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The privatisation of Australian electricity: Claims, myths and facts

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Abstract
Australia has one of the most 'liberalised' electricity sectors in the world. The sale of government-owned electricity companies has contributed to that liberalisation and a quarter of the proceeds of one of the world's largest privatisation programmes. In 2014, the state governments of New South Wales and Queensland announced further electricity privatisations if re-elected. Advocates claim private ownership will mean more productive investment, lower costs leading to more efficient operations, lower prices for all consumers and better market functioning without government interference. Opponents contend that the true value of government businesses is not being realised at sale, retention can achieve returns greater than those from a sale, and that follow sale, prices will rise and jobs will be lost. This article demonstrates that the claims of either lower or higher prices, of job losses and of more efficient operations are tantamount to being myths of privatisation not borne out by reality.

JEL codes: L33, L50, L94

Keywords
Australia, electricity, privatisation

Introduction

Electricity sectors have undergone significant structural change since the early 1990s. Policies, embodying the neoliberal precepts of competition and decreased government involvement, have spearheaded this transformation. The key policy elements used to restructure electricity sectors have been the breaking-up of government

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monopolies into separate generation, transmission, distribution and retail companies; the creation of competitive wholesale and retail markets; new regulatory regimes to set market rules and prices for the monopoly transmission and distribution network businesses; and the privatisation of government-owned companies. Australia is considered to have one of the world's most 'liberalised' electricity sectors, having adopted virtually the full suite of policy elements in the 'textbook' electricity restructuring model (Joskow, 2006).

In 1990, the Australian electricity sector comprised 34 government-owned vertically integrated businesses. That sector is unrecognisable today. The functions of generation and retail are exposed to competition and the monopoly functions of transmission and distribution network services are regulated to ostensibly emulate competition. Most electricity generated is traded through the National Electricity Market (NEM) which in late 2014 had 293 participants (Australian Energy Market Operator (AEMO), 2014).[1] Within the NEM, 77% of generation capacity is privately owned along with 33% of distribution networks and 29% of transmission networks (including interconnectors). Private companies deliver the overwhelming majority of retail services.

Privatisations featured most strongly in Victoria and South Australia (SA) from 1995 to 2000.[2] Sustained community and trade union opposition prevented for more than a decade the sale of government electricity assets in New South Wales (NSW) and Queensland. With the election of conservative federal and state governments since 2011, there is a renewed momentum to sell those electricity assets still in government ownership. In 2014, the NSW and Queensland governments announced further privatisations would take place if re-elected.

The case for privatisation is built around ideological arguments, based on neoliberalism's advocacy of market primacy and reduced government involvement, consistent with neoclassical economics' theory of perfectly competitive markets and notion of government debt 'crowding out' private investment. There are four key arguments in favour of privatisation (Bacon, 1995; Moran, 2002; Officer and Quiggin, 1999). First, government ownership imposes unnecessary costs through political decisions and interference, and thus higher consumer prices. By default, private ownership is not subject to these pressures, so more efficient operations and lower prices will prevail. Second, private ownership will mean greater competition and hence, lower consumer prices. Third, the proceeds from privatisation are needed to eliminate government debt or to finance investment which government cannot fund due to other expenditure priorities, without incurring new debt and/or increasing taxation. Fourth, retention of government-owned assets exposes government to financial risks.

The counter arguments focus on the following claims (Quiggin, 2002, 2014; Walker and Con Walker, 2008). First, the returns from retaining government-owned assets can greatly exceed the returns from their sale. For example, the savings in public debt interest (if proceeds are used to retire debt) may be less than the loss of dividends from the business sold. Second, the true value of the asset is not realised at sale. Third, jobs will be lost as private owners seek to cut costs. Fourth, higher consumer prices will occur as private owners seek to maximise profits. The claims about savings, dividends and asset values are critically dependent on assumptions about future interest rates and bond rates, discount rates and the expected growth in dividends and earnings.

The arguments for and against privatisation have generated a perennial discourse in Australia and internationally. That discourse, however, has not been well informed by empirical analyses of the actual outcomes post-privatisation devoid of modelling assumptions about, for example, future income streams or interest rates. One of the obvious difficulties posed for empirical analysis is the lack of a counter-factual history, that is, what would be the outcomes if public ownership had continued. The few studies which have focused on actual (not hypothesised) outcomes following Australian electricity privatisations, however, have not situated their analyses within the context of the structural changes which have occurred. For example, Richardson (2013) and Quiggin (2014) conclude there has been no price advantage for consumers by comparing electricity price indices in the 'privatised' state of Victoria with those in Australia overall, but without considering the regulatory regime which determines electricity price formation – irrespective of ownership – in Australia's restructured electricity sector. Such analyses, abstracted from context, arguably present findings which do not adequately depict real-world outcomes and thus expose proponents and opponents of privatisation to the same criticism, namely 'selective reporting of data' (Quiggin, 2014: 24).

This article seeks to contribute to a more informed understanding of the real-world outcomes post-privatisation. Claims concerning prices, employment and efficiency are assessed and the findings explained in relation to the dynamics and constituent components of the restructured sector. The number of jobs and efficiency are directly linked, through operating costs, to prices. These are of particular importance to all Australian households, given the substantive price increases of recent years, as the governments of the two largest states have sought a mandate for electricity privatisations at elections in 2015.[3]

Following this introduction, an overview of Australian electricity privatisations is presented and the drivers of the renewed momentum to privatise the remaining government-owned electricity assets are outlined. The validity of three claims about the outcomes of privatisation – lower or higher prices, loss of jobs and greater efficiency – are then examined against the available evidence. Conclusions are drawn out in the final section.

Australian electricity privatisations

The privatisation of Australian government-owned assets has amounted to one of the largest programmes of all Organisation for Economic Co-operation and Development (OECD) countries, being second in value to that of the UK (Reserve Bank of Australia (RBA), 1997). Since the late 1980s, the total proceeds have exceeded AUD148 billion.[4] The assets sold have been predominantly within the sectors of transport, communications, electricity and financial services.

Table 1 lists the electricity companies which have been privatised. Total gross proceeds have been nearly AUD37 billion, 25% of the total financial gains from all Australian privatisations. The first three sales listed did not form any enunciated privatisation programme, being used to overcome short-term funding shortfalls for the Victorian and Queensland governments. These sales, however, provided fuel for those who advocated that governments were poor financial managers and should leave the operation of businesses to the private sector.

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Table 1. Privatisation of Australian electricity companies, 1992–2014.

