A FRAMEWORK

Introduction

Energy retail competition has been a feature of the Australian electricity supply industry since December 1994 when the Victorian government gave 47 sites consuming more than 40GWh p.a. the option to choose their electricity retailer. Commencement of mass market retailing was on 1 January 2002 in NSW and Victoria. The last electricity customers to be given the choice of their retailer was in Tasmania on 1 July 2014 (although this choice is in name only).- see Table 1 in Annex A.

Because of rapidly rising retail energy prices since 2007/08, Australian governments have undertaken various reviews to determine the causes and to develop policies to address rising prices. In all cases these reviews have resulted in more regulation and government intervention in the NEM. The NEM is now more regulated than it has ever been.

Following the 2017 review into the Victorian electricity and gas retail markets the Victorian government introduced a number of policy changes, the main one being the re-introduction of electricity retail price regulation. Specifically, retailers will be required to offer a regulated Victorian Default Offer which will be set by the Essential Services Commission (ESC). Retailers will be obliged to offer this tariff to all households and small business customers.

The Victorian government has now asked the ESC to develop a framework for assessing the competitiveness of the Victorian energy market by 31 December 2019. I have been asked to propose an approach for assessing the competitiveness of the retail market.

I will start by briefly reviewing and commenting on the previous attempts to assess retail competition by the Australian Energy Market Commission (AEMC), the ACCC's Retail Electricity Pricing Inquiry, IPART and the Essential Commission of South Australia (ESCOSA).

Previous reviews

The AEMC annually reviews the state of competition in the retail energy market. They do these annual reviews to identify priorities for retail market reform.[1] To assess retail competition the AEMC employs the widely used industrial organisation (IO) structure-conduct-performance (SCP) framework for analysing the competitiveness of energy retailing.[2, 3& 4]ESCOSA adopted a similar SCP framework

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[1] Australian Energy Market Commission (2019), 2019 Retail Energy Competition Review, Final Report, 28 June, pg i, Weblink: https://www.aemc.gov.au/sites/default/files/2019-06/2019%20AEMC%20Retail%20energy%20competition%20review%20-%20Final%20report.PDF

[2] *ibid*, pg 1.

[3] The approach used by the AEMC (and ESCOSA and IPART) is more likely to fall into the category of New Empirical Industrial Organisation (see Bresnahan, T. (1989). Empirical Studies of Industries with Market Power, Handbook of Industrial Organization, vol. II. Elsevier, Amsterdam)

[4] A good treatment of the competing definitions of IO and the history of the development of the IO literature can be found in Lelissa, T. B. & A. M. Kuhil (2018), "The Structure Conduct Performance Model and Competing Hypothesis – A Review of the Literature", *Research Journal of Finance and Accounting*, Vol 9. No. 1.

as the AEMC.[5] & [6]IPART's recent review of the performance and competitiveness of the NSW retail electricity market used aspects of the SCP framework.[7]

The basic idea of the SCP, which is a deductive reasoning process, is that the structure of an industry, in terms of its competitiveness, will give rise to a certain set of behaviours by buyers and sellers and this will determine the economic outcomes in terms of industry costs, prices and service quality. For example, a competitive market would be characterised by a large number of small producers where there are low barriers to entry and exit. This competitive structure would give rise to intense rivalry between producers to gain market share and that this would result in a high level of engagement of consumers with the market and, ultimately, this behaviour would result in lower costs and prices and better customer service.

The SCP framework has its problems, aside from not having a strong theoretical model where there is imperfect competition. For example, in application, and especially in the some of the retail competition reviews that have been conducted in the NEM, there seems to be propensity to search for signs of competition and where these signs exist, especially when a number of indicators are consistently pointing in the same direction, it is concluded that competition has been established. The opposite is also true. When the SCP framework indicates that, for example, there are some structural signs that would suggest a deterioration of rivalry then it is concluded that the market is becoming less competitive. On this score, I agree with Ron Ben-David's conclusions in his entertaining 2015 paper that there are many problems with the application of the SCP framework for assessing changing levels of retail market competitiveness.[8]

For example, the fact that the number of competitors has increased *may* mean that there is additional competition, but it is unclear whether and by how much economic efficiency has improved. Similarly, the fact that retailers are developing new products in an attempt to differentiate themselves does not necessarily indicate that there has been an improvement in competition nor efficiency. Indeed, product differentiation could just as easily and, indeed, is likely to have the opposite effect as it can confuse consumers and raise search costs and discourage switching.

