took the presence of a labour party to make that identification much stronger
as the new labour parties adopted a model of democracy based on the delegate
model of representation that allowed for greater control of politicians.

This contrasts with the American situation, where there was a long history
of party identification going back to the early days of the republic and
strengthened by a civil war. A new party would need to fight to get into the
American political arena, whereas in Australia the labour party came in on the
ground floor. By the early twentieth century, the Australian party system had
begun to assume a much greater rigidity.

The case of repression also indicates a major difference between Australia
and America. Australian political culture was much more sedate than its American
counterpart, and was less open to political violence. In part, this went back to
the 1850s and the need for a former convict society to demonstrate to a doubting
British public that it was worthy of the political freedom that it had been granted.
In part, it reflected the workings of the ‘Australian’ secret ballot, which
dampened down political conflict during elections. During the Victorian political
crisis of 1879–80 C. H. Pearson complained about how docile the Victorian
population was in the face of what he saw as a threat to democracy. He argued
that they should become more activist in their politics. David Malouf has argued
that Australians received the English culture of the late Enlightenment, which
helped Australians to become queue-formers rather than queue-jumpers. Only
the presence of Chinese immigrants appeared to bring out the darker side of
Australians.

Archer also points out that a crucial difference between Australia and America
was the different role of the courts vis-à-vis the legislature. As heirs to the
Westminster system the Australian colonists tended to rely more on Parliament
to change the law than on the courts. This made the legislature a greater prize
to capture in Australia as a means of defending individual interests.

The place of the courts and an emphasis on human rights in American culture
might also help to explain why American labour leaders were also more prone
to moving towards abstract socialist dogmas. Americans were influenced by
Reformation Protestantism, which emphasised rules and covenants. Scottish philosophy had a big impact on American universities. The Scots were much more rationalist than the English. Anglicanism, based on the Book of Common Prayer and a measure of pragmatism, was far more influential in Australia. In this regard, Australians resembled the English far more than their American cousins.

In the final analysis it might be no more than a matter of timing that explains why America has no labour party while a labour party in Australia stands at the centre of the Australian political system. It is always a battle for a new political party to emerge in an established political system. In Britain it took decades for the Labour Party to establish itself properly as one of the two major parties. Even then the displaced Liberal Party has managed to survive in different guises down to the present day. In Australia, Labour did not have to fight against long-standing established political parties. It was a foundation member of the Australian political system.
Benno Torgler, *Tax Compliance and Tax Morale* (Edward Elgar, 2007)

Jeff Pope¹

Why do people pay taxes? Or, more importantly, how willingly do they pay taxes? And what induces them to do so? Why do more people pay tax voluntarily than traditional economic models would predict? Do taxpayers comply simply because of the fear of being caught; or do other factors, such as religious beliefs or a sense of ‘value for money’ received from government services, play a role? In spite of taxation being a part of our lives, and of recorded history since Egyptian times, such issues have rarely been studied.

Benno Torgler’s work on ‘tax morale’² aims to rectify many of these ‘knowledge gaps’ in the field of tax compliance — a challenging task. The book is drawn from eight papers previously published mainly in economic or political economy journals. It not only integrates Torgler’s previous work into a coherent body, but is also likely to bring it more prominently to the attention of tax researchers, administrators and policy-makers.

A significant feature of this book is that it contributes research from outside the United States (which has overwhelmingly dominated the compliance literature to date). Torgler’s research is based upon behavioural data drawn from the World Values Survey based on 40 societies from around the world including diverse cultures such as Latin America (covering 17 countries), East and West Germany, and Switzerland.

Torgler’s research is unlikely to appeal to traditional economists — his multi-faceted approach incorporates concepts from other social sciences (particularly psychology) within an economic framework. In methodological terms he uses both surveys and experiments; where different methodologies reach similar findings the robustness of conclusions is strengthened. Torgler’s approach reflects a growing trend in tax research to use more widely two or more different methodologies within a single study.

A beneficial feature of the book is that the econometric analysis, a key component of Torgler’s research, is supportive of the analysis, without actually being obtrusive: it is there for econometricians, but may be easily passed over.

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² Tax morale is understood simply as the ‘intrinsic motivation to pay taxes’.
by other readers. This much-to-be-admired approach, as Torgler acknowledges in the Preface, derives greatly from his mentor, Rene L. Frey, who emphasised ‘… avoiding complex structures that affect the readability, to see the relevance of an applied research focus, and to expose the research thoughts not only in academia but also a broader audience’. Research students note well!