Company	Year	Function	State government	Gross proceeds (million AUD)
Loy Yang B (51%)	1992	Generation	Victoria	544
Gladstone Power	1994	Generation	Queensland	750
Collinsville	1995	Generation	Queensland	130
United Energy	1995	Distribution/retail	Victoria	1,553
Solaris Power	1995	Distribution/retail	Victoria	950
Eastern Energy	1995	Distribution/retail	Victoria	2080
PowerCor Australia	1995	Distribution/retail	Victoria	2150
Citipower	1995	Distribution/retail	Victoria	1575
Yallourn Energy	1996	Generation	Victoria	2428
Hazelwood Power/Energy Brix	1996	Generation	Victoria	2400
Loy Yang B (49%)	1997	Generation	Victoria	1150
Loy Yang A	1997	Generation	Victoria	4746
PowerNet Victoria	1997	Transmission	Victoria	2555
Southern Hydro	1997	Generation	Victoria	391
Ecogen Energy	1999	Generation	Victoria	361
ETSA Utilities	1999	Distribution	South Australia	3250
ETSA Power	2000	Retail	South Australia	175
Optima Energy	2000	Generation	South Australia	315
Synergen	2000	Generation	South Australia	39
Flinders Power	2000	Generation	South Australia	465
ElectraNet SA	2000	Transmission	South Australia	938
Terra Gas Trader	2000	Generation	South Australia	35
Sun Retail	2006	Retail	Queensland	1202
Powerdirect	2007	Retail	Queensland	1203
EnergyAustralia	2010	Retail	NSW	1486
Integral Energy	2010	Retail	NSW	1000
Country Energy	2010	Retail	NSW	1300
Delta West	2013	Generation	NSW	160
Eraring Energy	2013	Generation	NSW	50
Macquarie Generation	2014	Generation	NSW	1505
TOTAL				**36,886**

Source: Chester (2007), NSW Auditor-General (2011, 2013).

The Victorian and SA governments have fully privatised their electricity assets. Victoria led the way with the sale of each distribution business during 1995.[5] The proceeds were well above expectations and almost double the assets' book value (Booth, 2003). Flushed with success, Victoria proceeded to sell its generation and transmission assets. All proceeds were used to retire Victorian government debt. SA opted for long-term leases (100 and 200 years) with operational control held by the purchasers.[6] The proceeds were also used to retire debt.

In 1999, the ACT (Australian Capital Territory) Government proposed to sell its electricity distribution-retail company. Political opposition prevented an outright sale which

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was replaced by a joint venture with one of Australia's largest energy companies, AGL. The ACT government retained asset ownership, rights and liabilities and contracted with AGL to maintain, manage and operate the business activities for which it receives 50% of net profits (ACT Government, 2000). AGL did not make any payments for this joint venture.

The largest state, NSW, has experienced a more problematic privatisation path. In 1997, the Labor Government announced its intention to sell the state's electricity assets. A few months later, a government-appointed Committee of Inquiry reported, with majority support for privatisation because of the state's potential significant financial gain and ostensible risk exposure of future investment (NSW Government, 1997).[7] The government sought political support for the sale at the 1997 NSW Labor Party Conference but the proposal was resoundingly defeated. The government endeavoured for many years to turn around the opposition. In 2008, it proposed to lease the generators and sell outright the retail business of each distributor. The justification used was the findings of the government's Owen (2007) Inquiry which had concluded that higher levels of debt and taxation, along with changes to expenditure priorities, were required to meet future capital needs of the government-owned electricity businesses. Again, the proposal did not proceed following overwhelmingly rejection at the annual Labor Party Conference.

In late 2009, the NSW Labor Government launched a new strategy. The retail businesses were to be sold outright. The output of the three generation companies was to be sold, in five bundles, as trading rights (GenTrader contracts) with the day-to-day operation and maintenance of the generation assets to remain the responsibility of the government-owned companies. The purchaser of the trading rights was to pay capacity charges for exclusive access to the generator's output plus operating costs and fuel charges. This was a complex solution to the government's inability to secure legislative passage to divest ownership. Two GenTrader bundles were sold, in late 2010, along with the retail businesses, leading to some but not all generators being subject to GenTrader contracts. The process was dogged from the outset by political controversy, particularly about retention values, bid prices and the governance structure for the sales.

Another controversial privatisation attempt involved the Snowy Mountains Hydro-Electric Scheme (Snowy Hydro) owned by the federal (13%), NSW (58%) and Victorian (29%) governments. Intentions to sell were announced by all three governments in December 2005. In June, the following year, the federal government withdrew from the sale in the wake of strong political and community opposition which led the two state governments to withdraw also.

The only other electricity privatisations have been the sale of the two Queensland retail businesses of the distribution companies, Energex and Ergon Energy, in late 2006 and early 2007. The Tasmanian Government proposed to sell its retail electricity business, Aurora Energy, in 2012 but subsequently withdrew it from sale when unable to attract a bid above retention value.

Renewed momentum

Upon election in 2011, the NSW Conservative Government established a Commission of Audit, to review the public sector, and a Special Commission of Inquiry (Tamberlin

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Inquiry) into the 2010 sale of the electricity retail businesses and the incomplete sale of the generator trading rights.

The Tamberlin Inquiry concluded *inter alia* that the sale process had met government objectives, continuation of state ownership or the GenTrader contracts was not conducive to a competitive market and the sale of trading rights was sub-optimal and should not be used for the remaining generation assets (Tamberlin, 2011). It recommended that the government sell or lease those generators with GenTrader contracts as well as those still government-owned. The NSW Commission of Audit concurred with the Tamberlin Inquiry's recommendation and also suggested that 'the options and appetite to divest the public ownership of Snowy Hydro Limited be reviewed' (NSW Government, 2012: 208). Delta West and Eraring Energy were sold in 2013 to those companies which had entered into the GenTrader contracts and Macquarie Generation was sold in 2014. In June 2014, the NSW Government proposed – if re-elected in March 2015 – to privatise, through 99-year leasing, 49% of its network assets.[8]

The Queensland Conservative Government, elected in 2012, similarly established a Commission of Audit which recommended divestment of all government electricity assets (Queensland Government, 2013). The government rejected privatisation of the transmission and distribution networks and, in mid-2014, announced its intention to sell the generation and retail assets and to enter into contracts with the private sector for investment in the networks. Strong public reaction forced a back-down a few months later when it was announced that, if re-elected, no electricity assets would be sold outright but leased for 50 years with an option to extend for another 49 years (Queensland Government, 2014). Nevertheless, in late January 2015, one of the biggest swings in Australian political history occurred, and this privatisation (leasing) proposal is generally attributed as a key contributor to the electorate's rejection of the first term Queensland Conservative Government.