Approach for assessing retail energy competition and efficiency

Consumers don't demand competition *per se*, they demand choice. Consumers want choice because it means that they can shop around for better deals when they feel they are not getting good value or service. If consumers can freely and easily switch their demand to another producer then no producer will be able to charge more than their competitors, nor provide poor customer service, and remain in business. In a market which supplies a homogenous product and where consumers can freely and easily switch suppliers it would be expected that the price paid by consumers would be identical.

[5] NERA (2007), *Review of the Effectiveness of Energy Retail Market Competition in South Australia, Phase 3 Report for ESCOSA*, June, Weblink: https://www.escosa.sa.gov.au/ArticleDocuments/844/070614-EnergyRetailMarketCompetition-Phase3-Report.pdf.aspx?Embed=Y

[6] ESCOSA (2004), *Monitoring the development of electricity retail competition in South Australia, Final Decision*, September, Weblink: https://www.escosa.sa.gov.au/ArticleDocuments/848/040917-MonitorEngyRetailComp-FinDec.pdf.aspx?Embed=Y

[7] IPART (2019), Review of the performance and competitiveness of the NSW retail elctrciity market, 2018-19, Drfat Report, October, Weblink: https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-compliance-monitoring-energy-publications-market-monitoring-201819/draft-report-performance-competitiveness-of-nsw-retail-electricity-market-201819.pdf

[8] Dr. Ron Ben-David (2015), "If the retail energy market is competitive then is Lara Bingle a cosmonaut", 25 June, pg. 34, Weblink: https://www.esc.vic.gov.au/sites/default/files/documents/If-The-Retail-Energy-Market-Is-Competitive-Then-Is-Lara-Bingle-A-Russian-Cosmonaut.pdf

Electricity is a very good example of an homogenous product. This being the case, in a highly competitive energy market it would be expected that prices being paid by consumers would be very similar, recognising of course that in reality consumers do not react immediately to price signals. Even given customer inertia, it would be surprising to see price differences across consumers to persist in a competitive retail energy market.

In a highly competitive market, producers will work hard to keep customers by offering the best price because they know that if they don't the customer will switch suppliers. This means that high rates of switching from supplier to supplier is not necessarily a feature of a competitive market (even though regulators acknowledge this they often present switching rates as measure of market 'dynamics').

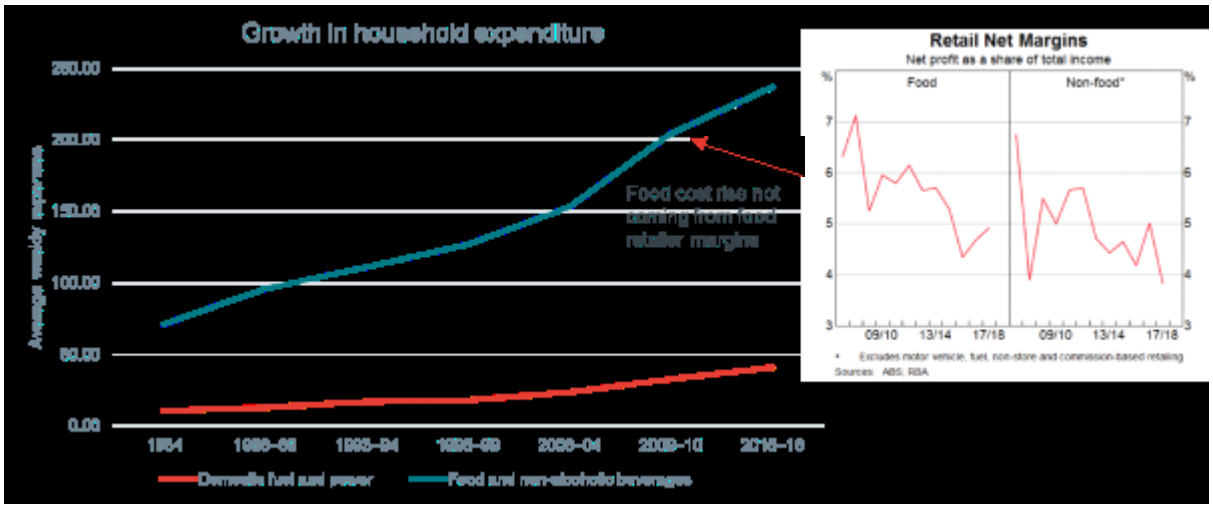
If price differences do persist the cause may also have something to do with the desire of consumers to engage in the market. For example, if energy costs represent a small share of consumers total expenses and the actual or perceived benefits of negotiating with current suppliers or dealing with a new supplier are smaller than the transaction costs, then consumers will make the rational decision to do nothing, except perhaps complain.