Torgler is critical (on more than one occasion) of the traditional economics-of-crime approach to tax compliance that emphasises that tax evasion is negatively correlated with the probability of detection and the degree of punishment. He makes the useful point that, in many countries throughout the world, tax-compliance levels are far higher than an economics-of-crime model would predict. He is also critical — and rightly so — of the many tax-compliance games that use students as participants rather than people from the broader and more representative taxpaying population as a whole. Whilst rectifying this deficiency, Torgler emphasises the limitations of experiments in tax research and its iterative nature in getting closer to a clearer picture (but realistically never 100 per cent clear!).

The core of the book is explaining what helps determine tax morale, other than punishments. As might be expected, religious observance is a key factor, with only two known previous research papers investigating this aspect of tax morale/compliance. Based on a much larger data set covering over 30 countries, and controlling for other determinants such as corruption, trustworthiness, demographic and economic factors, religious observance, perhaps unsurprisingly, is found to have a significant positive effect on tax morale. What is interesting is that a belief in God is not specifically mentioned but religious observance is defined in terms of seven variables: ‘church attendance’, ‘church participation’, ‘religious education (at home)’, ‘religious (beliefs)’, ‘importance of religion’, ‘religious guidance’ and ‘trust (in the) church’. Although the term ‘church’ is usually associated with Christians, the analysis includes all major religions found throughout the world including Catholic, Protestant, Jewish, Muslim, Hindu and Buddhist faiths, with results broken down accordingly. This could have been emphasised more clearly in the Introduction.

The effect of institutions on tax morale is also evaluated. Torgler investigates the effect of direct democracy, trust in government, the court and legal system, and federalism, based on Swiss data, and factors in traditional variables such as audit probability, legal fines and individual tax rates. Overall, there is strong support for the proposition that both formal and informal institutions positively influence tax morale. The critical issue here is the extent to which findings from Switzerland can be generalised to other tax jurisdictions.

The experience of Latin American countries shows that democracy and individual traits such as pride, financial satisfaction, personal satisfaction and happiness all contribute to tax morale. However, this section in particular
illustrates a weakness of Torgler’s analysis: the lack of a clear distinction of the effects of tax morale upon tax avoidance versus its effects on tax evasion. Apart from basic taxpayer dishonesty, the other main reasons for tax evasion in Latin American countries are the size of the tax burden and, importantly, corruption (with little difference between these three).

The effect of culture and social norms upon tax morale is investigated in the chapter comparing former East and West German taxpayer data from 1990 and 1997 (following German reunification in 1989), in an interesting study of wider social and political relevance than just the tax sphere. The book ends with two chapters of particular interest to tax administrators and policy-makers: the role of moral suasion (based on a Swiss tax commune) and tax amnesties (worldwide review plus field experiments in Switzerland and Costa Rica).

One of the weaknesses of the tax compliance field overall is that a high proportion of work is focused on individuals who are generally subject to withholding tax (PAYE/PAYG) on most, if not all, of their income, with much less on the self-employed, who have much greater discretionary power as to how much tax they decide to pay, and very little on companies. In that respect this book is little different, although at several points Torgler notes that, overall, the self-employed have lower tax morale than other individual taxpayers.

A more pedantic criticism is that the Introduction (at 61 pages) is really an Overview as there is no concluding chapter: it usefully contains the tax policy implications of Torgler’s research and indicates the many opportunities for further work in this specialist and hitherto neglected field of tax morale. The chapters that follow read almost as a detailed appendix.

The sentiments and findings of Torgler’s book are likely to be well received by many tax administrators throughout the world. It has already been cited by Michael D’Ascenzo, the Australian Commissioner of Taxation, in a speech on small business and the cash economy. It is only to be hoped that, in the years ahead, tax administrators become more supportive of further tax compliance/morale research, especially studies focusing on business taxpayers.

To sum up, Torgler’s book is a valuable contribution to the tax field, especially as it pioneers research into tax morale that is in its infancy and helps redress the U.S. domination of the tax-compliance literature. It places econometric analysis where it rightly belongs — as the supporting act, not the main feature! — and takes a holistic approach in attempting to explain the complex area of human behaviour that tax compliance involves, whatever the country. There is much still to be done: this book points the way for researchers who wish to contribute to this endeavour.

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Among the many startling facts in Åsa Wahlquist’s book is that Australia is the driest inhabited continent, but has the highest per-capita consumption of water. The scarcity of water is clearly an economic issue.