The Productivity Commission (PC, 2013) recommended in 2013 that all state government-owned electricity networks should be privatised because

> the rationale for government ownership … no longer holds. State-owned status is ill-suited to the current incentive regulatory regime. State-owned network businesses *appear* to be less efficient than their private sector peers. (p. 287)

Twelve months later, when reporting on public infrastructure provision, the PC (2014) stated that privatisation should occur when 'net benefits in the form of efficiency gains' (p. 18) can be demonstrated and specifically recommended the sale of all state government-owned electricity businesses and investigation of the sale of respective government holdings in the Snowy Hydro (PC, 2014: 89, 91). This report also raised the issue of 'capital recycling', that is, using the proceeds from privatisation of existing assets to fund new infrastructure, commenting that 'capital recycling may help to build community support for privatisation' (PC, 2014: 88). The NSW government has proposed using all proceeds from future electricity privatisations to fund infrastructure projects.

Following the 2013 election of the Abbott Federal Government, a National Commission of Audit was set up which recommended privatisation of federal government businesses operating within contestable markets, including the Snowy Hydro, and

investigation of the 'potential benefits of a sale for the operation of the National Electricity Market' (Australian Government, 2014b: 222). Around the same time, state and territory Treasurers agreed to a federal government 'asset recycling' proposal of financial incentives to privatise assets and use of the proceeds to finance new infrastructure. This agreement was subsequently endorsed by the Council of Australian Government (COAG) (COAG, 2014; Hockey, 2014). The 2014 Federal Budget included provision for an AUD5 billion Asset Recycling Initiative. State and territory governments will receive 15% of an asset's sale price if the funds are used for new infrastructure (Australian Government, 2014a: 216). The 2014 NSW government proposal to fund infrastructure with electricity privatisation proceeds will attract this financial incentive.

Claims, myths and facts

Claim 1: Privatisation will result in lower or higher consumer prices

Australian electricity prices have increased substantively since 2006, well in excess of general price movements. Figure 1 compares movements in the Consumer Price Index (CPI) and the Electricity Price Index (EPI).[9] Generally, all capital cities have followed this pattern, although increases in the EPI above the CPI change have occurred at different times. For example, the EPI for Adelaide, Hobart and Canberra has been greater than the CPI for these capital cities since 2000 whereas this did not occur for Sydney until 2006 (Australian Bureau of Statistics (ABS), 2014a).

Figure 2 compares the EPI for Australia against those for the capital cities of the two 'privatised' states, Melbourne and Adelaide. The EPI was greater for Melbourne than the Australian average from late 1991 until 1998, mid-way through the Victorian electricity privatisation programme. Adelaide, on the other hand, shows a gap between the two indices from 2000, with the difference appreciably widening after early 2003. From 2000, when both Victorian and SA privatisations were complete, until 2014, the Australian EPI increased by 174% compared to an increase for Melbourne over the same period of 146% and 178% for Adelaide. *Prima facie*, these numbers do not suggest that privatisation has led to higher prices in Victoria and SA than elsewhere in Australia. The difference between the change in the SA and Australian EPIs is marginal. If anything, there is some support for the argument of lower prices in the case of Victoria.

As in electricity sectors elsewhere, a rapid price escalation started about a decade after restructuring commenced (Chester and Morris, 2012: 439). Electricity sector restructuring commenced in Australia from the mid-1990s and the EPI indicates quite significant change after 2006 compared to the previous decade with the two 'privatised' states, Victoria and SA, fitting this pattern. This suggests something other than an ownership change has driven these increases.

The EPI shows the relative change in electricity prices. The pattern of absolute changes shows a slightly different picture which is now considered.

During the 5 years to 2003–2004, NSW household electricity prices showed no real change although there were real increases of 5%–11% elsewhere except in SA, where prices stagnated before leaping 24% in real terms in 2003–2004 (Energy Supply Association of Australia (ESAA), 2003). Much more substantive price increases have

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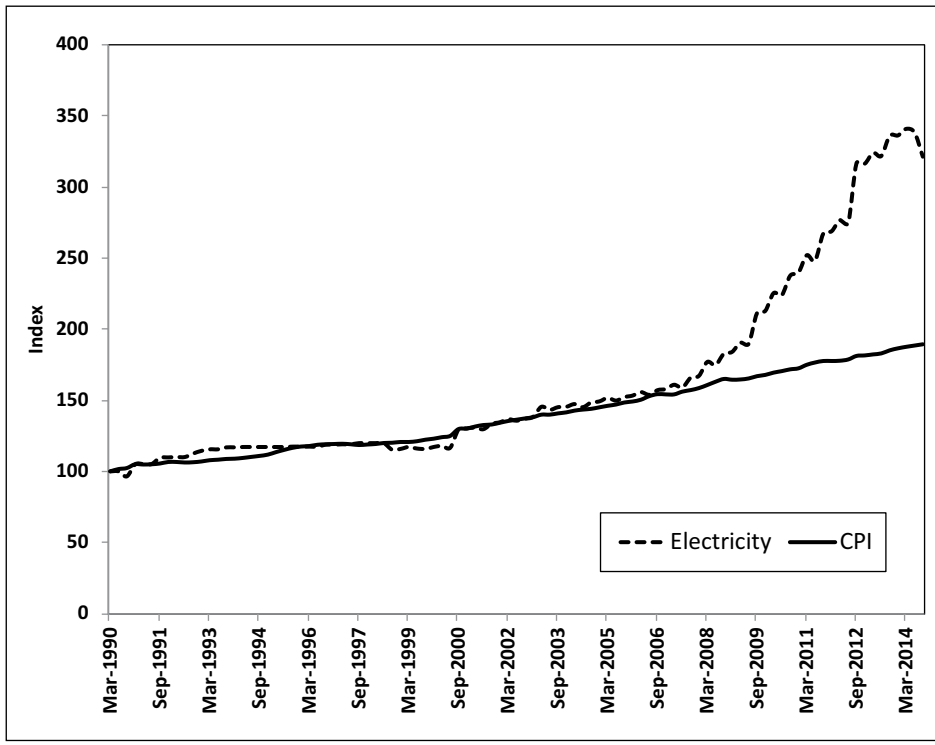

Figure 1. Consumer Price Index and Electricity Price Index, Australia, 1990–2014 (March 1990 = 100).
Source: ABS (2014a).

occurred since. At this point, the pricing story becomes a little more complex so some context is warranted.

