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Price discrimination and the modes of failure in deregulated retail electricity markets

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ABSTRACT

In Australia, as with Great Britain, governments have shown rising concern with the health of competitive residential electricity markets. A core concern is the practice of price discrimination and the rising dispersion of prices. After almost a decade of Full Retail Contestability, the State of Queensland finally removed its regulated price cap from the residential electricity market in 2016, while almost simultaneously, the two jurisdictions that pioneered this price deregulation reform, Great Britain and Victoria, were questioning their prior policy decision. Queensland makes for a fascinating case study because Southeast Queensland comprises a fully deregulated retail market while Regional Queensland is a regulated monopoly – with common input costs across both zones. Consequently, a regulated monopoly with a uniform tariff and 640,000 customers forms a very large control group, which can be directly compared to the competitive market of more than 1.3 million customers – making such analysis globally unique. Analysis of Queensland market conditions concludes the policy is welfare enhancing, and that British and Victorian concerns regarding price discrimination practices are misguided. To be clear, rising electricity prices are a problem, but price discrimination is not. The deregulated competitive market is, perhaps unsurprisingly, better at regulating the overall average tariff and consumer welfare has been enhanced by $184 million per annum – with some consumer segments very materially better off. However, certain modes of failure remain, viz. an inter-consumer misallocation problem and lack of transparency vis-à-vis the anchoring of discounts – known as the "discounts off what?" problem. The former is currently trivial, and the latter requires further research.

1. Introduction

When contestability commences in the mass market segment of a retail electricity market,[2] prices commence a natural drift from a regulated and uniform (two-part) tariff to discriminatory prices. This arises in energy markets due to the policy design of vesting incumbent retailers with a default tariff, and contestability arising via rival retailer discounts (see Giulietti et al., 2005; IPART, 2013; Simshauser, 2014a; Littlechild, 2016a; Waddams Price and Zhu, 2016; He and Reiner, 2017; Nelson et al., 2018; Flores and Waddams Price, 2018). A market progression of rival entry, greater product complexity and price dispersion is common in former regulated capital-intensive monopoly industries such as telecommunications, airlines and energy as Borenstein and Rose (1994), Dana (1998, 1999b), Levine (2002), Baumol and Swanson (2003), Littlechild (2014) and Simshauser and Whish-Wilson (2017) explain. Thus, while regulated retail price caps are initially retained in energy markets as a proxy *safety-net* for inactive small consumers as the market shifts from single monopoly provider to competitive market, the regulated default tariff or "Standing Offer" forms a *price-to-beat*. Rival and new entrant retailers entering a franchise service area will offer *discounts off* the incumbent's Standing Offer tariff in order to poach customers. Incumbents are forced to construct their own discounted matching-products in response. Discounts off a Standing Offer tariff and associated price dispersion are thus a central design feature of a fully contestable retail electricity market.

Considerable evidence exists to suggest the success of Full Retail Contestability is inextricably linked to expected gains from switching supplier. Gains to residential consumers are most visibly expressed

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[1] Views expressed in this article are those of the author.

[2] To ensure an orderly transition, competition in retail electricity markets occurs progressively with a timetable comprising 4–6 Tranches of consumers spanning a 4–8 year window. In Great Britain, retail market contestability started in the early-1990s with the residential market made contestable in 1999, and price controls removed in 2002 (Littlechild, 2016). In the NEM contestability varied by region, viz.: Victoria 1994–2002, New South Wales 1996–2002; Queensland 1998–2007, South Australia 1998–2003. Price controls in these NEM regions were removed in 2009, 2014, 2016 and 2013 respectively.

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as a "percentage discount off[3]" the existing Standing Offer tariff. This rivalrous process hinges critically on the existence of the Standing Offer, from which discounted products are anchored.

When the mass market is deemed *workably competitive* the requirement for an independent regulator to set a regulated Standing Offer price cap no longer exists. Incumbent retailers – who retain an obligation to supply[4] in their former franchise area – must ensure a Standing Offer tariff (and associated default levels of service) is available at all times. The critical difference pre- and post-price deregulation is that incumbent retailers are free to select the *price-to-beat*. As Littlechild (2017) explains, this residential market liberalisation template was largely pioneered by Great Britain (1999) and the Victorian (2002) region of Australia's National Electricity Market (NEM).

When retail prices are deregulated, all things being equal the number of rival suppliers will expand rapidly because key business risks (i.e. regulatory risk, regulatory mistakes, dynamic inconsistency) have, at least in theory, been removed.[5] Consequently, an incumbent retailer will not only encounter traditional incumbent rivals from adjacent service areas, but additional new entrant "2nd Tier" retailers. Starting without a franchise customer base, 2nd Tier retailers accumulate customers based on various customer-focused strategies such as low-cost, on-line or renewable energy models.[6]

Energy retailers *further segment* consumer groupings well beyond coarse historic segments of Commercial & Industrial, Small Business and Residential. Sophisticated retailers might dissect Residentials into six or more sub-segments, for example, 1) affluent urban professionals, 2) budget conscious families, 3) pensioners, 4) socially conscious households; 5) time-poor families; and 6) tech-savvy households. Products, product bundles and marketing channels to market are specifically constructed to target customers in these discrete sub-segments. Furthermore, some households have solar PV, and/or controlled load (i.e. ripple control) associated with swimming pool pumps and hot water systems. Each metering combination requires discrete product bundles.

Consequently, with the number of retailers expanding, consumer sub-segments multiplying, and the mix of discrete household metered loads rising, the number of products necessarily proliferates. Product proliferation is driven by customer needs and competitive intensity, i.e. retailers design products to attack rivals, and to defend their own customers from competitor poaching.