Adam Smith used the water-diamond paradox to illustrate the difference between value-in-use and market-value. In a sense, water is now less of a paradox than it was in the eighteenth century, as water is now traded in a market, albeit a rather imperfect market with active government involvement in the ongoing revisions of property rights over water. But trading water in a competitive market may not always be a viable option. Wahlquist cites a study that estimated that there would be a 70 per cent loss in transferring any traded water between Loxton in South Australia and Deniliquin in New South Wales. Transaction costs like these must limit the effective size, and hence potential for competition, in any water market. Economic issues of the cost of water storage and supply depend on local idiosyncrasies of climate, geology and geography so, obviously, no single national solution is appropriate. Wahlquist’s description of the history of water usage in both urban and farming contexts is particularly informative. Economics is, rightly, only one of several disciplines used to inform the public debate about the drought and climate change and Wahlquist’s most valuable contribution is that she renders intelligible to the lay reader the rather technical literature on the science of climatology, hydrology and related disciplines.

The only substantive omission from the book’s content is the failure to mention the notion of ‘cultural flows’. It has become common to refer to ‘environmental flows’ of water to maintain a healthy environment, but in the last 10 years there has been some debate about the need to ensure that the flow of water is sufficient to facilitate the ongoing viability of local indigenous cultures. A recent Australian Institute of Aboriginal and Torres Strait Islander Studies Discussion Paper canvassed the issues involved in the context of the Living Murray Initiative (Morgan et al. 2004). That paper uses selected passages from the Native Title act to argue that the allocation of water for ‘cultural flows’
can be seen as reparation for past dispossession of water and impacts on cultural rights.

The Rudd Government implicitly recognised the increasing importance of indigenous issues when it announced the new structure of the Northern Land and Water Taskforce, which was set up initially under the Howard Government and chaired by Bill Heffernan. The new Chairperson for the Taskforce is Joe Ross, a prominent Indigenous leader from Fitzroy Crossing. Note that the Taskforce now has several indigenous members, including Richie Ah Mat (Balkanu CYDC) and Walynbuma Wunungmara (NLC).

This book provides a mostly balanced account of the issues involved as it reports most perspectives on the debate. For example, Wahlquist provides some implicitly critical comments on Bill Heffernan’s suggestion that we require ‘incentives for a new generation of farmers’ that will ‘get farmers up there [in Northern Australia] with incentives, favourable tax treatments, plus the opportunity to get a quid’. While Heffernan’s policy prescriptions can be rationalised in terms of recent climate history, I would argue that the author is too gentle on this form of agrarian socialism as it is based on a premise that is not consistent with the latest CSIRO models, which predict that temperatures will increase and rainfall decline in such areas over the next century. It is probably worth noting that the models of rainfall in North Australia do not always agree with one another but there is sufficient doubt to be sceptical about Heffernan’s policy prescriptions.

The author of *Thirsty Country* is an award-winning journalist and the reportage of the diverse opinions is understandable — but a more rigorous framework is required for the analysis to design effective policy options. Given the uncertainty about the climate and economic models, one needs to give some weight to the possibility that various predictions are wrong. While government intervention is not automatically warranted, there is a distinct possibility that markets may fail if transaction costs are high, and if it is important to take into account non-market values associated with the environment and cultural flows. In a sense, the water-diamond paradox is inescapable and is probably a multidimensional paradox. The wedge between market-value and use-value comes from several sources (both human and non-human), and varies over time along with our attitude to risk and uncertainty (inter alia, over which model to use).

There are no real surprises in the concluding chapter about what we can do. Most people will know what they should be doing in the home, even if they do not always do it. The main challenge is to enhance public understanding of the broader issues for the nation, which on balance this book achieves.

Overall, the *Thirsty Country* is a stimulating contribution to the literature, but it is a remarkably dense book that is, at times, cluttered with facts. Many
readers will find themselves using the glossary and index so that they can find definitions of technical terms that were defined earlier and follow the flow [no pun intended] of the argument.

The book works best at a didactic level. There is not one single unifying thesis as the author seeks to inform readers about the diversity of challenges and issues facing Australian people, and their local regions and cities. Book is appropriately and affectionately dedicated to the late Peter Cullen who was one of the founding members of the Wentworth Group of Concerned Scientists—a group dedicated to overcoming widespread ignorance about the complex issues for water management on the Australian continent.

Reference