Most Australian households are now able to choose the company supplying their electricity.[10] If they do so, the prices paid are set by a 'market contract'. If a household chooses to remain on a 'standard contract', its electricity prices are set by state and territory government regulators (regulated prices) or by the electricity supplier. Regulated electricity prices are being phased out. There have been no regulated prices for Victorian households since January 2009 and for those in SA and NSW from February 2013 and July 2014, respectively. In these states, electricity retailers must provide 'standing offer' electricity prices to those who have not chosen a market contract. The number of households on market contracts and standing offers varies across Australia. In Queensland, 45% have chosen to remain on standing offers. In NSW, the proportion of households on standing offers is 40% compared to 20% in Victoria and 19% in SA (Australian Energy Market Commission (AEMC), 2013).

Table 2 shows the average annual increases in the prices paid for electricity by Australian households since 2007–2008. These increases have been calculated from standing offer and regulated prices. Data for the prices paid under market contracts are

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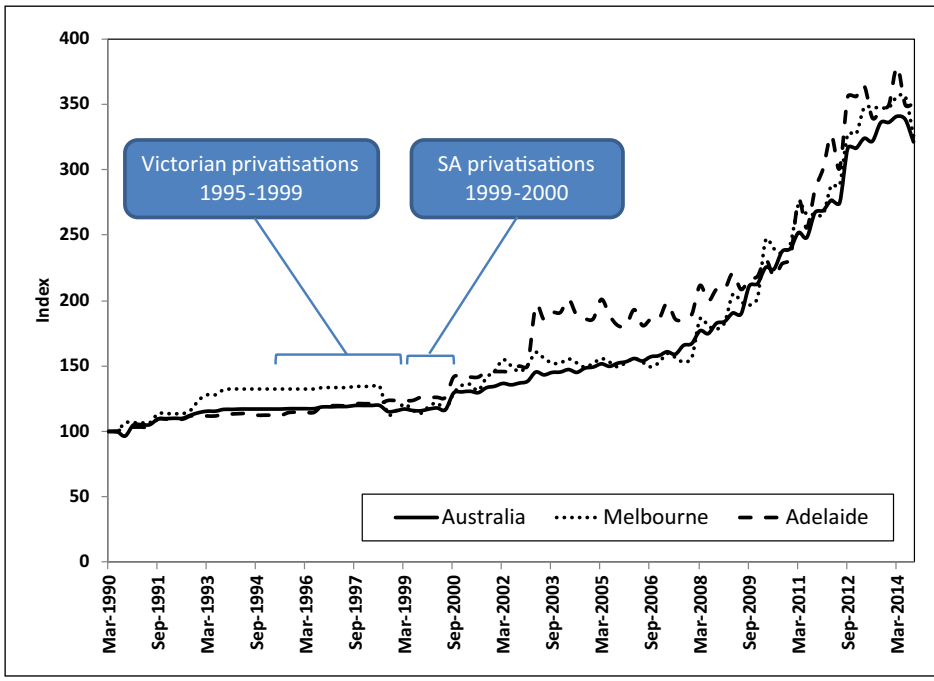

Figure 2. Electricity price indices, 1990–2014 (March 1990 = 100).
Source: ABS (2014a).

not available. Johnston's (2014) analysis confirms that market contract prices have trended in the same direction despite some actual prices being lower than those charged for standing offers.

In the 7 years to mid-2014, the average increase in Queensland electricity prices was the highest at 126% compared to the next highest of 115% for NSW. In the two 'privatised' states, the average increase in this period was 103% in Victoria and 91% for SA. Table 2 also shows a similar pattern in the EPI albeit at a lower rate of change with the exception of the Northern Territory.

Victoria and SA have the highest proportions on market contracts (around 80% of households) compared to 60% and 55%, respectively, for NSW and Queensland. It does not automatically follow that a higher prevalence of market contracts has led to relatively lower price increases. There is no evidence to suggest that price increases for market contracts have differed from those applying to standing offers and regulated prices.

The notion of private electricity companies being able to create lower or higher prices assumes these companies have considerable control over price setting, which leads us to consider electricity price formation. In restructured sectors, contrary to general understanding and acknowledgment by experts, this is the result of quite complex regulatory processes.

Electricity prices comprise multiple fixed and variable tariffs which represent charges for the activities of generation, transmission, distribution and retail. Charges for the

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Table 2. Average increases in household electricity prices (%).

	2007–2008%	2008–2009%	2009–2010%	2010–2011%	2011–2012%	2012–2013%	2013–2014%	2007–2008 to 2013–2014%	Electricity Price Index 2007–2008 to 2013–2014%
NSW	7.5	7.5	20.2	10.0	17.3	15.7	1.6	**114.5**	**105.5**
Victoria	7.3	7.4	13.5	6.0	12.0	18.0	7.1	**103.1**	**80.4**
Queensland	11.4	9.1	15.5	13.3	6.6	10.4	20.4	**125.8**	**101.8**
South Australia	12.3	2.5	3.1	18.3	17.4	12.7	2.8	**91.0**	**75.4**
Western Australia	0.0	10.0	23.6	10.0	5.0	12.5	4.5	**84.6**	**74.6**
Tasmania	15.7	3.9	6.2	15.3	11.0	10.6	1.8	**99.7**	**50.4**
NT	4.4	3.4	18.0	5.0	2.8	23.4	5.0	**78.1**	**84.9**
ACT	16.7	7.1	6.4	2.3	6.5	17.7	3.5	**76.7**	**49.9**

Source: Author's calculation from determinations published on regulator websites and Australian Energy Regulator (AER, 2013).

Table 3. Component charges making up final electricity prices, 2013–2014.

Jurisdiction	Regulated networks %	Competitive markets			Environmental policies %
		Wholesale %	Retail %	Total %	
National average	51.5	18.8	13.6	32.4	16.1
NSW	58.8	n.a.	n.a.	24.6	16.6
Victoria	41.5	n.a.	n.a.	41.0	17.4
Queensland	55.7	n.a.	n.a.	25.4	19.0
South Australia	51.6	n.a.	n.a.	31.6	16.8
Tasmania	51.3	34.7	10.0	44.7	4.0
Western Australia	48.3	41.5	1.5	43.0	8.8
Northern Territory	41.5	n.a.	n.a.	48.4	10.1
Australian Capital Territory	40.5	21.1	16.0	37.1	22.4

Source: AEMC (2013).
n.a.: not available.

monopoly activities of transmission and distribution are set by the national regulator, the Australian Energy Regulator (AER). The wholesale (generation) charge is determined by the market operator, the AEMO.[11] Retail charges are set by state and territory regulators except in Victoria, SA and NSW where, following price deregulation, these charges are set by the retailer. In addition, the federal government's carbon pricing mechanism (2012–2014) and renewable energy target, and state and territory government feed-in tariff and energy efficiency schemes have contributed to the final electricity price paid. A consumer's electricity supplier sets the final price based on all these charges.