As Queensland was removing price controls in 2016, Victoria and Great Britain, the jurisdictions which pioneered Full Retail Contestability and price deregulation, were investigating whether to reinstate the price controls that Queensland was removing. The British regulator (Ofgem) had instigated various formal market investigations and policy constraints from 2008 before handing the problem to the British Competition and Markets Authority (see Ofgem, 2008, 2011; Littlechild, 2016b; CMA, 2016). Victoria established a formal inquiry into the efficacy of its deregulation policy (Thwaites et al., 2017) and the Commonwealth Government initiated a formal review of retail electricity markets (ACCC, 2017).

At the core of policymaker concerns in both countries were the evolution of residential prices. However, two distinct pricing characteristics appear to have been conflated, viz. (1) sharply rising prices, and (2) price discrimination and the associated dispersion of prices (see also Littlechild, 2017). The difficulty for policymakers is that misdiagnosing price discrimination for policy treatment will inflame rising prices.

When shifting from a regulated uniform monopoly price to a competitive market, the practice of price discrimination produces a wide array of prices and products. To the non-economist, the term "price discrimination" can conjure negative sentiment. Ofgem and Thwaites Reviews considered the practice produces *unfair* prices, creates confusion amongst consumers, and presents the opportunity for large incumbent retailers to exercise market power and price-gouge inactive customers (Ofgem, 2008, 2011; Thwaites et al., 2017). But price discrimination is unremarkable in economics, is a predictable outcome of rising competition and is frequently welfare enhancing.[7] Price discrimination is pervasive throughout the economy and forms a vital means by which non-trivial joint fixed and sunk costs are efficiently recovered by firms, especially in capital-intensive or "heavy" industries (see Dana, 1998; Levine, 2002; Elegido, 2011; Littlechild, 2017).

Nonetheless, *perceptions of fairness* inevitably arise when a menu of tariffs emerge and deviate from an historic *uniform price* (Dana, 1998). Deeply discounted tariffs are of course very popular. In contrast, Standing Offer tariffs in a rising cost environment are, understandably, derided by consumer groups. This in turn produces adverse media and political "focusing events". The intuitive policy response to these focus events is to stamp out the practice and limit Standing Offer tariffs to some lower level perceived to be fair. Indeed, Prime Ministers of Britain and of Australia[8] weighed-in on retail energy markets in 2017 with ill-advised policy thought-bubbles of shifting all customers en-masse to the cheapest tariff (He and Reiner, 2017; Littlechild, 2017). Implementation of such a policy would surely see cheap tariffs disappear overnight, with serious welfare implications for low income customers who, by necessity, shop around for deep discounts.

At this juncture, Official Advice given to policymakers on the welfare implications of *intuitive interventions* is critical because an intuitive policy response will almost certainly do more harm than good. A long line of independent academic economists in Great Britain attempted to provide advice to British regulator Ofgem over the period 2009-2014 (see for example Vickers, 2009; Yarrow, 2009; Hviid and Waddams Price, 2012; Green, 2012) but were ignored and the consequences for British consumers were disastrous (Littlechild, 2014, 2017; Pollitt and Haney, 2014; Waddams Price and Zhu, 2016; He and Reiner, 2017).

The purpose of this article is to analyse retail market deregulation and in particular, whether Queensland's 2016 policy initiative to remove the regulated price cap (i.e. deregulate prices) represents a welfare enhancing policy. Queensland represents a fascinating and globally unique case study because of its common input costs and dual retail zones representing the market extremes; Southeast Queensland is a fully contestable and deregulated competitive market with 1.3 million customers, while Regional Queensland comprises a control group comprising 640,000 customers with a monopoly supplier and a regulated uniform tariff.

Evidence presented in this article on the performance of the Southeast Queensland market supports the policy of deregulation. Distributional effects are ambiguous, however. There must be episodes of inter-consumer misallocations, albeit trivial at this stage. But Southeast Queensland has certain advantages over its British and Victorian peers; (1) Southeast Queensland has benefited from Victorian and British experience; (2) in Southeast Queensland a credible reference rate exists (i.e. set for Regional Queensland); (3) rather than vacating the field when the market was deregulated, the Queensland Department of

[3] British research revealed only 19% of consumers preferred wanted to stop discounts being expressed in percentage terms (cf. dollar savings). In addition, he strongest driver of customer activity is the size of anticipated gains from switching – *not* the simplicity of offers available. See Littlechild (2014) for details. See also Giulietti et al. (2005), IPART (2013), Simshauser (2014a), Littlechild (2014), Waddams Price and Zhu (2015), Littlechild (2016), Waddams Price and Zhu (2016), He and Reiner (2017), Flores and Waddams Price (2018).

[4] This is usually a condition of their retail licence.

[5] As one Reviewer noted if market prices are rising this may prevent profitable entry.

[6] Heard (2017) argues that there are three tiers with 2nd Tier Retailers being highly successful new entrants (many of which have also vertically integrated) while the 3rd Tier represents the boutique sub-scale new entrants.

[7] The issue here is that setting uniform prices to average cost is known to produce deadweight losses whereas to the extent that price discrimination produces marginal prices below average cost and close to, or at, marginal cost then the resulting welfare outcomes can be expected to be improved. See Simshauser and Whish-Wilson (2017).

[8] See http://www.smh.com.au/federal-politics/political-news/feel-the-power-malcolm-turnbull-summons-electricity-retailers-to-canberra-for-summit-20170803-gxotv1.html.