Retailers understand the importance of switching costs relative to benefits. Incumbents in all markets attempt to raise switching costs and set prices to deter new entrants. New entrants in all markets attempt to identify customers who are paying the most and/or have the lowest switching costs to entice them away from relatively expensive suppliers.

There is some evidence to support the view that while rising energy costs are a problem in terms of household expenses, it is a relatively small problem, and this could easily explain any lack of engagement with the market, which means that price differences are likely to be more persistent.

Consider **Figure 1** which compares the average household weekly expenditure on food and non-alcoholic beverages to fuel and energy expenditure, with the former outstripping the growth in fuel and energy expenses by five times. Australian families will be more worried about feeding themselves than turning a light on and lowering food costs, and finding a cheaper mortgage is more likely to occupy the scarce time available to families.

Figure 1: Lack of engagement of consumers in energy is due to relative unimportance compared to other expenses



Source: Australian Bureau of Statistics

To understand how these prices differences arise, and persist, it is important to consider some basic economic pricing principles.

One strategy used to maximise profits by suppliers in any market, which is employed in all retail energy markets, is price discrimination. This involves selling to different consumers at different prices. Retailers seek to attract more consumers by offering discounts to those consumers with a lower willingness to pay using the profits they get from charging higher prices to consumers with a higher willingness to pay. This type of pricing behaviour is only possible in a market which is not perfectly competitive.[9] Since no market is perfectly competitive this pricing behaviour occurs in just about every market. Price discrimination is particularly evident in the airline industry, pharmaceuticals (geographically), cars, cinemas, telecoms, software, economic consulting.

To ensure producers can price discriminate, suppliers engage in a range of practices aimed at preventing consumers switching suppliers by raising the costs of searching for alternative supply arrangements. A classic strategy is to engage in product differentiation. This involves suppliers attempting to convince consumers that their product(s) has some distinctive advantage(s) that sets it apart from other similar products. If this product differentiation of an essentially homogenous product is successful it makes it harder, more costly, for consumers to compare alternative offerings. In these circumstances consumers are less likely to switch away from the supplier if the price rises. Interestingly, the SCP studies that have been undertaken by Australian regulators on the competitiveness of the retail energy market use the development of product offerings by retailers as a positive sign, indicating the operation of a dynamic, vibrant market.

Given that price discrimination occurs in a less than competitive market, the extent to which price discrimination occurs *and persists* can be used a *guide* as to whether the market is getting more or less competitive. To the extent that the market is getting more competitive it could be reasoned, as a

The ESC could form an index of *unit* price spreads across the market as a simple indicator of competition.

matter of theory, that outcomes would be more economically efficient.

In the context of the introduction of the Commonwealth's Default Market Offer (DMO), which sets a regulatory cap to the price that retailers can charge, IPART has examined the "price spreads" in the market.[10 & 11]

The results of IPART's analysis conforms with rudimentary economics that we have known for 85 years[12] which says that if regulation curtails price discrimination consumers who shop around lose and

[9] Varian, H. (2014), Intermediate Microeconomics with Calculus, First Edition, W.W. Norton & Company Inc, New York. pg. 482.

[10] IPART 2019 o*p. cit.* p49-54.

[11] In their 2019 NEM monitoring report the ACCC observed a spread of retail prices but without any evidence or analysis the ACCC asserted "The ACCC also found that this price dispersion is less likely due to efficient price discrimination and more likely due to retailers taking advantage of customers being inactive or disengaged in the market and/or being confused about which offer constitutes a better deal as a result of retailers' own pricing and discounting practices … " ACCC (2019), Monitoring of supply in the National Electricity Market, March, pg. 35. Weblink: https://www.accc.gov.au/system/files/1516_Monitoring%20of%20electricity%20in%20the%20National%20Electricity%20Market_D06.pdf

[12] Robinson, J. (1933), *The economics of imperfect competition*, Palgrave MacMillian, UK 2nd Edition 1969

those that do not shop around gain. IPART found early evidence of this following the introduction of the DMO and there is no reason to believe that this early trend will not continue. In fact, this is what the proposed "price trend" index will find over time. It will be important to interpret the results of such an index carefully as ESC will have to account for any price spread compression due to the DMO Victorian counterpart, the Victorian Default Offer (VDO), versus the effects of competition. The easiest way to decompose these effects is to commence the index from the introduction of the VDO, or a year after to account for the transition effects. Alternatively, ESC could econometrically adjust an index ex-post the introduction of the VDO.