The contribution of different charges to the actual price paid varies across each state and territory. For example, the largest component of regulated transmission and distribution (network) charges in 2013–2014 represented 52% of the national average electricity price and ranged from 41% in the ACT to 59% in NSW (Table 3).

Given the significant contribution of network charges, any movement in these charges will noticeably impact final electricity prices. This is what has occurred since mid-2007. The substantive increases in electricity prices are directly attributable to higher charges for network services, and particularly distribution. The AEMC (2013: viii) estimated that increases in distribution network charges will contribute 81% to the rise in national average electricity prices from 2012–2013 to 2014–2015. The Independent Pricing and Regulatory Tribunal (IPART) (IPART 2012) estimated NSW network charges increased by over 90% in real terms during the 5 years to 2012–2013.

As noted, the sector's restructuring included a new regulatory regime for the pricing of the monopoly activities of transmission and distribution. This regime has sought to make prices cost-reflective of supply and to recover the cost of investment to replace ageing assets, to increase capacity and to meet reliability and safety standards. The prices which network businesses may charge are set for periods of 4–5 years (the regulatory period) following the AER's review of a network's forecast revenue requirement based on proposed operating and capital expenditure. The largest revenue component is the return on

Table 4. Rates of return permitted by AER.

Network business	Jurisdiction	Ownership	Line length (km)	Approved rate of return	
				2009–2014	2014–2019[a]
Ausgrid (distributor)	NSW metropolitan	Public	41,578	10.02%	7.15%
ActewAGL (distributor)	ACT	Public-Private	4,992	8.79%	6.88%
TransGrid (transmission)	NSW	Public	13,957	10.02%	7.24%
Directlink (transmission)	NSW–Queensland	Private	63	8.32%	6.80%

Source: AER (2013, 2014a, 2014b).
[a]Proposed rates of return to be finalised in April 2015 (AER, 2014: 18).

capital, which may account for up to two thirds of revenue. The size of a network's RAB (regulated asset base) (and projected investment) and its weighted average cost of capital (the rate of return necessary to cover a commercial return on equity and efficient debt costs) affect the return on capital (AER, 2013: 64).

From 2009 to 2014, AUD43 billion was invested in network infrastructure of which 84% was for distribution networks, a 60% real increase over the previous regulatory period (AER, 2013: 72). The NSW and Queensland networks accounted for the lion's share of this investment, investing 94% and 73%, respectively, of their total RAB compared to 68% for Victoria and 78% for SA during 2010–2015 (AER, 2013: 63). Hence, it is unsurprising that the NSW and Queensland distribution businesses have much higher increases in revenue (and increases to network charges), during the corresponding period, than the privately owned Victorian and SA networks (AER, 2013: 70).

Table 4 shows examples of the rates of return permitted by the AER. The rates for 2009–2014 are comparable to those for the Victorian distribution companies during 2010–2015 which ranged from 9.4% to 9.95% (AER, 2010: 519). The rates of return for 2014–2019 are notably lower, reflecting changes to the economic regulation of monopoly network businesses.[12]

Putting aside the complex process used to set these rates of return, the salient point is thus: the return on capital for network businesses has been the primary driver of the significant increases in electricity prices. Those returns are set by an independent regulator *not* an individual network company, are irrespective of ownership and are driven, in turn, by investment programmes. The regulatory approach which applied pre-2014 provided far less scope for the AER to reject the expenditure and revenue proposals of the network businesses, and high rates of return prevailed. It cannot be posited, or implied as does Quiggin (2014), that network companies exercised their monopoly position to gain high rates of return. The high rates of return, and resulting escalating prices, were the direct outcome of a flawed regulatory approach which was tightened and will apply from the current regulatory period (AEMC, 2012).

As noted, NSW distributors contributed significantly to network investment during 2009–2014, with an increase also evident in the preceding regulatory period. Much of

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this NSW investment has been directed at ensuring reliability standards which have been progressively tightened since 2005–2006 (HoustonKemp, 2014: 8).[13] With one exception, reliability standards for electricity networks are set on a state-by-state basis by the government or a regulator.[14] In Victoria, distribution (and transmission) networks are not subject to reliability standards per se but reliability targets set by the AER. These targets also apply in all other states and territories *in addition to* the respective jurisdictional reliability standards and herein lies, in part, the reason for higher levels of network investment, and higher increases in electricity prices, in NSW and Queensland. These two states account for nearly 65% of the line length of the NEM's distribution networks, Victoria a further 20% and SA 12% (AER, 2013: 63). Longer networks will require higher levels of investment to reach both required standards and targets. Different reliability standards will require different investment levels. The smaller Victorian networks are only required to meet reliability targets and hence the extent of necessary investment is less. Again, it needs to be emphasised that the reliability standards and targets are set by regulation not by each network business, which severely undermines Quiggin's (2014: 12) claim that 'the shift from public to private ownership reduces incentives for safety and reliability'. If reliability standards and targets are not met, a network's licence to operate will be revoked.

It has been claimed that government-owned electricity network businesses have been 'gold plating', that is, using higher than necessary investment to expand their RAB and thus generate higher profits to provide larger dividends to government owners (Mountain, 2012). There is no evidence that state governments and regulators have deliberately set reliability standards – or created overly optimistic demand forecasts requiring new capacity – to inflate capital expenditure from which to earn 'excessive' revenue. Moreover, these government-owned businesses did not breach the regulatory rules and the AER approved revenue allowances within the existing rules of the regulatory framework. It is notable that the reliability performance of publicly and privately owned electricity networks has been found to be very comparable despite different investment programmes (HoustonKemp, 2014: 23–28).

It has been contended that long-term real network prices for privately owned network businesses have fallen compared to those for the NSW and Queensland networks (Ernst and Young (EY), 2014). This contention is extremely tenuous because the analysis did not take several factors into account. First, the asset bases and line lengths of the NSW and Queensland networks are considerably larger, resulting in differing operating and maintenance costs. Second, the age of assets and thus need for replacement differs. The Victorian and SA networks 'are now approaching a stage in their life cycle which may require substantial further investment' (EY, 2014: 6). Third, there is the issue of investment to provide additional capacity. The AEMO prepares 10-year demand forecasts and in each of the last 5 years these forecasts have been downgraded. The NSW and Queensland network investment programmes have included new capacity to meet unrealised demand forecasts. Finally, as discussed, state governments prescribe minimum service levels for network companies and different reliability standards apply across Australia requiring different levels of investment. These factors have sharply influenced the scale of investment by each network, irrespective of ownership, and thus the increase in network charges which has ensued.