This price spread compression effect of the VDO is an important conclusion for how the ESC analyses the development of the competitiveness and economic efficiency in energy retailing. For example, if the ESC adopts the SCP framework used by the AEMC and other Australian regulators, the ESC will inevitably conclude from this approach that competition and, hence, economic efficiency is declining over time following the introduction of the VDO. This occurs because the price behaviour employed by retailers provided a business opportunity for new entrants. The process of retailers charging according to willingness to pay provided an opportunity for new entrants to search for and entice these high paying consumers from their existing arrangements by offering discounts and other inducements to switch retailers. Once these new entrants gained a foothold using the puppy-dog ploy[13] they were able to progressively compete across all customer groups and establish themselves as a competitive force. It will now be difficult for new entrants to come into the market as there is less opportunity and, almost inevitably, some small players will leave the market as the DMO/VDO does the work they once did. This means that there will be fewer new entrants and, probably, fewer active retailers. Using the SCP, these changes would lead to a conclusion that the market is becoming less competitive and efficient from the DMO/VDO.

As the contest for customers weakens with the introduction of the DMO/VDO, because there is less discounts available to offer customers to overcome their inertia and to compensate for their switching costs, the range of products offered to customers may decline. Using the SCP adopted by the AEMC, this would suggest a decline in competition.[14]

Performance of the Victorian retail energy market

In 2018 the ACCC commissioned consultants to review the operation of retail energy markets in a number of jurisdictions.[15] Whilst this report did not review the relative performance of the four US state markets and six other countries they examined, they did make some important observations. In particular, the report identified that most of the retail markets considered had regulated price caps in place to limit the extent of price discrimination. It was also clear from the report that instead of markets become more liberalised over time, retail energy markets are increasingly subject to more regulation and government intervention. However, there seems to be no evidence that this great regulatory intervention has resulted in better economic outcomes. I would expect that the underlying resources costs of supplying electricity customers will only continue to grow over time (the cost of

[13] Fudenberg D, & J. Tirole (1984), "The Fat-Cat Effect, the Puppy-Dog Ploy, and the Lean and Hungry Look" *The American Economic Review,* Vol. 74, No. 2, Papers and Proceedings of the Ninety-Sixth Annual Meeting of the American Economic Association, pp. 361-366

[14] It may be that this decline in product differentiation does not occur as the remaining retailers may seek to create entry barriers by confusing consumers, raising the switching costs and reinforcing inertia to prevent switching.

[15] The Brattle Group (2018), *International Experiences in Retail Electricity Markets, Consumer Issues*, June, Weblink: https://www.accc.gov.au/system/files/Appendix%2011%20-%20The%20Brattle%20Group%20-%20International%20Experiences%20in%20Retail%20El....pdf

which will shared between taxpayers and electricity consumers) in the current post-Hilmer phase of re-regulation and government intervention.

This interventionist trend has important implications for the design of the entire energy market because the operation of the retail market has important implications for the dynamic efficiency of the wholesale market through hedging. Retail competition was established as the mechanism for ensuring that the efficiency gains from the upstream reforms were passed on to consumers. To ensure a lower cost and more orderly transition, it will be important for governments to carefully consider the upstream effects of downstream interventions that prevent the transfer of legitimately higher upstream costs to consumers.

One way to consider the performance of the Victorian energy market is to compare the returns being apparently earned by Victorian retailers against a competitive benchmark. To my knowledge, the most sophisticated, economics based, approach to determining a competitive retail benchmark was that conducted by SFG Consulting in 2013 on behalf of IPART.[16] In that review SFG found that, using the average of a range of approaches, the EBITDA retail margin was 5.7% in 2013 when the market was more benign (in terms of risk) than it is now. In their 2019 monitoring report of the NEM the ACCC found that the average retail margin in 2017/18 was 11%.[17] This is twice that of the SFG benchmark but it is important to note that the 11% is based on the ACCC's analysis of margins, which is plagued with estimation issues, and the context of this margin is a more risky market. Even accepting the ACCC's finding it is important to note that the difference between the ACCC's estimate and the SFG benchmark is about $80 p.a. If the SFG analysis was conducted again, it is very likely that the efficient retail margin would be higher and, therefore, the difference between the actual and a theoretical benchmark would be relatively small. On this basis, I would conclude that the retail market is not doing such a bad job and that the retailers don't deserve to be demonised in the way they have been and that the interventions that have been put in place are not justified and are likely to result in higher, not lower, costs.

Desirable innovation in the retail energy market

Given the energy system is likely to increasingly reflect the system that interventionists prefer rather what is likely to be economic, it would seem to me that encouraging the entry of service providers (let's call them retailers) who can offer consumers an opportunity to bypass these costs and avoid poor system outcomes would be desirable. To a degree, this is already happening with the rapid development of distributed energy resources. It would be easy to see how communities could benefit in the future being served by a modern district energy and utilities network (DEUN) incorporating power, gas, water and telecoms.[18] These systems allow the connected community to choose their own level of reliability, rate of emissions and costs. As the costs of these systems fall because scale economies are being achieved at lower levels of output and because of they capture scope

[16] SFG Consulting (2013), Estimation of regulated profit margin for electricity retailers in NSW, 2 June, Weblink: https://www.ipart.nsw.gov.au/files/f2342b47-09d6-429a-8652-a1e00091c310/Consultant_Report_-_SFG_Consulting_-_Estimation_of_the_regulated_profit_margin_for_electricity_retailers_in_NSW_-_June_2013.pdf

[17] ACCC (2019), Monitoring of supply in the National Electricity Market, March, pg. 40. Weblink: https://www.accc.gov.au/system/files/1516_Monitoring%20of%20electricity%20in%20the%20National%20Electricity%20Market_D06.pdf

[18] Lund H., Ostergaard, P.A., Chang, M., Werner, S., Svendsen, S., Sorknaes, P., Thorsen, J.E. Hvelplund, F., Mortensen, B.V., Bojesen, C., Duic, N., Zang, X. and Bernd Moller (2018), "The status of 4th generation district heating: Research and results", *Energy*, Vol 164 pp147-159. Elsevier Publishers.

economies, DEUN systems are becoming an economic alternative to the increasingly chaotic and high grid supply.[19]

Measures to put in place to undertake assessment

To form an index of price spreads, ESC would need access to accurate information about the rates that customers are paying. This information could be gained from surveys (expensive and dubious reliability) or license obligations on retailers to provide this data. ESC would also need to understand other pecuniary and non-price inducements or concessions that form part of the offer to customers so that a consistent index can be formed. While this index can be useful for showing whether the market is becoming more or less competitive over time, this information will need to be put in the context of other measures of competitiveness, such as retailer returns. This is a much harder measure to form, requiring an estimation of wholesale costs (which is notoriously difficult because retailers have different ways of blending energy purchase costs over products and over time), network tariffs and retailer costs. While this is possible it does involve some costs for ESC.

It is expected that as the Big Stick legislation takes effect it will be easier to track retailer returns as retailers will likely react to the risks of the Big Stick by shortening contracts with customers (to manage the risk they are accused of setting prices that are inconsistent with 'market prices'. This shortening of contracts means that it will be easier (but still challenging) to match retailers' wholesale costs with the wholesale component in retail tariffs.

[19] Frontier Economics (2018), *NEM Structure in Light of Technology and Policy Changes*, Report for the Australian Energy Council, 13 December, Website: https://www.energycouncil.com.au/media/14945/20181213-final-report-advice-on-nem-structure-in-light-of-technology-change-stc.pdf

Annex A

Table 1: Retail competition timetables

State	NSW			VIC			QLD			SA			ACT			TAS		
Options	Date	Threshold per annum	Sites	Date	Threshold per annum	Sites	Date	Threshold per annum	Sites	Date	Threshold per annum	Sites	Date	Threshold per annum	Sites	Date	Threshold per annum	
Tranche 1	1-Oct-96	>40GWh	47	1-Dec-94	> 40GWh	47	1-Jan-98	> 40 GWh	43	1-Apr-98	> 40 GWh	25	1-Oct-97	> 40 GWh	5	1-Jul-06	> 20 GWh	
Tranche 2	1-Apr-97	> 4GWh	660	1-Jul-95	> 4 GWh	330	1-Jan-99	> 4 GWh	346	1-Jul-98	> 4GWh	125	1-Mar-98	> 4 GWh	40	1-Jul-07	> 4 GWh	
Tranche 3	1-Jul-97	> 750 MWh	3,500	1-Jul-96	> 750 MWh	1,500				1-Jan-99	> 750 MWh	600	1-May-98	> 750 MWh	247	1-Jul-08	> 750 MWh	
Tranche 4	1-Jul-98	> 160 MWh	10,800	1-Jul-98	> 160 Mwh	9,000	1-Jan-00	> 200 MWh	6,317	1-Jan-00	> 160 MWh	2,400	1-Jul-98	> 160 MWh	781	1-Jul-09	> 150 MWh	
Tranche 5	1-Jan-02	All	2,700,000	1-Jan-02	All	1,957,300	1-Jul-07	All	1,497,000	1-Jan-03	All	700,000	1-Jul-03	All	125,000	1-Jul-11	> 50 MWh	
Tranche 6																1-Jul-14	All	

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