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Overall, the evidence does not support the claim of either higher or lower prices following privatisation. Each claim overlooks the significant role played by regulation in the formation of Australian electricity prices and in particular, the pricing regulation of monopoly networks. Both claims assume that privately owned electricity companies have considerable control over the setting of the prices. This is not the case as evidenced by past price increases driven by an escalation in network charges set by a complex albeit flawed regulatory regime, not the network owner, and in turn being driven by investments to meet demand forecasts and reliability standards, also set by regulators and state governments, as well as to replace ageing assets.

Claim 2: Privatisation will mean a loss of jobs

Total electricity sector employment averaged around 63,000 in the early 1990s and declined quite rapidly as governments discussed the sector's restructuring and the Victorian privatisations commenced. As other Australian states disaggregated and corporatised their electricity monopolies, the NEM commenced and the SA electricity assets were sold, employment declined to 37,000 by 2000.[15] Within a decade, total employment had dropped by over 40%. Total numbers have since steadily increased, most rapidly after 2008. The industrial relations changes implemented through the *Workplace Relations Amendment (Work Choices) Act 2005* and *Fair Work Act 2009* (*Fair Work)* led to no apparent losses although in the period following the Queensland privatisations and during which the NSW government announced a further aborted attempt, total numbers noticeably dipped. Since late 2010, and when the NSW privatisations commenced, the total number employed has averaged around 66,000 workers, a level higher than before restructuring commenced (Figure 3).

Around three quarters of the sector's employment has been historically concentrated in the most populous states. NSW accounted for 40% of the 1990s downsizing, Victoria a further 20% and Queensland 15%. As employment numbers have increased, however, those job losses have not been fully restored for NSW and Victoria. By late 2013, electricity sector employment in both states remained below that of the early 1990s. On the other hand, Queensland, with more than 35% of the sector's employment growth since 2000, has shown an increase in sector jobs well above pre-restructuring levels despite a recent dip (Figure 4).

These employment estimates encompass public and private electricity companies within each of the four largest states. Generation, transmission and distribution companies operate within fixed geographic boundaries, given the nature of their assets and operations. Electricity retail companies are not spatially fixed and all government retailers have been essentially privatised in these states.[16] It is assumed, given the electricity businesses privatised, that employees in Victoria and SA have worked in private companies since 2000, whereas government-owned businesses are the largest employer in NSW as they are for Queensland electricity sector jobs. It is on this basis that the following observations are drawn.

The loss of Victorian jobs through the first half of the 1990s coincided with the Conservative Kennett Government preparing the companies for sale. However, the subsequent upward trend started long before all sales were completed in 2000. A similar

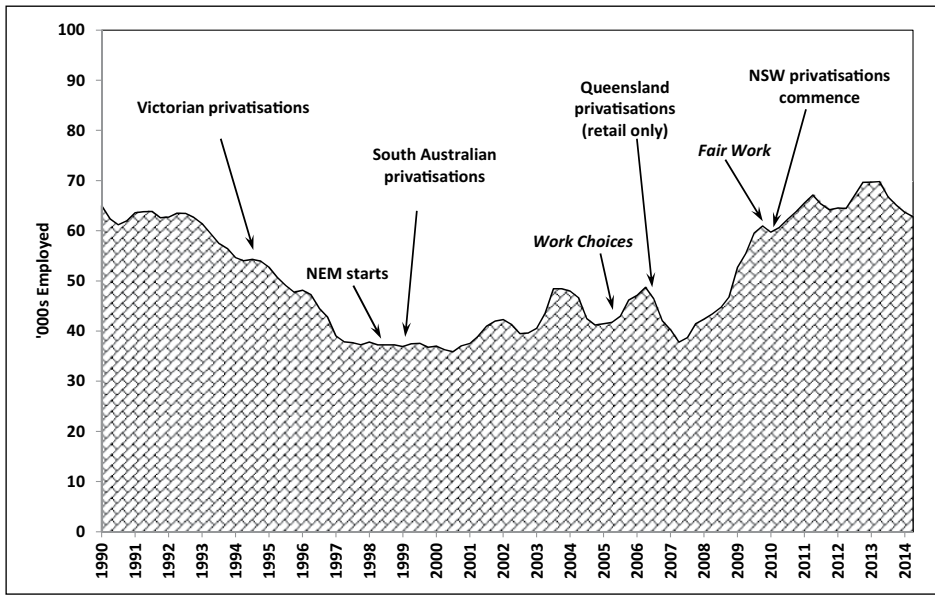

Figure 3. Australian electricity sector employment, 1990–2014 (four-quarter moving average).
Source: ABS (2014b).

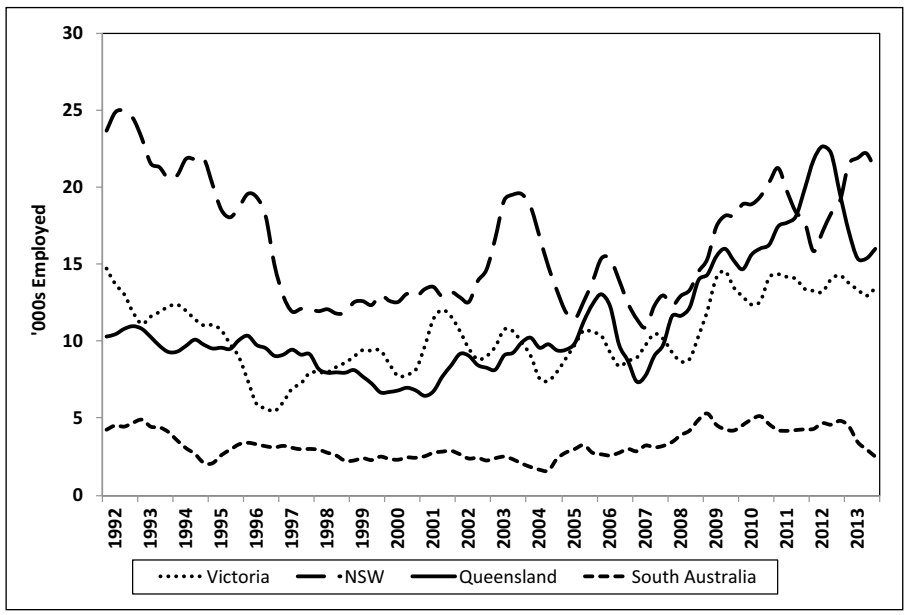

Figure 4. Australian electricity sector employment by state, 1992–2013 (four-quarter moving average).
Source: ABS (2014b).

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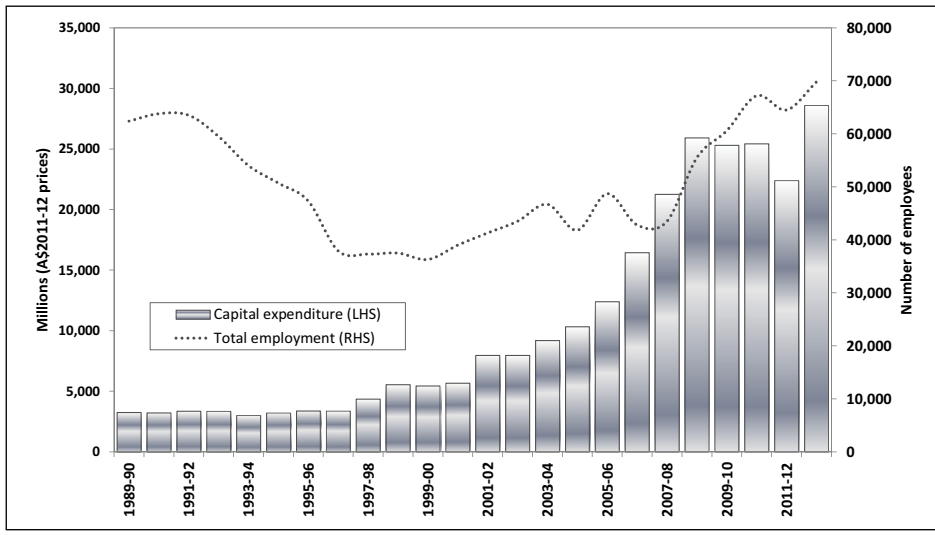

Figure 5. Real capital expenditure and employment, Australian electricity sector, 1989–1990 to 2012–2013 (2011–2012 prices).
Source: ABS (2013a, 2014b).

loss of jobs is evident prior to the 1999–2000 SA privatisations followed by a subsequent increase.

The loss of NSW jobs during the 1990s coincides with de-integration of the monopoly generation and transmission statutory authority, Pacific Power, the consolidation of 25 distribution entities into six businesses and the corporatisation of all these entities. Full retail contestability from 2002 in NSW may have contributed to the increase in the total number employed around that time and the subsequent fall as retail competition became embedded. The GenTrader contracts and retail privatisations immediately precede the decline in employment during 2010–2012. The 2012 re-integration of the three distribution businesses into a single statutory authority, Networks NSW, was forecast to shed 780 jobs from a total of 13,000 (Tovey and Wade, 2012). Yet, this loss is not evident in the subsequent employment trend nor is any significant labour shedding preceding the 2014 sale of Australia's largest electricity generator, Macquarie Generation.

The ABS Census data for 2006 and 2011 add further insight to these trends. Within this 5-year period, over 70% of the increase in electricity sector jobs was within the distribution sub-sector. The 'privatised' state of Victoria accounted for 27% of total growth. NSW, which did not commence privatisations until late 2010, shared in 28% of this growth and Queensland a further 19% (ABS, 2006, 2011). The increase in jobs in the distribution sub-sector coincides with the significant increase in network investment (Figure 5).

An interesting adjunct to the sector's employment growth since the mid-2000s is provided by Richardson's (2013) occupational analysis. Managers increased by 46% from 2007 to 2012, clerical and administrative workers by 63% while technicians and trade workers rose by only 39%. Again, these shifts coincide with the increased network

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investment although they also signal the implications of corporatisation and privatisation on the types of jobs within the sector. Managers now account for 13% of jobs compared to less than 8% in 1997, whereas technicians and trade workers comprised 31% in the late 1990s and barely 21% in 2012.

Some effect on employment could be expected following a sale as a new owner seeks to cut costs, achieve efficiencies and economies of scale and maintain expected shareholder returns. However, it cannot be concluded categorically that job losses will automatically follow a privatisation. The evidence shows that labour shedding is more likely to occur prior to privatisation. The Queensland and NSW partial privatisations have not made a dent in employment growth since the early 2000s. The privatised and government-owned distribution sub-sector has been the primary source of this growth during a period of significant network investment. Nevertheless, the growth in electricity sector employment has been accompanied by a substantive shift in the types of jobs within electricity companies of both ownership types.

Claim 3: Privatisation will mean greater efficiency

'Numerous theoretical reasons have been posited as to why privatisation should lead to a rise in efficiency' (Abbott and Cohen, 2014: 436). There has been little empirical analysis to determine if different ownership types have an impact. One study concluded that government ownership 'even in the relatively narrow perspective of financial performance, doesn't contradict the "inefficiency management hypothesis"' (Clò et al., 2014: 22). Pollitt (1999) concluded that UK privatisation itself was not correlated with productivity growth or profitability. Recent Australian comparative studies have contrary findings. IPART (2010) found the efficiency levels of government-owned companies to be comparable with peers. The AER (2014b) reported that the Victorian and SA distributors 'generally appear more productive than their counterparts' (p. 28) although this depended on the selected performance indicator. Koukoulas and Devlin (2014), after accounting for important differences between networks, conclude that the NSW network businesses 'outperform their privately-owned peers on operating expenses' (p. 13).

Productivity is one measure used to consider if efficiency is improving. Growth occurs as output rises faster than inputs or inputs decline as output remains the same. Substantial labour productivity gains in the electricity sector occurred as output (consumption) grew and downsizing accelerated (Figures 3 and 6).[17]

Throughout the 1990s, labour productivity grew annually, on average, by more than 7% compared to the market sector's annual average of 3.4%.[18] Since 2000, as output has shown far less growth and even declined, and as employment trended upwards, productivity growth turned negative.[19] The ratio of output to employment rose from 2.2 Gigawatt hours (GWh) per employee in 1990 to 5.2 GWh in 2000 and then fell to 3.5 GWh by 2012 (ESAA, 2013).

Declining productivity and employment growth corresponds with the sharp increase in investment by electricity distribution companies since the mid-2000s (Figure 5). This is not surprising given distribution networks accounted for nearly 85% of electricity sector investment and more than 70% of jobs growth during this period. More than 50% of the sector's employment is within the distribution sub-sector.

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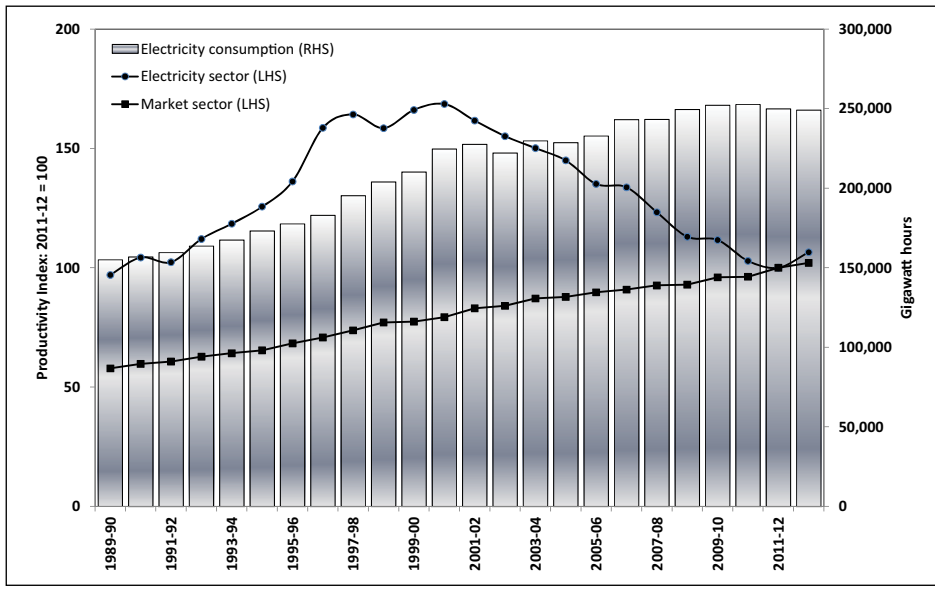

Figure 6. Labour productivity and output, Australian electricity sector, 1989–1990 to 2012–2013.
Source: ABS (2013b); ESAA (2013).

It cannot be concluded, from productivity data, that privatised electricity companies are more efficient than their government-owned counterparts.

Concluding comments

There is a scant factual basis for the claims of lower or higher prices, job losses and more efficient operations following privatisation. The substantive electricity price increases are directly tied to the significant investment in electricity distribution networks and the rates of return permitted by the regulatory regime for these monopoly businesses. It was the (flawed) regulatory approach, not ownership type, which led to these price increases. To suggest that companies control price increases or cuts ignores actual price formation in restructured electricity sectors. Second, the rapid acceleration in distribution network investment reflected demand forecasts and mandatory reliability standards set by regulators and state governments. Third, employment losses have most noticeably occurred in government-owned businesses following de-integration and corporatisation and prior to the Victorian and SA privatisations. Fourth, employment growth within the sector has been in both privatised and government-dominant jurisdictions and dominated by the distribution sub-sector as well as closely matched to distribution network investment. Fifth, productivity trends, mirroring the sector's employment patterns, indicate efficiency losses in companies of both ownership types.

The analysis demonstrated that the post-privatisation pricing, employment and efficiency claims are rhetoric ignorant of a radically restructured industrial sector and

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tantamount to being myths, given reality. As long as these claims continue to be stated authoritatively by advocates and opponents of privatisation and remain unchallenged, the privatisation discourse is ill-informed and framed around reality-inconsistent notions of perfectly competitive markets.

Before initiating further electricity privatisations, politicians should explain how the regulatory regime, notwithstanding recent changes to the approach for monopoly networks, will not create more unforeseen outcomes. The regulatory regime was directly responsible for the rapid escalation in electricity prices. By default, this regime is also responsible for the loss of labour productivity given the increase in employment arising from regulator-approved investment programmes as output growth plateaued and declined. Demand forecasts and reliability standards, drivers of investment, are also a product of the regulatory regime. Instead of state governments seeking election mandates for electricity privatisations, the public should be asked to decide about political assurances that the regulatory regime will not result in further deleterious pricing or other outcomes. All Australian governments are responsible for the creation of, and continue to oversight, the regulatory regime of the restructured electricity sector and should be held to account.

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Notes

1. The NEM covers the states of Queensland, New South Wales, Victoria, South Australia and Tasmania.
2. Privatisation can be conceived broadly and narrowly, from the divestment of public assets to the private sector to a much broader transfer of ownership, management, financing and control from the public to private sectors through asset sales, franchises, contracting-out, the private financing of infrastructure, user pays, withdrawal from services and liberalisation (Aulich and O'Flynn, 2007; RBA, 1997). This article focuses on privatisation through the divestment of electricity assets, by outright sale or long-term leasing, due to a lack of data for other privatisation forms that have occurred in the sector.
3. Households account for nearly 89% of Australia's 10.425 million electricity consumers although use slightly less than a quarter of all electricity consumed.
4. Author's calculation from Table 1, Cormann (2014), Queensland Government (2011), RBA (1997), (1999), Roozendaal (2010) and Walker and Con Walker (2008).
5. The State Electricity Commission of Victoria was split into five distribution and six generation companies.
6. Leasing was used to overcome political objections from an independent Member of Parliament who held the deciding vote for passage of the privatisation legislation.
7. NSW electricity assets were valued at around AUD22 billion in 1997 (NSW Government, 1997: 102).
8. The regional distributor, Essential Energy, is excluded and 100% of the transmission network, Transgrid, is included (Constance, 2014). To achieve 49% of total network assets will mean majority stakes in the remaining two distribution networks (Koukoulas and Devlin, 2014).
9. The comparison here is the average for the eight capital cities.
10. This is commonly referred to as retail contestability meaning companies 'contest' for the business of customers.

11. Generators submit price-volume bids with the cheapest bid dispatched first. The AEMO determines a dispatch price for every 5 minutes and the average of six prices every half hour is the 'spot price' paid for the electricity traded.
12. Political concern over the rapid escalation in electricity prices led to a review of the regulation of monopoly network businesses. As a consequence, the AER was given greater discretion to reject expenditure and revenue proposals and to place 'a greater emphasis on the efficient costs of providing network services' (AER, 2014: 9).
13. Reliability standards for distribution networks refer to the average frequency of customer interruptions and the average time of outages.
14. The COAG Energy Council is currently considering a national framework for reliability standards.
15. Corporatisation is the adoption of an organisational form emulating a publicly listed company and the replication of private sector operations (e.g. accounting practices, corporate governance, performance reporting, dividend and tax-equivalent payments), although it is still government-owned.
16. A small group of Queensland's Ergon Energy customers was not sold when its retail business was privatised in 2007. Snowy Hydro operates as a generator and a retailer.
17. Productivity data are only available for the utilities industry (electricity, gas, water and waste services sectors). The electricity sector accounted, until the mid-late 2000s, for 70% of the utilities industry's output and more than 60% of employment (Topp and Kulys, 2012). Hence, the utilities industry productivity data are regarded as strongly indicative of that for the electricity sector.
18. The market sector comprises industries 'where the exchange of goods and services generally takes place in markets at observable prices' (PC, 2013: 5).
19. Capital and multi-factor productivity for the electricity sector both show the same trends.

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